REPORT

OF

WILLIAM STEIN,

Mine Inspector of the Sixth Anthracite Coal District,

EDWARD RODERICK,

Mine Inspector of the First Anthracite Coal District, and

EDWARD BRENNAN,

Mine Inspector of the Seventh Anthracite Coal District,

WHO WERE REQUESTED BY THE GOVERNOR OF THE COMMONWEALTH OF PENNSYLVANIA TO INVESTIGATE THE DISASTER WHICH OCCURRED AT THE TWIN SHAFT COLLIERY, PITTSTON, PENNSYLVANIA, ON THE MORNING OF THE TWENTY-EIGHTH DAY OF JUNE, 1896.

CLARENCE M. BUSCH,
STATE PRINTER OF PENNSYLVANIA.
1897.

REPORT.

Harrisburg, Pa., September 24, 1896.

To His Excellency, Daniel H. Hastings, Governor of the Commonwealth:

Sir: In obedience to the request of your letter, dated July 1st, 1896, we, the Mine Inspectors of the First, Sixth and Seventh Anthracite Mine Inspection Districts of the State, in company with Hon. Henry C. McCormick, Attorney General, met at the Twin Shaft, Pittston, on the 6th day of July, 1896, and consulted together as to the method of making our examinations and investigations which would best comply with your request, as well as aid us in determining the cause of the sad disaster that occurred on the morning of June 28th, 1896, whereby fifty-eight lives were lost. At our preliminary consultation with the Attorney General we agreed that we should first inspect the colliery map; second, make an examination of the underground workings of the colliery; third, visit the neighboring Clear Spring colliery; fourth, travel over the lands known as the "Bank Farm," or "Flats;" and, fifth, hear all witnesses who would voluntarily come before the Commission to testify as to what they knew of the condition of the Twin Shaft colliery prior to and at the time the extensive cave-in occurred.

On the evening of July 5th the Commission was interviewed by a number of the citizens of Pittston, who wished to know whether our work was to be conducted privately, as they had been told. We notified them that their information was incorrect, assuring them that, on the contrary, the investigation would be conducted in public, and also that they could be represented by attorneys if they so desired.

Fully realizing the importance of the work assigned to us by you, as Chief Executive of the State, we have sought all information that would throw any light upon the disaster in question, and have the honor now to submit to you the result of our labors.

On July 6, 1896, we examined the maps of the colliery furnished for our inspection by the colliery owners, which maps accompany this

report. These were offered in evidence and were sworn to be correct by Mr. David C. Davis, mining engineer for the Newton Coal Company, and were verified and sworn to by Mr. William Siley, mining engineer for the Lehigh Valley Coal Company. We noted the general plan of the colliery, as represented by the maps and the relative positions of the main avenues to the shaft, especially those close to where the unfortunate men were said to have been at the time a large area of the overlying strata was crushed down. We had a conference with the surviving officials, with a view of ascertaining the magnitude of the cave-in, which could only be approximated by those who were most intimate with the colliery workings. We then descended the shaft and for several hours inspected all accessible openings of the underground workings, but the fallen debris prevented us from getting far from the bottom of the shaft in any direction. We found men at work, propping, cribbing and otherwise attempting to arrest the squeeze from further approaching the shaft.

We next visited No. 3 slope, the head of which is in a northeasterly direction from the bottom of the shaft, as shown on the map. We travelled down this opening to where men were at work cutting through the fallen material to reach the entombed men. The coal pillars all along No. 3 slope were crushed to pieces, and every precaution was being taken to strengthen and maintain this avenue to the rear of the working force by extra relief timbering, so as to make the retreat to the bottom of the shaft as safe and permanent as possible. At intervals also men were stationed to prevent any one from inadvertently getting where danger existed from whatever cause, especially from explosive gas, as it was known that a large body of standing gas was in front and on either side of No. 3 slope. We proved this fact by entering an opening east from the head of No. 3 slope, where we tested with a safety lamp the return aircurrent and found it to be an explosive mixture. We noted the character of the rock measures immediately overlying No. 6 vein, which is a very hard spurious fire-clay, having floral impressions clearly defined throughout its formation, and not such as would sustain much pressure. It varies in thickness from eight to twenty feet, and widens into thickness from the foot of No. 3 slope towards the shaft. No. 5 vein overlies it.

The No. 6 vein is very hard and has a tendency to "chip," or fracture off the pillars and walls of the openings in course of mining the coal. This is not unusual, even in collieries where very large pillars are left to support the roof. The angle or dip of vein is from two to two and one-half degrees, and the formation of the coal bed is a little undulating.

On July 7th we visited the neighboring Clear Spring colliery in company with Mr. John B. Law, general manager for the Newton

Coal Mining Company; Mr. Cake, general manager; and Mr. George Thomas, inside foreman for the Clear Spring Coal Company. Our purpose was to learn whether the terrible thrust had in any affected the workings of the clear Spring colliery or the ninety (90) foot barrier pillar separating the two collieries. We found that no disturbance that we could observe had taken place at this point and that the barrier pillar had arrested the squeeze if it had approached the western boundary of the Twin Shaft workings.

We visited the bore hole drilled through the barrier pillar, a distance of ninety feet, and decided to test the character of the atmosphere passing through it with a safety lamp. A pipe was inserted into this hole, with a valve attached and securely plugged. After withdrawing the plug and opening the valve, we held a safety lamp twelve from and in front of the hole, when we discovered an explosive mixture coming through from the Twin Shaft workings. The fact that it was forced through under considerable pressure was evidence to us, in connection with the knowledge we had already acquired, that the Twin Shaft mine workings were full of gas. The bore hole is nearly on the same level as the bottom of the Twin Shaft and is marked on the map "B. H. N. 65 degrees E."

We then visited what is known as the "Bank Farm," sometimes called the "Flats," under which are part of the Twin Shaft workings, for the purpose of examining with reference to surface fractures, so as to enable us to determine, in some measure, the extent of the crush. We went over these flat lands from the Lehigh Valley railroad to Bore Hole, marked on map "B. H. Elev. Sur. 556.27" west, and along the bank of the Susquehanna river to where the Lackawanna empties into it; thence along east on the northern bank of the Lackawanna river to the Lehigh valley railroad. We noticed that the squeeze had affected the surface all over the "Flats" or "Bank Farm." The surface evidences, together with what we had found to be the condition of the interior of the Twin Shaft mine workings from near the bottom of the shaft, east to the barrier pillar, between this and the Old Forge Coal Company, north to bore hole and west to barrier pillar, between Clear Spring and the Twin Shaft, proved that a large territory of over two hundred acres must have broken down. The bore hole through the barrier pillar was drilled with a view to communicate with any of the men who might have escaped the fall and wandered in the vicinity of the bore hole; but the rescuers were rewarded only by an excessive flow of explosive gas; so that the effort to reach the men from Clear Spring was abandoned and every effort put forth to expedite the re-opening of No. 3 slope. However, from our first visit to the colliery, we were of the opinion that but little hope could be entertained of ever reaching the imprisoned men, even through this opening.

In connection with the bore hole marked "B. H. Elev. Sur. 556.27," we inquired into the character of the rock strata through which it was sunk, and why it was put down in front of the workings at this point. Mr. Law informed us that a natural fissure had been discovered at this point, in the course of mining the coal, and the Newton Coal Mining Company determined to satisfy themselves fully as to the conditions and character of the rock strata. In order to accomplish this they engaged Mr. H. P. Simpson, boring contractor, to sink the hole. It was begun on the 7th day of February and completed to a distance of 227 feet on March 17th, 1896. It will be seen by the Bore Hole Journal, furnished the Commission, that the Checker and Pittston veins are not cut in drilling to the Marcy Vein at this point, as compared with a cross section through the Twin Shaft, furnished us by Mr. Law, which also accompanies our report. The distance from the top of the Twin Shaft to the Marcy Vein is about 225 feet, and the distance from the top of Bore Hole to the Marcy Vein is 219 feet, a difference of six feet; and the difference of elevation between the top of the Twin Shaft and the top of Bore Hole is twenty-six feet, as shown on map.

JOURNAL OF BORE HOLE.

Strata.	Drilled.		Total Depth.	
	Feet.	Inches.	Feet	Inches.
Sand,	146		146	
Fine sandstone,	5	6	151	6
Coarse sandstone,	9	10	161	4
Gray sandstone,	27	7	187	11
Sand slate,	14	2	202	1
Fire clay,	2	6	204	7
Coal, bone, slate (Marcy vein),	14	5	219	
Fire clay,	1	3	220	3
Slate,		4	220	7
Bone,		4	220	11
Fire clay,	3	1	224	
Sandstone,	3		227	

The Marcy Vein is split into two members at the bottom of this Bore Hole, with two and one-half feet of rock between them. It is here shown that the bore hole passed through 146 feet of sand, while the Twin Shaft was only sunk through 34 feet, 2 inches of sand, a difference of one hundred and eleven feet, ten inches. We believe this difference in thickness of sand deposit is due to the fact that the Bore Hole is closer to the bed of the Susquehanna river. The cross section shows the location of the Bore Hole to be two thousand seven hundred and seventy-five feet north of the Twin Shaft and five hundred feet east of the Susquehanna river, opposite Scovell's island, as shown on the horizontal map.

It was mutually arranged by the Attorney General and the Commission on July 6th that we adjourn to meet in Pittston on Thursday, the 9th, at 10 o'clock, a. m. An announcement to this effect was made in the columns of several newspapers so that those in any concerned in the interests of the relatives of the entombed men might have ample time to prepare a list of witnesses who would testify as to what they knew of the Twin Shaft mine prior to and up to the date of the accident.

We accordingly met on the date fixed in St. Aloysius Hall, the use of which was kindly given us by the owners. Inspector Stein presided; Henry C. McCormick, Attorney General, appeared for the Commonwealth; E. F. McGovern, P. A. O'Boyle and William H. Gillespie for the families of the entombed men; and J. B. Woodward and F. W. Wheaton for the Newton Coal Mining Company, owners of the Twin Shaft mine. A transcript of the preliminary proceedings and testimony given by the several witnesses, as made by Mr. H. M. Hoke, stenographer to the Attorney General, accompanies this report. The object of examining witnesses was to learn from them as much as possible of the condition of the colliery prior to and up to the time the accident occurred.

One witness testified that "there never was a heading driven in that mine under twenty-five feet unless the roof was so bad that they could not drive it," and that during the two years he worked in the colliery he had been confined to that particular section—No. 3 slope.

The first three witnesses examined were Edward Hughes, 25 years of age, tracklayer's helper; John Williams, 25 years of age, occupation, brattic man; and William Costello, 20 years of age, who was engaged as a timberman at the time the cave-in occurred. Their testimony goes to show the size of pillars, width of chambers and headings, the chipping of coal from the pillars for some time, and the falling down of the fifth vein into the sixth. Frank Haley, 35 years of age, a "gangway" miner, testified that he had worked in the Twin Shaft mine since he was a boy. He did not hear any squeezing. He was told that it was "squeezing right into the fifth vein," and would have worked that night (meaning the 27th of June) had not the gas "shoved out." He did not think it proper to stay where they were staying. He "had a naked lamp." Frank Tracey testified that he was fifty years of age, had worked in the mines thirty or thirty-one years, twenty-six years as a miner, and had worked in the Twin Shaft mine in the neighborhood of three years. He could not give any cause for the accident; never thought his life was in danger from a cave-in, but was afraid of an explosion of gas many a time. The pillars in the Twin Shaft were equal to the pillars in other collieries in which he had worked, but the gangways were not. He noticed the pillars "chipping off."

Michael Langan testified he was thirty-four years of age, and was

a timberman by occupation. He had worked in this colliery fourteen months; had observed the pillars squeezing and was afraid; thought the pillars were too small. On the night of June 27th the fire boss told them "she was caving-in, and we could not get in on account of gas, and I said it is time to get out, and so I did." Coming from No. 3 slope to bottom of shaft he did not notice any indications of a "squeeze."

Hugh McDonald, mine inspector, testified that he did not expect any trouble from the pillars being too small, or he would have taken measures to stop the men from working. He thought the pillars, compared with those in other collieries in his district, were large enough. He had never seen any signs of a squeeze and had not been notified by the Superintendent of any squeeze. Mr. McDonald was asked to point out on the map the location of the different important openings, and their relative position to the cave-in. The Attorney General wished to ascertain first who made the map and if it had been drawn to the scale of one hundred feet to the inch, as required by law. Mr. McDonald said that the map was made by David C. Davis, mining engineer for the Newton Coal Company, and delivered to him in his official capacity something over two years ago. It was extended regularly to the scale of one hundred feet to the inch. He was then interrogated as to his opinion of the cause of the extensive cave-in, its extent, and also what effect the fissure, discovered near where the bore hole was drilled, had on the strata.

Mr. David C. Davis testified that he was thirty-one years of age, and by profession a mining engineer for the Newton Coal Company. He had been a mining engineer for six years and used to make surveys of the Twin Shaft mine every week. He stated how these serveys were made. He made a general survey every six months. He stated that the two veins were worked together, and, as near as anybody could get at them, the pillars of one seemed to be over the pillars of the other and the chambers were over chambers. He had been in the colliery Thursday before the accident, and noticed at one point a little disturbance, but throughout the whole vein there was no general disturbance. He then explained how he made his measurements while making his surveys. He stated that where two veins are so approximate as in the Twin Shaft, "they are worked together all over the valley."

Mr. William Siley testified that he had been employed by the Lehigh Valley Coal Company as a mining engineer for twelve years; that he made surveys of that portion of the Twin Shaft colliery where the coal is mined under lands belonging to the Lehigh Valley Company; that he made a survey three times a year; and that the map produced by him corresponded with the map Mr. Davis had made for the use of the mine inspector, as nearly as it was possible to have it.

The remainder of his testimony, and that of the other witnesses, is given in full with this report.

In order to make a complete report on so sudden and serious a calamity, it is necessary that we should give a history of the colliery and of the colliery officials and their connection with it, together with the mode of operating it, and a comparison with other collieries in the same vicinity, mining the same coal seam and environed by the same conditions.

The Twin Shaft was first sunk to the Checker and Pitton seams some thirty years ago, afterwards to the Marcy vein, and subsequently an extension of the shaft was made to the Red Ash vein, which is split into two members called the No. 5 and No. 6 veins, which are considered to be the deepest in this basin. The shaft is sunk near the junction of the Lehigh Valley and the Delaware, Lackawanna and Western railroads, within the city limits of Pittston, in the Northern Anthracite coal fields of the Wyoming Basin, Luzerne county. The total depth of the shaft is 434 feet to the Red Ash vein. This vein has been in operation about nine years, and during thirty years the colliery has been operated by six or more different coal companies. The present owners are the Newton Coal Mining Company, who took possession of the Twin Shaft mine in 1889. Mr. John A. Mears, who was a member of the company, was made general manager and served as such until September 1st, 1892. A large area of the coal property, from which they mined their coal, is owned by and leased from the Lehigh Valley Company, and the remaining coal lands, tributary to the operation, are owned by the Newton Coal Company. The colliery map accompaning our report, which was offered in evidence, shows the underground workings of the No. 5 and No. 6 veins, and the territory over which they have been mined. The red lines show the No. 5 and the black No. 6 vein. The map also shows that sixty-six per cent. of coal has been mined under that portion of the lands marked "Eli K. Price;" sixty-six per cent. from under the bed of the Susquehanna river, and sixty-four per cent. from under the lands known as the "Bank Farm," the remaining thirty-three per cent. to forty per cent. being left as pillar supports.

When the Twin Shaft reached the Red Ash vein it was found to be "faulty" and thin by reason of a rock "fault," which, as shown on the map, extends from the shaft a distance of one thousand four hundred feet southeast and southwest, and through which a tunnel is driven two hundred and forty feet to win the coal south of the shaft. As the workings of No. 6 vein extended towards the point located at the foot of No. 3 slope (elevation 91.1) the No. 5 vein was accidentally discovered by reason of having to blast down the roof of No. 6 vein in order to make a uniform road grade. This exposed

the upper member of the Red Ash vein and was proved to be from four to four and one-half feet thick. A transportation road (technically called in and about Pittston a "run") was made into it. No. 6 vein, however, had been mined considerably in advance before No. 5 vein was opened, and much difficulty was experienced in maintaining the transportation road beds of No. 5 vein, on account of the rock strata between the two veins being only eight, twelve and twenty feet thick. As this occasionally fell down it was necessary to fill up with refuse and build "cogs," so as to raise the road beds to their original position and also serve as pillar supports. In course of mining No. 5 vein, Mr. Davis, mining engineer, testified that every effort had been made to form the chambers and pillars in No. 5 vein over those constructed in No. 6 vein. The map shows that a little over nine acres of the No. 5 vein had been mined before the accident occurred.

In September, 1892, the Newton Coal Mining Company secured the services of Mr. John B. Law, a reputable mining engineer and graduate of Lafayette College, who discharged the duties of his position up to the date of the accident, his chief underground officials being M. J. Langan, general inside mine superintendent, and M. T. Lynott, inside foreman. Mr. John B. Law, as his evidence shows, was for several years general mine superintendent for the Pennsylvania Coal Company, Pittston, and served in this capacity up to the time his services were secured by the Newton Coal Mining Company as its general manager.

His duties, as described by himself in the evidence, was to employ competent men at the head of each department of the Newton Coal Company's interests as well as to oversee the company's affairs, financially and otherwise. He had implicit confidence in the ability of Mr. Langan to conduct all the mining operations belonging to the company, with due regard to the safety of the men, and to the best interests of all concerned. Mr. Law's evidence also shows that he consulted with Mr. Langan when necessary, and the plans of the latter always met with his approval. He also testified that he went into the mines only when requested by Mr. Langan to consult on some particular matter.

A general manager's duties are such that he cannot make frequent visits into all the mines belonging to the company in whose service he may be. Numerous business matters constantly require his attention, and therefore each department is placed under a competent head, whose daily duty it is to see after the details of his particular department and report anything which, in his opinion, requires the attention of the general manager.

Mr. Langan, the general mine superintendent, was the person next in authority to Mr. Law. The term "superintendent" means

"The person who shall have, on behalf of the owner, general supervision of one or more mines or collieries." (See Article 18 under the head of "Definition of Terms" of the Mine Ventilation Law, June 2, 1891).

Mr. Langan had held this position in the service of the Newton Coal Mining Company, and had been connected with this company in some capacity, long before the Twin Shaft was sunk to the Red Ash vein. From boyhood he had been an employee at this mine, beginning as a driver; was promoted to the position of driver-boss, and served in that capacity in the Pittston vein; and was made inside mine foreman of the mine workings in the Marcy vein. Under his supervision the Twin Shaft was sunk to the Red Ash vein, where he was also mine foreman for some years, until he was again promoted to the position of superintendent of the Twin Shaft and all the other mines operated by the then owners. When the present owners, Messrs. Frank T. Patterson, William Hill and E. L. Fuller, took possession of these mines seven years ago, Mr. John A. Mears, who was appointed general manager, continued Mr. Langan as mine superintendent. Mr. Law succeeded Mr. Mears in 1892, and Mr. Langan was retained in his position, which he held until his death.

It is to be presumed that Mr. Langan had been a close student during his long and varied experience in mining and was fully competent to contend with all the complications of coal mining, yet, during all his mining experience, he may never have had to contend with a general squeeze. It is safe to assume that he considered the squeeze at the Twin Shaft of a local character, for if he had possessed a true apprehension of the magnitude of the subsidence which was going on and the dangers attending it, he would have withdrawn with his men to the top of the shaft and awaited results.

In connection with our inquiries into the cause of the Twin Shaft disaster we asked for the records kept at the colliery in which accidents have been recorded. We found that nine men had lost their lives in seven years. The following statement shows the average number of tons of coal mined by the Newton Coal Mining Company at its Twin Shaft for each life list, covering operations for a period of seven years from 1889 to 1895, inclusive:

Year.	Lives Lost.	Tonnage.
1889,	None.	241,045
1890,	1	179,448
1891,	None.	238,831
1892,	1	218,761
1893,	1	276,808
1894,	4	214,063
1895,	2	342,867
Coal used for steam purposes during above 7 years,		133,000
Total,	9	1,944,623

One man was killed by falling under a car, one by a blast, one standing in a cage pit when the cage came down on him, one by a fall of the roof, and five by explosions of gas. This statement shows the average number of tons of coal produced per life lost to be 216,069, while the average number of tons of coal produced per life lost throughout the eight Anthracite Districts for the year 1895, is 123,597.

The method of mining throughout the entire underground workings of the Twin Shaft colliery has been by the pillar and chamber system, with no sectional reservation blocks of coal left to arrest a squeeze and confine it to the particular group of chambers from which it may have begun. The Twin Shaft mine, however, compares favorably with others in this vicinity with respect to width of chambers, headings and size of pillars, for, from what we could hear of how other collieries were operated in the neighborhood of Pittston, and from our own observation, as well as from the maps we were permitted to see, we found the same method generally adopted as at the Twin Shaft. The Twin Shaft colliery had always been very gaseous and required very large intake and outlet airways in order to pass the necessary quantity of air for all purposes, yet we think some of the gangways in this mine were driven too wide and the chambers were opened too wide from them. No fixed rule can be laid down for a uniform width of transportation and ventilation avenues in all collieries because the requirements vary with each mine. The cars used in collieries are not all of the same dimensions, and the law is mandatory only in that sufficient width shall be allowed in passageways for persons to pass the cars, no matter what their dimensions may be. (See Article 12, rule 43). With regard to air passages, the amount of air necessary to be in circulation in one colliery may not be adequate properly to ventilate another, and in proportion to the amount of air necessary to ventilate a colliery so must the area be to comply with the Mine Ventilation Law. (See Section 7, Article 10). Some testimony was given before the commission that the headings were driven too wide in order to save paying for yardage. If we are to believe this evidence, it must have been false economy, for, from what we found to be the conditions of the strata overlying the coal seam, the expense in maintaining these headings must have been more than the amount usually paid for yardage.

The percentage of coal that should be left as pillar supports is a matter about which opinions differ, for it is subordinate to unquestionable conditions which may exist on the surface, or from the surface down to the top of the coal seam and immediately under it. One mine superintendent may determine to leave sixty per cent. of unmined coal as pillar supports, while another would consider forty per cent. sufficient for all purposes. In either case, however, the mine superintendent has the absolute right to decide and to dictate what the dimensions of the mine openings and pillars shall be. There is no State law that gives to the mine inspector a discretionary power in this matter, except in cases where he sees indications of danger to the lives of the workmen. It then would be his duty to advise with the colliery officials as to the proper means to be taken to remove the danger, and, if forced to do so, appeal to the court for an injunction to restrain the operator from further mining until the colliery, or section thereof, has been made permanently safe. In connection with the Twin Shaft workings Mr. McDonald considered the pillars large enough and did not expect a squeeze to take place on account of weak supports. He did not see any indications of a squeeze on any of his inspection visits to the colliery, nor was he ever notified of any trouble of a character demanding special attention.

Article 14, Section 2, of the Mine Ventilation Law, reads: "The owner, operator or superintendent of a mine or colliery, shall without delay give notice to the inspector of the district in which said mine or colliery is situated in any or all of the following cases." Case sixth: "Where a squeeze, or crush, or any other cause, or change may seem to affect the safety of persons employed in any mine, or where fire occurs, or a dangerous body of gas is found in any mine." Now, not only was the Twin Shaft mine affected by a terrible subsidence of the overlying strata, but a large body of gas had accumulated west of No. 3 slope. This gas, no doubt, had collected there by reason of the air passage being obstructed by a fall of the roof, and the fracturing of the roof strata liberating the confined gas. Gas is a very dangerous element to contend with, especially so when a crush of the roof strata takes place. It was known that all the workmen at the foot of No. 3 slope were using naked lamps, and that the gas was "shoving out" to that point. The squeeze had assumed certain proportions which made it possible at any moment for a fall to take place of such dimensions as to displace the gas, causing it to come into contact with the naked lamps, when a terrible explosion would have been the result. We also take into consideration the fact that the men's lives were in imminent danger from an explosion of gas, even if they had been using safety lamps, for, should a local fall of the roof have taken place, it would have forced the gas out at such a high velocity that the flame of the safety lamps would have been forced through the gauze and ignited the exterior gas. After the extensive fall, however, there was no evidence left to prove that there had been an explosion of gas; yet there is reason to believe that an explosion may have occurred, for, according to the evidence, precautionary measures were not taken to prevent it. The absence of indications which generally follow an explosion of gas would not prove, in connection with this accident, that the gas was not ignited,

because the cave-in may have occurred subsequently to the explosion, which, in this case, destroyed or buried all indications such as scattered fragments of timber. Again, the residue from combustion called "choke damp" could have been diluted before the rescuing party could have reached the point where it was likely to be found. Whether an explosion occurred or not we have no positive proof. We have evidence, however, that naked lamps were used on the night of the accident, and the character of the squeeze and the results produced therefrom were such as would lead us to presume that an explosion did occur.

Different opinions are advanced by mining men as to what is the original cause of a mine squeeze. This subject needs but little discussion, because a squeeze will never occur where the pillar supports are strong enough to sustain the overlying strata. Where the roof strata is friable and dislocated or "slippy," the chambers or breasts must be driven narrower than where the roof strata is comparatively stronger. The roof strata, however, at the Twin Shaft mine was not unusually friable, and no fears were entertained that a sudden displacement of a large area of the overlying strata would take place, and we failed to learn that it has become publicly known that a cave-in was likely to occur. It is true we often meet with a dislocation in the strata, such as the "mud crack," found near the bore hole in front of the workings marked on map "Elev. Sur. 556.27." These features in the coal formation very often give much trouble in keeping the roof of the vein from falling down, as they generally weaken the surroundings. Still the trouble will be only local where the pillars are formed large enough to sustain the load over them under ordinary conditions.

From our experience, however, all mine squeezes, general or local, come on gradually and the indications are always very manifest to the ear or to the eye, such as the cracking of the roof rock before an entire separation takes place, and an occasional fall. These are evidences that sooner or later we may expect a collapse unless the squeeze can be arrested. A gradual subsidence may continue for days, weeks, or even months, before the final separation takes place; yet plenty of warning and time are given for all to escape from under the fall. In view of this fact it will be readily seen, even by the uninitiated, that loss of life does not necessarily attend a mine squeeze if those, whose duty it is to direct, will use all precautions to prevent the workmen from working under it.

Mr. Langan, mine superintendent, had directed what size the pillars should be formed in the Twin Shaft mine and his judgment in this respect was endorsed by Mr. McDonald, Mine Inspector, who testified that he considered the pillars in that mine large enough. Mr. Langan not only had confidence in the strength of the pillars

throughout his entire colliery, but he was personally directing the work that was necessary, in his opinion, to arrest the squeeze on the Saturday night he and his faithful men were buried under the collapse of the roof strata.

The pillars throughout the entire workings in the Twin Shaft colliery have, as a whole, been very regularly formed, in our opinion, and the dimensions of most of them were fairly good. The map shows a large pillar one thousand four hundred and fifty feet long by fifty feet wide under the Lackawanna river, extending from the meridian line west to and under the centre of the Susquehanna river opposite Scovell's island. Where the two veins have been worked, as shown on the map, the pillars and chambers of the upper vein are not all immediately above those in the lower. This, to some extent, superinduced the squeeze and caused the falling down of coal and rock into the No. 6 vein, and, although the openings made by these falls were filled up with refuse and "cogs" built with logs, these substitutes could by no means be considered equal in strength to the coal in its unbroken state; because, in proportion to the height of even a closely built pillar-support of either rock or wood, as they are generally built in mines, so will be the distance they will be compressed by the weight of the overlying strata. Therefore, if we would have the roof supported properly, it is safer and cheaper to leave enough unmined coal for that purpose. Where two veins are so intimate as those at the Twin Shaft, the upper vein should be mined first, for, even with the greatest care taken to have chamber over chamber, the partition rock is liable to fall down, taking the miner with it and killing him.

The Twin Shaft mine has always been very gaseous and the coal of a free nature, and where much gas is confined in the coal, as at this colliery, the coal is liable to burst out, even where the pillars have been formed with openings on all sides of them, and those in abandoned sections of the colliery, under these conditions, will, from time to time, become reduced in size and strength. We know where gas in some athracite collieries has forced the coal out of the solid for yards ahead of the face of a gangway having an area of only seventy-five feet, burying the miners and fouling the atmosphere for hundreds of feet back from the face, so suddenly did the pressure of the confined gas in front of the miners displace the solid coal that they had no time to escape. However, the dangers attending an occurrence of this character cannot be considered parallel with those attending a mine squeeze, for, as we have already stated, notwithstanding a mine squeeze may and often does occur, sufficient warning is always given for all to escape to a place of safety.

We have carefully inspected as much of the Twin Shaft colliery workings as it was possible for us to do, and at the same time ac-

quainted ourselves with the method of mining, as shown on the colliery map. We have also taken into consideration what effect the "mud crack" would necessarily have on the rock strata. In addition, we have also noted the absence of large reservation pillars of coal left sectionally throughout the colliery. These have not yet been introduced in connection with coal mining in the vicinity of Pittston. After matured deliberation, we have come to the conclusion that the "mud crack," discovered in front of the bore hole marked on map "Elev. Sur. 556.27," which dislocated the roof strata, together with some irregularity in the formation of the pillars and the chambers of No. 5 vein not being all vertically over those in No. 6 vein, was the original cause of the squeeze.

We have also been asked by you to state in our report whether, in our opinion, any precaution was omitted which would have prevented such loss of life. Our opinion is that, notwithstanding a squeeze did occur at the Twin Shaft colliery, Mr. Langan, who was in charge of the work, erred in judgment in going so far into the mine from the bottom of the shaft. Having gone so far from a means of escape to make an examination of the squeezing section of the colliery, he put his men to work to arrest the squeeze, which he may have considered local, and he and his men worked for hours under the squeezing territory until the collapse came. So, without a question of doubt, his error of judgment was the cause of the loss of his own life as well as of those subordinate to him. Mr. McDonald, the Mine Inspector, cannot in any way be held responsible for the accident, not having been notified of the squeeze by the mine superintendent.

Accompanying our report is a tracing of two veins mined simultaneosly, with breast over breast and pillar over pillar, which is the only safe method of mining coal where the veins are close to one another; also a tracing showing the plan of mining coal from groups of ten breasts between reservation pillars. No. 2 shows that the breasts may be opened at an angle to the gangway, other than a right angle, and the breasts on the one side of the gangway opened opposite a pillar on the other side. No. 3 shows a group of ten breasts opened at right angles to the gangway, and also opposite to the pillar on the other side. The openings connecting the breasts, as shown on No. 2 and No. 3, are not opposite one another. This method of mining strengthens the surroundings of all the openings and increases the safety of the workmen, for should a squeeze occur, it would be confined to one group of breasts; or should an explosion occur, its effects would be confined to one group of breasts. Again, should a fire occur, dams could be constructed on the gangway opposite these reservation pillars, which would necessitate flooding only the section of the colliery in which the fire was located. Each

group of breasts could also be ventilated separately, thereby discharging all impurities from combustion and otherwise into the return air way, which would give a safer and healthier atmosphere for the men to breathe.

A tracing of part of the workings of Packer No. 3 colliery, belonging to the Lehigh Valley Coal Company, also accompanies our report. This shows the method of mining coal, as introduced by Superintendent Col. D. P. Brown, twenty years ago. The tracing shows the reservation pillars, the breasts between them, and also the final robbing from the barrier pillar west towards the slope. It will be noticed that each lift is robbed back, one a little in advance of the other.

To guard against and prevent a repetition of such accidents as that at the Twin Shaft, we would respectfully suggest for your consideration the following:

First: That reservation pillars of coal be left unmined sectionally throughout each colliery, of such dimensions as will form the position of two breasts or chambers and two pillars with a group of not more than ten (10) breasts or chambers between two reservation pillars.

Second: Where more than one seam of coal is in operation, reservation pillars of coal shall be formed in each seam, one vertically over the other, and where such reservation pillars have not already been formed in collieries now in operation, the Mine Inspector shall have power to enforce the same, and no openings other than transportation and ventilating avenues shall be driven through these reservation pillars unless by permission of the District Mine Inspector.

Third: The coal may be mined from these reservation pillars on giving notice to the Mine Inspector, but not until final robbing may be begun, and only where the surface condition will permit of such mining.

The reasons in favor of the three foregoing suggestions are:

1. Should a squeeze occur, it would be confined to one group of breasts of chambers.

2. Should an explosion occur, the effects of it would be confined to one particular group of breasts or chambers.

3. Each group could be ventilated separately and the impurities from combustion and otherwise generated in each group could be discharged into the return air-way, which would give a purer and safer atmosphere for the men to breathe.

4. Where reservation pillars are left under surface streams of water, they should be left unmined unless it has been proved beyond a question of doubt that it is safe to do so.

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Second Suggestion. Reservation pillars of coal should also be left unmined under surface streams and rivers, the width of the pillar to be in proportion to the width of the stream or river, and depth from the surface to the top of coal seam.

The reason for giving the second suggestion is that the pillars left large under streams of water will prevent the surface or bed of the stream from fracturing and flooding the colliery, which has happened in the history of coal mining.

Fourth Suggestion. A skeleton map of each vein mined in each colliery shall be furnished by the owners, operator or superintendent, to the Mine Inspector, showing the course of all the air currents, intake and outlet, also all the main and distributing doors, and overcasts, and should any important or permanent change be made in the course of the air current, the inspector shall be notified so that the change may be put upon his map.

The reason for giving the fourth suggestion is, that, should all the officials lose their lives by accident, as at the Twin Shaft, those who might volunteer to assist in rescuing the entombed men would be better able to do so with the aid of such a map.

Fifth Suggestion. In collieries generating explosive gas, where the workmen alternately use naked and safety lamps, they shall absolutely use safety lamps.

The reason for giving the fifth suggestion is that nearly all accidents from explosions of gas, fatal and non-fatal, occur in collieries where this practice is in use, and not in collieries where the workmen absolutely use the safety lamp.

We have the honor to be,

Very respectfully,

WILLIAM STEIN,
EDWARD RODERICK,
EDWARD BRENNAN.

REPORT OF TESTIMONY.

William Stein, Mine Inspector of the Sixth Anthracite District; Edward Roderick, Mine Inspector of the First Anthracite District; and Edward Brennan, Mine Inspector of the Seventh Anthracite District, convened at St. Aloysius Hall, in Pittston, Pennsylvania, at 10.30 a. m., Thursday, July 9th, 1896, pursuant to the request of the Governor of the Commonwealth, and of notices published in various newspapers, for the purpose of investigating the disaster which occurred at the Twin Shaft mine on June 28th, 1896, and to determine, as far as possible, the cause of said disaster and to inquire as to whether such casualties may be prevented.

Inspector Stein Presided.

Present:

Henry C. McCormick, Attorney General, for the Commonwealth.

E. F. McGovern, P. A. O'Boyle and Wm. Gillespie, for the families families of the entombed miners.

J. B. Woodward and F. W. Wheaton, for the Newton Coal Company, owners of the Twin Shaft Mine.

Inspector Stein:

As previously arranged and announced in the papers, we come here this morning as the Commission appointed by the Governor, with Attorney General McCormick, who will explain the method by which this investigation will be conducted.

Attorney General McCormick:

Gentlemen, at the request of the three Mine Inspectors, appointed by the Governor as a Commission for the purpose of conducting an investigation relative to the catastrophe at the Twin Shaft mine, of which you are all so painfully familiar, I am here for the purpose of aiding, if possible, that investigation to the extent of my ability. The Inspectors have been informed by a number of the citizens of Pittston that witnesses will be here on this occasion for the purpose of throwing some light upon the causes of this great catastrophe,

and the Commission is here to-day for the purpose of inviting you, and all of you, to aid them in their investigation, and to assist them in arriving at the truth with regard to this calamity.

It has been determined by the Inspectors that the orderly mode of procedure would be, first, to hear any person or persons here to-day who have knowledge of the character of the Twin Shaft mine immediately prior to the accident, and who can tell the Inspectors whether there was any neglect of duty on the part of those whose duty it was to maintain it in safe condition for those who were operating it. In the first place, therefore, the Inspectors will hear all such persons, and they may be present by counsel if they choose; they may be heard by counsel if they prefer. The Commission will hear all such persons as have any knowledge upon the subject that would enable it to arrive at the truth in regard to this matter. The subject of the investigation is, first, whether all the safeguards required by law and common prudence were used by the mine owners in this Twin Shaft mine; whether all the preventives that are known to science or required by statute were employed. Second, if those preventives were not used, if there was negligence upon the part of anyone, whether it be upon the part of the official whose duty it was to inspect this mine, or whether it be upon the part of the owners or their employees, it will be the duty of the Commission to find the facts, as warranted by the testimony and their own investigation; and if they find that it was one of those accidents for which no one is properly responsible, then it is their desire, as it must be yours, and that of every citizen of the Commonwealth, to discover, if possible, whether appropriate legislation may not, at least in a degree, prevent such terrible loss of life in the future.

Inspector Stein:

It was said by some of you that you would hand to the Commission a list of witnesses when we met here this morning. The attorney who brought that list will please hand it up.

(List handed to Mr. Stein, who called the name of Edward Hughes, the first upon the list.)

Edward Hughes came forward to the stand and was sworn by Inspector Stein.

Mr. O'Boyle:

Mr. Stein, as one of counsel representing the families of the men who are entombed in this mine, and along the suggestion made by the Attorney General, that the orderly way of proceeding would be first to find out the condition of the mine previous to this accident, I think that the proper witnesses to relate to this body the condition

of the mine would be the men who are the owners of it, to show by maps what was the condition of it, and to have, so far as it is possible, an affirmative and negative statement of the case; in other words, I think that the onus, as we take it, is now upon the owners of the mine to show that it was in such condition as is warranted under the ventilation law for the operation of mines. The burden is first upon the company. They have the witnesses who are familiar with the mine, and they should relate from the witness stand whether or not the condition described by the company existed there at the time the accident occurred. Otherwise, as I take it, you would be proving now at this stage of the proceedings only a negative proposition. What this young man may testify certainly could not, in the first stage of the proceedings, be the best testimony. I think it is first the duty of the company to show the condition of the mine at the time the accident occurred and previous to its occurrence, and then, if any answer is to be made by the families of the persons entombed in the mine, they can make it by either affirming or denying the position of the company. That is our position as the representatives of the families. And furthermore, I suggest that the Inspector of Mines for this District ought to be here with his maps for examination.

Inspector Stein:

I do not see that it matters much which of the parties gives testimony first. The miners volunteered and came and notified the Mine Inspectors that they would have the witnesses. They seemed to have this investigation thoroughly in hand, and said they would have all the witnesses here with their names. We will have all the witnesses that it is necessary to be heard, both proprietors and mine officials that can give us any evidence touching the accident. I do not see why we cannot go on with the miners. That is the method we decided upon last Tuesday.

Mr. O'Boyle:

Of course, as I take it, we are here as a matter of sufferance. As I understood, it was agreed that the families of the miners might be represented by counsel. Well now, it strikes me that the logical way of proceeding in this case is first to have maps presented here before this body that may be read and understood by yourselves. The maps that were furnished to the inspectors by the operators should be here. For instance, I see Mr. Law here. He is general superintendent of this company and he resides in Pittston. He might be called to explain the condition of this mine, because it is a logical inference that, being general superintendent, he was there within a short period previous to this accident. All the others who might throw

light upon the exact condition of the mine as a whole, or at least that portion of it which caved in, are in the mine. They are not here to call attention to the condition of the mine at the time it caved in, and the best evidence that can be offered here at the present can only be offered by the men who own the mine and who have the maps of the mine, and we should have their testimony in relation to its condition previous to this accident. Then if the families of the persons in the mine, who have knowledge of the facts, may wish to testify relating to this afterwards, they should be asked to do so. It may be possible that, when its condition is made known, may it please the Board, that it may be acceptable to these men as an unavoidable accident and that all precautions within the range of human power were taken; but until that condition is shown, as I take it, the miners have very little to testify to, or until they know what the contention affirmatively of the company may be. I take that suggestion from Attorney General McCormick, that that is the orderly and logical way of proceeding, to ascertain by the best evidence what the condition of the mine was previous to this accident, and then if there are persons present who will not agree with the company that it was in the best possible condition, and that it was being operated under the ventilation law, strictly in conformity with the law and statute that then they may have nothing further to say; but until that time, I respectfully submit, we think that the families of those who went into the mine, should not be examined until the whole map is set up by the company and until such evidence is offered as would call for an answer. If any disagreement exists, let it be made known. There is now no disagreement, nothing to deny, and the company should, in the first instance, make known whether or not they have complied with the ventilation law. That is our theory, and by conference with my colleagues, that is what they understand are our rights here.

Inspector Stein:

I do not think it would interfere with the rights of the men to interrogate the witnesses who are here. I understand that the Mine Inspector will be here at twelve o'clock, and the maps will be forthcoming then.

Mr. Woodward:

I am authorized by the company to say that their position in this matter is that they desire to aid the investigation in any way they can. They came here without knowing what the method of procedure would be and without knowing what they would be called to meet. They have not the maps or the evidence that you may require here at present. They are willing and ready to furnish it as soon as they can procure it, if the Commission decides that that is the proper

way to proceed in this matter. Their position is that they desire to aid the Commission in whatever way it decides to conduct the investigation.

Inspector Stein:

I do not see anything wrong in going on with the testimony of this witness. The map will be here shortly, and when it is it can be shown.

EXAMINATION OF EDWARD HUGHES.

By Inspector Stein:

Q. Mr. Hughes, how long have you been a miner?

A. I never was a miner, sir.

Q. Well, then, just state in your own way when you were employed in the Twin Shaft mine.

A. I was employed as a track layer's helper.

Q. How long have you worked in this particular colliery?

A. Two years the first of last June.

Q. Confined to any particular section of the colliery?

A. No. 3 slope was my district. We were supposed to keep up the roads through that district, and on three weeks ago last Saturday the breaker was not working, and we went into a place that crosses there. It had fell down into the sixth vein. This was the fifth vein; we were working the two veins at one time. About half past nine Mr. Lynott, he had sent in for John Gill. John Gill is my butty. He is entombed now, and both of us came out and I said to Mr. Lynott, I said "Mike, that place is in a terrible condition."

Mr. O'Boyle:

May it please the Board, we think the testimony in this case ought to be conducted upon the rules of evidence, and any conversation or anything that was said by any of these men that are entombed now and are unable to answer ought to be excluded.

Inspector Stein:

Just confine yourself to give the testimony of what you know of the condition of the colliery yourself.

A. All right, sir. Well, at the time that I left there I noticed that the bottom was dropped out of the fifth vein. It used to drop out of there often, I should judge about onece or twice a week. And then we would go to work to fill it with fine dirt to support it. Before I came up Mr. Lynott sent for me. I noticed you could stick your arm right between the roof and the top of the pillar, the roof of the fifth vein; I could stick my arm between the top of the coal and roof. I should judge it was an area of forty or fifty feet; that is across that road and where it was stripped from the roof. We was called out to prop underneath that; underneath the fifth vein.

Q. Underneath the partition stone?

A. We were ordered to prop the roof of the sixth vein, the bottom of the fifth, and we was propping that. We worked all day. That was the last I done of that kind of work until the day of the disaster. That was a week ago last Saturday. We went in in the morning into what they call the big passing branch, the left side of No. 3 slope, and we went there in a body; I should judge about thirty of us, and Mr. McCormick, the fire boss, said ———

(Objected to).

Mr. O'Boyle:

You can describe the condition of that mine without telling what anyone said. If the condition showed that there was a violation of law there and a violation of common prudence, that can be testified to without detailing any conversation with these men.

Inspector Stein:

Q. State of your own knowledge what you know about the colliery.

A. I know one thing; that is this air-way side, if it was one inch it was thirty feet wide, and there is a passing branch that was thirty feet wide, we took a skip off there about six months ago, and that was at least thirty feet wide.

Q. For what purpose was that skip taken off?

A. To give the mules more room to pass. There never was a heading drove in that mine under twenty-five feet wide, unless the roof was so bad that they could not drive it. That is in the sixth vein.

Q. You say that the width of the chambers or headings was how many feet?

A. Twenty feet wide, from that to twenty-four.

Q. How thick were the dividing measures between the two veins?

A. Where they start in they were supposed to be seven or eight feet; nothing more than eight feet.

Q. Did you observe any of these dividing measures any thinner than that?

A. No, sir.

Q. Any thicker?

A. Sometimes they run a little thicker. They run up to ten feet, maybe twelve.

Q. How thick is the No. 6 vein?

A. Runs from three to eleven feet.

Q. How thick is the No. 5 vein, the partition?

A. That, I judge, is about four feet.

Q. Of your own knowledge of this colliery can you tell the Commission whether the pillars of the No. 6 vein and the pillars of the No. 5 vein were immediately one above the other?

A. No, sir, I could not tell you that.

Q. From what you have seen and from the length of time you have worked in this Twin Shaft colliery did you notice any chipping of the pillars?

A. Yes, sir.

Q. In which vein?

A. In the sixth vein.

Q. Did you at any time during the time you were working in that colliery have any fear as to your safety?

A. Yes, sir, I was always afraid of it, but I got steady work there and had to continue on in order to support my family.

By Inspector Brennan:

Q. What were you afraid of?

A. I was afraid of the roof.

By Mr. O'Boyle:

Q. Why?

A. Because I thought that this fifth vein was going to make trouble. She was dropping down once or twice a week.

Q. For how long a time?

A. For the last six or seven months. I knew that the top could not stay up when the bottom was dropping out. I was always afraid that the roof rock would give way. The rock was so hard. There was sandstone there that was so hard that she would not break, but come down in a big piece.

Q. Did you have any fears because of the width at which the chambers and gangways were worked?

A. I never thought much about that because I did not fully understand it, but I was afraid when I saw the pillars dropping down from the fifth vein. I was afraid she would come down some day. I said to several of the people before that that it would come down some day.

By Inspector Stein:

Q. During the time that you worked at this colliery do you know

of any robbing taking place at any of the pillars, the company robbing the pillars?

A. No, sir; I do not know of any only when a pillar would get too thick they would drive a chamber in between it.

Q. Do you know of any coal falling from the pillars to have been loaded up by the miners and thereby superinducing the pillars to fracture off?

A. No, sir; they would throw the coal to one side. They did not take the time to do it. If there was any coal laying along the road there was a company man that was supposed to throw that coal off; they never done anything of that kind.

By Mr. O'Boyle:

Q. He wants to know if the coal that comes off the chipping was taken up by the company?

A. It was thrown away just as any other piece of coal.

By Inspector Stein:

Q. Where coal falls off the pillars by reason of a squeeze and the coal is loaded up by the workmen it superinduces the pillar to further crack off, doesn't it?

A. I never saw any of it loaded up. I saw them throw it to one side.

Q. Were you working in this colliery the last day it operated?

A. Yes, sir.

Q. On Saturday?

A. The breaker was not working on Saturday.

Q. On Friday?

A. Yes, sir.

Q. You were working that day, were you?

A. Yes, sir.

Q. Did you notice any squeezing of the pillars in that particular spot where these men are closed in?

A. On Saturday morning I did.

Q. Then you were working on Saturday morning?

A. Yes, sir; I intended to work on Saturday night.

Q. What method did the operator, or the officials take to arrest that squeeze?

A. They just put up cog pillars.

Q. Did they do any propping around the pillars, or lagging?

A. They built what they call cog pillars.

Q. Will you state to the Commission what reason you had for not working on Saturday night?

A. Why there was a fall from what they call the heading side, and that fall I suppose was in the air course and had stopped the air and it drove the gas out. The fire boss went down to investigate and

he says they could not get any air on account of gas and he said there was a big fall on the heading side. They thought there was danger. Then Mr. Williams suggested that we should go home. And I said, yes, it would be the best thing; we could not work and there was a good deal of danger. And then Martin Haley said, "Boys, let us go home." And he threw up a stone and asked the boys what they would have, wet or dry, and wet was turned up, and he says, "That shows we should go home." So we went up to the foot of the shaft. Martin Haley, John Williams, Tim O'Brien went straight up the slope. There was a boy by the name of James Golden stood at the foot of the shaft. Mr. McCormick went out and as he passed down he looked at him and said for him to go to work. I said "Mr. Golden, let us go home." "No," he said, "I'll stay and see what is going on." Mike Langan and myself went up to the head of the shaft, and we sat there for about an hour. There was a boy come up in the meantime after Langan and Lynott, and while he was down we four went home, and Thomas O'Brien stayed there at the head of the shaft.

Q. Mr. Hughes, from your acquaintance with the mine and inside mine superintendent, and your knowledge of mine operations, did you consider Mr. Langan a safe man to conduct the operations of that colliery?

A. Yes, sir; I thought he was.

Q. How old are you?

A. Twenty-five years.

Q. How long did you say you were working in the mines?

A. Two years the 2nd of last June.

Q. You went to the mines when you were twenty-three years of age?

A. Yes, sir.

Q. What had been your service before that?

A. I went up there as a car runner inside.

Q. What was your description of service before going inside?

A. I have been working in the mines since I was fourteen years of age.

Q. Mr. Brennan wants to know what you were afraid of that Saturday night when you went home.

A. I was afraid of the roof and then again I was afraid of the gas. The roof was falling from the inside and was driving the gas out, and I was afraid of the gas and of the roof.

Q. Mr. Brennan also wants to know if you consider your practical experience in mines sufficient to enable you to know whether you were in danger from a falling roof or not, or to discriminate whether the top was bad or not.

A. The top was certainly bad. I was afraid of it and I always was

for the last six months, and when I saw the danger when she was falling from the inside I got more afraid and came out.

Q. You say the top of the fifth vein was falling?

A. Yes, sir. I did not see only what the men told me. I did not leave the foot of the slope because it was not safe.

By Inspector Brennan:

Q. Did you hear any heavy bumps as if it was coming from a distance before you left?

A. Not at that time. I heard the squeezing in the morning.

Q. I understand from what you say that the squeezing was between the bottom of the fifth vein and the top of the sixth vein.

A. I was down in the sixth vein when I heard the squeeze.

Q. You did not hear anything as though the mine top was coming down?

A. No, sir.

Q. Nothing that would jar you. You did not hear any cracks or bumps that would jar you down in the bottom?

A. I felt the squeeze and saw the chipping off the pillars.

Q. From the point where these two veins are worked simultaneously, did you notice any squeezing all the way from that point to the bottom of the shaft?

A. No, sir; I did not notice it there. The squeezing that I noticed Saturday morning was, I judge, about five or six hundred feet away from the foot of the slope.

Q. East or west?

A. Indeed I could not tell you, when I was in the mines whether it was east or west.

Q. Do you understand the position you were in from the map?

A. I never saw a map in my life.

By Mr. O'Boyle:

Q. Can you tell whether it was away from the foot of the shaft or toward it?

A. It was away from the foot of the shaft.

Q. Further away from the slope than the foot of the shaft?

A. Yes, sir.

By the Attorney General:

Q. Mr. Hughes, you spoke of the gangways being from twenty to twenty-four feet wide. Is that the result of any measurement upon your part?

A. No, sir; I just about guessed it. A man could pretty near guess twenty or twenty-four feet?

Q. Did I understand you to say that none of these gangways were less than twenty feet?

A. If the roof was pretty bad they would be apt to drive them narrower.

Q. Some of them were as wide as twenty-four feet?

A. I never measured them, but I think so.

Q. Had you ever worked in any other mine except this?

A. Yes, sir.

Q. Where?

A. I have worked over in Exeter. I have worked in Stevens. I have worked in pretty near all the mines.

Q. Have you ever worked as a miner, mining coal?

A. No, sir.

Q. In what capacities have you worked?

A. I always followed up company work; that is, running cars and driving mules and on the roads laying the tracks.

Q. Do you profess to have such a knowledge of the business of mining as to be able to determine whether the mines are properly worked?

A. Well, no. No, I don't know much about that, but I know one thing; that a heading is not supposed to be drove—at least I think so—over twelve or fourteen feet wide.

By Inspector Stein:

Q. The inference from what you have stated, Mr. Hughes, in regard to the width of these openings, is that you consider them too wide. Now I will ask you the question: Did you consider these openings too wide?

A. Yes, sir; I did.

Q. Still you are not in a position to testify that your knowledge of mining is such as would enable you to be a judge.

A. No, sir.

By Mr. McGovern:

Q. In response to the question of the Attorney General and also of the presiding officer you have stated that you have not sufficient knowledge of the workings of a mine to be able to tell whether it is worked properly or not?

A. No, sir.

Q. Do you mean by that that you have not sufficient knowledge of the law?

A. That is just what I mean.

Q. But from the experience you have had and what you have seen in other mines can you state whether or not you are able to judge as to whether this shaft was worked properly or not, comparing it with the other mines that you have worked in.

A. I know I worked over at Exeter, and I ran cars over there for

my brother. My brother worked in what they call narrow headings, and he never drove them over twelve feet wide.

Q. Taking the headings of that shaft and the headings of this one, do you think, from the knowledge that you gained from those other mines, that this mine, known as the Twin Shaft, was worked properly?

A. I don't think it was, judging from other shafts.

Q. You, of course, know where this squeeze has taken place, you knew the location of it in the mine?

A. Yes, sir.

Q. What was the thickness of the pillars there?

A. Well, they run some of them twelve feet, some of them run sixteen. I seen them run as high as sixty feet. More of them would not be more than six feet there.

Q. What do you mean by saying that they drove a chamber breast?

A. When a pillar would become too thick they would run a breast through it.

Q. Instead of leaving one pillar they would make two out of it?

A. Yes, sir.

Q. How wide would they leave these two pillars?

A. Sometimes they would leave them ten or twelve feet, more times not that much.

Q. What would be the average width of the pillars there?

A. Twenty-four feet.

Q. Did I understand you to say that the gangways were also of the same widths?

A. Yes, sir.

Q. They make no difference between driving a gangway and a chamber; the width was the same?

A. No, sir; not unless the roof was so bad.

Q. When the roof was so bad that it might fall in on them they would drive them narrower?

A. Yes, sir.

Q. Now, as I understand, when you drove narrow you were paid so much a yard, and when you drove wide, you were not.

A. Yes, sir.

Q. What sort of props did they use when there was a tendency of the roof to come down; whether the props were large and thick, of sufficient strength to keep up the roof.

A. Well, some of them was very thin. They aint at all like the props they are getting now. You can see them yourself if you go up there.

Q. Some were very thin?

A. Yes, sir.

Q. Were those props of sufficient strength to sustain the roof?

A. I do not think so. They have been lying outside for two years or more, and dried up by the sun.

Q. In the beginning of your examination you spoke about the bottom of one vein sinking down into the other. Did the fifth vein sink down in the sixth?

A. Yes, sir.

Q. And you could see a space between the roof and the top of the pillar?

A. Yes, sir.

Q. Could you tell from that falling in there, that sinking, whether these pillars of coal that you have spoken of were directly one over the other?

A. Well, I could not tell that. I think that one pillar would not drop down unless there was a vacancy under it.

Q. The pillar dropped down into a vacant space?

A. Of course, I could not swear to that. I was not down far enough underneath.

Q. You saw the pillar drop down into the open space. The sixth vein is the very bottom vein, is it?

A. Yes, sir.

Q. When did you notice them first begin to use these cog pillars?

A. They started to put them up three weeks ago last Saturday.

Q. Cog pillars are placing timbers one across the other in a kind of square and filling in with solid substance?

A. Filling in with dirt.

Q. Or stone or anything?

A. Yes, sir.

Q. Three weeks ago you began to notice them put them up?

A. Yes, sir.

Q. Those cog pillars are never put up unless there is a squeeze or unless the roof is about to come away.

A. Yes, sir.

Q. It is an extra precaution. When they see that the roof is about to give way or a squeeze to take place, these are built up to arrest it?

A. Yes, sir.

Q. And three weeks prior to this accident ———

A. No, three weeks ago last Saturday. That would be two weeks before the accident.

Mr. Woodward:

There was something said about the proceedings being conducted according to the rules of evidence. The Attorney General will understand that one of the rules is that the attorney shall not lead his witness.

Mr. McGovern:

We have no witnesses.

Mr. Woodward:

I would suggest that some limit be put upon the character of the question in regard to suggesting an answer. I suggest this only in a spirit of fairness.

The Attorney General:

I do not think that this takes the form of a cross examination at all. There are no parties here. The Commissioners and counsel here representing the miners or representing the families of the deceased or representing the owners have a right to examine, and there is no cross examination; and therefore it seems to me, Mr. Chairman, that the well established rules of conducting an examination should be observed so as not to permit counsel, or not to permit yourselves, to lead witnesses, but to let them state what they know.

Mr. McGovern:

If it please the Board, I understood that this is an investigation, and what we want to get is the truth of the situation here, and if the gentlemen who represent this corporation objects to that and this Board sees fit to hold us down to the strict rules of evidence, then we respectfully submit ————

The Attorney General:

We will not permit such a statement to go unchallenged. This Commission is willing to permit everybody to state every fact that he knows. The only criticism that I have made has reference to the form of the questions put to the witnesses. You shall have the widest liberty.

By Mr. McGovern:

Q. How long prior to the accident did you first notice them putting up those cog pillars?

A. That was two weeks before the accident.

Q. And then the squeeze had set in at that time?

A. Yes, sir.

Q. How long prior to this accident did you notice the bottom fall out of the fifth vein into the sixth, the first time?

A. I noticed that six months ago.

Q. State what efforts were made to arrest the roof of the fifth vein after the pillars had sunk into the sixth?

A. They started to put up the cog pillars. That was two weeks before the accident.

Q. But prior to that time what was done?

A. Why the rock in under the road used to drop down. The pillars would not drop. They would get some fine dirt to fill it up.

Mr. Woodward:

Q. These men are supposed to be in the sixth vein, are they not?

A. Yes, sir.

Q. As you went down to the foot of the shaft the gangway went off at a level for a certain distance, didn't it?

A. Yes, sir.

Q. How far before you reached the head of the slope?

A. Well, I should judge about a thousand feet from the foot of the shaft to the head of No. 3 slope.

Q. No. 3 slope is in the sixth vein, is it?

A. Yes, sir.

Q. Then how long was this slope?

A. No. 3?

Q. Yes.

A. Well, I don't know exactly, but I would say it was 1,050 feet.

Q. It was in this slope that the men were entombed?

A. At the foot of it.

Q. Do you know where the pump was located in that slope?

A. Yes, sir.

Q. Was that at the foot of the slope?

A. Yes, sir.

Q. What point at the foot of the slope?

A. There was an old working turning to the right. I should judge you would go down that old working about three hundred feet before you would come to the pump.

Q. That is, an old working that led off from the slope?

A. Yes, sir; not exactly from the foot of the slope. You go in the air way side about one hundred or two hundred feet, then you turn to the right down to that working, I should judge about three hundred feet down.

Q. Wasn't it where this pump is that these men are supposed to be caught?

A. The driver boy told me there was some of them down there, more of them up further, scattered around there.

Q. What did you come to at the foot of this slope? Was that the end of this gangway? After you get to the foot of the slope where did the opening go to?

A. There was one road leading to the left and another road running straight from the slope.

Q. Where was it that you saw this fall from the pillar above through the roof of the sixth vein?

A. It was in the fifth vein.

Q. That was in the roof of the fifth vein?

A. Yes, sir.

Q. Is there a slope in the fifth vein too?

A. No, sir; there is just a small plane. It is called a run. I should judge it is about fifty or seventy-five long running from that. When you get up on top you strike the fifth vein. They ran the cars down there.

By Inspector Stein:

Q. They call it a cross cut from the sixth to the fifth?

A. I never heard anybody call it a cross cut. They call a cross cut driving from one chamber to another.

By Mr. Woodward:

Q. What do you call this opening from the fifth to the sixth vein?

A. A run.

Q. At what point in the sixth vein did the run from the fifth vein go into it?

A. On the heading side; straight road leading from the foot of the slope.

Q. At the foot of the slope?

A. About one hundred feet from the foot of the slope.

Q. Where was this cog pillar that you spoke of putting in?

A. Which cog pillar.

Q. You said that they put in cog pillars. Was there more than one?

A. Yes, sir.

Q. Where was it?

A. On the air way side. Some on the passing branch; some of them this side of the passing branch.

Q. Now, these cog pillars that you speak of—they are sometimes called cribs, are they not?

A. Yes, sir.

Q. Were they located in the sixth vein or the fifth?

A. Some in the fifth and more in the sixth.

Q. What point in the sixth vein?

A. To the left.

Q. At the foot of the slope?

A. Yes, sir.

Q. Was this pump at the left of the slope or the right?

A. Why you turn to the left when you go down to the foot of the slope, and after you go down one or two hundred feet you turn to the right.

Q. Now you say that you were in this mine the day before the accident occurred, Saturday; that is a week ago last Saturday?

A. Yes, sir.

Q. What were you doing in the mine?

A. I was hauling props for these cog pillars.

Q. What time did you go in that morning?

A. Seven o'clock.

Q. What time did you come out?

A. Half past five.

Q. When was it that you decided to come out by flipping up the stone?

A. About nine thirty in the evening.

Q. You had gone in again after you came out?

A. I went home and ate supper.

Q. What did you go in for at that time, after supper?

A. I went in with the intention of working.

Q. Who asked you to go in?

A. The boss.

Q. Who is that?

A. The mining boss gives the orders and the driver boss —

Q. What is his name?

A. Tom Murphy, he was the driver boss.

Q. After you came out at half past five what time was it when you went in again?

A. I should judge about half past seven.

Q. Was it customary to go in after you had come out for the day?

A. No, sir.

Q. What did he tell you he wanted you to go in for?

A. To timber.

Q. To timber at what point?

A. He did not tell us at what point. The boss was there to tell us.

Q. This was at seven o'clock?

A. Yes, sir.

Q. Did you do any work there after you went in?

A. No, sir. We all sat waiting at the foot of No. 3 slope, in and about there.

Q. Waiting for whom?

A. The fire boss to come out.

Q. How long did you stay there?

A. I stayed there maybe two hours.

Q. Then you decided to go out?

A. Yes, sir.

Q. And who were these others that came out with you?

A. John Williams, Tom O'Brien, James Golden, Mike Langan and Martin Haley.

Q. What were their occupations in the mine?

A. Martin Haley was a miner; John Williams was helping to brattice; James Golden was a track layer's helper, and Mike Langan was a timberman.

Q. They all came out with you?

A. Yes, sir.

Q. You say you came out because you thought it was dangerous?

A. Yes, sir.

Q. What made you think it was dangerous?

A. Why because they told me there was a big fall on the heading side and said it was coming this way.

Q. Who told you?

A. Ed. Delaney.

Q. What is the heading side?

A. The straight road leading from the foot of the slope.

Q. Did they tell you where the fall was in that road?

A. No; he did not tell us where the fall was. He said it was down in what they call Walley's Road. There was a fall down in there.

Q. When did that fall take place?

A. That fall took place while we were home to supper. I don't know exactly what time.

Q. You say you thought this was dangerous down there before that?

A. Yes, sir.

Q. Did you ever tell anybody you thought it was dangerous?

A. Yes, sir.

Q. Whom?

A. I have told my butty; the fellow I was working with.

Q. Did you tell any of the officials of the mine, the mine foreman?

A. I just told the mine foreman three weeks ago last Saturday and he told me it was dangerous himself.

Q. Did you say there was a boy in your party that went back to speak to Langan and Lynott?

A. There was a boy came out while we were sitting at the head of the shaft. He went after Langan and Lynott.

Q. He went down to see Langan and Lynott?

A. Yes, sir.

By Mr. McGovern:

Q. He came down home?

A. Yes, sir.

By Mr. Woodward:

Q. Were they in the mine?

A. They went in after I went home.

Q. Do you know what time this fall took place?

A. I heard at three o'clock.

By Mr. Stein:

Q. I want to find out from you if you were compelled to work there?

A. No, sir; nobody could compel me to work if I did not want to.

Q. You stated that you were forced to work by reason of having a family?

A. Any man is forced to work as far as that is concerned. I was not compelled to go there if I did not want to.

The Attorney General:

He used the word in the sense that it was necessary for him to work.

Inspector Brennan:

We are not trying to find out whether he was compelled to work there or not.

Mr. McGovern:

He means that his necessities forced him to work, and he is willing to run certain risks to supply the necessities of his home, but as soon as he saw there was imminent danger he left.

(Investigation adjourned until 1.30 p. m.)

Afternoon Session, 1.30 o'clock.

Inspectors, Attorney General and attorneys present as at morning session.

Inspector Stein presiding:

Hugh McDonald sworn by Inspector Stein, testified as follows:

By Inspector Stein:

Q. What is your business Mr. McDonald?

A. Mine Inspector of the Third Anthracite District.

Q. How long have you been in that position?

A. Ten years.

Q. Now you can give your explanation of the map.

(Witness produced map of the Twin Shaft Mine.)

By the Attorney General:

Q. By way of preliminary, I want to ask a question or two. Who made the map before you, Mr. McDonald?

A. The mining engineer of the Newton Coal Company.

Q. Was that map delivered to you in your official capacity?

A. Yes, sir.

Q. When was it delivered to you?

A. Something over two years ago.

Q. Has it been corrected from time to time as your work progressed?

A. Yes, sir; extensions brought up regularly.

Q. What is the name of the mining engineer who made it?

A. David Davis.

Q. Is he here?

A. He was here at the morning session.

Q. Is he still in the employment of the colliery company?

A. Yes, sir.

Q. Has he been continuously during the last two years?

A. Yes, sir.

By Inspector Stein:

Q. You had a map from the time you took the oath of office?

A. Yes, sir. Sometimes as the colliery increased our map would get too small and they would put it on a larger map. As you will see, this is now a very large map.

By the Attorney General:

Q. Was that drawn to the scale required by law; one hundred feet to the inch?

A. Yes, sir.

By Inspector Stein:

Q. All the elevations on it?

A. Yes, sir.

By Mr. O'Boyle:

Q. Mr. McDonald, are all the maps that you have in your official capacity furnished to you by the employes of the different coal companies?

A. Yes, sir.

Q. That is the only way you get a map?

A. Yes, sir.

Q. You do not make any maps yourself. You take the company's maps and on that you base your official report?

A. Exactly.

By Mr. Woodward:

Q. Can you tell whether that map is accurate?

A. Yes, sir.

Q. Do you understand map drawing yourself?

A. No, sir; not being an engineer myself.

By Inspector Stein:

Q. When was that map extended?

A. About a month ago.

Q. Are the locations of the different transportation openings on that map?

A. Yes, sir.

Q. Go on now and explain the map.

A. In the first place, here is the Twin shaft. The opening is 434 feet in depth down into the red ash seam. We extended the inside working from the shaft in the neighborhood of 150 feet to the head of No. 1 vein or slope, the head of No. 1 slope passing down here in the neighborhood of 200 feet to this point, where you see those red lines. No. 2 slope continues down here. Previous to the extension of the head of No. 3 plane, which you see represented going in here, the head of No. 3 plane was located here, No. 3 slope. This runs from the head of No. 1 to the foot of No. 2, to this foot here at No. 2. We hoisted up No. 2 from the foot of No. 1 and from No. 1 into the shaft, necessarily to save the double hoist. The No. 3 slope was extended up to this point, to this level. This continued the level into the foot of No. 1, saving this hoist. Down No. 3 slope in the neighborhood of 6,000 feet. This that you see here represents the fifth vein or the upper split of the red ash. There is a distance of rock between from eight to eleven feet. The red ash vein has an average thickness of six and a half feet.

By. Mr. O'Boyle:

Q. Is that the sixth vein? (Indicating.)

A. Yes, sir; that is the sixth and the bottom is the red ash, only it is split. They call the one the fifth and the other the sixth, only it is split, with this much rock between them. The strata lay in between them so that it would be rather too large; they would not have space enough in the chambers to stay in line, so they drove around here, and come up in this run. But before I come to that in this point here is the basin.

The Attorney General:

Q. What point do you mean by here. What is the distance from the shaft?

A. This will be a thousand feet from the top of No. 3 slope. The slope rises to a measure of northwest slightly, partly north, rising northwest, and entering on the opposite rise. This fifth split was opened at this point, right close to the foot of the slope. It was made with a slight run for cars to run out of this down and hoisted up in the sixth vein; running down here as the fifth seam and hoisted in the sixth in the lower split. The top has an average thickness say about four and a half feet, thickness of coal.

Q. That is what you call the fifth vein?

A. Yes, sir. The lower would be about six and a half. Understand, the vein varies considerably. We find it in some places as high as eight feet and some places might be less than three, but taking it as an average it would be in the neighborhood of six and a half feet, that is, the sixth seam. In this point of working the sixth seam had advanced away beyond the fifth, away beyond the red working here, which is the fifth seam. In some of those places, to make room enough for the cars to pass in this low seam, it would be necessary to take off a small portion of that bottom. They would take off a little of it. On account of the roof of the fifth seam being of such hard sandstone, it was impossible to get tools to stand it, so they took off small portions of the bottom slate to make room for cars. On my last official visit there had been some of those places broken down, being the strata was a little thin, and had disconnected the ventilation. I believe there was some three of those that had come down. Mr. McCormick had pointed this out to me as we came out of the working. From the foot of the shaft going west we have here what is termed a rock road or fault. You see there was nothing here. It is a rule that we should first come down one side of the shaft, come down on this rock road. This represents the rock tunnel driven in the neighborhood of 250 to 300 feet all the way to the shaft, and they struck the seam of coal in here and mined all around in this manner. From these slopes they had their different headings driven. This represents a pillar under the Lackawanna river.

By the Attorney General:

Q. This long white space represents a pillar under the Lackawanna river?

A. Yes, sir; right in here, extending to the Susquehanna. This work had extended around here. We had a way of going around this and passing through this working and coming in here along this working, and here is the barrier pillar to the Phoenix working on the opposite side. This is the barrier pillar that you have heard so much talk about in here. And this portion has all been worked. This whole portion that you find in here is the Susquehanna. This

is the Susquehanna river coming through here. This is the Clear Spring Colliery, part of the workings of the Clear Spring Colliery. In through here is the drill hole, placed there lately to make this test. We have here the Church Hill working. We had some working up here. We drove through another in here, but it is not worked, not being of much account.

Now, in regard to the squeeze. I found on Sunday morning, the 28th of last month, I was called to come to the Twin shaft, as an explosion had taken place in the neighborhood of a quarter after four, or it may have been half past four, by some gentleman, who I cannot say. I immediately went there and went down this shaft. I took one man who was acting as fire boss at this time, and who was legally constituted to carry a lamp with me down in here, down into the slope. When I got to the foot of the shaft I found a squeeze taking place all in this locality, right close to the shaft, within one hundred feet of the shaft. Everything was giving way right along this shaft here. They were sending down a great many men at this time to explore for these men. I found at the foot of the shaft that there had been no explosions. The indications did not prove there was any explosion, but that it was a terrible cave of the roof. I instantly made across the head of No. 3 plane and determined to go down that barrier after these men, as I was told that the men were at the foot of No. 3. The likelihood was that it would break off at that barrier pillar. I thought if I got down in there I could pass along the solid working and could possibly reach them here, in this place right here, right in beyond No. 3, the head of No. 3 slope on the barrier pillar. We could not penetrate on account of gas. There was no return for the west side of the slope. On the east side of the slope was a returning current, and it was passing the air up in through here, so that it would be impossible for any man to get down there. I came back and found that I would have to pay attention to the shaft or send every man out that was there, as the squeeze had advanced close to the shaft. I instantly organized some men, in the neighborhood of some sixty or seventy men, organized and placed them to work to secure this as far as possible. We were driven back and forth but eventually, from the left of this fault, we secured the lower side of it. It had come all the way to here, within the thickness of that pillar there. The squeeze had come on, not caved down, understand, but it was squeezing this pillar. We secured it sufficiently back there through those barns; those old chambers that had been arranged for barns to put the mine mules in. Some fifty odd mine mules had been put in here to get them out of the road of the men. We got this checked by filling this entirely solid with pillars, placing cogs, props and everything to secure it so that we could go after those men. I trav-

eled in through here and found that it was squeezing into this point. This is the point not at the end of the fault, 900 feet from the shaft. It is running on the west course. We found that the squeeze had been going up this way. I did not apprehend any danger. At the end of this fault the squeeze was extending upwards, going up the pitch, going south. It was clearly demonstrated to my mind that this fault would resist any squeeze coming up from the mine close to the foot of the shaft, for the simple reason that this was a natural barrier against the squeeze. I felt that I was safe in keeping the men out in here. When falls set in they ought to be secured at the foot of the shaft.

By Mr. O'Boyle:

Q. You say the squeeze had come within 900 feet in one direction to the end of the fault? How near did it come at the other point, that you indicated, to the foot of the shaft?

A. It come in the neighborhood of 150 feet from the foot of shaft down through the barns, the closest point we found down here about 150 feet. We lost time there because the cogs caved over while we were putting them in. After this was done—the securing of the barns—on Monday forenoon I found that we had secured it safely enough for an exploration back of this fault, north of the fault going down the pitch. I came there to make an investigation, to go down through some of those old chambers. I found I was blocked off in every place which I undertook to go. Every place that I entered I struck either carbonated hydrogen gas, or else I was cut off by the fall, so close down that it was impossible for me to get through. After thoroughly understanding the situation, understanding where the men had been working, I immediately found the only feasible way was to go down No. 3 slope to those men. Our fight to save the men in No. 3 slope was to secure an overcast bridge here, leading from the head of No. 3 slope to the foot of No. 1. The return air from the west side passed around this working and over the top of this bridge and entered the air shaft, located about 200 feet away from the main shaft. Had this bridge been broken down we would have been entirely driven from the shaft, and to that point we exerted our full determination to save the men. While it was in a considerably dangerous place, yet we took the risk of securing that bridge, and accomplished it, which gives now the security we have in exploring for those men. We had passed down No. 3 slope into the neighborhood of the apex from the slope of 370 and some odd feet from the apex of the slope.

By the Attorney General:

Q. At that point you may state how far that is from the point where the miners are entombed, as nearly as you can tell?

A. To the left of No. 3 slope, 1,000 feet from the top down to No. 3 slope.

By Inspector Stein:

Q. In what direction from the bottom of the shaft?

A. It is running now a northwest course. I understand by the advice of some one—it was not told me personally—that Mr. Langan, the general inside foreman, was sitting in an entrance above this on No. 3 slope in a shanty that they had there. And in this location between the foot of No. 3 slope, from the foot of No. 3 slope, 500 feet, was located the pump, in this working, under a portion of the fifth seam. Mr. Lynott was represented to me as inside of Mr. Langan in the neighborhood of 400 feet, on this gangway running from the foot of No. 3, in the same heading turning to the left. One thousand feet from the foot of No. 3 slope, on the same heading, was a large passing branch, holding a large number of cars. One thousand feet from the foot of the slope was where those men were securing the pillars, putting up timbers and cogs, as I understand. Inside of them—what distance I am not prepared to say—was Mr. McCormick, with his two assistants, as fire bosses, guarding these men from gas. That is the last that has been known of them. In walking over the service to find the extent of this area I find it broken in this direction all the way along here, clean down on the Lackawanna river here. I am speaking now of the surface, showing the clear indication that this whole territory has gone down.

By the Attorney General:

Q. State the area, approximately, that has crushed or squeezed down?

A. If all of this has went down, it would be close to 200 acres of it gone down. Of course, from this point we can trace the cracks.

Q. That is to the river?

A. Yes, sir. There is an indication on the inside that it must have broken down likewise.

Q. You were speaking about Mr. Langan having been last seen at a certain point. Please state in this connection how far that is from where the men are now at work?

A. Five hundred feet.

By Mr. O'Boyle:

Q. From where the men are said to have been working at the time that the crush came, the outline that you have drawn there on the surface—for instance, as you examine it on the outside, is there any possibility or likelihood of the men being beyond the point where

the surface indicates the cave to have been, the extreme end of it, towards Scovell's Island?

A. This represents Scovell's Island. Well, that I don't know.

Q. From where you say you last heard that Mr. McCormick and his assistants were protecting the others, how far was that from the extreme end of where you find the surface broken?

A. About 2,800 feet, from the slope to where the men were.

Q. From where you found the surface broken, how far ———

A. Well, it broke all along here on Scovell's Island.

Q. Well, now you say Mr. McCormick was near Scovell's Island?

A. Excuse me, I did not say he was near to Scovell's Island. These men being a thousand feet from the slope, would be here. To the line of Scovell's Island would be 1,300 feet.

Q. Right there now; where did you say you last heard Mr. McCormick was?

A. I heard he was inside ———

Q. Near the foot of the shaft?

A. He was this side of the men, toward Scovell's Island side.

Q. When you last heard of him, how far is that place from where the surface indications show that the extreme end of the cave in is, toward Scovell's Island?

A. I could not tell that.

Q. Approximately?

A. We will say that Mr. McCormick stood one hundred and two hundred feet inside of them to guard them from any gas coming out. It would be quite a distance from there, from the end of Scovell's Island. You want to the water's edge?

Q. I want from where the indications show that the earth is broken?

A. It is broken down 1,200 feet the other side of them.

By the Attorney General:

Q. That map shows sundry drawings of irregular size. Do those those indicate the chambers worked?

A. Yes, sir.

Q. And all else standing coal?

A. Yes, sir.

Q. What I mean to ask you is whether all within the lines, the interior of the lines, represents chambers worked or gangways?

A. Each of the figures there represents a pillar of standing coal. That is a pillar; that is a chamber already excavated the height of the seam. This is a heading, an air way passing in, which each of those chambers are turned off of.

Q. What I ask you is whether the space within the lines represents pillars of standing coal?

A. Yes, sir; blocks.

Q. And does that show them according to the scale of one hundred feet to the inch?

A. Yes, sir.

Q. And the same is true of the gangways, chambers, etc.?

A. Yes, sir.

Q. The map correctly represents the situation?

A. Correctly. Well, I did not go and measure, but as far as my eye can determine in passing through, they are in this shape.

Q. How long prior to this accident had you been in this mine?

A. On the 15th day of April, 1896.

Q. When had you been there prior to that date?

A. On the 26th day of March.

Q. Have you a record of all your visits to this mine, as required by law?

A. Yes, sir.

Q. How many collieries have you in your district?

A. I have forty-five breakers and sixty-six openings delivering coal.

Q. All of which you visit?

A. Yes, sir.

Q. Were these two veins, Nos. 5 and 6, being worked simultaneously?

A. Yes, sir.

Q. Was No. 5 worked over the extreme end, or foot, as you call it, of No. 6 vein? Were No. 5 and No. 6 veins being worked at that point?

A. I don't understand your question.

Q. What I want to ask is, at the extreme end of the mine or the opening of the mine, were both veins being worked at the same time?

A. Yes, sir. The extreme end of No. 6 seam was working and the extreme end of No. 5 seam was working, as I understand your question.

Q. What I want to know, Mr. McDonald, is whether while men were working in vein No. 6, there were also men working at the same time in No. 5?

A. Yes, sir.

Q. They were being worked simultaneously?

A. Yes, sir.

By Mr. O'Boyle:

Q. No. 6 vein extends four or five hundred feet further than No. 5, doesn't it?

A. An average of 400.

By Mr. Woodward:

Q. These red marks show where the men were working in No. 5, don't they?

A. Yes, sir. This portion of No. 5, understand, running more south (indicating by red lines). This was worked out, understand, here. That is the sixth seam. No. 5 was worked over the top of those abandoned places in this direction. They were working here.

By the Attorney General:

Q. No. 6 had been worked out and they were working in No. 5?

A. Yes, sir.

Q. Did you ever make any examination to discover whether the piers were directly over each other in the two veins?

A. Yes, sir. I made it when I was on my visit and I make it by looking here. I see it here on the tracing, without going in to see how it was.

Q. A pier in No. 5 stands directly over a corresponding pier in No. 6?

A. Not altogether. Sometimes it would and sometimes it would not. The trouble is driving over the top of another one. It is pretty hard sometimes to keep just exactly square.

Q. It should be so, shouldn't it?

A. It should be so, but it was mined as close as any other mine of the same description in my district.

Q. A pier of coal over an open chamber in No. 6 would not be much support to the mine, would it?

A. It would have some slight tendency to weaken. Placing six and a half feet of coal in the bottom of a pillar, opening up a seam on top and taking off four feet, understand, four and a half feet, and working between, whatever it might be, would stand in this shape—it would lengthen the pillar, and the longer that column is the weaker it is to a certain extent.

Q. State, if you please, the width of the gangways in that mine?

A. There is one twenty-four. That is the gangway coming to the left. We will take an average of all the workings. It would stand in the neighborhood of 22 feet. Some places they would be wider and some places they would be narrower.

Q. Is that the usual width of gangways in mines of this character?

A. We have them as high as twenty-four feet; some down to eighteen. Some are driven at fourteen and some at ten. The reason of this is that the different seams makes quite a difference. For instance, remember that this i sa gaseous mine and has been ever since it was sunk to the red ash seam. In driving a narrow heading it is necessary to get beyond an entrance a distance enough for a block to drive an entrance. To do that there must be bratticing kept up, and to get the brattice up into a place ten or twelve feet would confine the air to such an extent that it might endanger the whole entire workings. Sometimes, as in this gaseous mine, we have got to drive them wide or we would have explosions of gas and fires.

By Inspector Stein:

Q. Is there any place where the rocks are placed?

A. Yes, sir; they are placed to one side.

Q. That decreases the width of the gangways?

A. The refuse would be placed to the dip side of the road. Slate, rock and dirt would be placed down as a gob, kept in there for ballasting the road up to its proper level.

By the Attorney General:

Q. What was the cause of this accident?

A. I cannot tell you the cause. I would not put myself on record on that point.

Q. You are a Mine Inspector and I ask for your judgment as such?

A. As such I will give my judgment, and that is that I could not say what was the cause.

Q. I put the question to you entirely as an expert.

A. Well, I will tell you. Up in the front of No. 6 working, at the head of the slope, this chamber on the front of the slope, coming down No. 3 slope, a chamber from the bottom of the slope driving northwest, that way—that is this one here (indicating) there was a fissure struck in the roof sometime ago, which we meet in a great many mines in this locality. There was some water came through this, and immediately this working was abandoned until this was tested, knowing that there was something there that ought not to be. The Newton Coal Company put a test hole here at the front of this chamber, from the surface, and tested whether it was in regard to the thinning of the rock, or whether it was that the vein had thinned out there. This hole showed a depth of wash of 146 feet. They found a wash on top of this hole. There was supposed to be sixty feet between that and the Marcy seam.

By Mr. O'Boyle:

Q. What is the wash?

A. Sand and gravel. It sometime had been in the bed of the river over there. Two hundred and eighty-five feet of solid rock was found at in this point, proving that the overlying rock had full strength at this point; that it was no crop out. Now my impression is this, that through this point, in front of this slope working there has been a dislocation of some description.

Q. A dislocation of what?

A. Of the rock strata. As the workings had advanced up in this direction it had weakened until the collapse came. All along here we did not trace it quite as close as it might be, beyond the Clear Spring, on the West Pittston side, down into the Stevens shaft, we found a break, but whether it might be that break or not is a question. It is running down this way, and it may possibly be the same break that has come along these workings. If such was the case there was no question of that terrible amount of strata crushing down instantly by being weakened here.

By the Attorney General:

Q. You speak of the company boring through two hundred and eighty-five feet of solid rock?

A. No, they bored a hole through this strata.

Q. Well, how thick was the stratum?

A. This hole was put down through the sand and gravel 146 feet to this point here. Within the short distance of this bore hole, say one hundred feet, or less, about ninety feet, the elevation was taken here, and the elevation and the top of the rock gave us the amount of thickness of rock.

Q. That was a matter of calculation, was it?

A. Yes, sir.

Q. What was the thickness of that rock?

A. Two hundred and eighty-five feet.

Q. What was the character of that rock?

A. Hard sandstone generally on top of the seams from the red ash up; intermixed at the different seams with fireclay.

Q. Then, if I understand your answer, it is your judgment as an expert that this squeeze took place because of a fissure in this rock?

A. A fissure across in here. I judge from the indications of this place direct from the foot of No. 3 slope upwards, and northwards.

Q. Might not the sinking of the mine have caused the fissure instead of the fissure causing the sinking of the mine?

A. Well, no, it would certainly break the strata. The only question would be if this was a dislocation, it would be instantly seen here in this swamp. This is a very dangerous place in any mine. It would have been the heaviest point if anything had broke down through this swamp. It is where all mining men try to take care of it through a swamp, to see if there is any solid part of it, and in the swamp would be first where all the side pressure comes from, and to weaken this point through a dislocation it would have a tendency to throw more of the weight onto this point.

Q. What do you think caused the fissure?

A. Well, I believe the fissure might have been caused by an eruption of Campbell's Ledge.

Q. Doesn't it strike you as strange that the fissure should conform so closely to the boundaries of this mine?

A. This is the same fissure that I call as being at the Stevens colliery, which we found at the bottom of the Pittston seam, which was down here, and threw off so much water that we put this dam in.

Q. Have you ever observed anything of that character before in mines?

A. Yes, sir.

Q. I refer now to these fissures?

A. Yes, sir. Very few mines that we do not have more or less of them in. We have a large one struck here in a great while in No. 7 shaft of the Pennsylvania Coal Company.

Q. Now when was this fissure discovered first in this locality?

A. I could not answer you exactly to the right date when they struck it first.

Q. About how long since?

A. In the neighborhood of a month or two.

Q. What was done then, if anything, toward strengthening the support of this mine?

A. Nothing in particular as I know of; only what they had done when we found the weakness here in the breaking of the strata between the fifth and sixth seams.

Q. You have told us about the width of these gangways, the average width being, as you say, twenty-two feet. Is that the usual width of gangways in anthracite mines in this locality?

A. No, we generally run about fourteen; the average width is about fourteen and some sixteen. Fourteen and sixteen is about our usual width.

Q. Do you know of any others having as great width as these?

A. We have seams or gangways drove twenty-four feet wide.

Q. In this basin?

A. Not in this basin.

Q. As I understand, you give as a reason for the width of these gangways the fact that, while it may weaken the mine, as it necessarily would, it is a necessity because of the gaseous character of the mine?

A. Yes, sir.

Q. And that the men would not be able to work unless the gangways were wide.

A. Yes, sir.

By Mr. Wheaton:

Q. You say that this was widened for ventilation. Isn't it a fact that you have built a gob from the floor to the roof to conduct the ventilation?

A. That is after the cross headings is put in. You take notice to our pillars there and what we call our anchorages. Very few of them is much over fifty feet. The reason is on account of the gaseous nature of the mine, and that just as quick as you get the bratticing in they give good ventilation. But too much wood bratticing of this character becomes very dangerous in a mine, and there is strict orders given to have as little wood bratticing as possible so that in case of explosion or of the mine taking fire it would be safe; and we have to get along with as little bratticing as we possibly can on that account.

By the Attorney General:

Q. How long have you been familiar with this mine?
A. Since it was sunk to this seam.
Q. How long ago was that?
A. In 1887, I believe.
Q. How long have you been a Mine Inspector?
A. Ten years, going on eleven.
Q. Continuously?
A. Yes, sir.
Q. You visited this mine periodically as Mine Inspector?
A. Yes, sir.
Q. Did the width of these gangways meet your approval?
A. Yes, sir; or I should certainly have stopped it.
Q. Did you make any objection to the mine owners or superintendent or anybody?
A. No, sir.
Q. You did not because it was your judgment that they were safe?
A. My judgment was it was necessary to have it so.
Q. Did you, at any time during the last ten or eleven years as Mine Inspector have occasion to call in any other official Mine Inspector to look at this mine?
A. No, sir.
Q. As a matter of fact you never did call in anyone.
A. No, sir.

By Inspector Stein:

Q. During your periodical visit to this Twin Shaft mine did you observe any subsidence going on?
A. I did not in my visits; that is, nothing to apprehend or call my attention beyond anything I had seen previously.
Q. Was your attention at any time called by the officials in charge?
A. No, sir.
Q. What would be the distance from the top rock of the fifth vein to the floor of No. 6?

A. State your question again.
Q. What is the distance from the top rock of No. 5 seam to the pavement of No. 6 seam?
A. In the neighborhood of about 19 or 20 feet.
Q. Do you know of any law governing the size of pillars to be conformed to in mining operations?
A. No, sir.
Q. In your opinion as the Mine Inspector of this District, do you consider these pillars were sufficiently large to resist the pressure of the overlying strata?
A. Most assuredly, or I should have had them larger.
Q. What do you know the character of the overlying strata to be?
A. Sandstone.
Q. That overlies the fifth vein?
A. Yes, sir.
Q. What is the character of the intervening measures?
A. A bastard fireclay mixed in.
Q. Call it spurious?
A. It is bad rock.
Q. What is the character of the bottom slate or rock measures under the seam?
A. We have sand stone under it, some fireclay in places.
Q. You never saw any heaving of the floor by reason of overlying pressure?
A. Not in this mine until this squeeze.
Q. Always found the ventilation sufficient for all purposes?
A. The ventilation was good; they had sufficient ventilation to keep this mine in a healthy condition.
Q. How many fans have you got in operation?
A. Two.
Q. Exhaust fans or forcing fans?
A. Exhaust fans of the Guibal pattern.
Q. How many cubic feet of air?
A. In the neighborhood of 150,000 cubic feet per minute.
Q. Each fan throwing one hundred and fifty?
A. The total volume; 150,000 cubic feet per minute.
Q. Have you never put any more than that in your monthly reports?
A. Yes, sir; I am giving you the last report. The fans run about fifty-six revolutions per minute.
Q. How do you account for such a large area of overlying strata breaking down so suddenly?
A. My theory in regard to it was through this dislocation which I have just described.
Q. At what point of the operations in connection with the Twin

Shaft did you have the greatest pressure. At what point of the Twin Shaft would you consider to be the point of resistance?

A. Right by the shaft.

Q. How much deeper is that point where the two veins are working simultaneously than the bottom of the shaft?

A. Sixty-four feet.

Q. And does the surface depress that much going from the shaft?

A. Well, no; it might be in the neighborhood of about twenty feet. That is a supposition of mine.

Q. So that that point where the two veins were worked together would be the deepest point?

A. Yes, sir.

Q. And that would be the point of resistance?

A. Yes, sir; being the basin.

Q. I want to get from you where you consider that the weight would center?

A. On this basin; one thousand feet down from the head of No. 3 slope.

Q. You stated that you were not notified at any time during your term as Mine Inspector of any indications that a squeeze was coming on at the colliery?

A. No, sir. Never was notified of anything in regard to a squeeze or any trouble.

Q. Not immediately at the time or prior to the accident?

A. Not immediately before it nor at any time.

Q. Does the law dictate what the size of the pillars shall be?

A. No, sir; I guess not, as far as I can see.

Q. If you had thought that these pillars were not sufficiently strong to resist the weight, you say you would have taken occasion to stop the colliery.

A. Certainly I would.

Q. Can you tell us many lives you have lost in that colliery during the time these veins have been working?

A. I don't know as I could exactly. There is a copy from the records here, I believe.

(Paper furnished to witness.)

In the year 1889 there were no lives lost, and there was a tonnage of 241,045. In 1890 there was one life lost, to 179,448 tons. In 1891 there were no lives lost, and they had a tonnage of 233,831. In 1892 there was one life lost, with a tonnage of 218,561. In 1893 they had one life lost and a tonnage of 276,808. In 1894 there were four lives lost, with a tonnage of 314,063. In 1895, which was the last year reported, there were two lives lost, with a tonnage of 343,867 tons. In this time there were 133,000 tons of coal used for steam purposes. This shows a total of nine deaths of a tonnage of 1,944,626.

Q. Who gave you that statement?

A. It was copied from the Inspector's records. Four of the nine men were killed by falls of the roof; the other five by explosions of gas. This shows an average of tons mined of 316,069 for each life lost.

By Mr. McGovern:

Q. What years were those men killed by the roof?

A. I could not tell that without looking at my records. I could not tell whether it was in 1894 or 1895.

By Mr. O'Boyle:

Q. How many visits, Mr. McDonald, have you made to the Twin Shaft mine within the last year?

A. Well, I could not say; possibly four or five.

Q. Can you give any account now when those visits were made and the intervals between them?

A. Yes, sir.

Q. If you can, just tell us.

A. I have other works to attend to between my visits to this mine.

Q. When did you make your first visit in 1895?

A. In March, the 26th.

Q. Of 1895 or 1896?

A. 1896.

Q. I am asking about 1895?

A. I could not tell you that.

Q. What intervals elapsed between your visits?

A. Oh, there may be two months; there may be three, possibly four.

Q. Now you usually go to the mines on the occasion of the death of someone?

A. Well, sometimes. I go every accident, and I go without being notified of an accident.

Q. When did you make your last official inspection of the mine?

A. On the 26th day of March.

Q. Was there an accident there at that time?

A. No, there was none on the 26th.

Q. On the 26th of March there was no accident.

A. No, sir.

Q. How long did it take you to make your official inspection on the 26th of March, 1896?

A. Five or six hours.

Q. How many veins did you traverse in those five hours?

A. These two veins.

Q. Are there any other veins open in the Twin Shaft?

A. Nothing working.

Q. Had they ever been worked?

A. They had been worked in the Pittston seam and the old Marcy had been worked.

Q. And you did not go into the old workings at all when you made your official inspection in March?

A. No, sir.

Q. Why didn't you go into the old workings?

A. Because it wasn't necessary.

Q. Would the condition of the old workings in the shaft have any effect whatever on the condition of the lower veins, the fifth and sixth veins?

A. Not in this case; no, sir.

Q. On any case? Would the condition of the other veins have any effect whatever on the lower veins of the mine?

A. It would if it was falling over, certainly.

Q. When did you make your last official inspection of any of the veins above the fifth and sixth veins?

A. That I could not tell.

Q. Did you ever?

A. Yes, sir.

Q. Did you make one within the last two years?

A. No, sir.

Q. There are three veins worked above these two, are there not?

A. There might be. I don't know.

Q. You say there are six veins, three or four of them above these two?

A. These ain't counted from the top down. There might not be six veins in that locality.

Q. How many veins or seams are there to your knowledge in this mine?

A. Well, there are five.

Q. How many of those have been worked out?

A. Two of them worked out.

Q. What two are they?

A. The Pittston and the Marcy.

Q. Then comes the fifth vein, does it?

A. Yes, they call it the fifth vein.

Q. The fifth vein is below the Pittston and the Marcy?

A. Below the Marcy.

Q. Is there any other vein worked between the Marcy and the fifth?

A. Not in the Twin Shaft, no, sir.

Q. And you say that within the last two years you have not been in any of the veins worked out?

A. Not until last Sunday a week.

Q. When you went into those old worked-out veins did you discover that the fall had come from the surface or that those veins had caved in?

A. They were not touched.

Q. They are still standing?

A. Standing just the same as they always were.

Q. Are they worked over the place where the cave-in was?

A. No, sir.

Q. Did you go in over where it was worked in the Pittston and Marcy veins, over the point where the earth came down?

A. It is not worked over the red ash at all.

Q. So that the only working, then, over the red ash was the fifth and sixth veins?

A. The fifth vein is the piece that is worked.

Q. From the top of the fifth vein to the surface is a solid body?

A. Yes, sir.

Q. What distance of earth was between the outside or surface and the top roof of the fifth vein?

A. In the neighborhood of four hundred feet, possibly a little more.

Q. What was the thickness of strata between the fifth and sixth veins, or what is called the red ash, for instance, as you may say, the floor of one and the roof of the other?

A. The distance between?

Q. What was the thickness of that?

A. Of rock?

Q. Yes, sir.

A. From eight to ten or eleven feet in some places.

Q. How wide were the chambers in the shaft there?

A. Twenty-four feet.

Q. What is the usual width of a chamber?

A. Twenty-four feet.

Q. In the mines about here?

A. Yes, sir.

Q. What was the thickness of the pillars left standing?

A. They would average, a good many of them as high as six yards, five yards, and some of them ten yards.

Q. Square yards?

A. The front in feet, the distance through the pillars, or thickness.

Q. Do you say yards or feet?

A. Feet. You will find pillars fifteen, eighteen and some eight yards, just according as it was convenient.

Q. Now, did you observe where a large pillar was left standing, that at different times they cut in and put a chamber through a large pillar and left two pillars instead of one large solid body?

A. Never in my inspection.

Q. Did you hear Mr. Hughes testify to doing that frequently?

A. I did.

Q. That frequently, where the pillar was a large one, they would take out the inner portion and run a chamber through it and leave two pillars standing where there was originally one solid body?

A. I heard the gentleman say so.

Q. Did you observe that?

A. The way he stated it he was mistaken. On the heading going parallel they started a chamber on a particular angle, running wherever they could get the best road, and leaving a large pillar on the outside, to get drive room enough so they could start this chamber and cut the other chamber in.

Q. They should start at the angle of a pillar?

A. Yes, sir. Something being the matter on the gangway, it might be necessary to put up double timber, and that would cause them that they could not get it the right distance without passing inside of that, and they would drive another chamber up, and they would throw this chamber up. It would run parallel by keeping the pillars in this shape; which would lead a man to think it was a big pillar. We often have to do such work as this.

Q. Did you, in your inspection, make an examination with this map of the condition of the fifth and sixth veins? Did you have this map with you when you made your tour of inspection?

A. No, sir.

Q. And so far as this map is concerned, you are depending solely upon your memory when you say that it is like the condition in the mines; that it is a true representation of the mines?

A. When I had come out of the mines I took the mine foreman's map.

Q. The question was asked you by the Attorney General if this map was a correct representation of the mines, and you said it was. Now you say that you never had this map with you in the mines when you made your tour of inspection.

A. I never took it with me in the mines.

Q. When you say that this map is a correct representation, you are depending upon your recollection of the condition of the mines and your view of the map now.

A. Yes, sir; when I go home.

Q. Where is your own map?

A. This is it.

Q. Where would you keep that map when you would be making your tour of inspection?

A. In my office.

Q. Do you mean to tell us that you at no time took the map with you when you made your tour of inspection in the mines?

A. I do.

Q. During your tour did you make any notes or drawings of the conditions there?

A. Sometimes would; sometimes would not.

Q. Where have you any of those drawings?

A. I did not bring them here.

Q. Did you think it necessary to bring them here to this investigation?

A. No, sir.

Q. Where is your office?

A. South Main street.

Q. A mile and a half nearly from the Twin Shaft?

A. Yes, sir.

Q. And you say that you carried in your recollection the conditions of that mine and came home and then examined the map to see if it was in conformity with the conditions that you found there.

A. I will answer that question now. I will say yes to that. I did that, but, understand, at that time that map would not show to me the conditions of the working places; the map would not be advanced every twenty-four hours.

Q. Would it not show you the general conditions that you show on it now?

A. Certainly.

Q. If it was not of any service to you in your tour of inspection, how does it become important now.

A. I understand it.

Q. You understand it thoroughly as it was, but if it would not show you the conditions existing there, how does it become important now?

A. This has all been mined.

Q. But you say it does not show you the conditions. Doesn't it all along show you the conditions?

A. You don't understand it.

Q. Does it show you the conditions now?

A. It does.

Q. When you travelled through these mines—and you say you went through them in five hours—tell us what portions you traversed?

A. I passed down the shaft; down this slope; passed in through this heading here. First take this seam; take this gangway; gangway passing up through this working. Examine here. There was no one passed around this way; we have got around in here. I would come into the working here; pass through here; around in here, and come down in here. Passed down here and coming through on this heading and the barrier pillar, and passing up the slope.

Q. And you made all that tour of inspection in five hours?
A. Yes, sir.
Q. What is the distance traversed through that whole route?
A. In the neighborhood of eight or nine miles.
Q. Now just tell us where the red ash is indicated here?
A. That is the red ash.
Q. Now, this portion of the red ash is worked out too, is it?
A. Yes, sir.
Q. And this piece here is the fifth seam?
A. Yes, sir.
Q. And above the fifth seam here there is nothing worked at all?
A. No, sir; from this line.
Q. Above this in the Pittston and Marcy seams are there any workings?
A. Yes, sir.
Q. What is known as the Pittston and Marcy veins are worked here?
A. Yes, sir.
Q. But they are not worked down here?
A. No, sir.
Q. And the portion where the cave occurred is that part of the mines where the Pittston and Marcy veins are not worked?
A. Yes, sir.
Q. And this point there was no cave at all, where the upper veins were worked out?
A. No, sir.
Q. There are no indications of the cave there?
A. No, sir.
Q. Just indicate with your pencil the boundary line of where you think the cave occurred.
A. The cave occurred entirely through here.
(Marking the place.)
Q. Did it extend beyond this? Is this the river?
A. This is the Lackawanna river. It extended in from this slope around in here over to this side.
Q. That is from external indications; from the surface indications?
A. Yes, sir.
Q. Is this portion of it worked in the Pittston and Marcy veins?
A. Yes, sir.

By Inspector Brennan:

Q. What do you call the Marcy seam?
A. That seam is nearest the surface. The red ash is below.

By Mr. O'Boyle:

Q. Is any of the Pittston and Marcy veins that have been worked involved in that cave?
A. Oh, yes, part of it here; this lower end of it. I could not say that it is down. The surface indications here indicate that it is down, but we do not find any indications on the surface that it is down here. We met with a fall here but the surface indication do not show that.
Q. But from examination of the Pittston and Marcy veins have you discovered that there is a cave there?
A. We discovered it in the red ash seam that this is down.
Q. In the red ash seam?
A. Yes, sir.
Q. Then the red ash is extended on this map beyond the Lackawanna river?
A. This is the red ash.
Q. And did you discover from internal examination that this is down?
A. Yes, sir; and from the external we find that it is down around in here.
Q. Now, how did you make the inspection when you come around to the different mines, in this mine particularly, how did you make the inspection?
A. Generally go down, and Mr. McCormick, the fire boss, went with me. We traveled in through the workings ———

By Inspector Stein:

I do not think that is a proper question.

Mr. O'Boyle:

I think we have a right to know how he made this inspection and how thorough it was.
Q. Just indicate to us how you made your last inspection of this mine. You say that was on the 26th of March?
A. No, on the 15th of April.
Q. Wasn't there a death at the mine at that time?
A. Yes, sir.
Q. Did you make an inspection of the mine at that time?
A. Yes, sir.
Q. Did you make an inspection of the mine on the 15th of April, or did you go there to investigate a death?
A. I went there and investigated that death and made an inspection.
Q. How long did it take you to make that inspection?

A. About the same time.

Q. Now tell us how you made that inspection?

A. I went down into the foot of No. 3.

Q. Did you go into the body of the chambers here or only along the main workings?

A. Went around the main workings. We passed in through here and examined this working here.

Q. Did you examine the size of the pillars in the chambers or did you examine the chambers themselves or only in a cursory and general way go through the main openings?

A. Yes, sir.

Q. And that is through gangways and such as that, you did not go into the ———

By Inspector Stein:

Q. Do you understand the meaning of the word "cursory?"

A. I have enough English for that.

By Mr. O'Boyle:

Q. The question was asked you if you observed this map and if it was a correct representation of the condition of the pillars and the workings there?

A. As close, I said, as we could detect anything.

Q. If you only went through in a cursory and general way in the workings here and along the main lines, how can you give testimony as to the pillars in the main body of the work?

A. Let me enlighten you in regard to that. The portion of the workings that I would pass through would not be on this tracing possibly at the time.

Q. Was it on it, that is the question?

A. On my last inspection, when I went through, certainly not.

Q. Now you say it was not on the map when you went through on the last inspection?

A. That has been extended since my last inspection. It has been extended in the neighborhood of from fifty to seventy-five feet, different places of it.

Q. Around here at the edge. In other words, the workings have been extended out here?

A. Yes, sir.

Q. I am not asking you about the trivial extensions; I am asking you about the main body of these chambers here, these pillars?

A. It would be possible that I did not enter into them.

Q. In other words, it would be possible that you had not entered the main body of the mine for some considerable time previously?

A. My examinations are around the general places here.

Q. You say that you made this last inspection on the 15th of April. Did you discover this fissure that you speak of at that time?

A. Yes, sir.

Q. When did you discover that for the first time?

A. I discovered it when we were in there on the 15th of April.

Q. You say that you discovered that then for the first time?

A. Yes, sir.

Q. What you mean by a fissure is an external opening in the earth. Is it from within or without?

A. It is in the mine.

Q. You discovered it in the mine?

A. Yes, sir.

Q. Did you discover it from an external examination?

A. No, sir.

Q. You say that this was a basin here; in other words, it was a swamp?

A. It was a swamp.

Q. What do you mean by that—a swampy piece of ground?

A. I don't know about the surface. It was a swamp lying in the mine.

Q. In the basin of the coal and not on the outside?

A. Yes, sir.

Q. And you knew, when you discovered that fissure in the rock from within, I think you said in an answer to a question of Mr. McCormick's, that, by weakening at this point, where that fissure was, it would throw the weight considerably into that basin, by reason of the shape and formation of it?

A. It has a tendency to throw it in here.

Q. At the time that you were in the mines, when you saw that fissure on the 15th of April, did you hear any one working, any cracking or any pressure apparently from the roof above anywhere in the mine?

A. No, sir.

Q. You heard this man testify that for six months along in different places that the floor had fallen?

A. Yes, sir.

Q. Between the fifth and sixth veins. You never saw anything of that character?

A. I just answered that.

Q. You saw that?

A. I did.

Q. When did you see it? On the same visit that you saw the fissure did you see the break?

A. This had broke through, and it was fallen out.

Q. Did you observe that body of coal that had separated from the top of the fifth vein and that you could stick your arm through?

A. No, sir.

(Examination of witness suspended in order to recall Edward Hughes.)

Edward Hughes recalled.

By Mr. O'Boyle:

Q. Was this place that you could put your hand and arm into, that you mentioned this morning, near any main entrance or any gangway?

A. It was on the gangway road.

Q. In what portion of the mine; in the fifth or sixth vein?

A. In the fifth vein.

Q. How far from the slope, if you know?

A. Why, it was about one thousand feet.

Q. Do you know where the slope comes down here? Is that gangway one of the main entrances of the mine?

A. Yes, sir.

Q. The chambers go off from the gangways, do they not?

A. Yes, sir.

Q. Would an inspector, in going through, pass through the gangway? Is that the way the inspector has described that he went through?

A. Yes, sir.

Q. When did you see the separation of the pillar from the top of the fifth vein?

A. I saw that two weeks before the disaster.

By Mr. Stein:

Q. Mr. Hughes, when you saw this parting away of the veins from the main top of No. 5 vein, that was an indication to you, was it, that there was danger near at hand?

A. Yes, sir.

Q. You were suspicious that that was not a safe place?

A. Yes, sir.

Q. Did you notify anybody in charge that you had seen this?

A. I spoke to Mr. Lynott about it. He saw it himself.

Q. Didn't you deem it wise to notify the inside superintendent about it?

A. He knew about it. He was down there on that day. He had men there to secure it. That is what we were doing; trying to secure it, at least.

Q. What means were taken to secure it? Were they putting in wedges between the coal and the roof?

A. Putting up cog pillars underneath the fifth vein.

Q. And you worked there in the face of what you considered to be danger?

A. Yes, sir.

Q. Wouldn't it be possible for you to make casual visits to that colliery, say once or twice a month, and even to that place, and not even notice this?

A. I could not help but notice this.

Q. How wide was it? How far apart was the top of the vein and the roof?

A. I should judge about four inches.

Q. Did you use safety lamps there?

A. No, sir.

Q. I thought you used safety lamps absolutely?

A. We used a naked light.

Q. Wasn't that also dangerous to use a naked light there?

A. Not at all, unless there was gas there. The fire boss went in before. He said there was no gas, and it was safe for us to work. There was no danger of the roof and no danger of the gas at that time.

Q. Well, the fact of the top of the vein being so far separated from the roof measures, wouldn't that indicate that there was no subsidence of the superincumbent strata or else it would have pressed down upon the top of the vein? Wouldn't that indicate the settling down of the No. 5 vein and not the top above?

(Question objected to by Mr. O'Boyle as argumentative.)

The witness:

I tell you what did happen on that day. We were going in what we call a cross heading, and in going in we opened the door all right, but coming out we could not open the door. We had to cut off about three inches of the top of the door to get it open. That goes to show there was a squeeze there. That was in the fifth vein.

Q. The frame of that door was against the roof of No. 5 vein, was it?

A. Yes, sir.

By Mr. O'Boyle:

Q. Say, for instance, around the 15th of April or in March, state whether or not there were any creakings or any indications of a squeeze in that mine?

A. I do not know of any at that time.

Q. How long had it been regarded as dangerous before the cave came?

A. I noticed this drop down here about six months ago.

Q. Was that a dropping down or a breaking through?

A. They were blowing out the bottom. There was only seven or eight feet between the two veins, and they blowed out from the bottom.

Q. That intervening partition was blown out in order to make the height to get the cars in, on account of the vein itself being too thin?

A. Yes, sir.

Examination of Hugh McDonald resumed.

By Mr. O'Boyle:

Q. Did you ever make any examination of the pillars in the lower vein stood directly under the pillars in the upper vein?

A. Yes, sir.

Q. And what is your answer with relation to that? Did they stand directly under each other?

A. Some stood directly under and some did not.

Q. What percentage of the pillars in the upper vein did not stand over the pillars in the lower vein?

A. It might be in the neighborhood of twenty-five per cent., I could not tell that exactly.

Q. How many did you examine?

A. I examined all through, all around, in and under.

Q. Now, you say that you did not examine many of them?

A. I examined them in there but would not be able to tell, while I was there, whether they were directly the top ones over the bottom. It would have been necessary to bore a hole down on each side.

Q. Couldn't it be done by engineering? How did you examine them when you discovered that about one-fourth were not standing directly over the other?

A. By rapping.

Q. When you could discover by rapping, then they must have been considerably out of line, weren't they?

A. No, sir.

Q. Could you discover them correctly by rapping?

A. No, sir.

Q. Before there is a difference in the sound there would be considerable distance one out of line with the other, or it would have the same solid sounds, would it not?

A. Yes, sir.

Q. And you say that you discovered about one-fourth of them were out of line?

A. Yes, sir.

Q. When did you discover this from your sounding?

A. We were sounding to discover whether the rock between was sufficiently solid. It was of a weak nature, being in between here.

Q. Did you discover any pillars out of line from your rapping or sounding?

A. We could detect some from the measure of the pillars, going from one and stepping it from one to the other, but that would not be very accurate.

Q. When you went in there on the 26th of March, 1896, did you discover then this fissure that you speak of?

A. No, sir. I did not notice it.

Q. And when you went in on the 15th of April you discovered the fissure there?

A. They called my attention to it.

Q. Wasn't that in any degree alarming to you that this fissure had occurred in that period of time from the 26th of March to the 15th of April?

A. It was not alarming because this place had been stopped working.

Q. As a scientific miner, you know that that breaking would throw into the basin an extensive additional weight?

A. That is my theory of the fall.

Q. And you still say that, notwithstanding the existence of that fissure, you did not take the precaution of going there and ascertaining whether in this great body of works here these pillars were sufficiently able to sustain that additional weight upon the basin caused by the breaking of this fissure?

A. It was not necessary.

Q. When did you make your last government report?

A. On the 31st of last December.

Q. Did you make any official report of the fissure that you had discovered there?

A. No, sir.

Q. Did you notify the operators of the mine?

A. The operators knew it.

Q. Did you call their attention to it?

A. No, sir.

Q. Did they call your attention to it?

A. No, sir; not until I was going through the mine.

Q. Did you discover that yourself?

A. Yes, sir; in passing through with Mr. McCormick.

Q. And that was the first notification you had of that fissure?

A. Yes, sir.

Q. How did you know the operators knew it?

A. I don't know whether it was by hearing them say they had been notified to that effect.

Q. And then, although that fissure existed, did you go back at any subsequent time until the morning of this cave?

A. No, sir.

Q. Indicate to us as near as you can the extent of that fissure in length and width?

A. It was the width across this chamber, just in that way, and about that length. (Indicating.)

Q. About how wide was it?

A. About an inch and a half.

By Inspector Stein:

Q. Who do you mean by the operators that knew of the fissure?

A. The general manager, Mr. Law.

Q. And the inside superintendent?

A. Yes, sir.

By Mr. O'Boyle:

Q. How far up did you investigate that fissure?

A. As far as you could see.

Q. How far was that?

A. Only a couple of inches.

Q. What was there to obstruct the view as to whether that fissure extended any greater distance?

A. It was all closed up.

Q. That fissure might have existed for several hundred feet or several hundred yards without your being able to tell?

A. Yes, sir.

Q. What was your theory about that, Mr. McDonald? Did you think that that fissure existed there in that small space, or did you think that it continued a long distance?

A. A small space I thought it was, and in that chamber.

Q. You said, in answer to the Attorney General as to the cause of that fissure, that the eruption on Campbell's Ledge had something to do with it?

A. Yes, sir.

Q. There was an eruption there, was there?

A. I do not know whether there was or not; I was not living at that time.

Q. Your explanation is that, starting up here at Campbell's Ledge at the time of the eruption, it caused a flaw around here, and that you had knowledge of the existence of that flaw because you had met it elsewhere?

A. Bcause I had seen it at the Stevens, but I did not know whether it had come in that direction.

Q. Do you know now?

A. I cannot say.

Q. Was that your theory when you saw the fissure in the mine, that it was caused by the eruption on Campbell's Ledge?

A. No, sir.

Q. It is your theory since the accident?

A. Yes, sir.

Q. Now, with relation to this line that you have drawn. (Indicating on the map.) It is not a parallel line, or naturally it would not be extended along to the same point that you discovered it in the Stevens' shaft, would it?

A. No, sir.

Q. So that it would not be an eruption from natural causes years ago. It would be another eruption and not the one you found in the line of the Stevens' shaft?

A. It might be another one further advanced.

Q. That is all theoretical?

A. It is theoretical.

Q. From a careful examination of the condition of the mine, from the existence of the pillars there, and the fact that one stood much beyond the other, and from the manner in which the mine was being worked, with the gangways twenty-four feet wide, wouldn't it be a nearer and more natural explanation for you to say that this cave in was because of the inability of the pillars there to sustain that 400 and some odd feet of roof?

A. If we had pillars to support that strata it would not have come down.

Q. You say that in your judgment the pillars were strong enough to sustain it?

A. No, no.

Q. Did you say that?

A. No, sir; I said that the pillars in there were sufficient to hold the roof, and that proved so all the way through.

Q. How, then, did the accident happen if the pillars were strong enough to sustain the roof?

A. I have given my theory.

Q. Your theory is that this cave was caused by an eruption that occurred years ago in Campbell's Ledge?

A. By a dislocation of the strata.

Q. And it is not due to internal weakness in the mining operations that this was caused?

A. Not as far as I know, I could not say that it was.

Q. Is that your best explanation of your theory; that this crack here, existing so many years, caused the cave in, or that it was internal weakness in the mines?

A. It may have been on account of the dislocation here.

Q. What, in your judgment, caused the dislocation if the pillars were strong enough to sustain the roof?

A. We often find these dislocations in the mines.

Q. In other words, when you say a dislocation you mean a break?

A. A break in the rock.

Q. The natural explanation from that would be that a break of the rock occurred because there was not sufficient under it to sustain it?

A. We have breaks where the covers do not come down.

Q. In all the years that these breaks exist, they do not fill up?

A. They do not fill up.

Q. Although solid coal and the solid chamber might be immediately below them, still these breaks exist?

A. Yes, sir.

Q. And you knew of them?

A. Yes, sir.

By Inspector Stein:

Q. I understand you to say that the fissure is a natural dislocation and not by reason of any thrust?

A. Not by reason of any thrust.

By Mr. O'Boyle:

Q. I will ask you whether, if a natural or artificial dislocation exists, the philosophy of it, after all, is that there is no weight on the other side of it to sustain the body?

A. Yes, sir.

Q. It is broken apart?

A. Yes some eruption has broken it apart.

Q. And didn't you know that a natural fissure of that character existing there would have caused danger?

A. We might have determined that, if it had come across all the way.

Q. Did you usually regard a natural fissure as dangerous?

A. It appears to me that it must have come through there, but it is only my theory of the accident.

Q. If the pillars were the proper thickness, properly located one

above the other, and the gangways are not too wide, notwithstanding the existence of the fissure, wouldn't they have sustained the roof?

A. If the pillars are large enough there is no danger of the roof coming down.

Q. The roof will not cave if you have large enough pillars?

A. If you only take one-third of the coal out of a mine, there is no danger of the roof coming down.

By Inspector Stein:

Q. Did you ever see a natural dislocation in the rock measures, two, three, four, five, six, even fifteen inches wide, and yet not caused by any eruption? Did you ever see that?

A. Yes, sir.

By Mr. McGovern:

Q. If the pillars were thick enough under all proper conditions, wouldn't they support the roof?

A. They will support the roof.

The Attorney General:

I think the real question is whether, according to the best approved modern system of mining, under all the circumstances, these pillars were sufficient, and deemed sufficient by those best able to know. Of course, the result has proved that they were not sufficient.

By Inspector Stein:

It might be a matter of difference of opinion.

By Mr. McGovern:

The result clearly proves that somebody made a mistake.

By Mr. O'Boyle:

Q. The question was asked you in the first instance, but I now repeat it. Is it not a fact that you have to depend altogether on the maps furnished you by the company as to the location of the pillars and the general internal workings of the mine?

A. Certainly.

Q. Is there no provision in the law anywhere that enables you to have your own maps drawn and an engineer employed for that purpose?

A. Not unless the maps would be inaccurate.

Q. When you deem them inaccurate or have any reason to doubt them, the law gives you the power to get others at the expense of the operator?

A. Yes, sir.

Q. I want to ask you this question: State whether or not it is considered good, prudent and scientific mining to leave pillars in different stratas of a mine stand not one directly over the other so as to make one continuous line of support?

A. That depends upon the thickness of strata between.

Q. With eight or ten feet it would not be scientific mining to leave one pillar over the opening of another?

A. That was not done there. The edges of the pillars were over.

Q. Both in so far as gas and the falling of the roof are concerned in this mine, you had heard from time to time, had you not, that it was a dangerous place for the men?

A. I understood it was dangerous, but that was in regard to gas.

Q. Didn't you know also that a great many men had been killed from the falling of the roof in that mine?

A. We have men killed from the falling of the roof in all mines.

Q. I ask you whether or not it was a dangerous mine from the falling of the roof?

A. No more so than any other mine we have.

By Mr. Wheaton:

Q. This cave started in what is known as the Bank Farm, didn't it?

A. Yes, sir.

Q. On the north side of the Lackawanna river?

A. Yes, sir.

Q. What is the natural seam?

A. The red ash.

Q. That is the fifth and sixth vein?

A. Yes, sir.

Q. Now, on that whole Bank Farm north of the Lackawanna river, how much of the fifth vein of coal is worked out?

A. About ten acres.

Q. And according to your theory all of that area in which the sixth vein has been worked out includes the sixth vein that has been worked, north of the Lackawanna?

A. There is a large acreage there; I could not say exactly how much.

Q. Could you approximate it by looking at the map?

A. It might be in the neighborhood of one hundred acres.

Q. And according to your theory the whole one hundred acres is down?

A. Yes, sir.

Q. The question of pillars being one over the other involves only ten acres, yet the whole one hundred acres is down?

A. Yes, sir; and there are fifty acres down south of the Lackawanna.

Q. How much coal has been mined north of the Lackawanna?

A. Not a pound.

Q. So that the question of pillars being over each other is confined to the fifth and sixth seams?

A. Yes, sir.

Q. And over an area of ten acres?

A. Yes, sir.

Q. About the foot of No. 3 slope and to the north of that?

A. That is right.

Q. And that coal pitches up from about the foot of No. 3 slope in every direction?

A. Yes, sir; rises.

Q. They have asked you whether you had any method of finding out whether this map is correct. Who is the landlord up there?

A. The Lehigh Valley Coal Company.

Q. Don't they have independent surveys?

A. Yes, sir.

Q. Didn't they have independent maps to show the inside workings?

A. Yes, sir.

(Objected to. Examination allowed.)

Q. Have you examined the maps of the Lehigh Valley Coal Company showing the inside workings north of the Lackawanna river?

A. Yes, sir.

Q. How did they compare with the maps furnished by the Newton Coal Company?

A. They are the same.

By Mr. McGovern:

Q. If a cave started and broke down ten acres, wouldn't it break down the surrounding roof?

A. Naturally.

Q. And if this cave started within the ten acres where the fifth seam was worked over the sixth, it might naturally draw the other in with it.

A. Possibly it would.

Q. That might have been caused by the formation of that swamp there; that might have drawn the other right in?

A. That might be.

By Mr. O'Boyle:

Q. Where those pillars were in any way involved in that ten acres that you speak of, they come in that portion of the mine under which these men are now supposed to have been buried, don't they?

A. As far as I understand; I cannot say positively.

Q. What is your best judgment?

A. My best judgment is not that all the men are under the ten acres, but the men that were moving the pump would be in the ten acres.

Q. Did you ever examine this shaft for a second exit?

A. Yes, sir.

Q. They have it?

A. Yes, sir.

Q. Where is that located?

A. East of the main shaft.

Q. How wide is that opening?

A. On the surface I believe it is ten by twelve.

Q. Is it a square or a round hole?

A. It is square.

Q. Down into the mine?

A. Into the mine.

Q. To which vein?

A. In the sixth vein.

Q. How did you get out of that opening? For instance, supposing the main shaft was closed, how would you make your exit through that opening?

A. Through hoists by ropes and bucket.

Q. It is four hundred and how many feet?

A. Four hundred and thirty-four feet.

Q. You would have to come up in a bucket four hundred and thirty-four feet, would you?

A. Yes, sir.

Q. And the hoisting apparatus is at the top, is it?

A. Yes, sir; an engine.

Q. Did you ever come up that way?

A. Yes, sir.

Q. Is it not a fact that when you come up in that bucket that you swing from side to side in that four hundred and some odd feet, and that you have to steady yourself by catching hold of the prop that is on the side?

Inspector Stein:

I do not see how that is material to this inquiry.

Mr. O'Boyle:

I only wished to show the condition of this second exit in case of an accident, but we shall not insist on it.

By Mr. Wheaton:

Q. Your theory of the cause of this cave is a natural fissure in the rock which was first discovered at the face of the opening in the gangway that lead from the foot of No. 3 slope on the 15th of April?

A. Yes, sir.

Q. And that that fissure was caused, not as Mr. O'Boyle thinks, by a recent eruption on Campbell's Ledge, but by an eruption in that period of the world's formation when Campbell's Ledge was formed?

A. Yes, sir.

Q. When in the period called the glacial, that Mr. O'Boyle seems to have no idea of, this rock was thrown off—you mean that the same eruption which threw up Campbell's Ledge and the rock thereunder, disturbed all the rock formation in this vicinity, and produced this fissure that has weakened this mine?

A. Yes, sir.

By Mr. Gillespie:

Q. Why wasn't this discovered before this. It would not take all this period down to this time in April to discover that fissure, would it?

A. For the simple reason that there was no person took the coal out until lately.

(Adjourned until Friday at 10 o'clock, a. m.)

Inspectors reconvened in St. Aloysius Hall, Pittston, on Friday, July 10th, 1896, at 10 o'clock a. m.

Inspector Stein presided.

Present:

For the Commonwealth: Deputy Attorney General John P. Elkin, in place of Henry C. McCormick, Attorney General, who was called to Harrisburg to attend a meeting of the Pardon Board.

For families of entombed miners: E. F. McGovern, P. A. O'Boyle and Wm. H. Gillespie.

For the Newton Coal Company, F. W. Wheaton.

David Davis, sworn by Inspector Stein, testified as follows:

By Inspector Stein:

Q. What is your occupation?
A. Mining engineer.
Q. For whom?
A. The Newton Coal Company.
Q. Do you serve any other collieries besides the Twin Shaft?
A. Yes, sir.
Q. How long have you been a mining engineer there?
A. About six years.
Q. How old are you?
A. Thirty-one.
Q. How often do you make surveys of this Twin Shaft?
A. We used to make surveys of the Twin Shaft every week.
Q. State to the Commission how you make these periodical surveys?
A. We usually go in there and have a map with us showing every section that is to be surveyed. We find our old points that we had left there the previous survey, and from those we started out and make the survey, and if we have gangways we usually make a tie-up to verify our work.
Q. How often do you make a general survey, for instance, from the bottom of the shaft?
A. Every six months.
Q. Do you find them always correct?
A. Yes, sir.
Q. Did you also survey what is known as the No. 5 vein?
A. Yes, sir.
Q. On your working map did you put on the size of the pillars as you found them?
A. Yes, sir.
Q. Did you measure the pillars?
A. Yes, sir.
Q. What means do you take to measure the pillars?
A. We usually carried a tape, a fifty foot tape, and measured from the line to the ribs with a big tape.
Q. Measured with a large tape?
A. Yes, sir; between the stations with a steel tape.
Q. And then you took offsets?
A. Took offsets right and left on the pillars.
Q. So that these pillars are proved correctly on the map?
A. As correctly as anybody could get them.
Q. In making your periodical surveys, Mr. Davis, has it ever occurred to you to doubt that these pillars have been lessened since your last survey, lessened in size?

A. No, sir. Occasionally they may drive a counter or something of that kind, and snubbed a little off to get the road through to get up out of a dip. That is all I ever noticed.
Q. How did you find the position of the pillars in No. 5 vein in relation to those in No. 6 vein?
A. They seemed to be all right.
Q. In what respect?
A. They seemed to be pillar over pillar and chamber over chamber as near as anybody could get at them.
Q. During any of your visits to that colliery immediately prior to the accident did you observe any general subsidence going on?
A. No, sir; only in one place. I was there on Thursday before this accident, and I noticed just at one point a little disturbance there, but throughout the whole vein there was no general disturbance.
Q. Now, unfold your map and show to those interested where that point is.
(Witness produces his map.)
A. That point is right there (indicating). It is in No. 3 slope and about ———

Mr. O'Boyle:

Q. Give us the points of the compass on the map.
A. Here is the meridian; this is north; that would be east; and that would be west. Now, that gangway ran in a northeasterly direction from the foot of No. 3 slope over the old gangway that has been driven there before, and right at this point, in a northeasterly direction from the foot of No. 3 slope, about 720 feet, we found the disturbance I have stated. From where the tunnel goes in from the foot of the slope it would be about 900 feet. They have an air shaft there, and that is where the trouble was. It seemed that the pillars there were dropping down. It seemed that the bottom had come out, and that the pillar in the top overhung the pillar in the bottom, and it simply dropped down flush with the pillar in the bottom.

By Mr. O'Boyle:

Q. The overhanging portion of the pillar chipped off and fell ———
A. Until it got through on the line of the pillar below it would not fall any more. They had this air shaft there.
Q. At that point about how many feet of the orerhanging pillar chipped off?
A. I did not see it all. Some chipped before I got there. There was a piece hanging over there of maybe two or three feet.
Q. So that the piece hanging out was standing really upon nothing?
A. Yes, sir.

By Inspector Stein:

Q. Just explain to the Commission and those interested how you entered from the bottom of this shaft down to where this cave-in occurred, and give us as nearly as you can the direction and as nearly as you can the distance in each direction?

A. Going from the foot of the shaft to the top of No. 1 slope; that runs in a northeastern direction, about 150 feet, to the head of No. 1 slope. From that point to the foot of No. 1 slope we go in 200 feet in a northeasterly direction to the foot of No. 1. Then we go from the foot of No. 1 a distance of 400 feet we strike, not exactly the head of No. 3, but we strike the point where the gangway turns in to strike the line of the slope.

Q. How is that gangway designated on the map?

A. You mean the gangway leading to the top of the slope? That had been worked long before I got there.

Q. Go on.

A. Then from the top of No. 3, from where the gangway turns there at Station 1281, to the angle, to the frog where the two roads separate here at the bottom of No. 3 slope. One road goes on straight and the other turns to the left. From Station 1281 to the point of the frog, which would coincide with Station 1270 it is 1020 feet.

Q. What is the average angle or dip there?

A. About two degrees and thirty minutes.

Q. What is the difference of elevation between that point and the bottom of No. 3 slope and the bottom of the shaft.

A. No. 3 is ninety-four four and the top of the shaft is one hundred forty-two six, the difference between them would be the elevation.

Q. And so you have traveled that ground often, have you?

A. Many times.

Q. You are well acquainted with the position of this cave-in and the relative position of the two veins, the No. 5 and 6?

A. Yes, sir.

Q. What is the dividing measure between those two veins?

A. The thickness of the rock?

Q. Yes, sir.

A. Eight or ten feet.

Q. Does it get any thinner at some local places?

A. It varies a little, but I don't know that is varies an awful lot.

Q. Do you know of that partition widening out from that point where the cave-in occurred?

A. I know that it gets a good deal thicker here towards No. 2.

Q. During your visits to that colliery have you made any observations as to the character of the overlying strata of No. 5 vein?

A. I observed the roof and observed that it has a very hard rock; solid sulphur. There is a flim of sulphur that you could hardly bore a hole through.

Q. From your knowledge of mining operations do you consider that two veins so approximate and worked together at one and the same time is good mining?

A. Well, I think it is. I know that it is done all over the valley.

Q. There are about fifteen or sixteen inches of material in the top of No. 6 vein, which, in some mining regions, is called clod. It is technically called soapstone. Is that a strong material?

A. It did not seem to be very strong.

Q. Did you observe in going through the colliery that that is propped up in the different openings?

A. Yes, the place is pretty well propped all over.

Q. Have you observed also that after props had been abandoned for a time that that so-called soapstone fell down and left the props with nothing on top of them?

A. Well, I don't know that I have observed anything of that kind or not. Not all over.

Q. You have seen it fall.

A. It did not fall all over in a general way. I have seen it in other mines, and when it did fall there would be a good fall and it would leave a big hole in the roof.

Q. How thick would it fall?

A. I never got up to measure it.

Q. I mean this material immediately over the No. 6 vein?

A. Yes, sir.

Q. Did you take notice to the material above this soapstone; whether it was dislocated?

A. It seemed to fall up to the smooth. The whole material was smooth up there, but as a rule you could not get up to investigate these things.

Q. Do you recognize this as a map which you yourself made or someone in your employ and under your charge?

A. I have made the map myself.

Q. You recognize that as a map belonging to the State and in the possession of the Mine Inspector?

A. Yes, sir.

By the Deputy Attorney General:

Q. The map which is now presented is a correct representation of the mine, its slopes, headings, pillars; its general condition, is it?

A. As correct as a man could get it.

Deputy Attorney General:

I suppose for the purpose of this investigation the map may be considered as offered in evidence for the use of the Commission.

Mr. McGovern:

We have no objection to that.

By Mr. McGovern:

Q. I understand you to say that you are a mining engineer?
A. Yes, sir.
Q. How long have you been a mining engineer?
A. I have been in charge for about six years, and worked four years before that for the Delaware, Lackawanna and Western.
Q. Been in charge of this mine for six years?
A. This mine and the other mines the company has.
Q. You have been in charge of the collieries of the Newton Coal Company?
A. I have been in charge of the surveying part.
Q. And you have made all the maps and surveys that have been made under your supervision during that time?
A. Yes, sir.
Q. You made this map, you say, personally?
A. I made this map.
Q. Now the only knowledge and experience as a mining engineer that you have had is the four years under the Delaware, Lackawanna and Western?
A. Yes, sir.
Q. And the time you have been engaged by the Newton Coal Company?
A. Yes, sir.
Q. You never worked in any other mines than those of the D. L. & W. and the Newton Coal Company?
A. As a surveyor, no, sir.
Q. You are familiar with the methods of mining only in the mines of the D. L. & W. and these of the Newton Coal Company?
A. That is about right, I guess.
Q. Of course, not having any experience in any other mines, you don't know anything about the method of mining in any other mines than those that you have been connected with.
A. No, sir.
Q. Are you a graduate of any mining school?
A. No, sir.
Q. What you have learned about it has been ———
A. In connection with actual work.

Q. This map shows the size of the pillars, doesn't it, according to the scale of the map?
A. Yes, sir.
Q. Is there anything on that map by which you would be able to show to this Commission the size and width of the pillars under the fifth vein and also the size and width of the pillars directly above it in the fifth vein, supporting the roof of the fifth vein?
A. The pillars are right there, one over the other.
Q. Shows one right over the other?
A. Yes, sir.
Q. Shows the exact size?
A. As nearly as you could get them over.
Q. Are the pillars, as carried out and worked in the fifth vein, as they stand over the other, just exactly the same size?
A. Not exactly the same size, but we aimed to get them larger rather than smaller.
Q. Would they be larger in the upper vein?
A. There would be a little variation, but they were driven so we would have the pillar in the upper vein larger than in the bottom.
Q. They would be larger in the fifth than in the sixth?
A. They would lap over.
Q. After you made your first examination of the pillar and took the size of it, did you at any subsequent time ever measure any of those pillars?
A. No, sir.
Q. Therefore you never made any examination of the pillars to see whether there had been any reduction?
A. Not after I had made the first survey.
Q. When you say there has been no change or variation in the pillars, the only way you would judge that is the casual observation that you made in passing through?
A. Yes, sir.
Q. Looking at the matter in the light of prudence, state whether or not it would not be safer to have the pillars in the lower vein, in the sixth vein, larger than the ones in the fifth?
A. No, sir.
Q. It would not?
A. No, sir.
Q. Why don't you think so?
A. The pillar would be smaller. You would lessen the strength of the pillar. Decrease the size and lessen the strength.
Q. I am asking if it would not be better mining to have the pillar that supports the roof in the sixth vein larger than the pillar that would be directly over it in the fifth vein?
A. That is a question. There is a difference of opinion.

Q. What is your opinion?

A. My opinion is the other way.

Q. You do not believe that making the pillar larger in the bottom strengthens it?

A. Yes, sir; I do. There is a slight proportion that sticks out, that has a certain amount of strength.

Q. But if you weaken it near the bottom or floor it would not have the sustaining power, would it?

A. It cannot weaken on account of the smaller size in the bottom.

Q. My question is simply this: whether it is good mining, or common prudence, to have the pillar in the lower vein smaller than the other pillars that rest on it in the other strata?

A. My opinion is that it is. There may be a difference of opinion.

Q. I understood you to say that on the Thursday before this accident you noticed a disturbance in a certain portion of this mine?

A. Yes, sir.

Q. And that that disturbance was caused by the pillar in the fifth vein overlaping the pillar in the sixth?

A. Yes, sir.

Q. And by reason of that overlapping that pillar was separated and sunk down into the sixth vein?

A. That is the way it looked.

Q. That would demonstrate, wouldn't it, that your theory of having the pillars in the sixth vein smaller than the ones in the fifth vein is not good mining?

A. No, sir; it would demonstrate that when this had dropped off it would be no smaller than the pillar in the bottom. Then we would have the pillars of the same size.

Q. Do you think that anything that will produce a disturbance or any weakness in that way would have a tendency to disturb the whole area?

A. The pillars do not project at all points. I do not believe that the projection of the pillar had anything to do with the dropping out of the bottom.

Q. Do you think that a disturbance of that kind will have any effect on the other portions of the mine?

A. I do not know. Where it is caved it would disturb the ribs in that immediate vicinity.

Q. If a disturbance of that character would have an effect upon the surrounding parts of the mine, then that would not be good mining, would it?

A. I do not know; it is a question of opinion.

Q. If the facts demonstrated this conclusively not to be good mining, there could not be any question of opinion about it; is that right?

A. Well, yes; let the facts demonstrate themselves.

Q. The presiding officer of the Commission asked you in reference to working these two veins together, and you stated it was done all around in the region here, with such a small strata between them. Can you give us the name of the mines where it is done?

A. They did it up here at Connell's.

Q. What company is that?

A. William A. Connell, and they did it at Avoca.

Q. Any other places that you can name?

A. No, sir.

Q. Those are the only two places besides the Twin Shaft.

A. I have been told that they have been doing it at Carbondale.

Q. You don't know what is the difference in the strata between the two veins in those places, do you?

A. Two or three feet in some places.

Q. We will take the Connell. What is the thickness of the strata there?

A. I do not know the thickness of the strata there.

Q. In what mines in Avoca are they doing this?

A. I don't know the name of the mine there.

Q. Do you know the thickness of the strata there?

A. A man told me it was about two feet.

Q. Did he tell you what kind of stone was in the strata?

A. No, sir.

Q. Do you know what mines are doing it at Carbondale?

A. I do not.

Q. Do you know the thickness of the strata there?

A. No, sir.

Q. So that as far as your personal knowledge goes you don't know of any other mine that this was done in except the Twin Shaft, do you?

A. I have never been in any other mines, never seen in.

By the Deputy Attorney General:

Q. You have testified that the strata between the two seams of coal in the Avoca mine is two feet. Do you know that of your own knowledge?

A. No, sir; only what was told me.

By Mr. McGovern:

Q. In answer to the Commission you state that in the roof of the sixth vein there was what is technically or commonly called among the miners soapstone?

A. No, sir; I did not testify that.

Q. In what vein?

A. I did not say that was in the Twin Shaft. You would find it in the upper vein, but not in the sixth.

Q. Is there any soapstone at all in this portion of the Twin Shaft mine that was working at the time of this disaster?

A. I have never observed any.

Q. What do you think caused this accident?

A. Well, I don't know.

Q. Isn't it demonstrated to your mind that this accident was caused by not having these pillars properly placed over each other and of their being weakened and not being sufficient to support that roof?

A. I do not think that it is.

Q. What does this accident demonstrate to your mind as being the cause of it?

A. I don't know, sir.

Q. Your map also shows the width of the gangways and air-ways in the Twin Shaft, does it?

A. Yes, sir.

Q. And the width of the gangways and air-ways are from twenty-two to twenty-four feet on an average?

A. Yes, sir.

Q. That is driving them pretty wide, isn't it?

A. That is a good width.

Q. What are the thicknesses on an average of the pillars and supports along those gangways and airways?

A. We seldom ever drive a gangway or airway less than sixteen or eighteen feet.

Q. At this particular place?

A. The map shows them.

Q. What is the average?

A. Well, I should judge they would average about twenty feet.

Q. The gangways and airways were the same in each vein or seam?

A. Pretty nearly.

Q. They would average about the same in the sixth as in the fifth?

A. Very nearly the same.

Q. And the driving of those gangways on an average width of twenty to twenty-four feet, with the small strata that was over them in the sixth vein, had a tendency, hadn't it, to weaken the roof in that vein?

A. Well it might have such a tendency.

Q. And then off these gangways and airways, driven at the width mentioned, chambers were driven?

A. Chambers were driven, yes, sir.

Q. And the width of those chambers are what?

A. They run about the width of the chambers in the bottom, pretty nearly.

Q. Well, about how wide?

A. Twenty to twenty-four feet.

Q. And the driving of those chambers off the gangways that width, and the gangways being so wide, had a tendency to weaken that roof over that gangway, hadn't it?

A. It might have disturbed it some.

Q. And the probabilities are that from this weakened roof by the driving of these gangways and airways so wide—the probabilities are that that caused this disturbance, that superinduced this squeeze?

A. Well, it looks something that way, of course.

Q. Now, was it the custom and the ordinary rule of mining in this valley to drive gangways only from ten to sixteen feet on an average?

A. Well, I have never been in any other mines, only those of the Delaware, Lackawanna and Western.

Q. Have you noticed gangways driven twenty-four feet wide on an average in the Delaware, Lackawanna and Western mines?

A. They used to drive them narrow; about fourteen to sixteen feet.

Q. And a number of those mines belonging to the Delaware, Lackawanna and Western Coal Company are gaseous mines, are they?

A. Some of them are.

Q. You know about where these men are supposed to have been caught in this squeeze?

A. Pretty near, I think, from what I hear.

Q. And you know that around in that neighborhood there is what is commonly termed, in the language of mining experts, a swamp or dip?

A. Kind of a swamp.

Q. Basin?

A. Yes, sir.

Q. And the pitches all tend towards one common center there?

A. Yes, sir.

Q. And under the roof, at the point or apex where it dipped down, it would be necessary there, wouldn't it, to have a stronger and better support than if it was on the level?

A. Oh, well, I don't know about that.

Q. Wouldn't there be an additional weight and ———

A. In my estimation the inclination was not sufficient.

Q. Therefore, it would not be necessary, you think, to have any greater support there at that point of resistance?

A. I don't think it would be necessary to take that into consideration.

Q. So that not having any greater support right under the point of resistance of this dip or swamp would not make any difference as to the cause of this accident?

A. Hardly, as long as we had our supports as we have them in the top coal and the bottom.

Q. If they were properly kept up from the top to the bottom?

A. They were kept as near as they could be kept.

Q. And the supports under this dip or swamp were just about the same as they were in other parts of the mine?

A. Just about the same.

Q. There was no difference made between them?

A. No, sir.

Q. Did you ever hear or learn from any of the officials of the company, or any other person connected with it, that other mining experts and engineers had refused to go in there and make surveys on the ground that the mine was being unscientifically worked?

A. Never heard of it.

Q. Or on account of its dangerous character?

A. No, sir.

Q. Never heard anything of that kind?

A. No, sir.

Q. Do you know a surveyor by the name of Augen?

A. No, sir.

By the Deputy Attorney General:

Q. I understood you to testify that on Thursday prior to this accident you had noticed a disturbance at a certain point in the mine?

A. Yes, sir.

Q. How far distant was the place of that disturbance from the place where the accident did occur?

A. Well, I suppose that the men were in that neighborhood; along that gangway that was under them there.

Q. After having observed that disturbance what did you do by way of calling it to the attention of those in charge of the mine?

A. Those in charge of the mine had been there themselves.

Q. You did not bring it to their notice?

A. They noticed it themselves.

By Mr. McGovern:

Q. Mr. Davis, in answer to my question you testified that after you made the first survey of a pillar and took the measurement of it, you never made any subsequent survey or measurement of that pillar?

A. It very seldom became necessary.

Q. You never did?

A. No, sir.

Q. Therefore they might have cut down the pillar and taken part of it away after you had made the measurement and survey?

A. They might do that, yes, sir.

Q. On the Thursday prior to this accident, when you noticed this disturbance, did you hear any crack or noise to indicate any squeeze there?

A. No, sir.

Q. What amount of ground or territory did this disturbance extend that you noticed on Thursday?

A. It did not extend over very much.

Q. About how much?

A. Thirty or forty feet; in length along the gangway.

Q. About how wide?

A. Well, the gangway might have been eighteen or twenty feet wide, the opening through the chamber.

Q. Then it was a disturbance of forty by eighteen or twenty feet?

A. Yes, sir.

Q. After you noticed that disturbance there on Thursday, did you go into the mine?

A. I left there and went down to examine in the bottom to see how things were.

Q. That was on Thursday?

A. Yes, sir.

Q. Did you report that disturbance to the officials of the company?

A. The officials were there and saw it themselves.

Q. Was Mr. Law there?

A. Mr. Law was not there.

Q. Did you report it to Mr. Law?

A. Yes, sir.

Q. On the same day?

A. Not on the same day.

Q. How soon after?

A. It was reported to me on the day before.

Q. By whom?

A. By my assistant.

Q. And Mr. Law knew it before you did?

A. I told Mr. Law myself.

Q. On the day before you went down?

A. The day before I went down to examine it.

Q. After you examined this disturbance in the fifth vein you say you went down into the sixth?

A. I went down into the sixth to see how it caved under that; to see whether this thing had come down. People said the pillars

were not right and I went down to see if I could get any enlightenment.

Q. Did you find that ———

A. I found that the roof between the two pillars and the gangway was piled right up.

Q. It had crashed right down?

A. Piled up loosely where this disturbance was.

Q. Then the bottom of the strata between the fifth and sixth veins had fallen out by reason of this part of the pillar resting on it and having no support under it.

A. The bottom had fallen out because there was no support under it. We did not figure on resting the support under the strata; we wanted to leave the supports under the pillars.

Q. This disturbance was caused by a pillar in the fifth vein overlapping a pillar in the sixth?

A. I don't know what caused the disturbance. I only know the bottom went out.

Q. Did you see a part of the pillar from the fifth vein?

A. I saw a part of it.

Q. How many of those pillars did you see in that condition?

A. One on the right and one on the left.

Q. Did you make any further examination around there at the time?

A. No, sir; I left and went over to the other side of the vein and stayed there for two hours.

Q. Was this part of the pillar still intact, resting on the debris?

A. It was just loosening from the roof. There was a smooth running in there.

Q. It stood there intact?

A. It was cracked loose from the roof.

Q. The piece of coal itself was intact?

A. Yes, sir.

Q. During the time that you have been connected with the mines did you ever see a disturbance of that character before?

A. No, sir.

Q. It was something unusual, wasn't it, as far as your experience went?

A. Yes, sir.

By Inspector Stein:

Q. Taking into consideration the nearness of the two veins together do you think it would be necessary to leave a larger pillar in No. 6 than in No. 5?

A. No, sir. I aim to get the pillars as near the same size as I can.

Q. Did I understand you to answer Mr. McGovern that the partition stone of the intervening measures between the two veins was between the pillars ———

A. Right under the track.

Q. Between the veins; filling in the breasts between the pillars?

A. Yes, sir.

Q. Is your survey checked by any other engineer than yourself?

A. Yes, sir.

Q. By whom?

A. The Lehigh Valley.

Q. Did you have any authority to direct the width of gangways, airways or any other opening?

A. I had no authority. The only thing I did was to get them to follow out the line of chambers in the bottom.

Q. Did you have any authority, or were you at any time deputized to give instructions as to what the size the pillars in either No. 5 or 6 veins should be?

A. No, sir.

Q. Whose duty was it to attend to the width of the openings or size of the pillars.

A. Well, it was the general superintendent's duty or the foreman's to regulate the size of the pillars.

Q. Who is he?

A. Mr. Langan and Mr. Lynott, two of them.

Q. Mr. Langan was general superintendent and Mr. Lynott was foreman?

A. Yes, sir.

Q. What is Mr. Law?

A. He is general manager.

Q. Do I understand by that that Mr. Langan was the general inside superintendent?

A. Yes, sir.

By Mr. McGovern:

Q. Of all the mines for the Newton Coal Company?

A. Yes, sir.

By Mr. O'Boyle:

Q. What are the duties of the general manager? What is the distinction between general manager and the general superintendent?

A. I cannot define that distinction.

Q. How often did Mr. Law visit the mine?

A. I don't know, sir. Mr. Law never told me when he was going to visit the mine. He may have been there many a time that I don't know anything about.

Q. Did any of the other officials visit the mine?

A. I don't know. They used to come here. I don't know whether they went into the mines or not.

Q. They used to be around?

A. They came here on business.

Q. When did you last see either the general manager or the owners of the mine in the Twin Shaft?

A. I don't remember.

Q. Can you give us any idea?

A. No idea whatever. I don't keep any record of it.

Q. When you say that Mr. Law was general manager, do you mean that he was located here in Pittston and visited the mines of the company here?

A. I suppose so, yes, sir.

Q. What was the territory, so far as you know, over which he had general management, or was he confined to Pittston?

A. I don't know anything about that.

John B. Laws, sworn by Inspector Stein, testified as follows:

By Mr. McGovern:

Q. You are general manager of the Newton Coal Company, I believe?

A. Yes, sir.

Q. And their works are located here in the neighborhood of Pittston?

A. Yes, sir.

Q. How many mines do they operate?

A. They operate one breaker; the Seneca breaker, which has connected with it three shafts, the Seneca, Ravine and Twin.

Q. How long have you been the general manager?

A. Since September 1, 1892.

Q. Up to the present time?

A. Yes, sir.

Q. Who was the superintendent of the Twin Shaft at the time of this accident?

A. We have one inside superintendent of all our shafts, with a foreman at each of them. We had a foreman at the Twin and a foreman at the Seneca and Ravine. The Seneca and Ravine is a small colliery and Mr. Patrick Maloney is the mine foreman there. Mr. N. F. Lynott was foreman at the Twin. Mr. M. J. Langan was general inside superintendent of the three, took care of the three.

Q. As general manager did you visit these mines?

A. I have very rarely.

Q. When was the last time you visited the Twin?

A. Sometime during last February.

Q. What did you go down for?

A. Mr. Langan asked me to go down to see where he had got some water in the face of one of the workings.

Q. Is that the water that Mr. McDonald spoke of?

A. Yes, sir.

Q. You only went to the place where this water was?

A. No, sir.

Q. Does your engineer submit a map to you from time to time?

A. He makes a map for the inspector and for the company so that Mr. Langan could see how the work was carried out.

Q. That map is kept at your office?

A. Yes, sir.

Q. You examine that map from time to time?

A. I do at times when Mr. Langan would call my attention to anything.

Q. You are familiar with the workings of the Twin Shaft?

A. Not very familiar. I have never been in the mines very much.

Q. You are as familiar as a man could be from an examination of the map?

A. Yes, sir.

Q. You are familiar with the amount of output and the different kind of work carried on in the Twin Shaft?

A. Yes, sir.

Q. Of course you knew how the workings were being carried on from your knowledge?

A. Yes, sir.

Q. You knew how they were driving the gangways and airways?

A. General knowledge.

Q. You knew they were driving the gangways of the fifth and sixth seams twenty-two to twenty-four feet?

A. I did not pay any attention to the width of those.

Q. Didn't you know that from the indications on the map?

A. I might have known it if I had looked at it.

Q. Wasn't it knowledge that you had?

A. I never paid any attention to that.

Q. When did you learn first that they were driving them at that average?

A. I found it out here.

Q. You knew, of course, the thickness of the strata between the fifth and sixth veins?

A. I knew about, yes, sir.

Q. You knew they were being driven for the most part simultaneously?

A. Not simultaneously. They were driven one over the other. I understand Mr. Langan's idea was to drive one opening immediately above and over the other.

Q. That is, drive the sixth and then drive the fifth above it?

A. A portion of this sixth vein, I understand, had been worked sometime before.

Q. Then the fifth was driven over it?

A. Yes, sir.

Q. Both veins were working at the same time?

A. Not in the same place; both veins at the same time, but not in the same place.

Q. Wasn't there a part of the fifth vein being worked directly over part of the sixth?

A. It was all, I suppose, being worked over the sixth; all of the fifth that was worked.

Q. Were there men working in part of the fifth vein and also men working in part of the sixth directly under the fifth?

A. I think not; the map does not show it.

Q. You don't know from your personal knowledge?

A. I would not imagine that Mr. Langan would do such a thing, and the map does not show it.

Q. You remember when the disturbance was in there on the Thursday before the accident?

A. No. If Mr. Davis called my attention to it, I don't remember it. I was sick. I went home sick on Friday. If my attention was called to it he simply said to me that the bottom had fallen out of that chamber.

Q. From No. 5 down into No. 6?

A. Yes, sir.

Q. At the time it fell out do you know whether there was anybody working in it or not?

A. I would not imagine there would be.

Q. Mr. Davis has testified that it was part of the gangway that fell out?

A. I don't know whether it was the gangway or chamber. He simply said there was a place the bottom had dropped out.

Q. If they were working the gangway in No. 5, then they were working on this gangway where it fell out.

A. I don't understand your question.

Q. If they were working part of No. 5 seam over No. 6, then where the bottom fell out of this gangway was the gangway they were working on—were they working on the gangway where the bottom fell out?

A. I don't know.

Q. Did you ever make any examination of the map to see whether the pillars were over each other?

A. I have made a casual examination, yes, sir.

Q. Did you always find them so?

A. In a general way, yes, sir.

Q. Are they all one directly over the other?

A. As nearly so as would be considered possible under the circumstances.

Q. Did you ever have any experience in mining before you became general manager of the Newton Coal Company?

A. Yes, sir.

Q. Where?

A. At the Pennsylvania Coal Company.

Q. What was your position there?

A. Superintendent of mines.

Q. For how many years?

A. About eighteen years.

Q. If these pillars were not directly one over the other in the Twin Shaft you would not consider that good mining, would you?

A. I would not, no, sir. Of course it is impossible to get every pillar directly over, but in a general way, they are.

Q. Do you know anything about the size of the pillars in the Twin Shaft?

A. They were good fair pillars. I only know from the appearance of the map.

Q. They did not run a regular size?

A. No, sir.

Q. Irregular; some are small, some large, and some medium?

A. That is so in every mine.

Q. Do you think it would be good mining to leave the pillars in the sixth vein smaller than the pillars over them in the fifth?

A. The sixth vein was worked first, and if I were mining I would certainly prefer to leave a little more coal in the pillar above than in the pillar below.

Q. Then you think the weight ought to be greater in the top?

A. It would act as a cap piece, as a prop.

Q. Do you generally put the big end of a prop up?

A. No, sir; but there is a very great difference of opinion among men as to the formation of the pillars. There are just as many men say that the big end should go up.

Q. If the pillars were smaller in the sixth vein than in the fifth in the Twin Shaft, in your opinion is that good mining?

A. Yes, sir.

Q. Safe under all the circumstances?

A. Yes, sir. I think Mr. Langan's idea was this, as he told me many times ————

(Objected to.)

Q. Now, as general manager for the company, whatever was down by the subordinates was done under your direction and approval?

A. Not in the way of mining. I could not direct anything I did not see.

Q. When they submitted their reports as to what they did, it met with your approval; if not you would have stopped it, wouldn't you?

A. If I saw anything that would be injurious I would.

Q. This method of mining in the Twin Shaft of course met your approval, didn't it?

A. So far as I could see I had no objection.

Q. Where were you on the day of this accident?

A. I was in bed.

Q. All day?

A. It was at night.

Q. I am speaking about Saturday, previous.

A. I was not in bed that day. I was confined to the house all day.

Q. You did not go out of the house all day.

A. I went out in the evening, yes, sir.

Q. You went to the primaries?

A. I had my horse brought over and I went to the polls.

Q. Was Mr. Langan at your house at evening?

A. Yes, sir.

Q. He came there and reported the condition of the mine?

A. I was not at home.

Q. Did you see him at all that evening or that day?

A. No, sir.

Q. Did you see him at any time at all during Saturday prior to the accident, or any time during Sunday morning before it?

A. No, sir.

Q. You did not see him at all or have any conversation with him?

A. No, sir.

Q. I understand that you have been educated as a mining engineer?

A. Yes, sir.

Q. Graduated from some mining school?

A. Lafayette college, yes, sir.

Q. And since your graduation you have been connected with and followed mining and made it a study.

A. Yes, sir.

Q. You are acquainted with all of the sciences of mining?

A. Not all.

Q. As far as the mining in this region here is concerned.

A. I have much to learn yet.

Q. You have heard the testimony here of Mr. McDonald and your surveyor?

A. Yes, sir.

Q. As to the method of mining in the Twin Shaft. In your opinion was that mining done according to the rules or science as taught in the schools at the present time?

A. There is no teaching as to what you can do. Man can only do in fighting nature what nature teaches him to fight as he goes along. There is no regular law whereby a man on the outside can define what men on the inside shall do.

Q. Now is it not one of the rules laid down in the scientific schools of mining that, where you are working different strata, all the pillars shall be one directly over the other so as to form one continuous column to the surface?

A. It is where they are closely associated together.

Q. And if that is not done then one of the rules laid down by the scientists in mining is violated?

A. Yes, sir.

Q. And where the strata between the two veins, or the two seams, is about the same as it is in the Twin Shaft, do you think it would be good mining, according to the science of mining, to drive gangways and airways from twenty-two to twenty-four feet wide?

Q. I do not see any particular objection to driving them so if your pillars are the proper size. It is the proportion of coal that is left in the mine rather than the ————

Q. The thinner the strata is between the two seams or veins, and the wider you drive the gangway or air way, the greater the tendency to weaken, isn't it?

A. Of course if there were no coal taken out at all it would be very much stronger. There is no science in that.

Q. It reduces the amount of resistance, the wider you make the gangways under it?

A. Yes, sir.

Q. You say there is no science in that?

A. No, sir.

Q. What is the custom, then, among experienced miners?

A. In what respect?

Q. In the width of gangways under conditions as they existed in the Twin Shaft?

A. Gangways are driven in mines very largely according to the character of the roofs, sides, and character of the vein. There is no law that governs any one. If a mine has good top, good sides, good hard coal, and so forth, a very much wider gangway can be driven, and with equal safety as you can in a different class of coal and roof.

Q. By that I understand you to mean that if the strata is thirty or forty feet thick, of hard rock, then you can drive the gangways or airways wider than you could if it was only eight or ten feet thick of soft rock?

A. That is the idea.

Q. What kind of rock was in the strata between the fifth and sixth seams in the Twin Shaft?

A. It was of a fireclay nature. Well, it is not a pure fireclay.

Q. In the language of Mr. McDonald, it is a bastard?

A. That is a common mining parlance in speaking of fireclay that is not absolutely pure.

Q. And of course where it is not absolutely pure it is not as strong as the pure stuff?

A. The pure stuff is not as strong as the bastard.

Q. Do you think that having nothing but this fireclay between the two seams or strata there, that it was good mining to mine these gangways from thirty-two to twenty-four feet wide and open breasts off them of the same width?

A. When these gangways were driven there was none of the top seam worked. There was no knowledge of it being there.

Q. I understood from Mr. McDonald yesterday that there were not two veins. It was the red ash with a strata of slate running between it?

A. In some portions of the mine there is no top vein. The fifth vein only goes in on a small portion of mine. At the shaft there is no fifth or sixth vein. Some distance from the shaft there is a sixth, but not fifth. The fifth only come in the lower portion of the mine.

Q. Do I understand you to say that when you first worked the sixth vein you did not know anything about the fifth?

A. Yes, sir.

Q. Is it not a fact that these two seams run right in together near where you sank your slope there?

A. No, sir.

Q. When did you begin to work the sixth?

A. It was opened up in about 1887.

Q. How long did you work it?

A. It was worked yet—until the disaster.

Q. When did you begin to work the fifth?

A. The fifth was started about a couple years ago. About two years ago.

Q. Have you been working it since that time?

A. Yes, sir.

Q. And the gangways and airways in the sixth have been driven the same width as when they started?

A. The gangways and airways were driven in the fifth the same size as in the fifth.

Q. Up to the time of the accident they were driven the same width as at the time you started the sixth?

A. Yes, sir.

Q. So that the fact that you had no knowledge of this fifth seam being over the sixth at the time of driving the gangways was not the cause of driving them so wide?

A. No, sir.

Q. The object was to get all the coal out you could and get it out as cheaply as you could.

A. The object was to get the coal out. That is what a mine is sunk for.

Q. You stated that you are general manager. What are your duties as general manager?

A. My duties are to see—I represent the owners in seeing that there is a man occupies every position of trust necessary to fulfill the requirments of the law. I was there to see that there was a mine superintendent; to see that there was a master mechanic to look after and care for the machinery, boilers, &c.; to see that the time, &c., of the men is paid; to care for the funds when it was there until it was taken out of our hands and placed in the hands of those it belonged to; and to take a general care of the mine.

Q. You had a general supervision of everything?

A. Yes, sir.

Q. Were the miners furnished with sufficient props from time to time?

A. Always.

Q. Were there sufficient props on the ground on Saturday?

A. We always had props on had.

Q. Isn't it a fact that your men had sent to Scranton for props on Sunday?

A. We have had to send for a great many carloads of props.

Q. They sent early on Sunday?

A. Yes, sir.

Q. You could not have had enough there?

A. The character of the squeeze we had required different timber from what we had.

Q. Was there any timber on the ground on Sunday?

A. There is a lot of it there yet.

Q. What is the difference in the character?

A. The difference is that it is larger timber.

Q. What is the difference in the size?

A. The timber we ordinarily buy for the use of the mines is six inches at the small end. What we bought for this is ten or twelve at the small end.

Q. Is it true that there was plenty of timber there at all times?

A. Yes, sir.

Q. And according to the ventilation and mine law that timber was furnished to the men?

A. Yes, sir; at least I suppose so. There were men there to get it, and Mr. Langan was there to see that it was furnished.

Q. You testified a few minutes ago that a copy of that map was in your office or the company's office.

A. Yes, sir.

Q. And you examined it from time to time?

A. I did when Mr. Langan called my attention to anything.

Q. You had full opportunity to examine it.

A. I could examine it every day.

Q. And at times you did examine it with Mr. Langan?

A. Yes, sir.

Q. And of course from the examinations that you made with Mr. Langan, and other examinations that you made alone, you knew pretty well about the workings of these mines?

A. I knew pretty well how the map was.

By Mr. Wheaton:

Q. Mr. Law, the sixth vein is the bottom vein of coal, isn't it?

A. Yes, sir.

Q. What are the overlying veins of coal under that portion of the mine north of the Lackawanna river?

A. The fifth and the Marcy.

Q. Are there any other veins over the Marcy?

A. There are none on the flats over on the north side of the Lackawanna.

Q. What, in your opinion, has become of that coal in the overlying or Marcy vein and the balance of the fifth vein not mined on account of this cave, so far as the company being able to work it is concerned?

A. I fear it will be practically impossible to do so under present conditions.

Q. The Newton Coal Company is the lessee of all that coal?

A. Yes, sir.

Q. And if your fears are correct that coal is lost to them?

(Objected to.)

Mr. McGovern:

Q. Is the lease of these mines in writing?

A. Yes, sir.

Mr. McGovern:

Then I object to the question until the lease is produced.

Inspector Stein:

From the fact that it would be the first duty of a man who would expend money in opening up a coal property to open it with a view to surrounding the workmen with all the safety possible, and at the same time to so conduct his colliery that he could take the most coal out to a given area, so long as it was consistent with safety; that he would do the best thing he could; for by doing so the interest of the company is maintained, not only that, but the interest of the State and of the United States, and from the fact that if he would mine the colliery so as to reduce the quantity of tons coming out it would be a loss to all concerned, I would admit that question of Mr. Wheaton's.

A. My answer is yes.

By Mr. O'Boyle:

Q. Isn't it possible to have another opening in some other part of this land by which and through which that coal could be mined that you speak of?

A. Not the upper vein; no, sir.

Q. Why?

A. From the fact that the upper vein lies closely to the surface and the breaking down of these strata disorganizes it and places it in such a position that it would be completely flooded.

Q. You cannot tell at the present time the extent of this cave, can you?

A. We could tell pretty close as to three sides.

Q. Could you not sink beyond the river, on the north side of the Lackawanna river?

A. We could not because there is a wash of one hundred and forty-seven feet of sand that practically makes it impossible to get at it.

Q. How far down is the wash; how far below the surface?

A. One hundred and forty-seven feet.

Q. And what is the thickness?

A. The one hundred and forty-seven feet.

Q. Extends all the way from the surface down one hundred and forty-seven feet?

A. There is one hundred and forty-seven feet of sand before you get any rock.

Q. And you you say that it is impossible to sink a shaft in one hundred and forty-seven feet of sand?

A. Yes, sir. On that portion of the property the river rises up and flows over every year. If it rises fifteen feet, it is up there two feet; if it rises thirty, it is up there fifteen. If it comes up to the tracks it would completely inundate us.

Q. You think there is no other way of reaching this coal except through the openings already made?

A. It could be reached but it could not be mined, not in my opinion.

Q. What is the extent of territory over which this cave extends, involving the surface?

A. Well, it looks like a very large cave. It will figure up one hundred or one hundred and fifty acres.

Q. Are there any external evidences of it?

A. Yes, sir.

Q. Where on the surface; I mean on all sides.

A. It shows on three sides. The other is out by the river. It goes to the edge of the river and how far into it we don't know.

By Mr. McGovern:

Q. Suppose this cave that you speak of, that you anticipate will prevent you from taking out the coal in the Marcy vein, should crack off around about that one hundred acres and settle down in one solid mass until it rested on the floor of the lower vein that was worked out, do you mean to tell this Commission that you could not get in and work that out?

A. If it was away from the river I think we could. It is not a matter of the cave, it is a matter of the condition of the vein.

Q. Do you mean the water coming in through the fissures of the earth?

A. No, sir.

Q. Couldn't you mine the coal up close to where the fissure would touch the river?

A. This vein would be the depth of one hundred and forty-seven feet. There is sixty feet of rock on top of that. That would be two hundred and seven feet. There is two hundred and seven feet that that water has to enter into that mine, or equal to one hundred pounds pressure.

Q. You want us to understand that the water lodges there when the river is high?

A. It will lie in the sand when it is low too.

Q. And there is no means by which that could be prevented?

A. I know of none; no, sir.

Q. This is all conjecture upon your part as to whether you could mine this coal out and the extent of the cave?

A. From what I know of the business I would consider it more than conjecture.

John Williams, sworn by Inspector Stein, testified as follows:

By Inspector Stein:

Q. Mr. Williams, what is your age?

A. Twenty-five years.

Q. What is your occupation.

A. I was a brattice man at this shaft.

Q. How long have you worked at this shaft?

A. About nine or ten months.

Q. Have you ever mined coal during your time in the mines?

A. Yes, sir.

Q. At this shaft?

A. Yes, sir.

Q. Were you employed in this particular section of the colliery prior to the cave-in?

A. We were just that Saturday.

Q. You were not working there before that Saturday?

A. Not in that section.

Q. In which section of the colliery were you working?

A. Back of the shaft.

Q. That is entirely in an opposite direction, south of this cave-in?

A. Yes, sir.

Q. Were you sent for to assist in arresting this squeeze?

A. Yes, sir.

Q. Who sent for you?

A. The fire boss give us orders.

Q. What is his name?

A. Mr. McCormick.

Q. So you went down there, did you?

A. Yes, sir.

Q. In travelling from the bottom of the shaft did you observe whether there was a general squeeze all the way going down?

A. No, sir.

Q. Just tell the Commission at what point you observed the squeeze before you went into the center of the cave-in?

A. It was around the big branch where I heard the squeeze.

(David Davis was here re-called to point out to the witness the sections of the map.)

Q. When you came to that big branch you observed there was a squeeze going on there?

A. (Witness) Yes, sir.

Q. How far is that from the pump, the center of that cave-in?

Mr. Davis, (after measuring):

A. It would be about five hundred feet from the centre of the disturbance.

Q. The center of the fifth vein; is that correct?

A. Yes, sir; between five and six hundred feet.

Q. Can you tell the Commonwealth about the width of the openings there, the chambers and gangways?

The witness:

A. I should judge from twenty-four to twenty-six feet.

Q. That is the width of the chambers?

A. Yes, sir.

Q. What is the width of the gangways?

A. About the same width.

Q. Throughout the colliery in which you have in any way travelled?

A. Yes, sir.

Q. Do you know of your own knowledge that this colliery was considered to be unsafe?

A. No, not on our side; I have never been on this other side.

Q. Of your own knowledge, you say, you don't know of the colliery being unsafe?

A. No, sir.

Q. You went down that No. 3 slope with a view to assist in arresting the squeeze by putting in props or log cribbings?

A. I went down there with a mule to haul this timber from the other chambers of the workings. They could not get them from the outside fast enough.

Q. Was the work they were going to do propping and cribbing?

A. They were going to put up cog pillars.

Q. Did you see Mr. Langan there when you went into that section of the colliery?

A. No, sir.

Q. Was he in the colliery?

A. I did not see him.

Q. Is your knowledge of mining operations sufficient to enable you to determine whether the openings were too large or the pillars left too small?

A. My opinion is they were too large, the openings.

Q. What about the pillars?

A. I have no judgment at all about the pillars.

Q. During your time of working at that time did you notice that there was a false top of soapstone overlying the No. 6 vein, and which was propped up in the course of constructing these chambers?

A. Not a soapstone.

Q. Did you notice any false top or periodical fall down after these chambers were abandoned?

A. Yes, sir.

Q. Did you notice particularly the thickness of that false top?

A. No, sir.

Q. Did you notice in particular the character of the top above that?

A. No, sir.

Q. Have you at any time, in travelling through the colliery, noticed that this false top had fallen out and the props were standing with nothing on the top?

A. No, sir.

Q. Were the chambers propped?

A. Yes, sir.

Q. The props were under this false top?

A. Yes, sir.

Q. And did you notice that this false top had fallen down, which is a natural occurrence, leaving the top of prop with nothing on. You have not noticed that?

A. No, sir.

By Mr. O'Boyle:

Q. Mr. Williams, did you observe anything with relation to the pillar coming down from the fifth vein into the sixth when you went over there?

A. Yes, sir.

Q. How wide was the opening or space that it went down through?

A. I should judge—you mean on the floor of the sixth vein?

Q. I mean how wide was the floor of the fifth vein where this pillar went through, that you saw broke through into the sixth vein?

A. We put up eight by eight cog pillars. Eight square all around.

Q. Did you observe the size of that portion of the pillar which went down; could you see that?

A. No, sir.

Q. Did it appear to you as if the size of that hole was the size of the pillar that went through or a portion of the pillar that went through?

A. I don't understand.

Q. You say the size of the hole was eight by eight. Now, did you observe whether that was the size of the portion of the pillar that went down?

A. That was in the gangway road.

Q. The pillar fell through and left that hole?

A. The bottom fell out.

Q. Well, the bottom fell out. That was not the one where the pillar went through?-

A. No, sir.

Q. Did you observe where the pillar went through?

A. No, sir. I observed the pillar where you could stick your arm through.

Q. Was that between the roof of the fifth vein and the pillar?

A. Yes, sir.

Q. You say you could stick your arm in?

A. Yes, sir.

Q. And there was nothing there to support the roof of the fifth pier?

A. No, sir.

Q. How many of them did you notice that way?

A. Three.

Q. Were those pillars the pillars along the gangway or were those the pillars in the chambers?

A. On the gangway.

Q. What distance would those three pillars extend? From here down to the end of this building or the front of it?

A. Further than that.

Q. And you say that you observed three of those pillars that you could stick your arm in and nothing to support the roof at all.

A. No, sir.

Q. Could you see anything on the ground where any stuff had come out from between the pillar and the roof?

A. Any coal?

Q. Yes, or any slate or rock or anything of that sort?

A. No, sir.

Q. Had it been long there in your opinion?

A. No, sir; only just happened the day before. Some of it happened that day.

Q. What were the noises and disturbance that you first heard like?

A. Like the roof falling.

Q. Cracking and roaring?

A. Not roaring; violently, yes, sir.

Q. Did you go out near the foot of the slope then?

A. No, sir; I was not on the outside of the slope at all.

Q. How far away from the foot of the slope were you?

A. I could not say how far that distance is from the foot of the slope to where we were working.

Q. Have you worked in other mines?

A. Yes, sir.

Q. Where else?

A. The Pennsylvania Coal Company.

Q. How long have you worked in the mines altogether?

A. About twelve years.

Q. How old are you?

A. Twenty-five.

Q. What mines of the Pennsylvania Coal Company did you work in?

A. The Barnum.

Q. Did these gangways strike you as unusually wide in that portion of the shaft where the cave occurred?

A. In the Twin shaft?

Q. Yes.

A. Yes, sir.

Q. Wider than you had seen in other mines?

A. Yes, sir.

Q. Very much wider?

A. Not a great deal.

Q. About what was the size of the gangways that you have seen in other places?

A. I should judge about fourteen or sixteen feet.

Q. And these were twenty-four or twenty-six?

A. Yes, sir.

Q. And how about the width of the chambers?

A. Some of them were driven twenty-six; I saw some of them thirty.

Q. Did they strike you as being unusually wide?

A. Yes, sir.

Q. Wider than you had seen worked in the shafts of the Pennsylvania Coal Company?

A. The thirty feet ones were; the twenty-six were not.

Q. Are you speaking now of the average width of the gangways in that portion of the shaft as being twenty-four or tweny-six feet wide?

A. Yes, sir.

Q. How long have you worked as a timberman?

A. I have never worked as a timberman.

Q. Was there sufficient timber around there to timber the mine at the time, so far as you could see?

A. Not as far as I could see. I seen them driven into the chambers. We were sent to take the props out to this place.

Q. The props that were sent to other portions of mine were being hauled to this place, and you were one of the persons doing that?

A. Yes, sir.

Q. How long did you work on that day?

A. I worked until half past five.
Q. That was Saturday?
A. Yes, sir.
Q. Was that the hour that your shift went off?
A. Yes, sir.
Q. You did not go back again in the evening?
A. Yes, sir.
Q. What time did you go back?
A. I should judge about half past seven.
Q. Did you go down to the affected place?
A. No, sir; I could not get to it.
Q. Why?
A. We seen the fire bosses around, and we had to wait until they made their returns. As soon as they made their returns they had to send for the head fire boss, Mr. McCormick.
Q. Then did you go out or wait?
A. I went out.
Q. When you discovered there was danger?
A. Yes, sir.
Q. Did you ever see the inspector making inspection of the mine there?
A. Well, I saw him once.
Q. How long ago?
A. I should judge about six months ago.
Q. Did you see him go into the different chambers or did you see him along the gangways?
A. I met him in the old works where we used to travel; that is where we met him.
Q. In the gangways?
A. Yes, sir; just crossing over.
Q. Did you ever see him up in the chambers examining these works during the time that you have worked there?
A. No, sir.
Q. Did you ever see the general manager in the mines?
A. Never saw him.

By the Deputy Attorney General:

Q. Who was the inspector whose duty it was to inspect this mine?
A. Mr. McDonald.
Q. How long had he been inspector here?
A. That I could not say, sir.

By Inspector Stein:

Q. The inspector might be in the mines and you not see him?
A. Yes, he could.

By Mr. O'Boyle:

Q. You were working in those places in the mines along the general course, were you not, such as gangways?
A. Yes, sir.
Q. So that the inspector or other traveler through the general courses you would see, would you not?
A. Most likely.

(A number of witnesses were here called but did not respond. A general invitation was given for any one to volunteer testimony, but no one accepted.)

The Deputy Attorney General:

I desire to say, on behalf of the Commission, that the fullest and freest opportunity will be given to all parties to offer any testimony that is relevant to this inquiry. We can have a meeting this afternoon, and I think that if there are any witnesses that can be called this afternoon we had better hear them, and then to adopt the suggestion of the learned counsel to adjourn until next week, so that they can marshal their witnesses, in the hope that they will be able to produce such testimony as they have. We cannot prolong this inquiry indefinitely, and we will expect next week practically to finish it. I can only say this, however, that we are here on behalf of the Governor of the Commonwealth for one single purpose, and that is to get such testimony regarding this accident as may be useful in a recommendation for future legislation, and we want to arrive at the facts as they are, free from bias and without reference to parties involved, and so far as the Commonwealth has anything to do with this proceeding, the investigation will be conducted on the lines of justice and equity.

(Adjourned until 2 o'clock p. m.)

July 10, 1896, Afternoon Session.

Inspectors reconvened at 2 o'clock p. m. Present: Same as the morning session.

By Inspector Stein:

It was decided at the morning session that we would hear any old miners who know about the condition of this Twin Shaft Colliery, and if there are any such here who will volunteer their testimony we shall be glad to hear them at this time.

Mr. Gillespie:

It is almost impossible for us to secure the names of old miners who might testify in this matter, and if there are any old miners here we would be glad if they would come forward and give their testimony.

(No one responded.)

John B. Law recalled.

By Inspector Stein:

Q. Have you a book that is kept at the colliery in which you make daily reports of the mine?
A. Yes, sir.
Q. As approved by your assistant general mine superintendent?
A. Yes, sir.
Q. Will you produce that book?
A. I will.

William Costello, sworn by Inspector Stein, testified as follows:

By Inspector Stein:

Q. What is your age?
A. Twenty years.
Q. How long have you worked in the mine?
A. About fourteen years.
Q. At what description of service have you been employed?
A. Mostly everything; labored, mined and everything.
Q. What is your present employment?
A. Was working up there at rock work and timber.
Q. How long have you been employed at cutting coal?
A. I was cutting coal for the Pennsylvania Coal Company for two years off and on. I was employed the last place at the Twin shaft.
Q. At what particular place in this colliery were you employed?
A. At the right hand section of the foot of No. 3 slope, as timberman.
Q. How long?
A. Well, about five months from the time we quit driving the rocks down to the fifth vein. After that time I was a timberman.
Q. Can you give us the character of the measures between the fifth and sixth veins?
A. In some places it was eight, some places it was seven, and it ran up as high as forty. That was where we drove the rock down forty feet.
Q. Was it hard?

A. Yes, sir.
Q. Did you see any slips, any dislocations?
A. Yes, sir.
Q. What tools did you use to bore your holes in that partition?
A. When we struck a soft spot in the rocks we used a hammer and jumper.
Q. During the time that you worked there have you noticed any squeezing going on?
A. Oh, yes.
Q. What was the width of the chamber opening?
A. They drove them as they liked; they took the best way that it would open.
Q. What was the width of them?
A. They ran from twenty-six to thirty and on up.
Q. How did you determine the width?
A. By looking at them.
Q. That was the only means you had of determining the width?
A. When they started to open a chamber it was over twenty-six feet, and then if they took off thirty feet off the opening, they were not getting anything for opening the chamber.

Inspector Stein:

We have nothing to do with the money. We have no right to dictate how much money a man shall get for his work.

By Mr. McGovern:

I think it is proper for the witness to state why a chamber was opened beyond the usual width.

Deputy Attorney General:

It is proper for him to state the reason if he knows.

By Inspector Stein:

Q. What are the widths of the gangways there that you passed through?
A. They run from twenty-six up, as far as I could judge. There never was any smaller as I could see.

By the Deputy Attorney General:

Q. Do you know the width of these openings by actual measurement or is it just what you think?
A. Just by taking the size of the heading and the size of the openings and judging.

By Inspector Stein:

Q. The distances from where you stand?

A. Yes, sir. We could take up a thirty foot iron bar and turn them around.

Q. That could easily be done at certain angles. How long have you noticed this squeezing going on?

A. It is about five months, I should judge, since the time I was taken from the rock heading.

Q. What were the evidences that caused you to believe there was squeezing there?

A. When I was first sent up, the time this water was struck there aside of the rocking. I was sent up to clear this fall.

Q. Did that fall come down between two pillars?

A. Yes, sir; come down on the face of the chamber.

Q. Do you know if that came in the lower vein?

A. Yes, sir.

Q. Came down to the lower vein?

A. Yes, sir.

Q. Did No. 5 vein come down to it?

A. It was not worked up that far.

Q. Was the No. 6 vein worked in advance of No. 5 at that point?

A. Yes, sir.

Q. And the partition stone simply fell away there?

A. This chamber was worked up there to the night this fell. It fell no more than about eight feet from the face out. When she did come down she stood up like that (illustrating).

Q. Have you noticed that the fifth vein was overhanging?

A. I could not say. Of course there was a lot of stone came down. It was all small coal. It was a crop-out as they call it.

Q. If we should show you the map could you point out the particular place where that fell?

A. Where this water came in?

Q. Yes, sir.

(Map shown to witness and Inspector McDonald recalled to point out the headings to the witness.)

Witness:

This was my section from the foot of No. 5 up; around here in this gangway (indicating).

By Inspector Stein:

Q. Then the upper vein is not worked there?

A. No, sir; not up that high.

Q. Are you sufficiently educated in a practical way to state whether those pillars are too small?

A. Well, I don't know much about what the thickness was, because I never examined them, but I know one thing about them, and that is that when the shaft would be idle for two or three days, they used to go in before they could work the main shaft and load up fifteen or twenty cars of coal from the main road.

Q. Where was that coal from?

A. It was chipping from the pillars.

Q. Was that coal loaded up?

A. Yes, sir.

Q. Sent out?

A. Sent outside.

Q. Who loaded it up?

A. The company men?

Q. The company got the advantage of that coal?

A. Yes, sir; the miners were not paid for it.

Q. Can you state whether you think that the pillars formed in either of these veins, so far as you know, were not of sufficient size to support the strata above them?

A. Well, there was one side I could point out on the map where there was four or five chambers driven through pillars. They called them parting pillars.

Q. I am speaking of the section where the cave in was?

A. Down there I don't know much about it, only about the roof I was timbering.

Q. You could not tell the Commission whether you think the pillars were sufficiently strong?

A. I know the rock was coming down and that she was bad.

By Mr. McGovern:

Q. I understand you to say that you were a timberman in this mine?

A. Yes, sir.

Q. And as such it was your duty to go along putting up props to support the roof?

A. Yes, sir.

Q. In what part of the mine did you work?

A. On the right hand section.

Q. Was that near where this cave occurred?

A. Right there.

Q. You say you don't know from your own experience whether the pillars were of sufficient strength to support the roof or not?

A. I did not examine them very closely.

Q. You mean by that you cannot tell because you did not measure them?

A. Yes, sir.

Q. From the indications there, the splitting of coal off the pillars, do you think from that that they were sufficient?

A. I thought there was an awful pressure on top, the way it was pressing the pillars.

Q. How long was that going on?

A. I was there about five months, and it was going on all the time. We had to work night at it.

Q. That would indicate there was a squeeze; that is, that the strata above had begun to move by reason of not being sufficiently supported?

A. Yes, sir.

Q. You say that was going on five months?

A. Yes, sir.

Q. What were you doing as a timberman in the meantime?

A. I was timberman on that section.

Q. Trying to relieve the pillars?

A. Yes, sir.

Q. What sort of props did you put up?

A. We put up cog pillars on one heading, right below this chamber where this water came in.

Q. Do you remember at any time seeing a pillar from the fifth vein drop down into the sixth?

A. No, sir.

Q. Don't know anything about that?

A. No, sir.

Q. You worked up until what time in this place?

A. I was there about two weeks before this disaster.

Q. Where did you go to work then?

A. Did not go to work any place.

Q. Why.

A. I went in there after the men got closed in to work a couple of nights.

Q. Why did you quit two weeks before the accident?

A. I was afraid of it. I did not care much about going in there nights.

Q. You were afraid of it?

A. Yes, sir.

Q. Because there were evidences there of a general squeeze?

A. There was nothing there to keep me. They used to send me home on breaker time when there was work for us.

Q. So that it may appear plainly on the record, what do you mean by breaker time?

A. The shaft would quit at three o'clock, and they would work to four, but when the breaker would be idle we would be idle.

Q. This squeeze was going on all the time?

A. Yes, sir; off and on.

Q. What do you mean by "off and on?"

A. Sometimes she would settle. You would hear a roar sometimes and at other times you would not.

Q. Sometimes you would hear the roar and see the pillars chipping and then that would cease for a while?

A. Yes, sir.

Q. Did that increase in volume as time went on?

A. Yes, it seemed to keep up the same way right along.

Q. Now you say that the breasts were driven from twenty-four to thirty and sometimes more than that in width?

A. I don't know whether that is right or not; I never measured them.

Q. That is your best judgment?

A. Yes, sir.

Q. You say you form that judgment by sometimes picking up a thirty foot iron rail and turning it around?

A. Yes, sir.

Q. You would not raise one end up in the corner and the other end down in the ditch to do that?

A. No, sir.

Q. You could take it up and swing it?

A. I don't say you could do that every place.

Q. Could you do it in any of the gangways?

A. Never tried it there.

Q. But from what appeared to be the width of the chambers you would judge that the gangways were about twenty-four feet wide?

A. Some of them more.

Q. And you say that some places the roof between the fifth and sixth veins was so soft that you could bore a hole in with a ratchet?

A. Yes, sir.

Q. Do you know how thick it was; the rock between the fifth and sixth veins?

A. It used to vary from eight, nine to ten, as high as forty.

Q. From the knowledge that you have had in working in other mines, state whether or not, in your opinion, you consider that that mine was worked safely?

A. All the mines I ever seen that was the worst gutted out mine I ever seen.

Q. You do not think it was worked safely?

A. I should judge not.

By Mr. Wheaton:

Q. Was there a thirty foot T rail inside of that mine anywhere?

A. I should think so.

Q. Do you know of your own knowledge that there is a thirty foot T rail in that mine anywhere?

A. No, sir; I do not.

Q. Is not the longest length of T rail twenty-six feet?

A. I know of them fourteen and sixteen; we used them in the rock work.

Q. What is the idea of turning a T rail around in a chamber?

A. Sometimes we would get a kink in it.

Q. If you cannot get it out of the chamber without turning it around, what is the object of turning it around?

A. As I said before, sometimes there is a kink in the rail and we wanted it the other way and we turned it around to use it.

Q. How long before you quit there were you working on breaker time?

A. For two months.

Q. Then you were working on breaker time because there was no timbering to be done?

A. That is what I judge; yes, sir.

By Mr. McGovern:

Q. There was timbering to be done while the breaker worked, wasn't there?

A. Yes, sir.

Q. Before you would have the timbering completed they would give the signal?

A. Yes, sir.

Q. And you would go in next week to finish the same job?

A. Yes, sir.

Q. And the squeeze was going on the same?

A. Yes, sir.

William Siley, sworn by Inspector Stein, testified as follows:

By Inspector Stein:

Q. What is your occupation?

A. Mining engineer.

Q. For whom?

A. The Lehigh Valley Coal Company.

Q. Where is your office?

A. Coal Exchange Building, Market street, Wilkes-Barre.

Q. Were you in the habit of making periodical visits to this colliery to extend the maps?

A. Yes, sir.

Q. Have you been the engineer for sometime at this colliery?

A. I go to a number of different collieries.

Q. You were always sent to this colliery to extend this map?

A. Yes, sir.

Q. Did your employers give you any instructions to dictate to the operators what sized pillars should be left in this colliery?

A. Not that I know of.

Q. You did not give any instruction as given you by your employers?

A. No, sir.

Q. Have you made these surveys, plotted them and extended them on these maps in all sections of this colliery?

A. This side of the shaft toward the river.

Q. Didn't you survey the other sections of the colliery in order to show the relative position of the coal mined in the land belonging to the Lehigh Valley Coal Company with other lands?

A. No, sir; only what is on these maps; all that we surveyed there.

Q. You only surveyed the opening made on your own lands by the Newton Coal Company?

A. No, sir.

Q. You made no surveys on other lands?

A. Adjoining collieries we have.

Q. You did not make any surveys of the adjoining lands that the Newton Coal Company mined in connection with this particular colliery?

A. No, sir.

Q. Have you got the workings of the entire colliery on your map?

A. No, sir.

Q. Only your own land?

A. Yes, sir.

Q. Are the Nos. 5 and 6 veins on the lands of the Lehigh Valley Coal Company?

A. Yes, sir.

Q. Did you take any notice of the size of the pillars in this mine?

A. When we surveyed them we did.

Q. How did you measure the size of them?

A. Why, we measured the offsets on the ribs going up and then we measured the thickness through the pillar.

Q. Did you survey from the main transportation openings?

A. We surveyed everything.

Q. And took offsets and measurements on either side?

A. Yes, sir.

Q. Did you also go through the headings from one chamber to another?

A. All of them that are open so that you can get through.

Q. How often do you make the surveys?
A. Every four to five months.
Q. Three times a year?
A. Sometimes oftener, just as the chance is.
Q. And this is a correct map of the colliery as you made it?
A. Yes, sir.
Q. You did not take any notice of the engineer belonging to the Newton Coal Company?
A. He ran independent surveys to us altogether.
Q. Has it ever occurred to you to compare your surveys with the Newton Coal Company surveys?
A. I think we compared them once; sometime ago, though.
Q. How did they compare?
A. Fair. Of course we did not agree exactly. We could not get line over line.
Q. You did not set up you instrument with measurements of the other engineer?
A. We have separate marks entirely.

By Mr. McGovern:

Q. You were employed by the Lehigh Valley Coal Company?
A. Yes, sir.
Q. How long have you been employed by them?
A. I have been there about twelve years.
Q. You learned mining engineering with the Lehigh Valley corps, did you?
A. Yes, sir.
Q. You are not a graduate of any mining school?
A. No, sir.
Q. You made these maps?
A. Yes, sir.
Q. And the only surveys you make is at the request of the Lehigh Valley Coal Company?
A. Yes, sir.
Q. They are the lessors of some of this coal?
A. Yes, sir.
Q. And your surveys are to watch the Newton Coal Company to see how much they take out?
A. Yes, sir.
Q. They are not made with any idea of regulating the mining of coal?
A. No, sir.
Q. Just to ascertain how much coal is taken out?
A. They do not tell us what they want them for. They tell us to go and make the surveys and we make them.

Q. You never checked up your survey with the surveyor of the Newton Coal Company to see whether you compared?
A. Sometime ago.
Q. How long ago?
A. I should judge it would be two years; close on to it.
Q. Now, when you made a survey and measured the pillars in a new piece of working, you put that upon your map then as shown at that time?
A. Yes, sir.
Q. Do you subsequently ever measure those pillars again?
A. If there is anything done to them we do.
Q. Unless your attention is called to them you do not?
A. That is what we go around for. We are supposed to go to see those things.
Q. Did you take your map and compare every pillar?
A. If there is a road in around any pillar.
Q. Unless you see some indications on the ground there that the pillars has been tampered with, you do not do it?
A. We go around often enough to notice those things.
Q. You go in only once or twice a year?
A. We go in every four or five months.
Q. When were you in there the last time?
A. April first.
Q. When were you in before that?
A. I think it was the latter part of November.
Q. The Newton Coal Company could take part of a pillar off and remove traces on the ground there of having so taken it off between your surveys, couldn't they?
A. Without our noticing it—hardly.
Q. What would call your attention to it if they had taken the traces off the ground?
A. We could notice it. Any road that had been worked we would notice very readily. We go around for that information. If we find a road into a place we can tell whether it was working at that time or not.
Q. If a chamber is being driven up and it passes two or three pillars, and the road is on the ground there, and it was driven between your two surveys, couldn't they take off part of those pillars and load it up there without your noticing it?
A. We would go into that chamber again when we come.
Q. Could not some of the pillar be taken off so as to weaken it without your noticing it?
A. No, sir; not very well. I don't see how it could.
Q. So you depend upon your observations to find out whether these pillars have been reduced or not?

A. We always have a copy of the map with us.

Q. You do not make any measurements unless you see some signs or indications that draw your attention to a pillar as having been tampered with?

A. The marks we have in the mine. If we have marks in the mine we know just how close we are to the pillar.

Q. What kind of marks?

A. Paint marks.

Q. On the pillar?

A. No, sir; on the roof.

Q. You have surveyed in a good many mines in this valley?

A. Yes, sir.

Q. How wide did you notice the gangways to be there?

A. What particular point?

Q. Where this cave-in took place?

No answer.

Mr. Wheaton:

I offer the map in evidence, showing the surveys from the Lackawanna river north to the head and foot of slope No. 3, and covering this ground where the cave is supposed to have originated. Of course south of the Lackawanna river I do not understand there are surveys, but on what is known as the Bank Farm there he has surveys and of course we offer that map.

Mr. McGovern:

What is the purpose of this offer?

Mr. Wheaton:

When the Mine Inspector's map was offered to the Commission an objection was made that it was furnished by the engineers of the Newton Coal Mining Company. The object of that objection was to cast discredit on that map. We offer a map that is made by an entirely independent corps of surveyors in behalf of the landlord, who would not be assumed to be friendly with the Newton Coal Company, and we ask permission to compare those maps, and we say that the scale will show that the pillars and gangways and airways and the chambers, as shown by these two maps, are practically identical. We think that this is independent evidence to establish the verity of the Mine Inspector's map.

Deputy Attorney General:

I think it is quite proper that the map should be offered in evidence. If there are any other maps we would be glad to entertain them, and

if there is any evidence to show that these maps are incorrect or that the pillars, gangways, &c., are not as represented by these maps, that will also be admitted.

Inspector Stein:

The Commission wants to know the condition of this mine, and the counsel can have the benefit of pointing out any discrepancies that may be in these maps and asking any question in regard to them. All the Commission wants to know is the condition of these mines. We want tracings that will give us the size of the pillars and all that and we can get that information best from maps. If the maps are incorrect and you can discover that from this witness or any other witness, I think it would be a very proper subject of inquiry.

Deputy Attorney General:

I think you will quite agree that we cannot follow the technical rules of evidence in an inquiry of this sort, and all that we desire to know, in the best way that we can obtain it, is what the condition of this mine is and was at the time of this accident. Now this may be offered as an original map or it may be offered to corroborate some other, but the Commission will admit it just to show the condition of the mine.

Mr. Wheaton:

The witness has testified that this is an independent survey, and it seems to me that, as a purely independent piece of testimony, showing the width of the gangways, airways and the size of the pillars, that, whether it agrees or not with the Mine Inspector's map, the Commission ought to take it.

Deputy Attorney General:

The Commission will receive the map and take into consideration all discrepancies.

By Mr. McGovern:

Q. Take that map and give us the width, from the scale of the map, of the gangways and airways in the fifth and sixth veins of the Twin Shaft, starting at the foot of No. 3 slope in either the fifth or the sixth vein?

A. At the foot of the sixth vein, the gangways are fourteen feet wide.

Q. What is the gangway running off the slope?

A. It is about sixteen feet.

Q. Run along that a thousand feet and give us the average.
A. It is about eighteen.
Q. I wish you would take that map furnished the Commission by the Newton Coal Company and measure the same points and tell us what they are. Take a thousand feet from the foot of No. 3 slope.
A. That is about fourteen there where the two roads turn off, the foot of the slope.
Q. Take the main gangway a thousand feet from the foot?
A. It is about sixteen.
Q. Now examine the gangway around in the fifth and sixth seams and see if the average width is twenty-two feet; any of them in the fifth and sixth veins where the squeeze occurred. Take the whole gangway?
A. This is the gangway here in the sixth.
Q. Measure this one?
A. That is sixteen feet there.
Q. What is it up here?
A. Sixteen feet.

Hugh McDonald re-called:

By Mr. McGovern:

Q. Will you please point out on the map the gangway that you stated was 22 feet wide.
(The Inspector designated the gangway by pointing.)

Examination of William Siley resumed.

By Mr. McGovern:

Q. What do you find the average to be?
A. I only scaled the two.
Q. You gave the average.
A. Yes, sir.
Q. What is that? What is it of this gangway here where the cave-in occurred?
A. Twenty-seven feet.
Q. Now what is it at that point now, the main gangway? What does that scale indicate that that width is there?
A. I would call it thirty the way you measure it.
Q. You measure it?
A. It is thirty that way, too.
Q. At what point did you make this main gangway fourteen feet?
A. Right along here. (Indicating.)
Q. Let us see you measure fourteen feet there.
(Witness measures the gangway.)

Q. Is that a main gangway there?
A. Yes, sir.
Q. I understood you to say that it is two years since you checked the map?
A. It is two years as near as I can remember.
Q. Therefore you have no knowledge as to whether the map furnished the Commission is exactly like yours at the present time.
A. As near as they can be made. We know that ours is correct.
Q. It was two years ago that you compared them?
A. Yes, sir; and they compared.
Q. But since that time you cannot tell?
A. No, sir.
Q. In surveying and making maps there did you ever compare the pillars in the fifth vein with the pillars in the sixth to see whether they were directly over each other?
A. Yes, sir.
Q. How did you find them?
A. Why, I think they are as nearly over as they can be driven. They cannot be driven to an inch.
Q. So they are all directly one over the other?
A. Practically speaking.
Q. Are they one size in both veins?
A. I think they are both one size.
Q. Do you know from your knowledge of the measurements that you made?
A. That is on the map now?
Q. Yes, sir.
A. I think that they are. I cannot swear to it. I cannot tell every foot of ground from memory.
Q. You. can tell from that map the size of the pillars in the sixth vein, can't you?
A. Yes, sir.
Q. And you also can tell from the map the size of the pillars in the fifth vein?
A. Yes, sir.
Q. Suppose you take that pillar there (indicating)—a very big one along that main gangway, and give us the size of that in square measurement. Measure it in the sixth vein and give us the square measurement.
A. One hundred and twenty five feet on one end and fifty on the other.
Q. Give us the measurement of the one right directly over it.
A. There is not any over it; the fifth vein is not mined there. This over here indicates the fifth vein.
Q. Well, take that right there. These two veins are mined there. Take that pillar there. The black mark is in the sixth, isn't it?

A. Yes, sir. That measures thirty-five feet across there.

Q. What is the length of it?

A. Forty that way and sixty the other side.

Q. One side is forty and the other sixty; about twenty-five on the average?

A. Yes, sir.

Q. Is there a pillar directly over it?

A. Yes, sir; it covers a part of it.

Q. How much of that pillar that is over it extends out over the roof?

A. About five feet.

Q. Put your scale on it.

A. (Measuring) There it is seven feet and the lower end it is not over two feet.

Q. How far over the end of it does it extend there?

A. Fifteen feet.

Q. Over the end of it?

A. That is a cross cut there, as you call it.

Q. That is a pillar there in the sixth vein, isn't it? (Indicating.) Just measure that.

A. An average width of twenty feet.

Q. What is the length of it?

A. Twenty-three feet.

Q. Now that red tracing over that represents a pillar right over it in the fifth vein, doesn't it?

A. Yes, sir.

Q. Give us the length and width of that.

A. That is forty-two feet long.

Q. How many feet wide?

A. Twenty-five feet.

Q. How much of it rests directly over the pillar that you measured in the sixth vein?

A. Fifteen feet. The pillar is twenty-five feet wide and forty-five feet long.

Q. How many feet of it rests right over the other pillar?

A. Fifteen feet.

Q. Rests on the other pillar?

A. Yes, sir.

Q. So then there are thirty feet of that pillar with no support except these eight or ten feet of strata that is between the fifth and sixth vein. Is that right?

A. That pillar in the bottom catches two pillars in the top vein.

Q. The red is the top, isn't it?

A. Yes, sir.

Q. Is there anything under that pillar except this strata and the other thirty feet of that pillar?

A. I cannot tell you whether there is anything under it or not.

Q. From the map here?

A. No, sir.

Q. The map indicates that there is nothing under it, and that is the way they run all the way through where these two seams are worked together?

A. I cannot say that.

Q. Judging from that map there.

A. I would not say that they all run that way, just at that particular spot.

Q. They do not run the same in length and width; they overlap one another, some of them standing there without support?

A. When you drive mines you cannot do it to an inch.

Q. Don't you think thirty feet is a big margin out of forty-five?

A. That is only in that particular spot there.

Q. Take that one there. (Indicating.) Just measure the black one first?

A. The length of it is forty feet.

Q. Now the width?

A. At the bottom it is twenty feet.

Q. At the other end?

A. Thirteen feet.

Q. That would be an average of about sixteen feet, wouldn't it?

A. Yes, sir.

Q. Now you have given the measurements of a pillar that is in the sixth seam or vein?

A. Yes, sir.

Q. Will you kindly give me the measurements of the one in the fifth?

A. That is fifty feet and the bottom of it is about forty-three feet, and the top of it is twenty feet.

Q. What is this long portion?

A. That is an offset in there. On the bottom it is forty feet.

Q. So that that is a great deal larger than the other pillar that part of it rests on?

A. Do you mean the top one?

Q. This top pillar is larger than the other that it rests on?

A. No, sir; not much.

Q. Do you mean to say that this pillar here that we just scaled —

A. We scaled this in the top and we scaled this in the bottom.

Q. I am asking you about this. Isn't the pillar that is in the upper vein much larger than the one that is under it?

A. Oh, yes.

Q. Now, how much of this one in the top stands over the one in the bottom; that end of it?

A. Why, about fifteen feet.

Q. So there is a portion of the pillar, about five by twenty, that has nothing to support it except this strata of rocks between the two veins. That is right, isn't it?

A. Yes.

By Mr. Wheaton:

Q. Does that map represent accurately to the scale the pillars in those workings?

A. I don't know anything about this map.

Q. I mean your map now. Does it represent accurately to a scale the pillars in those workings?

A. Yes, sir.

Q. And the width of the gangways?

A. Yes, sir.

Q. And the width of the airways and slopes?

A. Yes, sir.

Q. And everything that is represented on that map is represented accurately to the scale?

A. Yes, sir.

Q. Does it represent the correct location of the pillars in the fifth and sixth seams there?

A. Yes, sir.

By the Deputy Attorney General:

Q. You stated that you make maps for a number of mines in this locality. You have also stated that the pillars in the upper seam are larger than the pillars in the lower seam in this particular section. State whether that is customary in the mines for which you make maps, to have the pillars in the upper seam larger than the pillars in the lower seam?

A. They usually get them about the same if they can drive them in that way; when they drive one directly over the other and when there is rock between the two veins.

By Mr. McGovern:

Q. Does your map show the pillars in the sixth vein in black and the pillars in the fifth vein in red, the same as that Commonwealth map?

A. I believe so; yes, sir.

John B. Law having been requested to produce Mr. McCormick's record book, here handed it to the Commission. The last entry in said book was that of June 27, 1896. It was put in evidence without objection, counsel for the relatives of the entombed miners admitting that it is Mr. McCormick's record.

Martin Haley, sworn by Inspector Stein, testified as follows:

By Inspector Stein:

Q. What is your occupation?

A. Mining.

Q. Where are you at present occupied as a miner?

A. At the Twin shaft.

Q. Were you working up there at the Twin shaft until the day of the accident?

A. Yes, sir.

Q. Do you work on the gangways or in the chambers?

A. Gangway miner.

Q. In which gangway?

A. Well, I could not tell exactly where it was located. It was off in No. 3 slope, going off toward the bend of the river.

Q. Didn't you know that gangway by name from any other gangway in the colliery?

A. They never give me any name for it.

Q. What is your age?

A. It is about thirty-five.

Q. How long have you been a miner?

A. About fifteen years.

Q. How long at this particular colliery, the Twin shaft?

A. I have been there in that shaft since I have been a boy.

Q. Just state to the Commission what you know of the condition of this colliery prior to the cave in on the 28th of June?

A. I don't know the condition of it except that night when I went out. I was asked to go in to timber. I went in along with the rest of the men, and when they went in, or rather before they went in, there was two men came out and one of them come out without a hat. They had found some gas and went off for the fire boss. He went around to make an inspection of the place before they would let the men go to work, and they could not go around to make connections, and when Delaney and Hughes came back they said this inside branch was loaded with gas. So I made up my mind that I would get out of there, and therefore I came out. Any further than that I did not hear of any squeeze only just what they said; that it was squeezing right into the fifth vein, and one of the men backed out along of going in with the fire boss there, and he called

this Con McQuire, and he went with him, and the other one came back and went out for McCormick. So that is all I know about it.

Q. What was the date of the last day you mined coal there?

A. I think it was on Friday.

Q. The 26th?

A. I think so.

Q. Was the condition of the colliery on the 26th, or on any day prior to the 26th, such as would lead you to believe that it was unsafe for you to work there?

A. No more than on this heading road that we traveled out we could hear the miners very plainly drilling and the roof looked very suspicious and the pillars began to chip. Whether it was because of the air or the squeeze I don't know.

By Mr. Gillespie:

Q. What day was that?

A. The last day we were coming out, on the 26th.

By the Deputy Attorney General:

Q. How long was that before the accident?

A. On the Friday before.

Q. And the accident happened on Sunday morning?

A. Yes, sir.

By Inspector Stein:

Q. Did you call the attention of any of the officials to the condition of that place?

A. No, sir.

Q. I merely asked that question to find if you had called the attention of the general inside superintendent or any of his subordinates to the fact that there was any danger existing?

A. I did not say nothing to them about it. I did not say nothing after we left the foot of the slope, until I was coming out and then I did not say anything about it.

Q. On any day prior to the 26th, did you notice any unusual or extraordinary cracking or squeezing?

A. No, sir.

Q. Did you, in your opinion as a practical miner, consider it safe to work there?

A. I thought it was safe if they had not said the squeeze was coming; if it had not shoved the gas out I would have worked that night. I was afraid a fall might come before they got that gas out. It was not proper to stay just where they were staying.

Q. What kind of a lamp did you use?

A. I was using my naked light. We had not started to work.

Q. Did you think yourself safe in working with a naked light there?

A. Right there where we were sitting; it was quite a distance off from it.

Q. In view of the fact that there was considerable gas giving off there, don't you think it was proper that safety lamps should have been absolutely used?

A. They had not known that in the first place until they went down and made an investigation.

Q. Well, in view of the fact that we have periodical explosions and men burned, where there is perhaps very little gas given off, would you not be in favor of using safety lamps absolutely?

A. Yes, sir.

Inspector Stein:

I ask this question because he is a practical miner, so that we can use his opinion afterwards.

By Mr. O'Boyle:

Q. As I undestand, previous to this day of the cave in you were not in that portion of the mine; you were away in No. 3?

A. Away on the inside.

Q. How far, in your opinion, is that from this portion of the mine that caved in?

A. It must be two or three thousand feet.

Q. So that there could be dangerous conditions existing at this point of the mine without your knowledge of it, two or three thousand feet away?

A. Yes, sir.

Q. You were not down in that region where the cave occurred?

A. No.

Q. The only knowledge that you have of it is such as came to you as hearsay; what others told you around about the place?

A. That is all; just what the men told me as I was coming in that evening.

Q. Do you know anything of your own knowledge about the width of the gangways and the size of the pillars down in the red ash, No. 5 and 6 veins?

A. No. 3 is fourteen feet wide, low down.

Q. That is where you worked?

A. No. 3 slope; yes, sir.

Q. But I mean now down here where the cave came, where the crash was?

A. I don't know anything about it.

Q. Did you work there at any time?

A. I drove the straight road all the way.

Q. That is, entering in from the foot of this slope where the cave came?

A. Yes, sir.

Q. You drove the slope. Did you drive the gangway?

A. I worked right straight down until they went up straight to the top of this hill.

Q. How wide was the gangway when you drove it?

A. Fourteen feet.

Q. When it was originally driven it was fourteen feet?

A. Yes, sir.

Q. At all points?

A. No, it might vary a little in some places; we might gain a little bit.

Q. One hole might blow a little wider than the others?

A. Yes, sir.

Q. Did you go in along that gangway as far as where the pump is?

A. No, I have the straight slope all the way down.

Q. You did not go beyond the slope, did you?

A. Yes, I went straight up to where they stopped that heading.

Q. Can you point out on the map what point that is?

(Map shown to witness.)

A. You would have to pass through this district in coming up?

Q. You were down, then, at the extreme end of what is known as No. 3 slope, away beyond where the cave in occurred?

A. Yes, sir.

Q. Did you come out along that slope on the day of the accident or the day before it?

A. No, sir.

Q. Which way did you come out before it?

A. Just at the end of this passage way at the foot of the slope.

Q. Now, the pump was said to be about where the letter "A" is here. Mr. McDonald, I'll ask you that question. The pump was about where the letter "A" is here?

Mr. McDonald. Yes, sir.

By Mr. O'Boyle:

Q. Which way did you go when you came out the last day you were in the mine?

A. Why, some place along in here.

Q. Now, you drove this No. 3 slope all the way from the bank territory to the extreme end of the mine. That was your work, and in coming out on the last day that you were in the mine, you did not come out again through the No. 3 slope portion, but you took a short ———

A. No, no; we come straight into the foot of the slope, of No. 3. We come off down in here.

Q. Being in here, where did you get out; just point out to us?

A. I don't know exactly how we got out.

Q. Did you go out on No. 2 slope?

A. We went back of the shaft and across No. 2 and into No. 3.

By Inspector Stein:

Q. Did you go down by the stable?

A. We went past the stables when we went in.

By Mr. O'Boyle:

Q. Well, then, where were you working just before you were called down to this point?

A. Down at the foot of the slope and turned off to the left.

Q. So that there was only the outlying portion here of this territory that you came in contact with either in going to or in coming from your work. On this last day that you went in you were called down here to the extreme end of No. 3?

A. At the foot of the slope.

Q. Did you hear any workings of the mine there?

A. I did not hear no workings.

Q. On that last day that you were in at the foot of the slope, did you hear any working of the mine?

A. I heard one crack when I was going in in the morning.

Q. You did not know what that was?

A. No, sir.

Q. Did you observe anything peculiar about the width of the gangway there?

A. It was about twenty-four feet wide there.

Q. Did you drive that gangway yourself?

A. Not that one.

Q. Did you ever drive or work on that gangway that you observed was twenty-four feet wide there?

A. No, sir.

Q. The other gangways that you worked were off in another direction, were they, and those you say were fourteen?

A. Yes, sir.

Q. So. that when you were working along this gangway you did not hear any creaking or any sounds that were down in the gangways and workings where they were twenty feet wide or thereabouts?

A. No, sir.

By Inspector Stein:

Q. In driving down there did you notice bursting out of coal in the face of the gangway?

A. In which gangway?

Q. In any gangway?

A. Not any more than what the air would chip off. The air used to slacken them and a piece would fall off.

Q. On the heading or on the face of the gangway?

A. Just along the face of the pillars.

Q. Not in the face of the gangway as you would advance?

A. No, sir.

Q. Have you benches of coal there?

A. Yes, sir.

Q. How far from the top of the vein?

A. It was eighteen inches, the top over; it was a foot or fourteen inches.

Q. Did you use blasting material to displace the coal?

A. Yes, sir.

Q. When you fired the shot did you notice the effects?

A. Nothing more than usual. Sometimes if we had a good chance it would blow a foot ahead.

Q. Did you ever have occasion to take your drill and punch any detached pieces to get them down as to make it safe?

A. Yes, sir.

Q. And while you were punching would that coal burst in your face?

A. It would naturally burst in your face if you were working it out; that is the nature of the coal.

Q. The nature of the coal is rather hard?

A. It would fall if you would start to work either with a pick or drill after you had powder in.

By Mr. O'Boyle:

Q. How wide are they driving gangways now or were they before the accident?

A. The last one I saw drove was fourteen feet.

Q. How about the other gangways?

A. I don't know anything at all about them because I was not in them.

Q. You never went into any gangways but your own?

A. The one alongside mine.

Q. How wide was that?

A. Fourteen feet.

Q. That portion of the mine is not caved now?

A. I could not tell you anything about it.

Q. Was your last job for the Newton Coal Company driving gangways?

A. Yes, sir.

Q. And you drove them up to the time that the cave came?

A. Yes, sir.

Deputy Attorney General:

I would like to state, for the information of the attorneys and all others in interest, that it is agreed by all parties that the investigation will now be adjourned until next Thursday, in the hope that the attorneys who are interested can by that time consult with their witnesses and obtain from them all the evidence they want to submit. We desire to say that outside of that we shall be glad to receive any evidence of a relevant character that anyone may wish to offer in this matter. We hope, however, that all the witnesses will be prepared so that the investigation can be closed after it has been commenced next Thursday.

(Adjourned until 10 o'clock A. M., Thursday, July 16, 1896.)

Thursday, July 16, 1896.
Morning Sessions.

Mine Inspectors Stein, Roderick and Brennan recovened at St. Aloysius Hall, Pittston, at 10 o'clock, Inspector Stein presiding.

Present:

Attorney General Henry C. McCormick for the Commonwealth.

E. F. McGovern, P. A. O'Boyle and Wm. H. Gillesepie for the families of the entombed miners.

F. W. Wheaton for the Newton Coal Company.

John B. Law, re-called, testified as follows:

By Mr. McGovern:

Q. Mr. Law, state whether you furnished a list containing the names of the men entombed to the Commission?

A. We did, sir; we furnished not only a list of the men entombed but also a list of the men with their families, whether married or single and the number of children.

Q. And those men have been entombed there since when?

A. Since the morning of the 28th day of June.

Q. And that list is correct so far as you know.

A. So far as we know. We have made a house to house canvass so that there might not be any errors.

Q. And none of those men have been recovered?

A. None of them have been recovered.

Q. So far as your knowledge goes they are at present entombed.

A. They are so far as my knowledge goes.

By the Attorney General:

Q. Mr. Law, is the list to which you refer a list handed to the chairman of this Commission by Mr. Fuller on the 9th inst?

A. It is, yes, sir.

NAMES OF MEN AND BOYS ENTOMBED IN TWIN SHAFT, OF NEWTON COAL MINING COMPANY, JUNE 28th, 1896; ALSO NAMES OF ALL PERSONS DEPENDING UPON THEM.

Number of men.	Names.	Relation to deceased.	Age of children.	Number of orphans.	Total number persons dependent.
	Mary Langan,	Wife,			
1	M. J. Langan—				
	James Langan,	Child,	19		
	Ambrose Langan,	Child,	17		
	Mary Langan,	Child,	15		
	Edgar Langan,	Child,	13		
	Michael Langan,	Child,	11		
	Vincent Langan,	Child,	9		
	Richard Langan,	Child,	7		
	Maggie Langan,	Child,	5		
	Theresa Langan,	Child,	3		
	Regenia Langan,	Child,	5 mos.	10	11
2	Alexander McCormick—				
	Catherin McCormick,	Wife,			
	Ethel McCormick,	Child,	15		
	Alex. McCormick, Jr.	Child,	13		
	Vergenia McCormick,	Child,	11		
	Robert McCormick,	Child,	9		
	Mary McCormick,	Child,	8		
	Lenox McCormick,	Child,	6		
	Arthur McCormick,	Child,	4		
	Alice McCormick,	Child,	2	8	9
3	Anthony Gordon—				
	Nora Gordon,	Wife,			
	Irene Gordon,	Child,	1½		
	Mary Gordon,	Child,	22 mos.	2	3
4	Patrick Ruan—				
	Mary Ruan,	Wife,			
	Winnie Ruan,	Child,	16		
	Peter Ruan,	Child,	14		
	Michael Ruan,	Child,	12		
	Mary Ruan,	Child,	10		
	Thomas Ruan,	Child,	9		
	Sarah Ruan,	Child,	6		
	Patrick Ruan, Jr.,	Child,	4		
	Joseph Ruan,	Child,	2	8	9
5	M. T. Lynott—				
	Mary Lynott,	Wife,			
	Bridget Lynott,	Child,	14		
	Clara Lynott,	Child,	12		
	Joseph Lynott,	Child,	10		
	Robert Lynott,	Child,	6		
	Margaret Lynott,	Child,	4		
	Mary Lynott,	Child,	2 weeks,	6	7
6	Edward Gildea—				
	Annie Gildea,	Wife,			
	Mary Gildea,	Child,	7		
	Alice Gildea,	Child,	6		
	James Gildea,	Child,	5		
	Thomas Gildea,	Child,	3		
	Edward Gildea,	Child,	1½	5	6
7	James Wall.				
8	Thomas Wall (son)—				
	Rose Wall,	Wife,			
	Raymond Wall,	Child,	17		
	Edward Wall,	Child,	20		
	Peter Wall,	Child,	15		
	Nellie Wall,	Child,	12		
	James Wall,	Child,	8		
	Leo Wall,	Child,	6		
	Terrance Wall,	Child,	1	7	8
9	Simon Mosock—				
	Rose Mosock,	Wife,			
	Tilley Mosock,	Child,	6	1	2

Number of men.	Names.	Relation to deceased.	Age of children.	Number of orphans.	Total number persons dependent.
10	Frank Sheskie—				
	Mary Sheskie,	Wife,			
	Veronica Sheskie,	Child,	10		
	Nellie Sheskie,	Child,	8	2	3
11	Andrew Slavinski—				
	Lizzie Slavinski,	Wife,			
	Veronica Slavinski,	Child,	5		
	Stanley Slavinski,	Child,	1	2	3
12	Daniel Ward—				
	Maggie Ward,	Wife,			
	Anna Ward,	Child,	5		
	Thomas Ward,	Child,	3		
	Dan. Ward,	Child,	7 mos.	3	4
13	Thomas Gaffney—				
	Mary Gaffney,	Wife,			
	Nellie Gaffney,	Child,	15		
	Agnes Gaffney,	Child,	13		
	Mary Gaffney,	Child,	11		
	Terrence Gaffney,	Child,	8		
	Thomas Gaffney,	Child,	4		
	Irene Gaffney,	Child,	1	6	7
14	Peter Zavachan—				
	Rose Zavachan,	Wife,			
	Joseph Zavachan,	Child,	14		
	Dominic Zavachan,	Child,	12		
	Austin Zavachan,	Child,	9		
	Peter Zavachan,	Child,	3		
	Francis Zavachan,	Child,	2		
	Charles Zavachan,	Child,	1	6	7
15	Joseph Zerenda—				
	Annie Zerenda,	Wife,			
	August Zerenda,	Child,	17		
	Joseph Zerenda,	Child,	13		
	Lizzie Zerenda,	Child,	8		
	Annie Zerenda,	Child,	5		
	Stephen Zerenda,	Child,	7 mos.	5	6
16	John Gill—				
	Elizabeth Gill,	Wife,			
	Catherine Gill,	Child,	3	1	2
17	Peter Martin—				
	Mary Martin,	Wife,			
	Peter Martin,	Child,	4	1	2
18	Michael Hughes—				
	Mary Hughes,	Wife,			
	Kate Hughes,	Child,	1½	1	2
19	James Goldon—				
	Catharine Goldon,	Wife,			
	Marie Goldon,	Child,	2	1	2
20	Cornelius McQuire—				
	Margaret McQuire,	Wife,			
	James McQuire,	Child,	4		
	Mary McQuire,	Child,	1	2	3
21	John O'Boyle—				
	Mary O'Boyle,	Wife,			
	Nora O'Boyle,	Child,	1	1	2
22	Thos. W. O'Brien—				
	Ann O'Brien,	Wife,			
	James O'Brien,	Father,			
	Catharine O'Brien,	Mother,			3
23	James McDonnell—				
	Francis McDonnell,	Wife,			
	Evaline McDonnell,	Child,	7		
	Roy McDonnell,	Child,	3	2	3
24	Mike Ganghan—				
	Mary Ganghan,	Mother,			1
25	John Kehoe (widower)—				
	Mary Kehoe,	Child,	16		
	Annie Kehoe,	Child,	12		
	Thomas Kehoe,	Child,	14	3	3
26	John Gaffney—				
	Margaret Gaffney,	Mother,			1

Number of men.	Names.	Relation to deceased.	Age of children.	Number of orphans.	Total number persons dependent.
27	Adam Zuniden—				
	Ellen Zuniden,	Wife,			
	John Zuniden,	Child,	3	1	2
28	Anthony Taleski—				
	Fannie Taleski,	Wife,			
	William Taleski,	Child,	2	1	2
29	Patrick Bolin—				
	Kate Bolin,	Sister,			
	Maggie O'Boyle,	Niece,	16		
	John O'Boyle,	Nephew,	14	2	3
30	Anthony Kaul, Jr.,—				
	Anthony Kaul, Sr.,	Father,			
	Bridget Kaul,	Mother,			
	Sarah Kaul,	Sister,			3
31	John Hart—				
	Patrick Hart,	Father,			
	Bridget Hart,	Mother,			2
32	James Daley—				
	Bridget Daley,	Mother,			1
33	Edward Delaney—				
	Annie Delaney,	Wife,			
	Edward Delaney,	Child,	10		
	Frank Delaney,	Child,	8		
	James Delaney,	Child,	4		
	Anna Delaney,	Child,	2	4	5
34	John Highstrick—				
	Ellen Highstrick,	Wife,			
	Mary Highstrick,	Child,	7		
	August Highstrick,	Child,	5		
	Susie Highstrick,	Child,	1	3	4
35	Thomas Tenpenny—				
	Alice Tenpenny,	Wife,			
	Rosena Tenpenny,	Child,	8		
	Isabella Tenpenny,	Child,	6		
	Florence Tenpenny,	Child,	4 mos.	3	4
36	Sylvester Doner—				
	Barbara Doner,	Wife,			1
37	Mike Connell, single.				
38	Thos. Cardon—				
	Selina Cardon,	Wife,			
39	Dominic O'Malley, single.				
40	James Costello, single.				
41	Thomas Barrett, single.				
42	Peter Joyce—				
	Kate Joyce,	Wife,			1
43	Thomas Murphy, single.				
44	Anthony Covoleskie, single.				
45	Anthony Nohinskie, single.				
46	Lee Owen, single.				
47	Timothy Derrig, single.				
48	Patrick Kelley, single.				
49	Mike Ford—				
	Mary Ford,	Wife,			1
50	Martin Gilbride, single.				
51	Frank Kehoe, single.				
52	Robert Haston, single.				
53	M. J. Burke, single.				
54	James Burke, single.				
55	Thos. Duhigg, single.				
56	Peter Bukoskie, single.				
57	John Cadarius, single.				
58	Matthias Taleskie, single.				

SUMMARY.

Married men,	39
Single,	38
Widows,	20
Orphans,	97

Examination of John B. Law, continued.

By Mr. McGovern:

Q. I do not think it appears in this record as to the kind of coal that was mined out of the fifth and sixth seams, and the kind of rock and the distance above it. Mr. Law, what kind of coal was in the fifth and sixth seams, what was it known as?

A. Anthracite coal.

Q. What particular kind?

A. The fifth and sixth vein.

Q. What vein—red ash?

A. It is known in some sections as the red ash, although it is not red ash coal.

Q. What kind of coal is it?

A. White ash coal.

Q. Is it of a brittle nature.

A. Yes, the sixth vein.

Q. More so than the fifth?

A. It is a good hard coal. In seasons of extreme warm weather it has a tendency to chip and fly, which is common in all mines where this vein is located.

Q. That is caused by the air acting upon the coal?

A. Yes, sir.

Q. It is known as checkered coal, isn't it?

A. There is checkered coal in all veins.

Q. In some veins there is more of it than in others?

A. Of course there is sometimes a larger percentage of checkered coal in some veins than in others.

Q. In some veins it predominates?

A. There are veins that are known as checker veins. We have less checker coal than there is in the veins that are called otherwise.

Q. Is there much of the checkered coal in this vein known as the fifth and sixth?

A. Not a great deal. There was more in the fifth than in the sixth.

Q. Was there a little sulphur running through it?

A. There was sometimes.

Q. Was there any sulphur between the roof and the vein?

A. Well, now, I think not; not that I know of.

Q. What was the distance, if you know, from the top of the fifth seam to the surface, over where this accident occurred?

A. It was about four hundred and five feet.

Q. Was that solid?

A. How do you mean?

Q. Solid from the fifth vein up to the surface?

A. Solid what? It was solid material.

Q. Solid anything?

A. So far as I know it was solid.

Q. There was nothing worked out?

A. No, sir.

Q. It is true, isn't it, that where the sulphur runs between the coal and the rock that that roof there is much more solid than where it is absent?

A. Not necessarily.

Q. Isn't it considered so among mining people?

A. Not generally; no, sir.

Q. Can you tell us what that four hundred and odd feet was composed of; whether it was composed of rock or clay?

A. At the bore hole that we bored—that is near the face of the workings—there was one hundred and forty-six or one hundred and forty-seven feet of sand and about two hundred and fifty-seven feet of rock.

Q. What sort of sand; common sand?

A. Dry sand.

Q. What kind of rock was it?

A. There was all kinds. There was sandstone, some little conglomerate. Then there was the Marcy seam; about sixty feet of rock, and there was the Marcy seam of coal. Then came the balance of the rock which lies between the Marcy and the lower vein, which is quite a hard rock.

Q. So then this four hundred and odd feet above the fifth vein consisted of rock, coal and sand?

A. Yes, sir.

By the Attorney General:

Q. What was the thickness of the rock that lay between the fifth seam and the sand?

A. There was about one hundred and eighty-seven feet.

Q. Of rock?

A. Yes, sir.

Q. Between the fifth seam which was worked and the Marcy seam which was not worked?

A. Yes, sir.

Q. What was the character of that two hundred and fifty-seven feet of rock?

A. A harder stone than ordinarily lies above the coal measures. We always consider the rock between the Marcy seam and the red ash the best rock there is in any of the coal measures. It is a harder strata.

Q. What was the thickness of what you style the Marcy seam?

A. It was about eight feet.
Q. And all above that was sand and gravel?
A. There was sixty feet of rock above that, about sixty feet.
Q. Sandstone?
A. Yes, sir.
Q. Then above that was the sand?
A. Yes, sir.

Mr. McGovern:

We will state that we had some witnesses that promised to be here, but they do not answer to their names, so that if the Newton Coal Company has any witnesses they might call them, and probably ours will come in in the meantime.

The Attorney General:

In order that we may know something of the probable length of the investigation, will you state the number of witnesses you expect to call?

Mr. McGovern:

About three or four.

Mr. Wheaton:

We have offered the maps here and are willing to produce anybody that the Commission wants to throw any light upon this subject, but we regard the Commission as composed of experts, and therefore we have felt some delicacy in calling anybody who has no personal knowledge of this matter at all, and who would testify simply as experts. If the Commission desires to hear any mine superintendents, mine foremen or anybody connected with the mines, anyone at any of the mines that we can get here, we will be glad to produce them. I would be glad to call Mr. Long or Mr. Stearns or Mr. Lathrop or Mr. Cook or anybody else that the Commission might suggest. I do not wish to suggest the names of experts, but if the Commission would suggest anybody in the expert line that they wish to hear, we would be glad to have them here.

Inspector Stein:

I think it would be well to have two or three experts.

Mr. Wheaton:

It seems a little like carrying coals to Newcastle to bring in experts to testify to experts, and that is the reason we have felt a delicacy about suggesting it.

Inspector Stein:

I suppose we could hear two or three experts who are intimately connected with the practical department of any colliery in the vicinity—adjacent collieries, for instance. Is there anyone in the room that might be called?

Mr Law:

There is nobody here now, but we can get them here in the afternoon.

The Attorney General:

Of course the same opportunity is open to the counsel representing the miners.

Mr. O'Boyle:

I might suggest, Mr. Chairman, that we are in a position that we cannot very well get mining experts to testify in this case, and furthermore we have not looked upon that as a necessity here. For instance, here are three men who have been in this mine subsequent, probably, to the time of the calamity, and they know its condition from the testimony given here and from maps and miners who worked in the mines. I think they know the condition of this mine as well as if twenty-five experts came here, and on the theory of their scientific knowledge give some facts to this Commission which the Commission themselves are supposed to know. Now I do not think at this time that this is a matter for expert testimony; it is a matter, I think, of personal knowledge given to the Commissioners who are themselves experts.

The Attorney General:

Expert testimony is usually offered to instruct non-expert jurors.

Mr. O'Boyle:

If the Commission were a bench of judges and they knew nothing about mining or mining operations, and they had never been in the place themselves, I think it would be proper to offer that sort of testimony to them, but, under the present circumstances—knowing, as we do, that it would be impossible for us to get mining experts to come here, and, furthermore, that nothing could be proved by them that these men cannot ascertain from the personal knowledge of witnesses, for they are supposed to understand the expert part of it themselves—I think it would be unnecessary to prolong this investigation to examine expert witnesses.

Mr. Wheaton:

I feel very much the same way, but this idea suggested itself to my mind: It might be possible that some of these experts might suggest some idea to this Commission—whether immediately connected with this case or not—that might be valuable to them in making up their report in the line of suggesting legislation. Do not understand me, however, as urging that you listen to expert testimony, but simply as I say, that if you desire to hear expert testimony that we shall try to get it. They would be just as open to examination by these gentlemen as to anybody else.

Inspector Stein:

The Commission does not wish to take one side or the other; they want to judge this matter impartially, and we gave out that either party could bring witnesses when they choose. As far as I am concerned, however, I do not think it is necessary that we have expert testimony, only we want to give them the opportunity to testify if they want to do so.

The Attorney General:

I understand the Commission to rule, gentlemen, that you are at liberty, any of you, any of the counsel, whether representing the miners or the colliery company, to produce expert witnesses, if you choose, but that the Commission does not call upon you to do so.

Edward Hughes, recalled, testified as follows:

By Mr. McGovern:

Q. You have been sworn before in this case?
A. Yes, sir.
Q. And when you were sworn you testified that you were a track layer?
A. Track layer's helper.
Q. Did you ever measure any of those T iron rails used in the mine?
A. Yes, sir.
Q. What was the length of those rails?
A. There was some twenty-one, and up to twenty-four, twenty-five and thirty.
Q. When was the last time you measured any of them?
A. I measured them mostly every day when we were put in.
Q. You had to measure them in order to get the right length of the space you had to fill?
A. Yes, sir.

Q. Did you ever turn any of those rails around in any of the chambers?
A. We turned them around. There was a kink in them sometimes and they would work to a disadvantage, and we turned them in order to get the kink round outside.
Q. When you turned the thirty foot rail did you have any difficulty with it?
A. Sometimes we would. More times we turned them around easily.
Q. Would you be able to turn them without giving them a pitch, one end resting on the ground and the other up in the corner?
A. We could turn them around without giving them a pitch at all.
Q. Do you know how frequently that occurred that you would have to turn these rails around?
A. It did not occur very often.
Q. In what percentage of the chambers could you turn a thirty foot T rail around without giving it any pitch?
A. We did not have to turn any thirty foot rails around. There was none of them used in the chambers.
Q. Where were they used?
A. In the main roads.
Q. Those are the gangways and airways?
A. Yes, sir.
Q. Then it was on the main road you turned them?
A. Yes, sir.

By Inspector Stein:

Q. Did you have solid coal in the chamber?
A. Solid on each side.

Frank Tracy, sworn by Inspector Stein, testified as follows:

By Mr. O'Boyle:

Q. How long have you lived in and about Pittston?

Mr. Wheaton:

The course of the investigation heretofore has been for the Commission to examine the witnesses first, and then for the counsel to proceed.

By Mr. O'Boyle:

It does not make any difference to us at all; we are willing to have the Commissioners examine the witness.

By Inspector Stein:

Q. How old are you?
A. Fifty years of age.
Q. How long have you worked in the mines?
A. I have worked in the mines about thirty or thirty-one years.
Q. At what description of service have you worked in the mines?
A. First as a laborer and then as a miner.
Q. How long have you been a miner?
A. For over twenty-six years.
Q. Have you been mining coal during those twenty-six years in the immediate vicinity of Pittston?
A. In the vicinity of Pittston; I never mined any coal unless it was in the vicinity of Pittston.
Q. What colliery?
A. I mined for seventeen years in one mine; that is the Seneca colliery. I have worked in the Florence coal mine for seven years, and a little while, off and on in other places, about three years in the Twin, in the neighborhood of three years.
Q. Have you worked in the Twin shaft?
A. Yes, sir.
Q. Were you working there at the time of the accident?
A. I was working there on Thursday before the accident.
Q. Did you know of any squeeze going on there prior to the accident?
A. No, for the reason that I worked on a different section from where this cave was. I did work about a year and a half ago down in this No. 2 slope, but I have not worked there in over a year. I worked off in another direction altogether.
Q. How long did you work in this colliery?
A. In the neighborhood of three years.
Q. Is your knowledge as a miner sufficient to enable you to give the Commission any information which would lead them, with their own knowledge, to decide as to the cause of this accident?

By Mr. O'Boyle:

I think that is a question for the Commission to decide after he has related what his practical knowledge is. Of course, he would not be asked to sit in judgment on his own knowledge. I take it that the Commission are the parties to sit in judgment upon that knowledge after he has related what his experience is.

The Attorney General:

The Commission can ask any question they see fit. I think your objection is too technical, and I do not think any such rule ought to obtain here.

Mr. O'Boyle:

I think the proper question would be, what, from the knowledge he has gained there in that mine, in his opinion, caused this accident?

By Inspector Stein:

Q. From your knowledge of mining, Mr. Tracey, and especially your knowledge of the mining going on prior to this accident at the Twin shaft, can you give us any idea of your own as to how this accident occurred?
A. No, your honor, I could not, because I have not seen this working. I have never seen this part of the workings. I have been working, as I told you, in this mine, yet I never was in that section of the works. You understand by the maps where No. 2 and No. 3 slopes are. They divide off and I have been down No. 2, up and down No. 2 slope for over a year and a half, something more than that.
Q. Is your knowledge of mining in general sufficient to enable you to determine what size of pillars should be left under a certain load?
A. A good many has different opinions on that matter. Now, some coal mines they put in an eighteen foot pillar at least, and some makes them less and some makes them more.

By Mr. McGovern:

Q. What do you mean by eighteen?
A. Eighteen by thirty, generally.

By Inspector Stein:

Q. At what depth from the surface?
A. That depends upon the roof. Generally, wherever I mined in the Marcy vein, as they call it, they do not leave the pillars that they would leave in another vein.
Q. What were the size of the pillars that you left where you were working in that section of the colliery?
A. The size of the pillars where I work—I worked one chamber, probably it was 500 feet or 600—the pillars there were from fifteen to twenty, but in two or three cases I broke into another working, into another man's place, for the reason that he did not drive according to his right way. Of course, we never had any plans to go by; we never got any charts.

By Mr. McGovern:

Q. All your testimony has been with reference to the Twin shaft?
A. That is my testimony now.

Q. When you speak of the size of the pillars you have reference to that mine?

A. Yes, sir; I have reference to that mine alone now.

By Inspector Stein:

Q. As far as you know, what are the width of the gangways?

A. The width of the gangways has been from twenty-two to twenty-four and twenty-five feet. I seen one gangway there that was twelve feet. That was driven to the Clear Spring colliery. The ones that I opened up now are about twenty-two feet wide.

Q. What width of chambers?

A. Well, we were instructed to drive the chambers from twenty-two to twenty-four.

Q. During your time working there and during the time in the course of constructing these openings in that colliery, did you notice any chipping off of the pillars?

A. Yes, always.

Q. How was the roof?

A. The roof was fair.

Q. Did you sound it?

A. Yes, sir; we had to be careful about that.

Q. Did it ever occur to you that your life was in danger in working in that colliery?

A. Not from a cave; I was afraid of an explosion many a time.

Q. I mean from a cave in?

A. No, never.

Q. You had no reason to doubt its safety, as far as that is concerned?

A. I always mined to keep myself safe if I could, but I was always afraid of explosions there. We had a careful set of men there and we gave them credit.

Q. Comparatively speaking, how did this colliery compare with other collieries you worked, as to the width of chambers, gangways and pillars?

A. It equally compared with pillars; with gangways it did not. That is all the difference. There would be a reason, I suppose, for driving these gangways. The reason is they would put off a certain piece of working until they would make their own road.

Q. While you have worked at this colliery did you observe any more chipping off of the pillars than at other collieries where you worked?

A. Yes, sir. In certain seasons of the year there is more chipping than there is at other times.

Q. How did you account for that?

A. Well, I think in warm weather it takes more effect.

Q. How was the propping carried on?

A. Well, of course, a miner's place is to timber his place and secure it, and if there is sometimes a miner neglectful, if the boss comes in and says "Why, you have a right to stand timbers here," of course you have a right to stand them, whether it is necessary or not.

Q. Were you ever ordered to stand timbers?

A. Yes, sir; and I knew it was not necessary at the time.

Q. Did you do it?

A. I done it, yes, sir; just to make the place look ornamental or something of that kind.

By Mr. McGovern:

Q. In obedience to your superior?

A. Yes, sir.

By Mr. O'Boyle:

Q. You stated that the pillars were chipping off in that section where you were working?

A. Yes, sir; especially in the hot season of the year. In the summer time they ship more than they do in the winter.

Q. Were there any precautionary measures used to prevent this chipping; used by the foreman to prevent this chipping going on?

A. Some places logging was put in.

Q. Standing props.

A. Standing props and then logging behind it. I only seen a few of them pillars. There was a few of that kind in the mine. That was not the way the pillars stood. The coal seemed to have that nature in it that it would chip anyhow. I abandoned one chamber and went on a counter gangway, went on to the other road. If I had no road and went on to another road, in some places I could have loaded a month's coal with the chipping from the pillars.

Q. Are any of the benches more liable to chip off?

A. Yes, sir.

Q. Is there a checker bench?

A. There are three benches in general. Where we generally work it stands about seven feet high, from seven to eight, and there was what they call a mining bench, a bottom bench and a top bench. The top bench was the softest coal of all.

By Inspector Stein:

Q. You do not know of any technical term given to the bench called the checker bench?

A. No, sir.

Q. It is called the bird's eye coal in Schuylkill county.

A. We here call the checker bench the top vein of all, the surface vein; that is what we call the checker vein, the lower side. The checker vein is here what they call the Pittston vein; then comes the Marcy vein; then under the Marcy again comes what they call the fifth vein, and then the sixth comes underneath after that. They have never explored any deeper that I know of.

By Mr. O'Boyle:

Q. Mr. Tracey, you never worked in this part of the mine where the cave came, did you?

A. No, sir.

Q. How far away were you working at the time that you last worked from where the area of the cave is supposed to be; say, for instance, where the pump was?

A. I was quite a distance away from that.

Q. In your judgment.

A. Well, I can walk pretty lively. I don't know what distance I can walk in an hour, but it would take me about twenty minutes to walk from the face of my place to the foot of the shaft. It would not take me over five minutes to get to where the pump is.

Q. From the foot of the shaft?

A. Yes, sir; in an opposite direction.

Q. In an opposite direction. Do you understand the map?

A. I understand a little about it.

(Map shown to witness, and Mr. O'Boyle explained its points to him.)

The Witness:

This side of the mine I don't understand. Right here they drove a gangway. They struck the Clear Spring line here, and they drove a chamber back in this way. I was a long distance away from the place where the cavein occurred.

Q. Now, Mr. Tracey, did you ever see the gangways in that portion of the mine where the cave was?

A. Not in No. 3. I have never been on the No. 3 section. I have been down in No. 2.

Q. How were the gangways down in No. 2 slope? You were in there, were you?

A. Yes, sir.

Q. What was the size of the gangways there?

A. I cannot tell you there, because it was a counter, and when they drove a counter they drove it across the workings. That is what I always seen. Of course, there is timber; when there

was danger they would secure it. These counters that were drove across old workings you cannot give the gangways for them. They did not drive them systematic. Some places they drove counters in the solid.

Q. Are they called regular gangways or are they called counters?

A. They are called counters.

Q. Are they as long as the regular gangway, or are they short openings?

A. If the working is a mile long they will run them.

Q. Have you any idea how wide those counters were?

A. Well, I have not and I will tell you the reason why. A counter that is drove through old workings, that is, through where it is worked out, you will have to skip places; drive through cross cuts and one thing and another like that, to get your road as near to a level as you possibly can do it; to get it the shortest route you can.

Q. Coming back to the gangways again; you say you saw but one gangway in the mine that was about twelve feet wide?

A. That is right.

Q. Did you work in the Seneca for seventeen years?

A. Yes, sir.

Q. The Seneca now belongs to the same company, does it not?

A. Yes, sir.

Q. Did you ever work in any other mine for the Pennsylvania Coal Company?

A. I never worked for the Pennsylvania Coal Company only for about three months we drove a slope for them.

Q. You have been in their mine?

A. Yes, sir.

Q. What was the average width of the gangways there?

A. I drove gangways for fifteen years and the average width was twelve feet; that is what I drove.

Q. And you were at it for fifteen years?

A. Yes, sir.

Q. That was in the Seneca mine. And in this mine the average width of the gangways was about twenty-four feet?

A. I seen one there, that is all.

Q. In what portion of the mine was that?

A. It was in that section that I pointed out.

Q. That also was twenty-four feet?

A. That is the only one I seen.

Q. You spoke of one that led to the line of the Clear Spring that was twelve feet?

A. Yes, sir.

Q. Was that a late gangway that was put there; later than the others that you speak of?

A. That gangway was put through there, it would be pretty near two years ago, a year and a half or two years. Of course, when they struck that line—that is what miners told me that was in when they struck that line—they had to cease.

Q. In places where they have coal that chips and falls off to the extent that you have mentioned, it is necessary to have larger pillars, isn't it, than where the coal is hard and not brittle and sustains itself without chipping off?

A. It would be, but yet I don't think it is the pressure of the roof that ever made that coal chip.

Q. You think it fell of its own weight by the atmospheric action upon it?

A. Yes, sir.

Q. And weight had nothing to do with it?

A. Weight had nothing to do with it.

Q. Because there was not enough pillars in the place to hold the roof in case of ———

A. They would hold the roof if the roof had pressed on them.

Q. Then the pillars for sustaining purposes that will fall from atmospheric action are poor pillars, are they not, to be left to sustain it?

A. I would think so.

Q. And pillars of that character, in your opinion, ought to be supported by something that would prevent that?

A. Well, that could be done, but it would be a very expensive piece of business. I would not want to do it, and if I had done it I would have to do it for nothing and therefore I was not going to do it.

Q. You stated that if you would go to a road where you had formerly been you could have loaded coal for a month with the falling of coal from the pillars. A pillar that falls and breaks away like that would require something to support it, wouldn't it?

A. In the course of time they would, sure.

Q. Do you know whether this chipping of the pillars was to any great extent down in this portion of the mine?

A. Well, I have told you that I have never been in this No. 3 section.

Q. So. you would know that only by hearsay?

A. That is all.

Q. Was it the same kind of coal that you saw chipping off the pillars that was down in this working where the cave occurred?

A. According to accounts, yes, sir. Of course I cannot say for the reason that I never seen it, but according to accounts it is the same nature.

Q. Where two veins, or seams as they are called, are worked one above the other—say, for instance, the fifth and sixth—where there is only eight or ten feet of roof between the two veins, will the firing and blasting in the upper vein cause any disturbance of pillars that are likely to chip in the lower vein?

A. It will.

Q. That also would have an effect?

A. That is my opinion.

Q. Do you regard it as good safe mining to operate two veins so close together; that is, where there is only a partition or floor, we will say, about eight feet or so separating them, of brittle coal of that character?

A. I think the upper one ought to be worked first.

Q. Would it have any such effect, in your judgment as a practical miner, if the pillars in the lower, or sixth vein, were smaller than in the upper vein?

A. There is no common sense attached to that. The pillar in the sixth—where the fifth is working, the pillar in the sixth should be larger.

Q. Would it have any effect upon the general condition of the mine, Mr. Tracy, if in the lower vein the pillars were smaller, and the pillars in the fifth vein, or seam as it is called, stood out in places four or five feet without anything sustaining them below but a portion of the pillar?

A. That would be detrimental to the lower working.

Q. Do you think that would have sustaining power?

A. One pillar has a right to be plumb over the other.

Q. Now, by careful engineering, in your opinion, and regard for the safety of the men working there, could they have the pillars practically one over the other?

A. Good engineers can.

Q. Now, is it not also practical and scientific mining to give to miners in the chambers lines by which they may go so they will not get out of their latitude?

A. Some places they do and some places they do not.

Q. In other words, is it not scientific and systematic mining to mark the places where miners go in so that they can work that way all the time?

A. You are supposed to get a point to go by to do justice, for the reason that a man in the mines is often turned around. He does not know where he is sometimes. The chances are that he will run into another man's place before he knows it. If he has a point to go by he lives by that point and he works by it.

Q. And in your experience there the points or chalk marks were not given to the miners?

A. I never got one.

Q. So far as your knowledge goes, were they given to others?

A. Not that I know of.

Q. And you say that frequently these men, working there at random or haphazard, would break into another man's chamber?

A. I have done it twice.

Q. Blast right into each other?

A. Yes, sir.

Q. And your theory is that a pillar ought to be about eighteen feet thick?

A. Yes, sir.

Q. And about thirty long?

A. Thirty, forty or fifty. We generally had them fifty feet long.

Q. Do you remember one man being killed up there by a blast from his neighbor's chamber and that he was gathered up in a bucket?

A. Have you any recollection of the name?

Q. I do not know it.

A. I do not then.

Q. Did you hear of such an instance?

A. No. I came near shooting a man myself once, but I do not remember that instance. I told the party to get out of the place and they did not do it.

Q. Did you have sufficient timbers in all instances there?

A. No; I had not. If I had I had to go to another chamber to get them sometimes, for the reason that that was the fault of our runners. We went to the outside foreman, and I ordered the foreman to send me timber, and the first thing was when those timbers went in, they went in in six cars, or whatever they would be, and the very first men come in they took the timber and it went into his chamber.

Q. What was the size of the timbers that you received in there?

A. We received them different sizes.

Q. What was the average size?

A. Well, I received them from ten inches to a foot and some of them fourteen and sixteen.

Q. And they were sufficient ——

A. A sixteen inch timber is a good timber. A ten inch timber wont hold no pressure; it will balance but it will not hold any pressure.

Q. Do you regard it in accordance with the science of mining to open gangways say twenty-four or twenty-six or twenty-eight or thirty feet wide and then open breasts twenty-eight or thirty feet at right angles from them?

A. I would not call it scientific mining if they have opened breasts twenty-four or thirty feet off them.

Q. You have not been in this section of the mine?

A. No, sir. They never have allowed me to open them over sixteen feet, that part where I was.

Q. You were not here when the other testimony was given in relation to the width of the chambers in the other section of the mine, were you?

A. No, sir.

Q. Suppose that they did open chambers at right angles from these gangways twenty-eight or thirty feet wide, or twenty-four feet wide, would you regard that as scientific mining?

A. No, sir; I would not. In the opening of a chamber it should be opened narrow. That always protects a gangway.

Q. In a mine situated as this is, with two seams, the fifth and sixth would you regard it scientific mining to keep the chambers as narrow as possible in opening them?

A. Yes, sir.

Q. With two veins one immediately above the other?

A. I would think that they ought to keep the chambers from fourteen to sixteen feet wide; for about six shafts. That would be eighteen feet. That would be my theory.

Q. That would be prudent, safe mining in your judgment?

A. Yes, sir.

Inspector Stein:

Is there anyone in the audience that will volunteer to give testimony to the Commission?

(There being no response the investigation adjourned until one o'clock P. M.)

Inspectors reconvened at 1 o'clock.

Present:

Same as at the morning session.

Michael Langan, sworn by Inspector Stein, testified as follows:

By Inspector Stein:

Q. How old are you?

A. Thirty-four.

Q. Are you a miner?

A. No, sir. I worked at propping.

Q. At which colliery?
A. At the Twin Shaft.
Q. Were you working there up to the time of the accident?
A. That Saturday. I did not work that Saturday night.
Q. How long have you worked at that colliery?
A. Fourteen months.
Q. Just state to the Commission and all present here what you know of the condition of this colliery in regard to the accident.
A. I will try and answer any question that you may put to me.
Q. You say you were a timberman?
A. Working on the gangway propping.
Q. Was that propping under the roof of No. 6 vein?
A. Yes, sir.
Q. Did you do any propping under the roof of No. 5?
A. It was under the roof of No. 5 where we were propping; right over No. 6.
Q. Do you know that those props were standing over the roof of No. 6 vein to brace the chamber openings?
A. I don't know anything about that.
Q. Did you know of any periodical falls of the measures between the two veins taking place?
A. Cave-ins?
Q. Yes, sir. Between the two veins?
A. I helped with some of the gob.
Q. Gob is the technical name for the refuse. What did this gob material consist of?
A. Rock.
Q. Where did it come from?
A. Out of the chambers.
Q. Was it above the No. 6 vein?
A. All out of the fifth vein.
Q. The roof of the fifth vein?
A. No; between the coal.
Q. How thick was this on the fifth vein?
A. About four feet.
Q. So that there is some refuse there in the fifth vein?
A. Yes, sir; sometimes they took it down and some places they took it up.
Q. You mean they took down the roof of No. 5 vein?
A. They took up the floor sometimes to get the cars in.
Q. In taking up the floor of the fifth vein did you observe that the shots occasionally went through to the sixth? Did you observe that any holes were blown through?
A. Not from the shot.
Q. Did you observe any squeeze on the pillars?

A. Oh, yes, sir.
Q. How long before this cave-in?
A. About three months.
Q. You knew the general inside superintendent?
A. Yes, sir.
Q. Was he any relation of yours?
A. No, sir.
Q. Same name?
A. Yes, sir.
Q. Had you any doubts in your mind during those three months that you noticed this squeezing going on that the large area of the overlying strata would eventually displace itself and fall out?
A. I did not think it was safe once it started in.
Q. Had you any doubts during those three months that you noticed this squeeze going on that the large area of overlying strata would displace itself and fall down?
A. I had my doubts; I was afraid of it.
Q. But you still worked on, did you?
A. Yes, sir.
Q. What was the character of the propping? Did you prop in front of the pillars and lag the pillars?
A. We did some of them.
Q. For the purpose of keeping the pillars from chipping off?
A. That is what it was for.
Q. Of your own practical knowledge in the working of mines did it ever occur to you that these pillars constructed in this colliery were too small compared with pillars you have seen in any other colliery?
A. They looked quite small to me.
Q. How long have you worked in the mines?
A. Twenty years.
Q. Never mined any coal?
A. No, sir.
Q. In your opinion do you think they were too small?
A. Yes, sir.
Q. Had you any doubts in your mind as to the ability of Mr. Langan, who was in charge of this colliery—as to his being thoroughly qualified to take care of his men?
A. I had not.
Q. What time on this Saturday that you referred to did you leave the colliery?
A. Half past five o'clock. We quit and then we went back again, left the mine at half past five.
Q. Were you subsequently called out again?
A. Had to go back again.
Q. What time?

A. Seven o'clock.
Q. By whom were you called back?
A. Our foreman told us to go back.
Q. Who was he?
A. Boss over the shift; Ed. Delaney.
Q. And when you went back you found that there was more chipping and more evidence of a general squeeze going on than when you left?
A. We did not get in. We were kept back while they went around to examine the place. They came out and told us the report and I said, "It is time to get out of here," and so I did.
Q. The report was in relation to the safety of the men?
A. The fire boss told us that where we had worked we could not get in on account of gas and that she was caving. So I quit and went home, at half past nine o'clock at night.
Q. You quit because the boss told you you could not get in. You quit because you thought it was not safe.
A. It was not safe.
Q. You stated that you thought the top was falling?
A. They told us it was caving.
Q. You came up No. 3 slope, did you?
A. Yes, sir.
Q. From the point where the two veins are worked together?
A. Yes, sir.
Q. No. 5 and 6 veins?
A. Yes, sir.
Q. One worked immediately above the other. You came from that point?
A. Yes, sir.
Q. Was it about where the pump is located?
A. From the foot of No. 3 slope I think it was one hundred yards.
Q. Did you pass that pump when you came out?
A. No, sir; I was on the outside of the pump. The foot of the slope was outside of it.
Q. While coming out No. 3 slope towards the bottom of the shaft, did you notice any indications of a squeeze from that distance up to the bottom?
A. No, sir.
Q. From the top of the slope to the bottom of the shaft, did you notice any unusual squeeze going on?
A. No, sir.
Q. Then you were not afraid unless it was down where the two veins are worked together?
A. I was afraid down there.
Q. Was the general inside superintendent there at that time?
A. Not when I left. He was just sent for.

By Mr. McGovern:

Q. How old a man are you?
A. Thirty-four.
Q. Have you lived in Pittston all that time?
A. No, sir.
Q. How long have you lived around Pittston?
A. Fourteen months here.
Q. Where did you live prior to that time?
A. Schuylkill county.
Q. And how long have you been engaged in the mines?
A. Twenty years.
Q. Prior to your coming to Pittston you have engaged in the mines around Schuylkill county, have you?
A. Yes, sir.
Q. During the time you have been engaged in the mines you have been engaged as what is known as a company man?
A. Yes, sir.
Q. And a company man is such as does work like cleaning up, putting up props, etc.?
A. Yes, sir.
Q. When you came to Pittston did you go to work in the Twin shaft?
A. Yes, sir.
Q. What did you go to work at?
A. Anything they put me at.
Q. You stood props?
A. Yes, sir.
Q. Laid tracks?
A. No.
Q. Cleaned up?
A. Yes, sir.
Q. Filled up caves, etc.,
A. Yes, sir.
Q. Do you know where this cave has occurred in the Twin shaft?
A. Pretty well, yes, sir.
Q. Did you ever work in that part of the mine?
A. Yes, sir; I worked that Saturday.
Q. For how long prior to that Saturday had you been working in that part of the mine?
A. Not before that day.
Q. It was the first day?
A. Yes, sir.
Q. You were taken from work?
A. Inside. I was timbering chambers, filling the main road up.

Q. You were taken from away inside beyond the cave and put to work where this cave has occurred?

A. Where she was working.

Q. How far from the foot of No. 3 slope did you work on that Saturday?

A. About half a mile.

Q. Something a little over 2,500 feet from the foot of the slope? That would be about half a mile. And you were putting up timbers?

A. Yes, sir.

Q. What kind?

A. Cog pillars.

Q. It was squeezing then at that point?

A. Yes, sir.

Q. There were no perceptible signs of a squeeze along from the foot of No. 3 slope up to the shaft?

A. Not when I was coming out, no, sir.

Q. When did you come out?

A. In the afternoon, about half past five.

Q. There were perceptible signs of a squeeze about half a mile from the foot of the slope where you were putting up these pillars?

A. Yes, sir.

Q. During the time you have worked there you have noticed the size of the gangways?

A. Yes, sir.

Q. About what size do you think they were?

A. Twenty-four and twenty-five feet.

Q. The breasts were worked off them at right angles?

A. Yes, sir.

Q. At what width were the breasts usually opened off the gangways in that section of the mine?

A. About thirty feet wide; I should judge that much anyhow.

Q. Were they opened the same in the fifth as in the sixth?

A. I did not work much in the fifth. When I did they were about that wide.

Q. And you worked around about in the neighborhood of this squeeze did you, where the cave in was?

A. No, not that day I did not. It was about three months since I worked in the fifth vein.

Q. What portion of the fifth vein that you worked in at that time was included in this part of the cave?

A. I could not tell you that.

Q. You don't know the area of the cave?

A. No, sir.

Q. You say you have been twenty years in the mines?

A. Yes, sir.

Q. During that time you have acquired quite a knowledge of the working of mines, have you?

A. Some.

Q. Did you notice the character of the coal in these fifth and sixth seams?

A. I did not take much notice to it.

Q. What kind of coal was it; brittle, soft coal?

A. Pretty hard and brittle.

Q. Did you notice the pillars chipping off there?

A. Yes, sir.

Q. For how long have you noticed it?

A. Last couple of months. It was laying along the road.

Q. Did you ever put up any props or lagging to prevent this chipping?

A. Yes, sir.

Q. Whereabouts?

A. Over in No. 3.

Q. At the end of No. 3 slope?

A. Away inside of it; about a mile from the foot of No. 3.

Q. Was there much chipping at the time you put them up?

A. No, had to put it up to save it.

Q. Do you think, in your judgment, that this mine was prudently and scientifically worked, opening the chambers thirty feet off of the gangways there twenty-three to twenty-four feet wide?

A. I do not think that was right?

Q. Do you think the pillars were of sufficient size?

A. I do not.

Q. They were quite small were they?

A. Yes, sir.

Q. And they were irregular in size, weren't they?

A. Yes, sir.

Q. There were no two of them alike?

A. No, no.

Q. Some were large and some were quite small?

A. Yes, sir.

Q. From the appearance of things upon the surface of these gangways and breasts, there was no system used in the driving of these chambers and the regulation of these pillars, was there?

A. No, sir.

The Attorney General:

I scarcely think you ought to lead the witness. I do not want to be particular about it, but you have been testifying for the last five minutes rather than the witness.

By Mr. McGovern:

The examination has not been conducted according to the technical rules, but if your honor objects to the form of my questions I shall change them.

The Attorney General:

I do not think it is fair that counsel should lead the witness. There can be no objection to your putting any question to the witness, but to state a proposition that demands a yes and no answer would scarcely be proper.

By Mr. O'Boyle:

Q. State whether or not you have had any experience in caves or squeezes?
A. I have helped to put some of them up?
Q. I mean any other place than the Twin shaft?
A. Yes, sir.
Q. You have worked in other mines, have you?
A. Yes, sir.
Q. Where?
A. Down in Schuylkill county.
Q. Where there have been squeezes?
A. Yes, sir.
Q. In how many?
A. In one.
Q. Were you in more than one mine where a squeeze took place?
A. No, sir.
Q. I understand from your testimony that you helped fill up some of the caves in the Twin shaft?
A. Yes, sir.
Q. On what vein?
A. In the fifth vein. She caved down into the sixth.
Q. What dropped down, a pillar or the floor?
A. Floor fell out.
Q. How many of those caves did you help to fill?
A. Two or three I helped to fill up.
Q. How long before this accident?
A. Between two and three months ago.
Q. How far from the foot of No. 3 slope?
A. Never tell you.
Q. About how far? Give an estimate?
A. About two hundred yards. Maybe a little more.
Q. Did you notice whether any of the pillars or parts of pillars fell into the sixth vein?

A. No, sir.
Q. Did you ever see any indications there to show that the pillars were not directly over each other?
A. No, sir; I did not.

By Inspector Stein:

Q. You say you come from Schuylkill county up here?
A. Yes, sir.
Q. What colliery?
A. The Bast, the Tunnel and the Marion.
Q. What is the pitch in the vein?
A. At the Bast?
Q. Yes.
A. Somewheres about eight feet.
Q. And the Marion?
A. Some place about forty.
Q. You stated to Mr. McGovern that you have seen a squeeze in some of these collieries, have you?
A. I was in the new side of the Bast when it fell out.
Q. Was it the gangway that fell in?
A. The roof.
Q. Which of the openings?
A. In one of the veins.
Q. Was it the gangways?
A. The roof caved in.
Q. Just state the name of the opening that caved in; the gangway or the chamber?
A. The chambers; they were all skipped.
Q. That was by reason of what we call down there the final robbing?
A. Yes, sir.
Q. And as a matter of course, we expect there will be a cave?
A. Yes, sir.

By Mr. Wheaton:

Q. You say about three or four months ago, two or three hundred yards from the foot of No. 3 slope, some of the floor of No. 5 fell into No. 6?
A. Yes, sir.
Q. On Saturday you were called into the mine to timber?
A. Yes, sir.
Q. Where had you been before that?
A. Inside further.
Q. And you timbered at what point on Saturday?

A. About half a mile from the foot of No. 3.
Q. How far is that inside the pump?
A. About a quarter of a mile.
Q. So that the appearances of a squeeze or cave at that time on Saturday were a quarter to a half mile inside the pump?
A. Yes, sir.
Q. You went back in the evening of Saturday?
A. Yes, sir.
Q. How many men went back with you?
A. About forty.
Q. Where did they go?
A. Went down to the foot of No. 3 and sat there.
Q. How many hours?
A. I could not tell you.
Q. How long do you think?
A. About half past eight.
Q. You sat there for an hour or more?
A. We come up to the foot of the shaft.
Q. What were you waiting there for?
A. The fire boss to make the return.
Q. When he made the return you came up?
A. They came out and told us that we could not get in where we were working that day.
Q. The whole party then came out?
A. No, sir; they did not.
Q. How many?
A. Me and Hughesy, Haly, O'Brien and John Williams.
Q. You came on the report of the fire boss?
A. Yes, sir.
Q. Did he make this report to the whole party?
A. Yes, sir.
Q. Everybody heard it, those who came out and those who did not come out?
A. Yes, sir.

By Mr. McGovern:

Q. He reported the condition but he did not tell you to go home?
A. No, sir.

By Mr. Wheaton:

Q. He told you what the condition was and some of you came out, and those who stayed in knew as much about the condition as those who came out?
A. Yes, sir.

By Mr. McGovern:

Q. When you came out you left the other men there?
A. We sat there a little while.
Q. And word had been sent out for the inside superintendent?
A. Yes, sir.
Q. You did not wait for the superintendent to come there, did you?
A. No, sir.
Q. Why did you come out?
A. I was afraid of the thing.
Q. You were afraid on account of the disturbance?
A. He reported so much gas there we were afraid there would come a cave and drive it out on us.

By Mr. Wheaton:

Q. You were afraid of the gas, weren't you?
A. And the cave, both.

Inspector Stein:

Any one who may wish to give testimony in this matter can now come forward.

(There being no response, and several names being called without any witness answering, Mr. McGovern requested that the inspector wait until two o'clock, by which time he expected several witnesses. When that hour had arrived the expected parties had not appeared.)

Mr. McGovern:

If it pleases the Commission, we expected those witnesses would be here by this time, and after consulting with my colleagues we have concluded not to ask you to wait longer. While this Commission or ourselves have no means by which to enforce the attendance of witnesses, all we can rely upon is the promise to be here, and, of course, if men fail to keep that promise, we are not to blame for it. We recognize the fact that, so far as the testimony has been introduced here, that it is sufficient to show what was the cause of this calamity, and that the calling of one or two or one hundred witnesses more would be only cumulative. The witnesses that have been called here have testified to the condition of the mine, the method of its working, and what, in their opinion, was the cause of this accident. Of course, this Commission has heard all that testimony, and from that testimony they must have, like myself and my colleagues, become familiar with the manner in which that mine was worked, and from that, as experts, they must judge as to the cause of this accident. Therefore, we think it is hardly necessary to call any more

witnesses. As I said before, it would simply be cumulative of what we have heard. The testimony is simply as to whether this mine was worked in a prudent and scientific manner. It has been shown how it was worked and there has been no effort to contradict it. It rests with you, gentlemen, to say whether it was worked in a prudent and scientific manner. If it was not worked in a prudent and scientific manner—as we contend it was not—we ask you, gentlemen, to put the blame where it properly belongs. Therefore, we do not think it necessary to offer any more testimony. We have done everything we could to get the witnesses here. Mr. O'Boyle and myself met the committee on Tuesday evening for that purpose, and we are unable to get the witnesses because we cannot force their attendance. So we have nothing further to offer.

The Attorney General:

I am instructed by the Commission to say that all of its members will be present in or near Pittston until Saturday of this week, and that if any evidence not of a cumulative nature is disclosed —because, as to that, counsel say they do not wish to introduce anything more—the Commission would be very glad to hear it. It is a matter of very great regret with the Commission, and a very great personal regret on my part, that there is no legal authority to issue a subpoena, or by attachment to punish the disobedience of it, and, as counsel has well said, the Commission can be enlightened upon this subject only by those who are familiar with the facts and who are willing to assist in determining the causes of this great catastrophe. Counsel agree now, I believe, that they have exhausted their efforts in that behalf, and the Commission, after repeated invitations to those present, and after invitations made known through the public press, gets no response. Therefore, I suppose, it is unnecessary to prolong this investigation further. It will be prolonged to any reasonable extent if counsel for the miners, or the representatives of those who are entombed, or counsel for the owners of the colliery desire it, and it is only because they have said that they have nothing further to offer upon any question that is pertinent that this Commission feels it to be a waste of time to continue longer in calling witnesses.

(Investigation adjourned sine die.)