

gen, which exudes from the strata, and is generated principally in mines below water level; explosions are caused by a mixture of air and carburetted hydrogen; one part of carburetted hydrogen to nine parts of air is most explosive mixture, but a smaller proportion of fire-damp is less so.

After a careful inquiry the jury found a verdict to the effect that the man Anderson carried a naked light into room 18, No. 2 level, which gave rise to the explosion; and avers that there is a dangerous supply of gas in this mine at all times, and suggests that only safety lamps should be used there.

In all countries where coal mining is extensively engaged in, it has been found that serious and deplorable disasters have more or less marked the annals of this industry, notwithstanding any precautions that may be taken; still casualties seem to be inseparable from the conduct of this business, and continue to produce their annual average. We hear much comment on such disasters, and it is well that such should receive the fullest criticism, in an endeavor to promote the means for the prevention of such, and the diminution of peril to the miner.

After the Crested Butte explosion we could hear numerous causes as to the origin of this accident. I will here endeavor to give as clear and concise a view of my belief of the circumstances to which I attribute this fatality, as I am able.

On the 4th of December I visited this mine and made careful inspection. Found the air current good and quite sufficient to render harmless all gases that would be given off in it; but this, in itself, is not an infallible safeguard against explosion, unless there exists a rigid spirit of discipline amongst miners, and a never failing watchfulness to the repairs of the appurtenances of the mine, for it may be in the defect of the brattice, door or stopping, or neglect on the part of one careless man that we may look for the cause explaining these disasters which occur frequently in the best ventilated mines, and where the highest readings on the anemometer are found, and whatever might have been the cause of the above explosion, it certainly was not in a deficiency of the total quantity of air forced in the mine.

During the time of my visit to the scene of this disaster, I formed an opinion as to the probable cause of this acci-

dent, which, after the maturest reflections given to it whenever the subject comes uppermost in my mind, apart from the excitement coincident to the explosion, I am obliged to give my fullest consent to, viz.: That the man Anderson did not walk deliberately into the gas after being warned not to enter his room, but think that he set to work with the nails the fire-boss gave him, and nailed the broken brattice up in place, which turned the air in a strong body and drove the whole of the gas out (which was probably equivalent, in force, to nearly 3,000 pounds of blasting powder) more rapidly than the air could render it harmless, and might have been fired on main entry by some unsuspecting party near by. Anderson, as it is stated in some of the evidence, told the fire-boss that if he gave him nails he, Anderson, would fix the brattice, also remarked that he had a car which he wanted to load. Anderson probably thought he was just doing what the fire-boss would have done had he waited until he came, so with a view of saving some time in not waiting for the fire-boss, *he nailed up those boards, which certainly should never have been done until every miner was out of that entry, and not one naked light been in that particular district.* Under this view, if Anderson had allowed the fire-boss to have preceded him, the fire-boss, I am very much afraid, would have done the self-same thing, as he was already making preparations and getting his tools to go and fix that brattice; thus the accident might have happened at the fire-boss' hands. This is my theory, which I firmly believe to be well founded.

The following is a list of persons killed in the Crested Butte disaster:

David Thomas.	John Price.
John Thomas.	James Driscoll.
Miles Roach.	James Coughlin.
Henry Anderson.	Henry Stewart.
John Williams.	Barney Heffron.
M. J. Stewart.	Larry Heffron.
John Martin.	W. L. Jones.
Thomas Rogers.	John Donnelly.
James O'Neil.	Charles Rodwald.
Jacob Laux.	Charles Sterling.
James Welch.	Thomas Roberts.
Peter Baker.	James McCourt.
William Davidson.	Frederick Becht.

Richard James.	Iber King.
Richard Hughes.	Joseph Weisenberg.
P. McManus.	H. Donegan.
W. J. King.	Joseph Kranst.
John Creelman.	James F. Stewart.
John Hular.	Wm. Neath.
Thos. Williams.	Morgan Neath.
John Shun.	Thomas Glancey.
Patrick Barrett.	John Rutherford.
John McGregor.	William McCowitt.
John Meyers.	A. W. Godfrey.
F. W. Smith.	Daniel McDonald.
G. B. Nicholson.	William Aubrey.
William Maroney.	Benjamin Jeffries.
Nicholas Probst.	Thomas Lyle.
Thomas Laffey.	Thomas Stewart.
John Anderson.	

## LIST OF FATAL ACCIDENTS.

September 20, 1883.—Thomas McKeown, miner, No. 4 shaft, Canon City Coal company, Fremont county, received injuries from which he died October 5, never having been conscious again; left a widow and two children. McKeown fired a shot, and immediately entered his place before the powder smoke cleared away. It appears that the shot was overcharged with powder, and the coal was thrown out with great force, displacing four or five props set under bad roof at face of roadway; he had but just entered when the rock from the face of the roadway fell, catching the unfortunate man under its weight. James McCart, who was working as partner with him, and present at the time of accident, states that they were both aware of the roof being bad, and thought from the nature of the shot that the props had been knocked out. McCart remarked to him that he should not enter so soon, but he answered he was only wanting to see the result of the blast and he went in. Being notified of this accident, I at once visited the place and found seven to eight tons of rock at face of roadway with a few props lying underneath. A piece of coal weighing about 300 pounds was lying out in road, which had been thrown there by the blast.

This habit of rushing in among powder smoke to investigate the result of a blast is a very daring and dangerous practice, still the same is practiced daily, even amongst intelligent miners, and many lives have been thus lost. Miners should never enter their working place after firing a shot until the air current removes the powder smoke, so that any probability of danger that may exist from result of blast may be apparent. The air current should always be in such a quantity as to carry away the smoke from a blast in a very few minutes.

September 28, 1883.—Daniel Goggins, miner, Starkville colliery, Trinidad Coal and Coking company, Las Animas county; injured and died morning 29th; caused by a fall of slate at working face of his room. I found, on examina-