

Mine Rescue Car 4,

Midland, Ark., Nov. 3, 1913.

PRELIMINARY REPORT

ON

EXPLOSION

at

STAG CANON MINE

of the

PHELPS-DODGE CO.

Dawson, New Mexico.

October 22, 1913.

by

H.D. Mason Jr.

Mine Rescue Car #4.

*To G. S. Rice,
Chief Mining Engineer.*

(I)

At 9.50 A.M. at Midland, Arkansas, Thursday October 23, Station Agent Curtis of the Midland Valley R.R. delivered to me on Car 4 a telegram from H.M. Wilson, Pittsburgh, Pa. ordering the car to proceed at once to Dawson, New Mexico, as a explosion had occurred there and entombed 230 men. Thro Agent Curtis I at once secured a special engine from Hartford to get our car and place it on the Rock Island tracks there.

Awaiting the arrival of this special engine I called up J.J. Rutledge at McAlester on long distance telephone, and asked that additional supplies be brought to the depot there and loaded on Car 4 when we came thro.

At 11.05 A.M. the special engine secured the car and at 11.50 placed it on the Rock Island tracks at Hartford and I notified the Rock Island agent there that we desired movement of car as soon as possible. Also wired President Mudge of Rock Island Lines to insure our continuous movement to Tucumcari, New Mexico.

At 12.20 our car was picked up by the Rock Island express and at 3.20 P.M. arrived at McAlester, Okla. where I conferred with J.J. Rutledge and loaded additional oxygen, potash and two breathing apparatus on car.

At 6.45 P.M. arrived at Shawnee, Okla. and I saw Dispatcher concerning immediate movement of car, accordingly we were placed upon train at 7.00 P.M.

Friday, October 24th.

At 10.30 A.M. arrived at Amarillo, Texas, and conferred with Div. Supt. Walker as to placing car upon local freight to Tucumcari. This was done at once.

6.00 P.M. Arrived at Tucumcari, N.M. and conferred with Supt. Morris of El Paso and Southwestern, and we were placed on special along with private car of President Douglas of the railroad company. 8.35 P.M. Departed from Tucumcari.

Saturday, October 25th.

12.30 (midnight) arrived at Dawson, N.M. and car placed upon side track $\frac{3}{4}$

(2)

midnight

mile from Stag Canon Mines, where the explosion had occurred. 1.00 A.M. Walked to mine with K.H.Chishelm and reported to J.C.Reberts, who advised us to secure a rest and report for duty in the morning.

Saturday, October 25th. continued.

8.00 A.M. Reported to J.C.Reberts at check room of mine and he advised me to take charge of breathing apparatus room and pump. K.H.Chishelm repaired defective helmets, and we tested and arranged Draeger and Westphalia apparatus.

2.00 P.M. K.H.Chishelm and myself entered mine (Hi Line side) wearing apparatus, and acted as advance in brattice work and recovering bodies on I7, I6, I8, I9 East Entries off 5th. Hi Line. 28 ^Bodies carried out (distance $\frac{1}{2}$ mile) and I4 brattices built. We used canary bird and Waf lamps in conjunction with Westphalia apparatus. 11.00 P.M. Party came out of mine, relieved by next 8 hour shift.

Sunday, October 26th.

9.00 A.M. Visited mine inspected and arranged apparatus.

3.00 P.M. J.W.Paul arrived. 3.10 P.M. Bureau breathing apparatus party consisting of Stevensen, Strane (wearing Draeger) Chishelm and Mason (wearing Westphalia) entered mine and proceeded to puncture and disinfect the bodies of 7 mules on Hi Line side of mine. The stench from these bodies was rendering the work difficult in this section, so Bureau party volunteered to do this work wearing breathing apparatus. We had the blacksmith point us two rods of $\frac{1}{2}$ inch round iron, six feet in length and did puncturing work with these rods then disinfected with I2 cans chloride per mule. Our party then acted as advance while the bodies of Genl. Supt. McDermott, Strafford, McShane and McCutcheon were being located under fall, then uncovered and carried out. 10.30 Our party checked out of mine. I reported progress of work to J.W.Paul.

Monday, October 27th.

9.00 A.M. Visited mine, inspected and arranged apparatus. At this time all work had been completed on the Hi side (excepting the cleaning up of falls) and the work was being pushed in #2 Mine. Reported to J.W.Paul.

2.00 P.M. Took charge of breathing apparatus crew, - Chishelm & Westphalia)
 Wilson, Donati and Calveri (wearing Draeger) other trained men. Our crew with
 canary, Wolf lamps, and flashlights acted as advance to brattice crew of 14 men
 under Mine Supt. Brown of Trinidad. Extended canvas brattices between 13th and
 14th. West Entries off 2nd. North, erecting 11 brattices, and forcing current up
 13th. West against a current which baffled back constantly. Heavy reef falls and
 bad top conditions. At least 4 bodies under falls on 13th., and our apparatus
 party in advance located 5 bodies in rooms. We kept two cross cuts in advance of
 brattice parties, and gathered props and timbers to be used for brattices. Were
 apparatus all the time (8 hours) using oxygen where advisable, and covered over
 4 miles on this shift, 10.20- Our party checked out of #2 pit mouth.
 Reported progress of work to J.W.Paul.

Tuesday, October 28th.

9.00 A.M. Visited mine, inspected and arranged apparatus.

2.00 P.M. Breathing apparatus crew, Mason, Chishelm, Wilson, Donati and Calveri,
 proceeded to 13th. West, where we met J.W.Paul, who said that ventilation was es-
 tablished ahead and we could leave apparatus at this point. Took charge of 5 stret-
 cher crews, and proceeded to locate and carry out 14 bodies ($\frac{3}{4}$ mile carry) on
 2nd. North and 17th. and 18th. West off 2nd. North. Dangerous top and strong sten-
 ch, so that we all had to take a hand on the stretchers to keep the Mexican crews
 at work. Located 7 more bodies and marked them for next shift. Put on apparatus
 and walked out with it. 10.00 P.M. Party checked out of #2 pit mouth.

Reported progress of work to J.W.Paul and G.S.Rice, who had arrived at 3.00 P.M.

Wednesday, October 29th.

7.00 A.M. Two mile walk with K.H.Chishelm.

Cleaning up Car 4, recharging and cleaning apparatus. Reported at mine.

6 to 10 P.M. Conference on car with Chief Inspector Dalrymple of Colorado.

J.W.Paul advised me to put car in shape to leave Dawson on October 31st.

(4)

Thursday, October 30th.

6.30 A.M. Two mile walk with K.H.Chisholm and Chief Inspector Dalrymple.

9.00 A.M. Sent ten telegrams regarding movement of Car 4 on Oct. 31st.

Conference with local Supt. regarding movement to Tucumcari over E.P.&S.W.

Secured six safety lamps at mine that had been loaned for recovery work.

Fumigated all apparatus and working clothes with Formalydhyl.

Had car watered and moved to Dawson depot side-track.

Friday, October 31st.

6.30 A.M. Two mile walk with K.H.Chisholm to report to Messrs. Rice, Paul and Roberts before leaving Dawson with car.

9.40 A.M. Departed from Dawson.

Correspondence and reports enroute.

6.00 P.M. Arrived at Tucumcari, N.M. Conferred with Supt. regarding car movement.

Saturday, October- November 1st.

3.45 A.M. Departed from Tucumcari, N.M. on Rock Island.

1.35 P.M. Arrived at Sayre, Okla., Telegram to J.J.Rutledge at McAlester, Okla.

11.30 P.M. Arrived at McAlester, conference with J.J.Rutledge.

Sunday, November 2nd.

3.20 A.M. Arrived Hartford, Ark. and car sidetracked there.

1.20 P.M. Car arrived at Midland, Ark. on Midland Valley R.R.

1.45 P.M. Conference with Mine Inspector Thos. Shaw and resumption of training.

Note- At time we left Dawson 230 bodies had been removed from mine and the remainder were under falls.

SIGNED—

H. D. Mason Jr.
Foreman Car 4.

K. H. Chisholm
First aid Miner Car 4.

Dept. of the Interior,
Bureau of Mines,
Pittsburgh, Pa.
ABSTRACT OF REPORT
Of
Explosion
At
Dawson No. 2, Dawson, New Mexico,
October 22, 1913.

Report by Geo. S. Rice.
Abstract by W. J. Fene.

Mine: Dawson No. 2.
Operator: Stag Canon Fuel Co.
Location: Two miles north of Dawson, Colfax County, New Mexico.
Date of Disaster: Oct. 22, 1913, 3:00 P.M.
Investigators: Geo. S. Rice, J. W. Paul.

* * *

Fatalities: 263 killed, including two rescue men.
Ignition due to: Probably from blown out shot.
Propagation due to: Coal dust.
Extent of propagation: Entire mine.
Primary cause of Explosion:

Men employed: 300.

Output: 1500 tons per day.

Coal bed: The coal beds are found in the lower part of the Laramie measure of the cretaceous series, and are fresh water deposits. The coal is a coking coal of excellent quality, although somewhat high in ash, but low in sulphur content. The roof is sometimes a hard shale and sometimes sandstone. The roof in general would be termed very strong.

Moisture: The coal is for the most part very dry, and due to arid climate the workings are naturally very dry.

Gas: The mines are very free from firedamp. Only occasionally is a pocket of gas found; generally where a fall of roof has occurred.

Development and Mining: The mine is opened by drifts, and worked on the room and pillar system, with rooms running on the faces, turned either side of the butt entries. The butt entries are turned off from 500 to 600 feet apart. The area covered by No. 2 mine is about 700 acres, of which about two-thirds has been worked out. Extensive areas of pillars in some places have been pulled and in other places they are lost through squeezes. The method of bringing down the coal is by undercutting and blasting. The undercutting was mostly by machine, but there was also considerable hand pick mining.

Explosives: Permissible explosives are used exclusively. The shot firing was done when the men were out of the mine by electric circuits extending to the outside. The shots are prepared by the miner, using abode for stemming.

Haulage: The main haulage is by electric trolley locomotives and the gathering is done by mules. Steel plate cars of about two ton capacity are used.

Lighting: Haulage-ways are lighted by incandescent lamps. Mines use open lights.

Ventilation: By a large, high speed Jeffrey fan.

Humidity: The mine is naturally very dry. The method of humidifying the air and wetting the dust was by means of water sprays placed at intervals through the mine. These sprays were found to be inefficient as they failed to wet the dust more than 5 or 6 feet beyond the sprays. Hose was also used for wetting down the dust in No. 1 mine.

Drainage: The mine does not make very much water, except in a few places where swamps occur, at which pumps are located.

Rescue Station: A well equipped mine rescue and first aid station is maintained; where instructions in the use of breathing apparatus and first aid to the injured are given to the miners.

STORY OF THE EXPLOSION.

At about 3:00 P.M., October 22, when the mine was working normally, blasts carrying smoke and dust burst out of the main openings, accompanied by the noise of the explosion. The explosion resulted in the death of 261 men, and subsequently two men of a rescue party lost their lives.

Origin of the Explosion: The explosion was a true coal dust explosion, and it is believed that it originated in a group of rooms in the 9th West entry off the 1st North entry. The pillars were being drawn back in this group of 5 rooms, Nos. 25 to 27. There was a large open groove 200 to 300 feet wide and 150 to 200 feet in length and this groove was probably more or less coated with fine coal dust.

The origin of the explosion was from the firing of an overcharged shot in the pillar of room No. 27, or an "abode" dynamite shot to break up a large slab of rock in room No. 26, or most probably from the firing of both at once. The evidence that there had been an overcharged shot fired the day of the explosion in the pillar of room 27 is unmistakable but the evidence of an abode shot in room 26 is not as direct. Gas could not have been a factor, since during the investigation no indications of gas were obtained by the safety lamp.

SUMMARY OF EVIDENCES.

Despite the method employed in the mine in attempting to wet the coal dust in the entries by fixed sprinkler system, it was evident that there was abundant dry dust sufficiently inflammable to carry the explosion both inby and outby around the mine. The explosion followed the haulage roads, which provided sufficient coal dust without being affected by the direction of the ventilation prior to the explosion, thus confirming that fire damp was not a factor.

The explosive wave in going out along the 1st North from the 9th West was retarded by a stretch of wet ground. Farther out it was again retarded by an admixture of inert dust and the force was not violent and did not do any damage to the main entrance to the West half of the mine. The branch traveling inward on the main West entry toward No. 5 mine encountered both water and such a degree of mixture with inert dust that it died away altogether.

The swamp in the 13th, 14th and 15th entries between the East and West halves of the mine did not permit the explosive wave to pass through it, as also was the case in the 13th and 14th East off the Hi-line beyond the 4th North.

For an explosion in which coal dust alone was responsible the penetration to the heads of most of the entries and rooms was extraordinary.

The crossing of the explosion from the left half of the mine to the right half was apparently through one single connection, i.e., at the head of the 16th and 17th East off the 1st North there was a single room or entry which connected to the 16th and 17th West off the Hi-line.

The explosive wave which came out of the West side of the mine had a direct path of 5800 feet in length not including the branches. That portion of the explosion which crossed over to the East and ~~skinn~~ then passed out the Hi-line entry, had a total travel of 11100 feet or over 2 miles, not including the branching off into the various side entries.

The explosion as a whole cannot be said to have shown great violence, although in places cars were wrecked, and nearly all stoppings were blown out. These were substantial stoppings of concrete blocks but not being reinforced would not have much resistance to pressure.

While the mine had a fixed sprinkler system for wetting the coal dust, this was altogether inadequate, and the method does not appear to be an efficient one where large quantities of moisture are required to wet the dust.

While permissible explosives were used in the coal, and an excellent shot-firing system was established, dynamite was used in brushing rock, there is an opportunity for dust ignition in this employment, and an opportunity for the men to obtain dynamite for improper use in blasting.

LESSONS.

- 1.--While a shot-firing system may be ever so complete, if there is the slightest loophole for improper practice, there is danger.
- 2.--If the blasting be done with permissible explosives, it should also be used in rock work even if not quite so efficient as dynamite for this work.
- 3.--In spite of all precautions in blasting, there is always liable to be an overcharged shot on the substitution of a long flame explosive by an irresponsible or unscrupulous employee, resulting in the possibility of igniting coal dust or gas if any was present.
- 4.--Supplementing the watering system, or independent of it, inert dust like rock dust, shale dust or ashes, should be brought into the mine to cover up any coal dust. And in addition, it is advisable to have supplementary safeguards, such as barriers placed near the entrance to all ventilating splits and at intervals along long haulage-ways.
- 5.--Where a mine is in two halves, as in the case of this mine, it is very ~~important~~ that the connection between the halves shall be specially safeguarded so that if an explosion starts in one half it will not effect the other half.
- 6.--Refuge chambers should be provided, one in each pair of entries with doors and bratticing material and a few simple supplies.
- 7.--To lessen~~xxix~~ the amount of dust on the roadways is most important. The most obvious remedy is to employ tight steel cars without doors, using turnover tipple, and not permitting the miner to build the coal up higher than the sides of the cars. This can be further supplemented by using automatic operating sprinklers at the siding to wet the surface of the coal and prevent the dust being blown off the cars by the ventilating current.

Pittsburgh, Pa.,
October 24, 1913.

PRELIMINARY REPORT

ON

MINE DISASTER

AT

Dawson, New Mexico.

The following telegrams were received by the Bureau of Mines watchman during the night of October 23,:

From J. C. Roberts, Denver, Colo., received at 2:00 a.m., October 23.

"Press report states explosion Dawson, New Mexico, 228 entombed. Leaving tonight, have wired car two. If car four at Pittsburg, Kans. instruct them proceed to Dawson immediately. Director notified."

From Mr. Pope, Washington office, received at midnight.

"I have a report Associated Press, 230 miners are entombed in the Stag Canon mine No. 2, Dawson, New Mexico. I hear our rescue car there, not sure."

Wyo., received at 8:25 a.m.

"Leaving for Dawson on train four this morning. Car and supplies in good condition except we have only nine full tanks oxygen and have wired Roberts this effect and will undoubtedly procure loan oxygen vicinity Trinidad."

The above telegrams were immediately reported by the night watchman to the rescue foreman in charge, William Rhudenbach. In view of the fact that the District Engineer J. C. Roberts, and Car #2 had been notified, and the further fact that Messrs. Rice, Paul, and Wilson were absent, and the latter was expected in the early morning, no further action was immediately taken.

I read the accounts in the morning papers, reached the Pittsburgh office at 8:00 a.m., October 23, looked over the telegrams and sent the following at 8:45 a.m.:

"Mason, Government Rescue Car, Midland, Arkansas.

Proceed with car mine disaster Dawson, New Mexico; two hundred thirty men entombed. Route via Rock Island to Tecumcari, thence El Paso Southwestern. If need oxygen wire McAlester enroute. Wire your movements."

(The above message was also wired to General Manager LeFebvre of the Midland Valley R. R.? Muskogee, Okla., with request to repeat same to Car #4, which was enroute between Hackett and Midland, Ark. on the above road.)

The following were received and sent:

"Government Rescue Station, McAlester, Okla.

Have ordered car four via Rock Island to Dawson, New Mexico. Mason may call on you for oxygen enroute."

At 9:00 a.m., Oct. 23, the Linde Air Products Co., at East Chicago, Ind. was wired to express six cylinders of oxygen to Dawson, and this was done.

At 9:00 a.m. the following telegrams were sent:

"Roberts, Government Rescue Car, Dawson, N. Mex.

Wire me if you need more oxygen. Six tanks expressed today from East Chicago. Car four enroute with about seven tanks."

"Rutledge, Bureau Mines, McAlester, Okla.

Mason enroute. Instruct him to notify Roberts Dawson, New Mexico, and ask him when he will arrive Dawson".

At 10:15 a.m., Oct. 23, the following was received from the Associated Press:

"Between 193 and 243 men still entombed in shaft two, Stag Canon Fuel Co., At seven this morning. 14 bodies recovered during the night. 23rd living victim found at depth of a mile, taken out 5:30 this morning."

Telegram received from J. J. Rutledge, McAlester, Okla., at 11:45 a.m.:

"Your message 23rd received. Can give car four two tanks oxygen. Have Burgess requisition eleven of October ninth filled at once."

Telegram received 3:35 p.m. Oct. 23, from Car 4, while enroute:

"Arrived Hartford at noon. Leave on Rock Island immediately. telephoned Rutledge."

Received from Mason, at 5:45 p.m. Oct. 23:

"Arrived McAlester 3:30. Extra supplies received. Rutledge remains McAlester."

The following telegram received at 11:50 p.m. Oct. 23, and phoned to Mr. H. M. Wilson at his residence:

"Leaving for Dawson 8:00 p.m. Arrive Lajunta 3:30 a.m. Due French 10:30 a.m., no connection for Dawson until 1:45 p.m. wire quick, care SantaFe train number six, Denver to Lajunta, if advisable to take special Lajunta to Dawson. Take up with Gen. Supt. SantaFe, Lajunta, to arrange direct. Could save eight hours." signed Stevenson.

Mr. Wilson telephoned the following telegrams from his residence at 12:30 a.m., Oct. 24:

"Stevenson, Government Rescue Car, train six, Denver to Lajunta, Colo. Have car hauled special to Dawson using Government transportation."

"General Superintendent, SantaFe, Lajunta, Colo. Arrange haul Stevenson and Government rescue car on special train six from Denver through to Dawson special. Stevenson will furnish Government transportation if necessary.

The following telegram received from J. C. Roberts, at 7:40 a.m., October 24:

"Arrived at Dawson at 1:00 today. 285 in mine on account of explosion; 24 out alive, resp probably dead. Exploration of wreck progressing satisfactorily; mine badly wrecked. Cars two and four will arrive tomorrow. Director notified."

J. W. Paul left Philadelphia, Pa., the afternoon of October 23, enroute for Dawson, New Mexico, passing through Pittsburgh about 10:00 p.m.

The following telegram received from Car four, at 1:00 p.m. October 24:

"Arrived Amarillo 10:30 a.m., leave at once for Tucumcari."

At this writing, 3:00 p.m., October 24, Car four has doubtless reached Dawson.

The Associated Press in Pittsburgh has kept me constantly informed of proceedings at Dawson, giving me dispatches nearly every hour. Summing them up, J. C. Roberts took charge of rescue operations immediately upon his arrival

at the mine. Car 2, in charge of Stevenson, arrived at the mine at about 8:00 a.m., October 24. Meantime, according to Associated Press reports, a large rescue party, wearing helmets, separated at entry 16, four of them going on towards the face at room 18, where a fall of roof struck down two of them. These two, in their excitement and fear and because partially conscious, tore off their helmets. This act so excited the other two that they likewise tore off their helmets and ran back toward fresh air. After falling, they were recovered by the main party from whom they had separated and were taken to fresh air, where, after six hours, one had recovered and the other had not as yet, though still alive. The one who had recovered gave the above details. The volunteer helmet men outside were so overcome by this report of the accident to these four men that J. C. Roberts was experiencing the greatest difficulty in securing volunteers to go back and search for the two lost men.

Later, immediately upon the arrival of Stevenson's car, No. 2, the Government rescue men headed a party to search for the two at room 18, at which point it was believed the missing men would be found. The distance was about two miles. Meantime, black damp began to fill all the entries and the ^{base} ~~part~~ at fresh air was so far from room 18 that this last rescue party found it impossible, with the two hours oxygen supply they had, to reach room 18. Therefore, those in charge of the rescue work ~~mutually~~ decided that, because of the progress being made by gases due to fire in adjoining shaft #3, that any man as far in as room 18 must have been suffocated, and that it was impossible to reach them unless a base could be advanced, wherefore, they proceeded at once to the erection of stoppings as the rescue men progressed.

Merely as a preliminary judgment on the above, which, when the full facts are furnished, may prove erroneous, but as a record of the impressions freshly created, I submit the following:

In conference with Dr. Yandell Henderson, and our Assistant Rescue Engineer, Geo. H. Deike, it is our belief that the four men who became excited and tore off their helmets did so because of the hard breathing induced by the excitement of the fall of roof and on the latter two by the two injured men tearing off their helmets, added to the high altitude, taxed the oxygen supply of the breathing apparatus beyond its limits, causing difficult breathing and the excitement which resulted in their tearing the apparatus off. The experimenters here, since Evans' accident, are rapidly approaching the position that the breathing apparatus must be regulated to deliver a

much larger oxygen supply at high altitudes, and shortly we expect to be able to issue instructions accordingly, thus ameliorating this condition. The rescue apparatus normally is regulated to deliver two litres of oxygen. For higher altitudes it should deliver three to four litres and can be made to do so.

It is believed that had at least two of the Bureau's trained rescue men been near at hand to lead the volunteer men who were overcome as stated above, that the experience and steadying effect of their presence might have prevented the over-excitement, which would probably not have resulted seriously had the wearers of the apparatus obeyed the instructions issued by the Bureau and sat down and rested for a few minutes, thus slowing down their breathing. The present difficulty lies largely in the fact that the volunteer rescue men use an apparatus but once in several months; it is strange to them, and if it does not work well they become excited and tax it more heavily instead of resting and relieving it.

Judging from the last reports, the conditions at the Stag Canon shafts Nos. 2 and 3, have settled down to those which usually follow such disasters; namely, the attempts to put in air furnish oxygen to start fires which fill the mine with poisonous gases and smoke, precluding the possibility of saving any except such as might have, by merest chance, walled themselves off somewhere, and rescue operations are now reduced to slow recovery work by advancing ventilation.

Hubert

Mr Rice

IN THE MATTER OF THE INQUEST, HELD BEFORE THE HONORABLE
T. L. MINNEY, JUSTICE OF THE PEACE, SITTING IN AND FOR PRECINCT
NO. 13, COLFAX COUNTY, NEW MEXICO, ON THE FIFTEENTH DAY OF
NOVEMBER, 1913, UPON THE BODY OF WILLIAM McDERMOTT AND OTHERS,
WHO CAME TO THEIR DEATH IN PRECINCT NO. 13, COLFAX COUNTY, NEW
MEXICO, ON OR ABOUT OCTOBER 22, 1913.

A JURY HAVING BEEN SUMMONED THEY WERE ADMONISHED BY
THE HONORABLE T. L. KINNEY, Justice of the Peace, AS FOLLOWS, viz:

Gentlemen, I summoned you here to inquire into the
death of persons found dead in Precinct No. 13, Colfax County,
New Mexico, on or about October 22, 1913. I presume you are all
citizens of the United States, and qualified voters of this Pre-
cinct, are you not?

Each Answered "Yes."

The jury, Thomas Kinney, Dr. F. B. Evans, E. E. Sherflock,
Charles Gioannini, James M. Allan and Jack Starkovich, were sworn,
as follows:

You and each of you do solemnly swear that you will in-
vestigate the cause of the death of persons found dead in Precinct
No. 13, Colfax County, New Mexico, on or about October 22, 1913,
and a true verdict give, according to law and the evidence given,
so help you God.

Each answered "I do."

G. H. Jermark, Stenographer, was sworn as follows:

You do solemnly swear that you will take and set down
and transcribe truthfully and to the best of your ability all the
testimony which is given upon the witness stand in this proceeding
so help you God.

Answer "I do."

Mr. R. H. Worcester, being called to the witness stand,
and sworn as follows:

You do solemnly swear that the evidence that you are about to give in this proceedings shall be the truth, the whole truth, and nothing but the truth, so help you God? And having answered, "I do," was questioned by the Honorable G. E. Remley, County Attorney for Colfax County:

Q State you full name, please.

A R. H. Worcester.

Q Do you live here in Dawson?

A I do.

Q How long have you lived here?

A Off and on for about seven years.

Q What is your occupation?

A Construction Engineer.

Q We are investigating into the cause of the death of William McDermott and others, and investigating as to whether or not their death was caused by a crime of any person or persons. Did you know Mr. McDermott during his life time?

A I did.

Q Do you know whether he is living or dead?

A He is dead.

Q Do you know about the time he died?

A Why, I would judge that it must have been right at the time of the explosion.

Q What was the time of the explosion?

A About three, or a few minutes before three on the afternoon of the 22nd of October, 1913.

Q Did you see the body of Mr. McDermott?

A I did.

Q And will you describe to the jury the condition of the body when you saw it?

A Why the face was burnt, and somewhat mangled around the mouth-

the lips were burned and broken, although considerable of his mustache was there. His hands were badly torn, and his legs, or his feet at any rate, were uninjured.

Q When did you see this body?

A I saw it after it came out of the Mine, in the Blacksmith Shop.

Q Did you see any other bodies about the same time?

A Yes, sir.

Q Approximately in what numbers did you see the bodies?

A I must have seen close to one hundred bodies, all told, as they came out of the Mine.

Q You were working in and about the Mine soon after the explosion?

A Yes, sir.

Q You were one of the helmet men?

A No, I was at the Check Cabin.

Q And you saw some of these bodies come out of the Mine?

A Yes sir.

Q What mine was that?

A Mine No. 2 of the Stag Canon Fuel Company.

Q The Stag Canon Fuel Company own it?

A Yes sir.

I have put this witness on the stand, gentlemen, merely to prove the death of one particular man, and others, if you have any questions to ask that bear upon the death of this man, and others, you are free and may ask any such questions as you choose.

Q Now, Mr. Worcester, to the best of your knowledge and understanding, what were the number of men who were killed in this explosion?

A About two hundred and sixty-two, I think.

Q Did that include the two helmet men?

A Yes sir.

YOU ARE EXCUSED.

Mr. Reese H. Beddow, the second witness called to the stand, was

sworn, as follows:

You do solemnly swear that the evidence that you are about to give in this proceedings shall be the truth, the whole truth, and nothing but the truth, so help you God?

Answer " I do."

QUESTIONS BY MR. REMLEY.

Q Will you state your full name, please?

A Reese H. Beddow.

Q Mr. Beddow, what official position, if any, do you hold under the State Government?

A I am State Mine Inspector.

Q And are duly qualified?

A Yes sir.

Q I will ask you to state whether or not you made any investigation of the condition in Mine No. 2 of the Stag Canon Fuel Company, on or after the 22nd day of October, 1913?

A Yes sir, - I got here on the morning of the 23rd, and went into the Mine between six-thirty and seven o'clock that morning.

Q You understand, Mr. Beddow, that we are examining into the question as to whether or not the death of Mr. William McDermott, and others, was caused by the commission of any crime, - with that in view, I wish you would go ahead and detail to the jury what investigation you made, and what you found, if anything?

A Well it is my opinion that there was a crime committed. I found, - The first three or four days after the explosion I devoted my time to seeing that the ventilation system was restored, and trying to get out the bodies, and seeing if there was any fire in the Mine. After that I devoted my time in trying to find out the cause of the explosion, and I think I put in fourteen days, all told, at that work, and I concluded in the first day after I started to investigate that the explosion had been started in the

9th West, or the South Entry off the 9th West in that Mine.

Q What caused you to conclude so?

A Well, on account of the direction of the explosion, of the force of the explosion.

Q Will you describe to the jury the conditions as you found them which lead you to believe the explosion was in one direction, and what caused the explosion in that direction?

Takes map and points.

A This is No. 2 opening here, or the Main Haulage Way, and here is the 9th and 10th West. - this is the 9th West right here, and this is the 10th. I went in there about the fourth day after I got here with Mr. Tinsley, and five helmet men, and we went into this part of the Mine before the ventilation had been restored. The ventilation was pretty bad, but we were able to get into the South Entry about forty feet, and had to turn back. From here on down everything was blown ^{out} into this West Entry, about room No. 21, off the 9th West Entry of No. 2 Main Haulage Way. Now the timbers and everything had been blown out onto this Entry, this 9th West Entry. There was a string of empty cars right about room 22 or 23. - from room 22 on to 24 there was a string of empty cars standing right along there, and these empty cars had been blown across the track over against the opposite pillar on the 9th West, and there was five cars blown through a slant into a room that would be about No. 23 on the 10th. There was also two ^{that had blown up the 10th west from this parting,} men, the bodies of two men, [^] about a distance of fifty feet. Now when we got about 24 there was a trip of loaded cars standing on the track, opposite these room necks about to 26. Some of the loaded cars were blown off the track, and some turned over, showing that the force of the explosion had come out of these rooms and blown everything in the opposite direction. The rooms off the 9th West and the South Entries off the 9th West are all going into the solid workings, and there was no possibility of the explosion originating off in this direction, - that is South of

those rooms, so I concluded that the explosion had originated somewhere in these rooms off the 9th West.

Q When did you arrive at this conclusion?

A It was about the fourth day after the explosion.

Q What, if anything, did you further do in this matter?

A Well, I made a very hurried examination in that part of the Mine, to try and locate the exact cause of the explosion. My first impression was that there had been a local explosion of gas, up in the South Entry off the 9th West, or in the East Entry off the South Entry. You see there is a part of the East Entry here, - right here at the head of the South Entry there are two Entries here. My first impression was that there had been a local explosion of gas in one of these places, or the working places. There had been a little bit of a gas holdup there, but not enough to show a cap in a safety lamp. But for quite a number of days after I first went in there, I had gone in there with other persons and made tests for gas myself and had others to make them. I had Mr. Roberts, Mr. Paul, of the United States Bureau of Mines, and the General Superintendent of the Rocky Mountain Fuel Company, Mr. Peart and Mr. Dalrymple, the Chief Mine Inspector of Colorado.

Q When did you make these tests?

A Well, about the fifth day after the explosion, - they all made tests and failed to find any gas, and I also did the same thing myself, and concluded that there had not been a gas explosion there, because on account of the ventilation, - it wasn't restored to its normal condition, and if that place was generating gas it would accumulate there much quicker after the explosion than before, and I decided then that it was not a gas explosion in that part of the Mine, and I then for the next probably eight or ten days, went with Mr. Roberts, and Mr. Rice and Mr. Paul, in all parts of the Mine, except the First East Entry off the High Line, to try and discover whether it had originated anywhere else.

and I failed to find anything that convinced me of the cause of the explosion, so I went back to this 9th West Entry, and I had that in mind all the time that that was where it originated, but I couldn't tell the cause, so I went back there with Mr. Paul and Mr. Roberts, and we started into the first room that we would get into, - probably the First room and Second room, I think the First room anyway, was blocked up so we couldn't get in. The pillars are pulled out, and I went into every place along this 9th West Entry, making tests for gas, or to see if there had been any ~~xxxxxx~~ recent heavy caves that might drive out the gas, but I found the ground had not caved, and with the exception of this cave this ground is all standing open, and I got to the face of all these rooms off the 9th West Entry, but found no gas, and I kept going into each one of them, and there was a good deal of faulty coal in here, and it is a good sound strong roof, and it is standing, and I kept working my way down until I got to room twenty-seven. I was in advance of the party and Mr. Paul was taking notes, and Mr. Roberts was looking for evidence of fire, - to see if there was any coke, and to see how extensive the fire was, and when I got to room twenty-seven I discovered that there had been a shot fired there, and I called the attention of Mr. Roberts and Mr. Paul to this, and they came down and looked at it, and they agreed with me that there had been a shot fired there. There was a car standing there about two-thirds full of coal, and we could see the man's check hanging in the car, and I asked them to look and see what his check number was.

Q Do you remember the check number at this time?

A Why, I have a note of it, but I haven't it with me, as I didn't bring my note book along, and I couldn't testify as to the correct number.

Q I will ask you to look at your notes during the intermission, so that you may refresh your memory as to this check number.

A Well my object in getting the check number was to see who worked in the room, so that I could find out whether the man had been working the day of the explosion, and when I got out I inquired who worked in that room, and whether they had been sending out any coal on that day, and the check man gave me the man's number and name and told me that he had gotten out five and a half or six tons of coal that day, - so that concluded my examination for that day, - or no it didn't either. After we had looked at this hole, I decided that the shot had been overcharged, and that there was entirely too much powder in the hole. The coal had been blown a distance of probably thirty or forty feet, and it appeared to me that that was the cause of the explosion, and that the gases had taken fire from this shot.

Q Describe what you saw where this shot had been fired, what coal was laying there, if any, and how the shot had been put in.

A It is a pillar, - he was driving back a pillar, - it was a very thin pillar, about six or seven feet thick, I should judge, and I looked around to try and locate the drill hole. The coal was shattered up so that it was pretty hard to tell just what direction the hole had been drilled, but there was a little stump of the drill hole left, - about three inches. The coal was badly shattered, and it appeared to me that the drill hole had been pointing right up the center of the pillar towards the 9th West Entry, and that would leave the mouth of the hole pointing back towards the gob, - the old workings that had been worked out.

Q Will you describe what a gob is, Mr. Beddow?

A It is the worked out ground where the refuse material is thrown away, - such as bone, slate and roof-rock that falls from the roof. There wasn't very much there ^htough, - the place was free from much gob.

Q What was there in the conditions you found right there that caused you to believe that an overcharge had been fired.

A From the way the coal had been scattered.

Q How had the coal been scattered?

A The force of the shot came back, - it blew right out back towards the old workings in the gob, about thirty or forty feet.

Q Was there anything in the quantity of the coal which would lead you to believe the same thing?

A That don't have much to do with it. It wasn't an extra large shot, but I should judge that it was about two or three loads of coal, - that would be about five or six tons of coal, and the way the shot was fired the flame would naturally go back against the gob where there was more or less dust, and it appeared to me that this dust had been stirred up by this shot.

Q There was dust in the room when you got there?

A Yes sir, there was a heavy deposit of dust and soot on everything, which showed that there had been a great commotion in there, and more or less flame.

Q Now what else lead you to the conclusion that the explosion had been caused by the firing of this shot, or that there had been a shot fired?

A Well, I traced the shooting wire back from the face of this shot, or particularly from the face of this shot. The wires were tangled up considerably, but in quite a number of places the shooting wires were still on the props, and it was not difficult to trace the wires back to the first cross cut, between room 27 and room 26, & then they lead from room 26 out about half way between the first cross cut and the 9th West Entry, where they all connected onto a cut out switch, which was fastened up on a prop.

Q Was that switch on or off?

A That switch was out in so the current could pass through it.

Q So the current could pass through it?

A Yes sir. The wires then lead out from this switch to the 9th West Entry, and then turned up the 9th West Entry to room 24, - to the mouth of room 24, where there was another switch connecting. -

I think the wire was still connected to this switch.

Q Was this switch in or out?

A It was out in. This switch is located close to the end of the trolley line.

Q How close?

A Well it is about five feet from the switch over to the trolley line, and I should judge about fifteen feet down to the end of the trolley line, but the current didn't run down as far as where this connections was made. The loaded cars stood right under the trolley line at this point, and it wasn't necessary for the current to go down that far, and on the trolley line I discovered a piece of copper wire wrapped around the trolley line, three or four wraps, and we found a piece of shooting wire, about five long, which was just the right length to connect the trolley line to the switch, and right at this switch, on the floor, I found a detonator, which is used in setting off the shots.

Q What was the condition of the detonator?

A It was in good condition.

Q How far was that exploder from the initial point of the explosion?

A The shot?

Q Yes.

A I expect that was one hundred fifty feet from the shot.

Q What is the operation of these detonators?

A The detonator has two insulated wires, - I brought this detonator out and deposited it in the Judge's safe.

Q Now, Mr. Beddow, will you then give the jury your conclusion as to how the shot was fired?

A I understand that on this trolley wire the current is cut off this wire, and they have a cut-out switch in each Entry where the motors work, so that when the motors are not working the current is cut off, and the current is only on that line whenever the motor is down in that part of the Mine, and it is apparant that this

motor had just come down before the explosion. I might state that this motor got its trip of coal from the parting on the 9th and 10th west, - part of its trip, and part of its trip further in from the 13th parting. They would get part of the trip down there, and pull it up to the 9th West, and leave it on the Main Road, and then they would go down into the 9th West, and they had pulled up part of their trip and left it and gone in there and uncoupled it from the empty trip, and were just about to couple to the loaded trip when the explosion occurred.

Q And the fact that it had gone down into this place would turn the current onto the trolley wire?

A Yes sir.

Q Did you find any body at or near the place where this shot had been fired? A No sir.

Q Did you find any body at or near the place where this wire had been connected with the trolley wire?

A Yes sir, there was two bodies right near by. Mr. Tinsley and I found some bodies the first day I went in there, but by the time I discovered this shot they had been removed.

Q About where, with respect to the trolley, were these bodies found?

A One of them was about fifteen feet, I should judge, on the other side of the trolley, from where the motor was, and a little in the Entry, and the other was found further up, close to the motor.

Q Is it possible to make electric connection with the trolley wire and the wire that fired the shot?

A All they would have to do would be to head in this wire we found into the ring on the trolley wire, and into the switch.

Q Could a man stand there and touch the wire?

A Yes, he could bring them in contact.

Q With respect to the place where a man could bring these wires in contact, where were the bodies found?

A One of them was found, I should say, about fifteen feet up

the Entry, and the other was about fifteen feet below where these switches were located.

Q Did you learn the name of either of these bodies?

A No sir, I did not.

Q How close to the place where the shot had been fired did you see anybody, and had any rescuers been in there prior to the time you reached that point?

A Did I see any men - live men?

Q Yes, live men or bodies, - did you see any live men near the place where the shot was fired?

A Yes sir.

Q Do you know who they were?

A Mr. Roberts and Mr. Paul.

Q They went in with you?

A Yes sir, after I discovered this shot, I told Mr. O'Brien about it, and ask him to go in and look at it with me, and the next morning Mr. O'Brien and I and Judge Hawkins went in there the next morning.

Q What I am trying to get at is this, - from your examination of the mine at that particular point, and your finding the bodies there, were you able to advance any opinion as to who fired the shot, formed this electric connection, and how it was done?

A No sir, I could form no opinion as to who done it, but I have an opinion as to how it was done.

Q Were there any bodies at or near the place where the connection could have been made?

A Yes sir, there were two bodies found within fifteen feet of this point.

Q As I understand it, one was in from where this shot was fired, and the force of the explosion was out, and it would consequently result that if the force of the explosion were sufficient to drive a man in any direction, it would drive him out.

A When the force of the explosion got out on the 9th West Entry it seemed to expand in both directions. - it naturally would. - it wouldn't follow a straight course, it would naturally expand in all directions, so the whole place was filled, so that in that event it might have been either one of these two men, and they might have been blown over the cars. One of the cars holds about two tons of coal, and the empty car would, I suppose, weigh about twenty-five hundred pounds, and they were blown off the track. The car right close had been dumped over and the coal dumped out, so the force of the explosion at this point was sufficient to blow a man most any distance.

Q Do I understand that, from your examination of the conditions, you are of the opinion that either one of these two men did make that connection?

A No sir, I don't say that. That connection could have been made by these men, or by anybody else, and the shot wouldn't have been fired until the motor came down there and the current came on the trolley line, then it would have immediately gone off.

Q Then you believe that somebody did make that connection?

A Yes sir.

Q And that connection was the cause of the explosion?

A Yes sir.

Q But you don't say who made the connection?

A No sir.

Q Mr. Beddow, Judge Hawkins has suggested a question.

Where was the wire/^{found} that was used to make that connection.

A It was found right on top of a car. - this car stood right in by the mouth of this room, so that this car where the wire was/^{found} was sheltered to some extent from the explosion.

Q By reason of the shape of the workings?

A Yes sir.

Q And was the wire that you found in such a place when you found it that it could have been thrown by the force of the explosion

from the place where the electric connection was made?

A Yes sir, it was just within two feet, I expect, from the switch, and this little wire that was wrapped around the trolley.

Q Now with reference to this connection that you have spoken of, and these switches, I will ask you if the shot could have been fired by means of a current unless the switches themselves had been closed, in other words, if the switches had been open could the electricity have caused the explosion?

A I don't think so. There is places where they claim they have stray currents of electricity passing through the coal veins, but as this was a pillar, I don't think it was possible, where the voltage is only two hundred and fifty volts, and the Mine was dry, as this is, that they would have currents of electricity passing through the veins.

Q Now, Mr. Beddow, have you any other testimony you would like to offer to the jury with a view ~~xx~~ of showing anything with regard to the explosion.

A I would just like to make the statement that it is a violation of our State Law for any man to fire a shot while the men are in the mine.

Q It is that section that you had reference to when you said you thought a crime had been committed?

A Yes sir.

Q Has there any other crime, in your opinion, been committed outside of that?

A No sir, I think not.

Q Mr. Beddow, with regard to this firing wire, was it at the time you found it, connected with any other wire?

A No sir, it was not.

Q But it was of the proper length so that it could be?

A Yes sir, and it was laying on top of a car within two feet of the place.

Q And about what was the size of this gob that you have testified to?

A Why it is quite extensive.

Q I just simply wanted to know whether it was small or large.

A There is some worked out ground in there that is probably one hundred feet wide by two hundred feet long, you might say.

Q Now what was the condition of the bodies of the two men you have testified to, as having found near where the shot was fired?

A As to mutilation do you mean?

Q Yes sir.

A I don't believe that I could answer that question, as I have looked at so many, that I don't have any distinct recollection - they were black, and it seemed to me they would be hard to identify.

Q Mr. Beddow, Mr. Hawkins has suggested a question:

When was the first time after the explosion that you went into this place that you have testified to, - how long after the explosion?

A I wasn't in this place until the day before I left here, and I left here on Wednesday, and a week ago last Tuesday I went in there the first time. I was up those South Entries, and the other party, Mr. French and Mr. Peart was with me, and Mr. French was with somebody else, - Mr. Fish I think it was, ~~and~~ they went through those old workings, and we went down the South Entries, and I inquired from them if they had found any gas and they replied they had not.

Q What I was trying to get at is this, - in your first trip to this place which you have described, you were the first man in there were you?

A I don't know, but I think probably I was.

Q And did you at that time see any bodies right there?

A No sir, the bodies had been taken out at that time.

Q I mean the first trip you made there.

A I hadn't been in there until about thirteen days after the

explosion. It was my second trip back in there, and that was the reason I hadn't. Mr. French had been in there, and we had gone up the South Entries. Mr. Peart and I had gone up this way, room 27 is connected here by two cross cuts into this South Entry, and Mr. Peart and I went around this way, and Mr. French and Mr. Paul, and probably Mr. Roberts had went through these rooms in here, and down around these here, and met us in this Entry there, and when we met I asked them if there had been any recent caves or falls or any gas, and they reported not.

Q When was it you found these two men?

A That was the second day after the explosion.

Q And did you find any other bodies?

A Yes sir, we found two more in the 10th West, - they had been blown off this parting, - these bodies were terribly mutilated, - one man's head had been blown off, and I don't suppose it has been found yet, and there was a rail through his body.

Q Who would be benefited by the firing of this shot? in your opinion?

A The man that was working in the place.

Q If it was possible for the man who was working in the place to have made the connection you spoke of, and have waited for the trolley to come down and then thrown in a switch where he was working?

A Yes sir, the second switch I mentioned was probably one hundred feet, - he could have his first in and his second out, and the shot wouldn't have gone off until the second was cut in.

Q In what way would he be benefited by firing this shot?

A He could load more coal that day than if he hadn't fired the shot, otherwise he would have to quit work.

Q And I presume the miners are paid by the amount of coal they get out?

A Yes sir, they work on a tonnage basis.

RECESS TAKEN UNTIL 1:45 P.M. ON THE SAME DAY.

Mr. Beddow recalled to the stand at 1:45 P.M.

Q Was that the detonator that you found in the mine?

A Yes sir.

Q In what relative position to the place where the shot was fired did you find this?

A This was out to the mouth of room 24, right close to the switch and trolley line.

Q How could that be used to cause this explosion, or shot?

A It wasn't used in the firing of that shot at all, it just goes to show that the man that been working those switches had detonators, which they were not supposed to have, they were given out daily by the cap man.

Q To whom?

A To the men firing the shots.

Q As I understand it the men prepare the shots for firing and the shot firer fires them off?

A No, the shot firer distributes the caps, and the man firing the shot fix the hole, and make the connection, and when retiring from the mine they cut in their room switch, and after everybody is out of the mine the shot firer cuts in the Entry switch, which are ⁱⁿ kept ~~xxxxxx~~ locked boxes, then they retire from the mine and call for the current, and then they cut in the outside switch, and when that is turned on all the caps in the mine are exploded at once.

Q Then this is produced by you to show that somebody had detonators?

A Yes sir, it was not intended to use in firing that shot.

Q Mr. Stenographer I hand you this detonator as "EXHIBIT A."

Q Mr. Beddow, I hand you here a piece of insulated wire, and ask you to state what it is? You may call this wire "EXHIBIT B." MR. Stenographer.

A This is a piece of wire, similiar to the shooting wire that is used in the room, and while it is a little bit longer than what I

thought it was, just from recollection at the time, it will be found to be just about the right length to connect from the trolley wire and the switch.

Q How long is this wire?

A It is ninety-two inches long.

Q This is the same wire that you testified to this morning, as having found on the car?

A Yes sir.

Q Right where that car was, what was the direction of the explosion?

A It came out of room 24.

Q And as I understand your statement this morning, this wire was in position, when you found it, which it was possible to assume by reason of the explosion?

A Yes sir.

Q It could have been driven from the place where you think the connection was made with this wire to the place where you found it, by the force of the explosion?

A Yes sir.

Q And in what direction from 24 was that?

A Well it was right on the inside of the room, probably eighteen inches or two feet farther west down the Entry in by of the room.

Question by Mr. E. E. Sherfick, Jurymen.

Q I wanted to ask Mr. Beddow if he had made an examination of the Mine prior to the explosion, -shortly before the explosion?

A Yes sir, just one week before the explosion I went through that Mine and spent two days ⁱⁿ there.

Mr. Remley:

Q And in what capacity was your examination made?

A In the capacity of State Mine Inspector, - I was making my regular round.

Question by Dr. F. B. Evans, Jurymen:

Q At that time, prior to the explosion, did you find any evidence of gasses in the Mine?

A No sir, I made tests in every place where I thought there was likely to be any gas, but I failed to find any. - that is, not enough to show up in a safety lamp.

MR. REMLEY:

If there are no other questions, and you have nothing further to offer, we can excuse you Mr. Beddor.

Mr. Jo E. Sheridan, witness was called to the stand, and sworn, as follows:

You do solemnly swear that the evidence you are about to give in this proceedings shall be the truth, the whole truth and nothing but the truth, so help you God?

Answer, " I do."

Q What is your full name, please?

A Joe E. Sheridan.

Q What is your occupation, Mr. Sheridan?

A Mining.

Q How long have you been engaged in that work?

A Forty-five years.

Q Were you State or Territorial Mine Inspector at any time?

A I was United States Mine Inspector for New Mexico for thirteen years. It was under Federal Government, and that was the title the Commission was issued under.

Q I will ask you, Mr. Sheridan, if you have made an examination of Stag Canon Fuel Company Mine No. 2, subsequent to the explosion?

A I have.

Q I wish you would proceed to tell the jury and the court the nature and extent of your examination.

A Mr. T. H. O'Brien, General Manager of the Stag Canon Fuel Company, telegraphed me at Silver City, asking that I come to Dawson for consultation. I arrived here on the evening of the 5th of November, 1913. After arriving here I was asked to make an investigation of

the conditions within the mine, and make a report to the company, as to what I considered the cause of the explosion, as nearly as I could determine. Having seen several reports published in Press Dispatches, that the explosion was originated by the ignition of gas, and that being the easiest method, and on that is most usually jumped at, as to the origin of coal mine explosions, I first went into the extremities of the mine where it was most probable that gas would be found in the headings farthest in, opening up new ground which was liable to give vent to gas. Examination in those localities failed to disclose any gas which would ~~show~~ ^{show} a cap upon a Wolff Safety Lamp. These examinations were made on November 6th of this year, continuing for seven or eight days thereafter, each day. The first examination, on the 6th, was exactly two weeks after the explosion had occurred. The ventilation was not as good as normal. I naturally concluded that if, with the ventilation obstructed, I could find no gas in places where it would most likely be, that it was improbable that the explosion originated at the faces from the ignition of gas, and still less probable that it had originated in localities which had an opportunity to vent for many months or years prior to that time. However, I continued throughout the whole investigation to make tests for gas, as in two or three explosions which I had investigated, in years prior to this, and of which I have the reports, the mine explosions in which gas participated in the origination of the explosion. I had found gas in the mine after the explosions occurred, and under similar conditions of obstructed ventilation. - for instance the Blossburg explosion, Mine No. 3, - in the Dutchman explosion, in the Primere explosion a few years ago, I found gas, and those accompanying me in exploring the mine, - in the Primere Mine recently, it was Mr. Rice, of the Bureau of Mines, who was with me when I found a considerable body of gas after the explosion, and in other instances I have the names of the men, - in the Dutchman Mine, Mr. Walter Kerr, who was afterwards Mine

Inspector for the Saint Louis and Rocky Mountain Coal Company, and who was here, I understand, - but in these instances the mine showed gas after the explosion, and in all probability the origination of these explosions was through the ignition of gas. My idea afterwards, when I found the gassesus origin was not upheld by the observations in this mine, was to take the outer end of Entries, or rather the inner ends of Entries, - the inby ends, where the explosion had travelled, and trace it to a common source, which was a slow and tedious process, but on the evening of the 6th Mr. O'Brien communicated to me what I had not heard before, that Mr. Beddow, the State Mine Inspector, thought he had discovered the origin of the explosion at a pillar, - at the end of the pillar, - between rooms 26 and 27, off 9th West Entry, off No. 1 North in the No. 2 Mine. I went with Mr. O'Brien and Mr. J. W. Paul to that locality, made a casual examination that day, and did not care to go specially into the details, except altogether under my own individual observation, and without ~~saying~~^a anyone who had any authority around the Mine with me. I asked that Fire Boss be allowed to go with me, who was quite familiar with that district, and one was detailed to go along. I made careful examination in that locality, continuous to room 20. I found that there had been no evidence of an explosion in room 20 off 9th West Entry. I am speaking of the 9th West Entry, and when I change from the 9th West Entry I will tell you. But at the mouth of room 21 a great deal of violence was exhibited, - a car having been lifted off of a side track and plastered against the opposite rib at the mouth of a slant going through into No. 10 West Entry. I went into No. 20 room to find why nothing had come out there, and found that there was no cross cut going from room 20 to anything in the East, and that the cross cut between 20 and 21 had a big pile of rock and bone facing it which would obstruct anything coming in that direction. The room was but a short room, and without any outer connection, except the end of the room. At this point, where the car was driven out from in front of 21 room.

and against the opposite rib, I was told had stood the automatic switch of the parting, which threw the current on when the motor came in. Going farther along on the 9th Entry to the mouth of Room 23, I think it is, - at the mouth of room 23. - Now I will state here that I have just heard Mr. Beddow testify, and there is some discrepancy, - either he or I are mistaken. - I understood him to say that there was a switch at that point where this connecting wire had probably not been used, - where there were four strands of a wire wrapped around the trolley wire. - Now, as I have that located in my mind, it is at the mouth of room 23 instead of 24, though I may be mistaken. But at that point, however, a loaded car shows to have been blown diagonally off the track, the inby end not blown so far because it was protected by the pillar against which it stood, - but the balance of the car was directly in line with the violence of the explosion, but the outby end was thrown off the track at a angle of forty-five degrees, and part of the coal was blown out apparently, - at least the car was not full, and the car showed that some of the coal on the end where the explosion wave had passed over, - some of the coal was blown out. Going up that room 24 and 25, - leave that, --- At the mouth of room 23 was a shot firing switch, which had been turned in by somebody making a connection apparently, at some/prior to the explosion, for the reason that very careful examination of the switch, by observation, - not touching it, indicated that it had not been touched since the explosion. There was no marks of any kind on it to show that it had been touched since the explosion, at any part, - that no person had handled it.

Q In what condition was it right there, Mr. Sheridan, which lead you to believe that it had not been touched since the explosion?

A Because it was covered with dust and soot in a similar manner as all of the described area in that vicinity, as wherever anybody had touched it was traceable, and you could track ^{by} foot prints and

finger prints and so forth. I examined it not only then but several times, and up to the last time I examined it, it had not been handled. On the trolley wire was a piece of ordinary wire, - I don't know just what size, what the number was, - I am not familiar enough with wire to know the number, but it was a pretty stout wire.

Q Copper?

A No, I think not, - it looked to me like a steel wire, & it was on there the last I saw of it. It was wrapped around the trolley wire four times. It is possible, - I will diverge here for a moment to state that Mr. J. W. Paul, of the United States Bureau of Mines, told me that he had discovered these irregularities of switches being thrown in. Going across the ends of the pillars on 24 to room 26 I was told that there was a switch in 26 thrown in, but which I did not go to when told about it, but went to it afterwards, myself, and measured the ~~hangingxxxxx~~ distance from the inby end of the pillars where the haulage road goes, and it was forty-seven feet outby from the Haulage road on the inby end of the pillar. That switch, when I examined it, was thrown in, and there was nothing about it to indicate that anybody had handled it, or touched it, since the explosion. Going through the cross cut between rooms 26 and 27 I went to the end of the pillar in 27, and carefully examined the end of the pillar that I had heretofore been shown, where the explosive had originally been placed. At this point in the pillar, about a foot or fifteen inches, probably a foot as near as I can remember, from the room 27 side of the pillar, there was a cavity identical with the cavity that is usually made by the detonating of an explosive of high power. It showed the shattering effect of a high explosive having gone off in that cavity. It resembled the bottom of a shot hole that had pretty well cleaned itself. The shot had kicked back and opened a horizontal crevice in the coal about a foot in length, about a foot out and about two inches in length, where evidently there was an opportunity for

flaming, as it might do with a large of explosive and no tamping on it. It had released itself in that opening, as well as throwing out all the coal which was upon the shot, - coal being thrown in coarser or finer pieces up to two hundred pounds, and the usual percentage of slack among it, - being thrown south toward the gob, or ground where the pillars had been torn out. It had been thrown for a distance of ten to twenty-five feet, spreading in a fan-like shape, as it usually will do, and some pieces where farther out than that. They could possibly have been left there at some other time, but may have been thrown by this shot.

Q Now right there, in speaking of this fracture do you mean

A The explosive was in the pillar?

Q Do you mean by that statement that the crevice would allow flame to go out, that it would not have otherwise allowed, if it had been properly tamped?

A If it had been put across from here to the center, and not too much explosive used, but there would have been weight enough upon it to hinder it if not too large a charge, then it would have required all of the energy from that shot to release itself, - or it did not require so much energy, as it was only a foot from the rib, or the side of the pillar, and as the appearance of the cavity indicates, the shot being put in from this way, it was released and a great deal of the unexpended energy went out through this horizontal opening. It did not tear that piece out, as it released itself in there. Had it not released itself in there it would have taken that piece out.

Q Thus permitting flame to go out in the room?

A Yes sir, permitting flame to go out in that place.

Q None of the coal from that shot had been removed?

A Any person going into that room knew, - It can be demonstrated beyond a doubt that if one or two shovels full be removed, it will break the appearance of the distribution of the coal that is made

by a shot, which is thrown in every direction. If even one or two or three, but as much as half a dozen shovels full would show beyond a doubt, - to break that appearance of the way coal is always thrown by a shot. Another thing, - the miner, or any person, shovels close to the car, making a place to stand upon, and then continues, but everything is there just as that shot threw it. That a shot had been fired there is certain. That there was an opportunity, from the manner in which it back-fired, for it to have originated an explosion was also evident. The question then was, did an explosion originate there, and did it extend in any direction, beyond that immediate vicinity, - and I would say here, this often happens, that an explosion will start and not do any damage, or go any great distance, - and if it did, to trace in what direction it went from this particular point. I followed it through room No. 2 from this point, or through room No. 2 off of the South to the junction of room No. 2 with the First South. The explosion appeared to split, part going up and outby, of the First South, party going inby. I followed it to the First East past the cross cut into the face of the First East, where an undermining, or under-cutting had been made, and a prop with shooting wire on it was laying in the under cutting, - ribbed into the under-cutting, also a lot of debris, - showing that the explosion wave come down to that face. It crossed from No. 1 East to No. 2 East, through a cross-cut. A loaded car standing in front of that cross-cut, going through No. 1 to No. 2 East, had been derailed by the force going from No. 1 to No. 2. I traced it through No. 2 back into the First South, to the face of the First South, - through the last cross cut into the Second South, - up the Second South, around the face of the 9th and 10th West, where a pile of timbers are lying in the face. I want to state in the face of the First South a car has been driven towards the face and badly battered by the explosion going against it. Around the faces

of both the 9th and 10th West, up 10th West up to room 20, where the violence which came out of room 21 and plastered that car up against the rib, and also taken three cars through the slant that goes through to 10 at that point, and driven them into the neck of No. 21 room. Two of them side by side. It had taken a draw bar which belonged to one of those cars, because it was one of the new Santa Fe patterns, - the large cars that were in there. The draw bar would weigh upwards of seventy pounds, and three lengths of coupling and the coupling pin, laying thirty feet up above where the cars were driven, - thirty feet out on No. 10. Tracing the force outby from No. 10 in this direction, and re-tracing it to find what had been done here, where it split to room 29. Followed it through room 29 to 11th West Entry, through a slant at this point here, in 11th West Entry, into 12th West Entry, up and on to the gobs in 24, 25, and 26 and 27, but at this point here a car was badly battered, - followed it into room 29, here was a car badly battered by the explosion force. Half way around No. 10 Entry and No. 11 Entry at this point here, and at this point is a room driven into new territory, where I made thests for gas, as I had made at the extremeties of all of the other Entries and exterior extremeties. Following this we traced the explosion going across the gobs in rooms 24, 25 and 26, - 23, 24, 25, and 26, going from 12 to 13, apparently in that direction. Part of it going out of No. 12, and some of it going out of No. 11, - going across No. 12 Entry into No. 1. We traced it all the way out here, as well as tracing it over these caves in these rooms. These were shown plainly by props and ~~xxx~~ timbers and pieces of timbers blown up on the caved rocks in these rooms. On the right going out on this South side, this first room, 23, off 11th West Entry, showed reflex action of the wave of explosive force moving back this way. Room 22 was so ^{we} naturally couldn't tell which way, - there was soot showing that there had been flame in there. Room 20 and 21 showed very distinctly the out-going wave.

going in this direction. Couldn't get over this ground here, going into this room, 13, so this shows that the explosion wave came out here, destroyed the overcast between 13 and 14 and went outby and along 15 West to 16 East, going through into the High Line in that direction. Tracing this force on to 16 and 17 it shows that the explosion went up to the end of No. 2 North, took in 18 and 19 West, going out 18, back 19, down No. 1, and here was a great deal of reflex action because it broke a stepping and came directly back this way, and we didn't know what could have happened. We traced it through 16 and 17 clear out into the High Line, but at this particular point for about fifty feet the force was exerted back this way, where it had come down No. 1, and had gone both ways here. There is a hitch

Q Mr. Sheridan, right at this point I will simply ask you this question. If, from your examination you were able to ascertain where the explosion originated?

A Yes, sir, - there was an explosion originated in the pillar at between rooms 26 and 27, and that explosion communicated itself to all of the interior part of the mine.

Q And that was the cause, or the initial point of the explosion?

A Yes sir. Outside of Entries No. 9 and 10 I did not examine any, either the High Line, or the others, because conditions were disturbed, and I only took observations where conditions were undisturbed, as at the time of the explosion.

Q Now, coming back to this pillar, were there any wires leading from there to other wires which might have electricity in them?

A Yes sir, there was wire leading from there around 27 room, through the cross cut into 26, and down to the mouth of 25 and 24 and I think 23 room.

Q Now, on this wire were there any switches?

A Yes sir.

Q What was the original function of that wire?

A To transmit electricity when there were shots to be fired.

Q As I understand it there was a separate electric wire for firing shots, and another for the running of motors?

A Yes sir.

Q And this was the wire used for firing shots?

A Yes sir, the shot firing wire.

Q Were there any switches on that wire?

A There were three switches.

Q Were they open or closed?

A They were closed.

Q Were they in the same condition as the others you have testified about, - untouched?

A Two of them were untouched.

Q Were you present when this wire was found? The wire testified to by Mr. Beddow?

A No sir, I never saw that wire until today.

Q Did you see the trolley wire, with the wire wrapped around it?

A Yes sir.

Q Did you see the switch at that point?

A Yes sir.

Q Have you gentlemen any other questions you wish to ask Mr. Sheridan at this point? The object of the investigation is, of course, to ascertain whether or not there has been a crime committed and by whom.

Q Did you find any bodies?

A There was some taken out while I was there, but none from near where I was. They were all out.

Q Then in your opinion what is the cause of the explosion?

A My opinion is that a shot had been left properly connected, and that when the motor came in it threw the automatic switch in, putting the electric power on to the trolley wire. There was a probability that it was connected with the switches and the shot was fired in that manner.

Q Of course you have no idea.

A I have no positive knowledge.

Q You have no idea by whom this connection was made, or the shot fired?

A I don't know who did it, no sir.

Question by Dr. B. F. Evans, Jurymen:

Q This shot in this explosion, Mr. Sheridan, I wanted to know if it is what you would term a blow-out shot?

A No sir, I would rather call it a flaming shot from the rear, - a weak point in the rear, - a blow-shot is one that is in the mouth of the shot hole, because it is too tight, and is blown out of the shot hole. A shot will frequently cut back and make a flaming shot, and the trouble with that shot is that it is not properly placed.

Q And that was the trouble with that shot?

A Yes sir.

Q There wasn't ground enough behind that shot to resist the powder?

A No sir.

Q Are there any more questions that you would like to ask Mr. Sheridan. If there are no other questions then we will excuse Mr. Sheridan from the chair.

MR. SHERIDAN EXCUSED.

Mr. T. H. O'Brien, witness, called to the stand and sworn as follows:

You do solemnly swear that the evidence that you are about to give in this proceedings shall be the truth, the whole truth and nothing but the truth, so help you God?

Answer " I do."

Q State your full name, please.

A Thomas H. O'Brien.

Q What is your occupation?

A General Manager of the Stag Canon Fuel Company.

Q Now Mr. O'Brien, relative to the manner and method used by the Company in firing shots, and the method and manner of taking the electricity to the place where the shots are fired, will you please explain?

A The shots, for several years, have been fired from the outside of the mine, - after the miners and everyone working in the mine are out. The wires are conducted from the shooting cabins on the outside. In these cabins are located switches. Switches that are locked open during the time they are not in use. The wires are conducted down the side Entries, or other convenient places, where other shooting switches are installed. Those switches are also locked open. The boxes are made in such a way that they cannot be closed while the current is passing through it. Then at each working room there is an individual switch to control that room alone. As the men go in in the morning they throw out these switches then along about three o'clock in the afternoon a cap man goes in and distributes caps to each room where holes are to be fired. After those holes have been loaded ^{and} ~~with~~ caps inserted the minner ~~man~~ connects those wires up to the shooting wires. As the miner goes out he connects this switch at the mouth of his room. When the days work has been finished, and every man has been checked out of the mine the power is out off completely. The shot firers then enter the mine and go to the various shooting boxes, as they are called, - unlock ~~the~~ those boxes and closes the switches. They then return to the surface and ask for the power to be turned on the the line. After that has been done they close the switches in the shooting cabins, and all the shots are fired at one time.

Q And that is the only method used in firing shots?

A That is the only method used.

Q And how many miners were employed in No. 2 mine at the time when the explosion took place?

A Practically 287 at that time.

Q You speak of shot firers, -are their duties only to fire shots,

special men to fire shots?

A They are men who are employed simply to look after the shot firing arrangements, and distribute the caps, and after the men are out they fire the shots, and after the shots have been fired, they open the switches and lock them and then go to each room and see that no fire has been started from the shots, and also to see if there has been an mis-shots.

Q And when this is done, I presume the next shift goes on?

A Yes sir, on the following morning.

Q You spoke of the men being checked out?

A The men, as they enter the mine leave an identification check with their number on that check with a man kept there for that purpose, and the checks are put on a board, numbered also, and when they come out of the mine they call for that check, and if the men do not call for all the checks, the men are looked up, and no shots are fired until the men are all accounted for.

Q I would like to have some evidence as to who the miner was who fixed this shot that Mr. Beddow and Mr. Sheridan have testified to. Have you any knowledge with regard to that man?

A Check No. 667 was working in that place.

Q You have been in the mine at that point?

A O yes, several times.

Q What was the check number on the car that Mr. Beddow testified to?

A No. 667.

Q I t was the same check number?

A Yes sir.

Q Do you know the name of the man who owned that number?

A That check number was owned by Thomas Pattison.

Q I take it he was a negro?

A No sir, he was not.

Q Is Mr. Pattison living or dead?

A He is dead.

Q Do you know where the body was found?

A No.

Q Has it been identified?

A It has been identified and shipped, but as to where the body was found I couldn't say, as I didn't see the body at that place.

Q Are there any other questions, Gentlemen, that you wish to ask Mr. O'Brien, - or have you any testimony, Mr. O'Brien, that you have to offer bearing on the investigation?

A No.

Q Mr. Hawkins suggests a question.

Q I think it might be proper to ask if there were any persons rescued alive in that place where Pattison was found, or around where the trolley wire was located, that was testified about.

A There was not a single man rescued from that side of the Mine.

Mr. E. E. Sherfick, Juryman.

Q I would like to ask Mr. O'Brien what the usual hour of firing these shots is?

A About six-thirty in the evening.

Mr. Remley:

Q And when did the explosion take place?

A A few minutes after three probably.

Q If you would state more fully the rules of the Company and instructions given to the miners relative to firing shots it would be appreciated.

A It was strictly against the rules of the Company, at all times to have anything to do with the firing of shots. I never knew of but one instance where they did that, and a man was supposed to have put off a shot in the 9th West. That was about two years ago, and the man and his partner were let out and compelled to leave town, - that was before we had the law under which to prosecute them.

Q Is the check man her?

A No.

Q You know of your own knowledge that the man, Pattison, had check No. 667?

A Yes, that is his pay roll number.

Q He was checked in under that number on that day?

A Yes, and his body checked out under that number.

Q And that was the number found on the car right there that we were speaking of?

A Yes.

Q And do you know, of your own knowledge that room 27 was where he was working?

A Yes.

Q Are there any more questions, Gentlemen?

Dr. F. B. Evans, Jurymen.

Q I would like to ask Mr. O'Brien if Pattison, No. 667, was the only man checked in to that room on that day?

A Yes, he was the only man, working on that pillar.

Q If that is all, Gentlemen, we will excuse Mr. O'Brien.

MR. O'BRIEN EXCUSED.

Gentlemen, that is all the testimony that I know of at this time, unless some of the rest of you know some witness who might testify on this question. You understand, while this is not a prosecution, criminal ~~proceeding~~ yet it is a criminal investigation, and you and I are here to ascertain if not only one crime has been committed, but other crimes, and if any of you have reason to believe that other crimes have been committed, and know of witnesses and can give any light on the subject, let us hear from you.

If you would like to hear the law on this point I can read it to you briefly, and you may then ascertain whether or not the law has been complied with, or broken, by any person or persons.

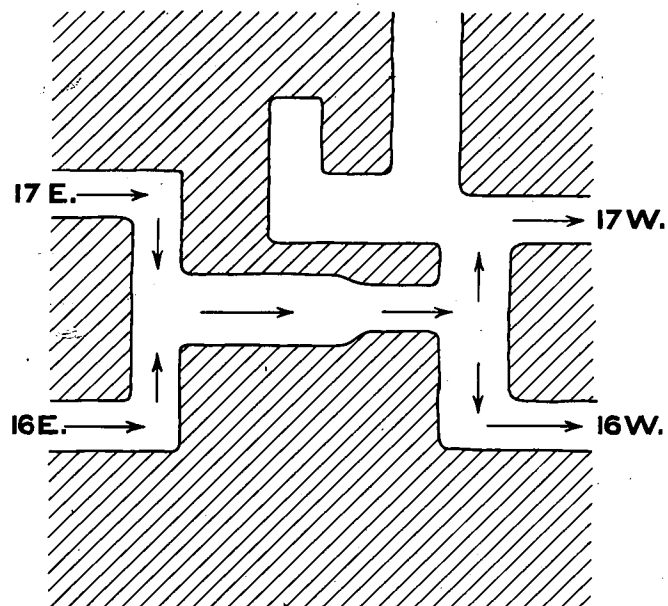
READS.

Judge and Jury are taken to the Mine testified about, in order that they might make an examination of some of the things testified about, and were ordered to appear in the office of the Honorable T. L. Kinney, at eight o'clock P.M.

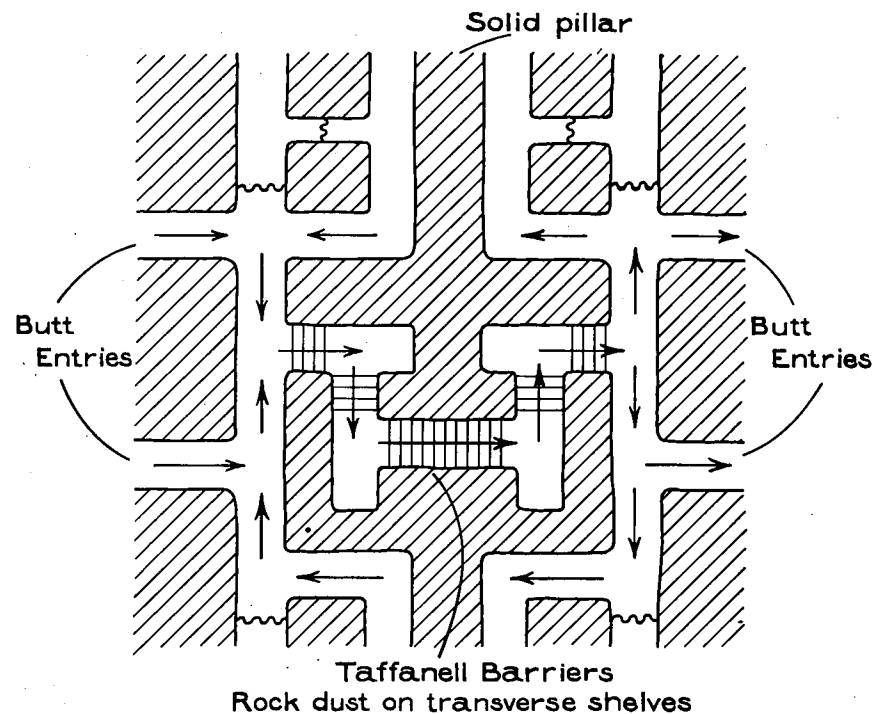
COURT ADJOURNED.

SKETCHES OF
AIRWAYS BETWEEN SIDES OF DOUBLE MINES

CONNECTION AT DAWSON, MINE NO. 2
THROUGH WHICH FIRE PASSED



SUGGESTED CONNECTION
TO PREVENT FIRE PASSAGE



SCALE IN FEET
0 50 100

SEE D. 132

BUREAU OF MINES, PITTSBURGH, PA.	
DATE 2-27-15	AIRWAYS BETWEEN MINES
	1 ^{ST.} , AT DAWSON, MINE NO. 2
	2 ^{ND.} , SUGGESTED CONNECTION
	SCALE, 1"=40'
DRAWN BY <i>L. C. Clark</i>	APPROVED
CHECKED BY <i>L. C. Clark</i>	<i>L. C. Clark</i>
ENGINEER	B.453.

OUTLINE MAP

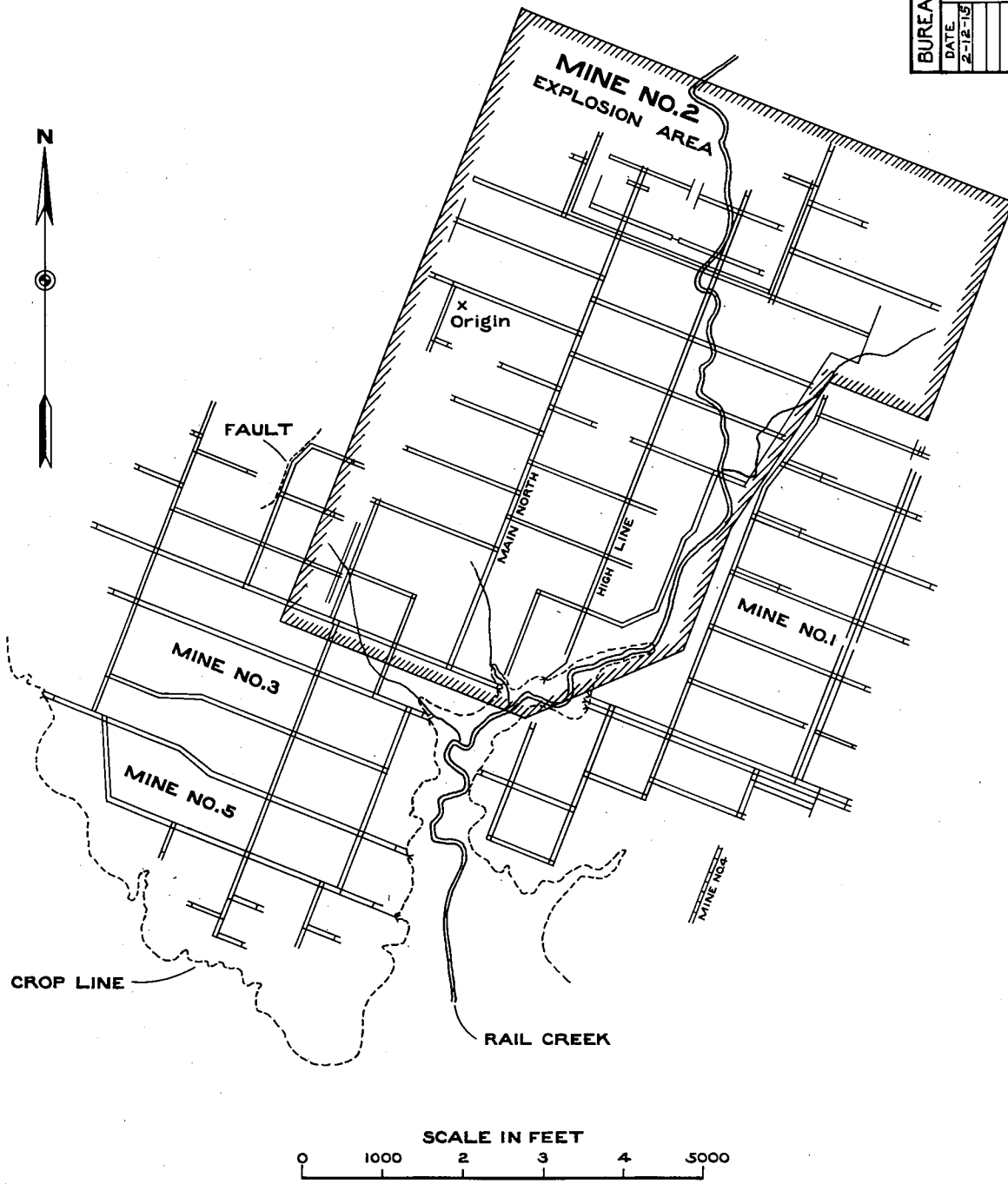
DAWSON MINES

—STAG CAÑON FUEL CO.—

COLFAX COUNTY, NEW MEXICO

COAL DUST EXPLOSION, OCTOBER 22, 1913

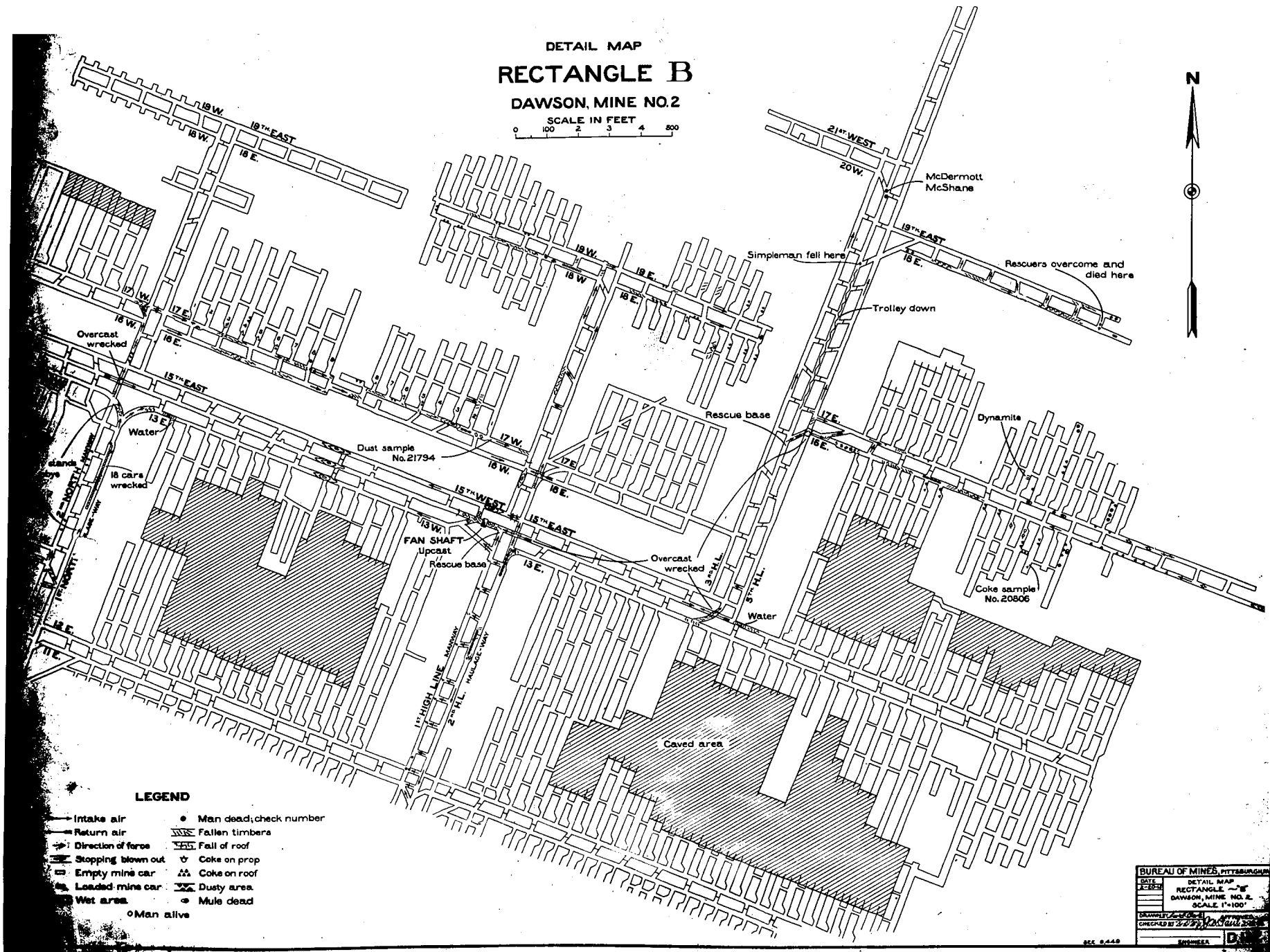
BUREAU OF MINES, PITTSBURGH, PA.	
DATE	OUTLINE DAWSON MINES
2-12-15	STAG CAÑON FUEL CO.
	COLFAX COUNTY, NEW MEXICO
	COAL DUST EXPLOSION, OCT 22, 13
DRAWN BY	APPROVED
CHECKED BY	
ENGINEER	
B, 448	



DETAIL MAP RECTANGLE B

DAWSON, MINE NO. 2

SCALE IN FEET
0 100 2 3 4 500



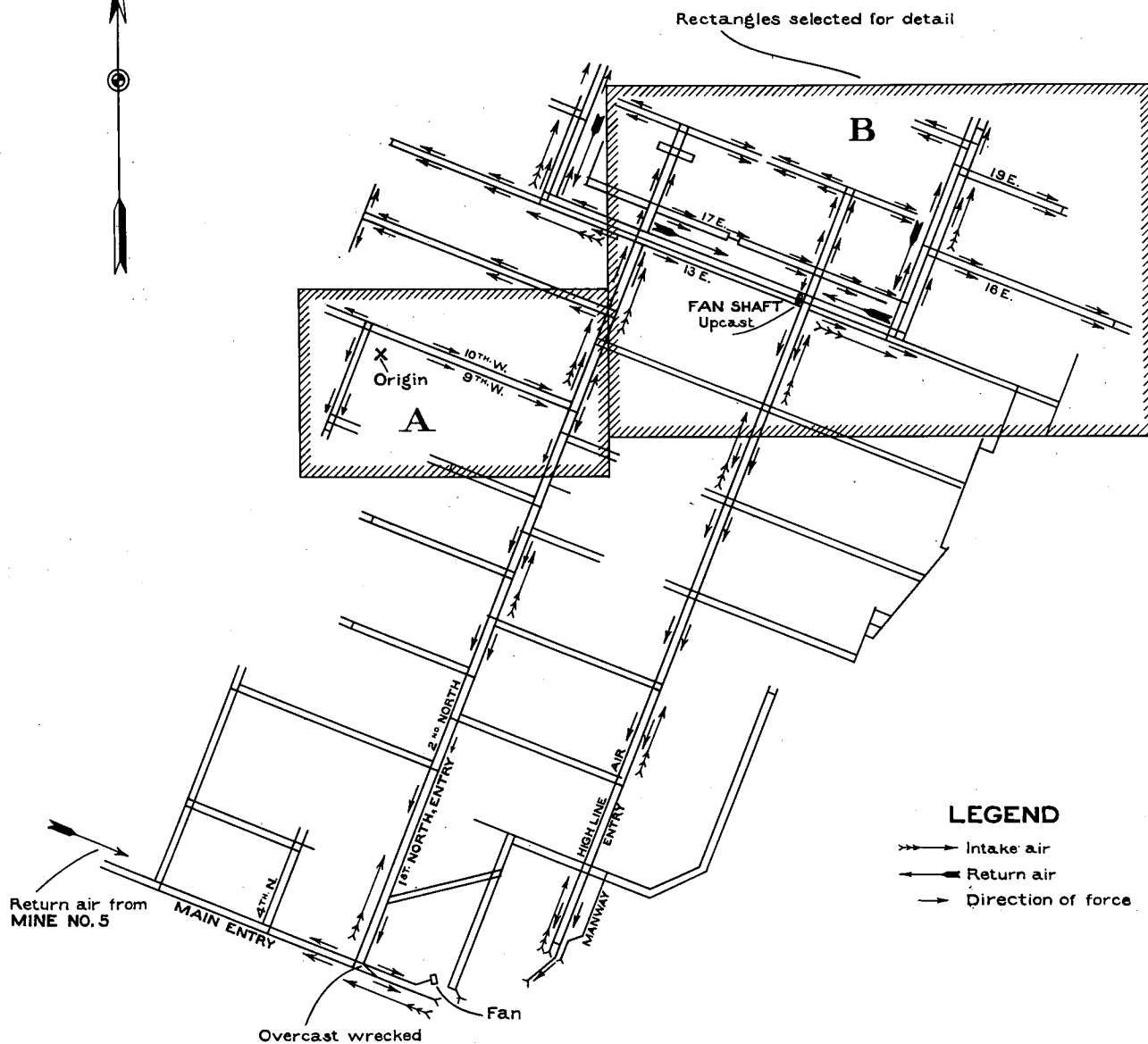
OUTLINE MAP
DAWSON, MINE NO.2
 SHOWING
—VENTILATION & EXPLOSION FORCES—

SCALE IN FEET
 0 500 1000 2000



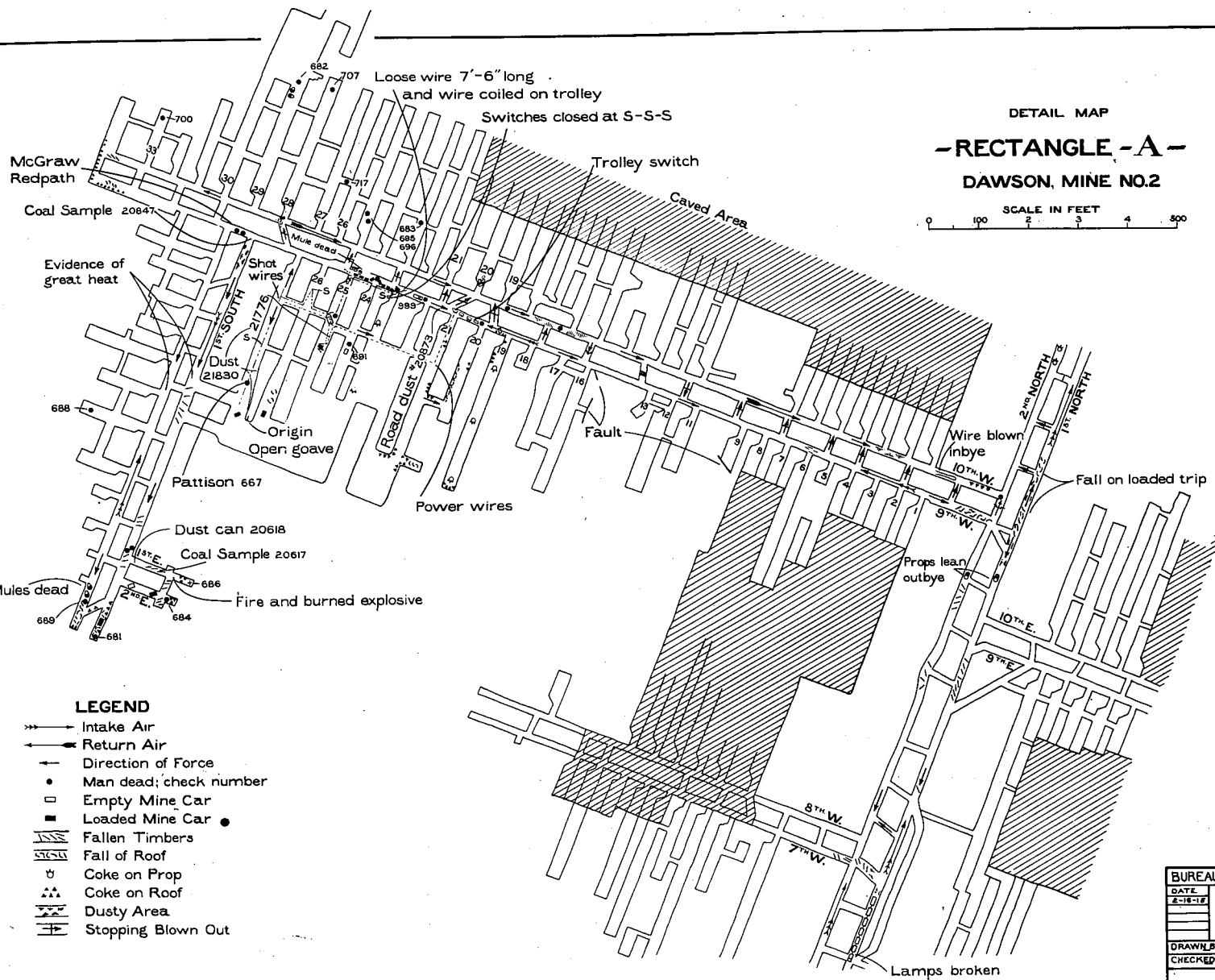
BUREAU OF MINES, PITTSBURGH, PA.	
DATE 2-10-15	OUTLINE MAP DAWSON, MINE NO. 2
SHOWING VENTILATION & FORCES	
DRAWN BY J. S. Clark	APPROVED
CHECKED BY J. S. Clark	ENGINEER
B449	

SEE B.4.48



LEGEND

- ↔ Intake air
- Return air
- Direction of force

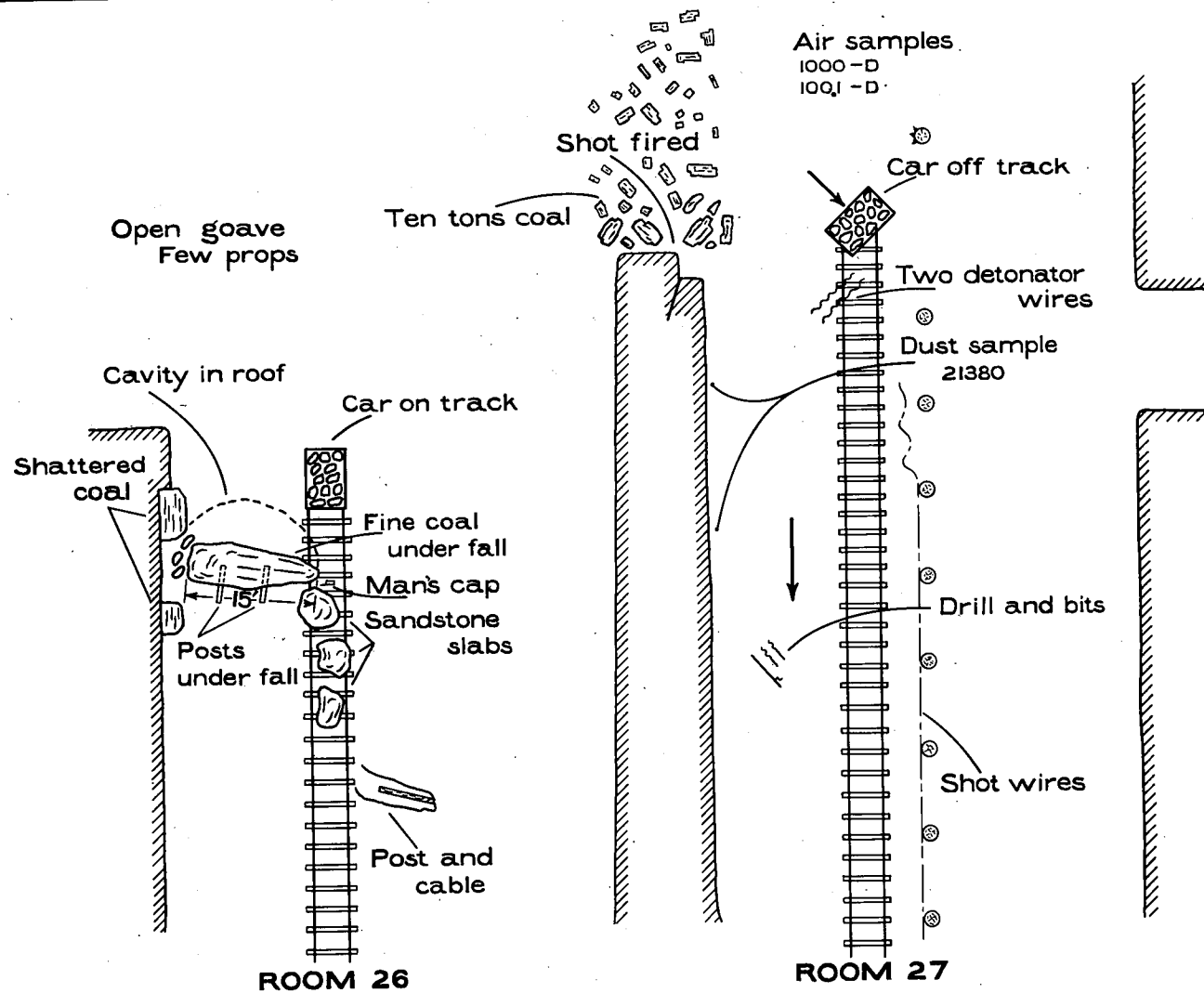


LEGEND

- Intake Air
- ← Return Air
- Direction of Force
- Man dead; check number
- Empty Mine Car
- Loaded Mine Car
- /// Fallen Timbers
- Fall of Roof
- ⬆ Coke on Prop
- ⬆ Coke on Roof
- Dusty Area
- ⊥ Stopping Blown Out

BUREAU OF MINES, PITTSBURGH, PA.	
DATE 2-16-18	DETAIL MAP RECTANGLE - A - DAWSON, MINE NO. 2 SCALE 1"=100'
DRAWN BY J. H. H. 1-10-18	APPROVED J. H. H. 2-6-18
CHECKED BY J. H. H. 2-6-18	ENGINEER C. 424

SEE B. 449



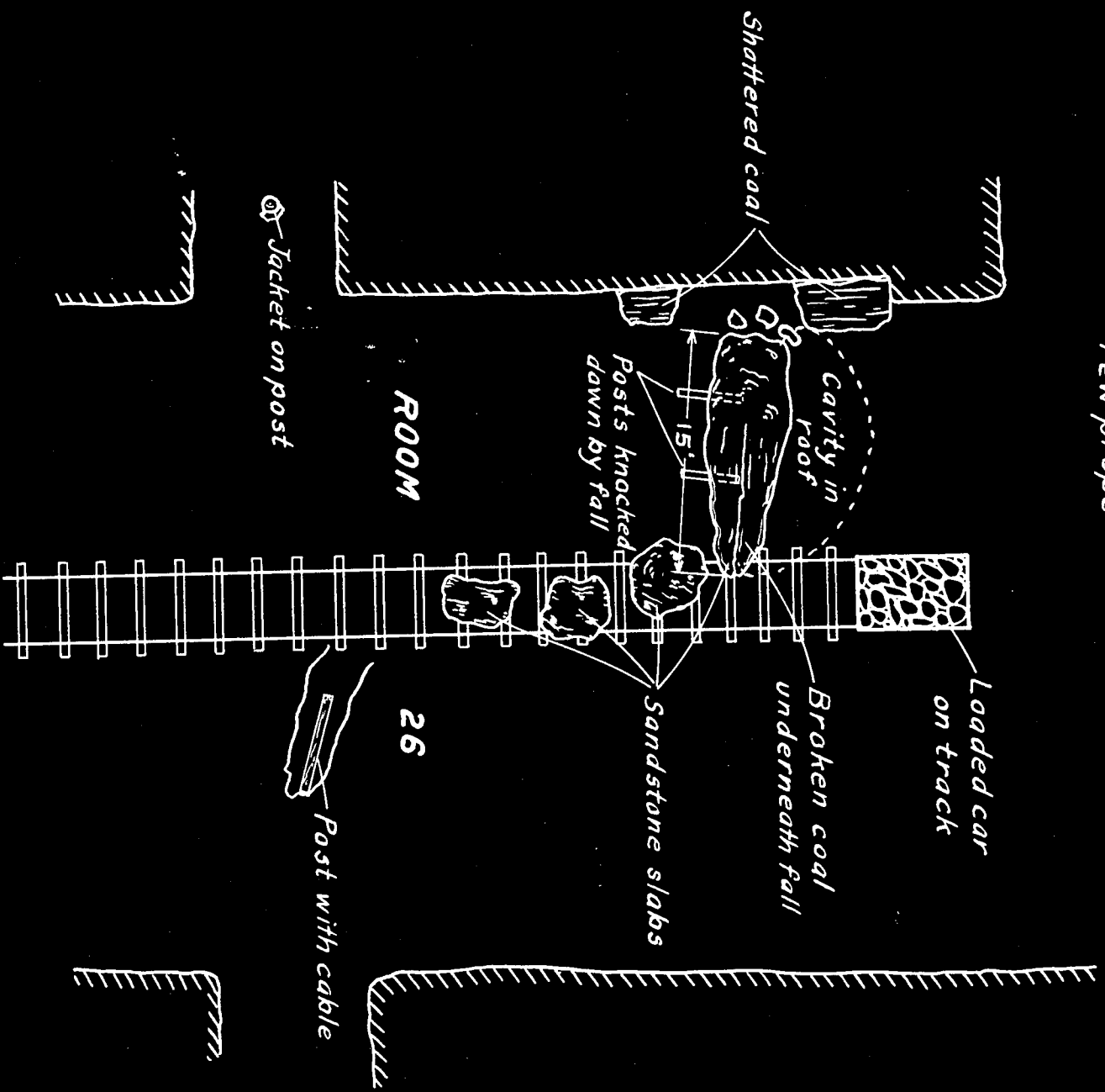
SKETCH
— ROOMS OFF 9TH WEST OFF 1ST NORTH —
DAWSON, MINE NO.2

SCALE IN FEET
0 10 20 30 40 50

SEE C.424

BUREAU OF MINES, PITTSBURGH, PA	
DATE 2-26-13	SKETCH ROOMS OFF 9 TH WEST OFF 1 ST N. DAWSON, MINE NO.2 SCALE 1'-10'
DRAWN BY <i>Louis Clark</i>	APPROVED <i>Louis Clark</i>
CHECKED BY <i>R. C. Clark</i>	ENGINEER
B,451	

Open gable
Few props



SKETCH OF
ROOM 26 OFF 9TH WEST

