SIXTY YEARS AGO THIS FIRE STARTED AND IT STILL BURNS

A Comforting Blaze for Frosted Fingers and Toes Grows Into Devouring Monster Defying World's Best Engineers to Check Its Devastating March--By D. Hiram Morgan

ONE February morning in 1859 a miner entering slope No. 1 of the Lehigh Coal & Navigation Co.'s mine stopped to warm his chilled fingers at a fire burning in a heap of rubbish. That fire is still burning, throwing off heat enough to warm—well, it's hard to say just how many cities like Philadelphia, 97 miles away, or New York, 129 miles distant, that fire would comfortably heat.

Between Summit Hill, one of the oldest towns of Carbon county, and Coaldale, the monster is steadily eating ton after ton of fuel; gorging itself on coal—coal for which almost everybody is clamoring. Engineers, generations of them, have fought the fire and it breathed its sulphurous breath into their faces, probably chuckled a little and went on devouring coal. Any one who can throttle this rapacious fire may spend the rest of his days, if he feels so inclined, saying, "How much is it?" and drawing checks for the amount, for the Lehigh Coal & Navigation Co. certainly does want that fire put out and the stockholders are willing to pay roundly for the services of the suffessful fireman.

Many schemes to check the fire have been tried, and the latest is simplicity itself; that is, on paper. It is just taking the fuel away from the fire by means of a tunnel which will cut through the vein being consumed. When the fire arrives at the tunnel there will, naturally, be no coal, and no coal, no fire. That's really all there is to it, but some of the best engineering talent in the world is busy on that tunnel, which is considered one of the most gigantic undertakings of its kind.

Strange it is that the world's greatest mine fire should break out in the very locality in which coal was discovered and in the first coal mine to be opened.

Near the site where coal was discovered the Lehigh Coal & Navigation Co., which developed the coal field in Carbon county, slope No. 1, was sunk in the year 1847 on the south side of the Mammoth vein, which was 50 feet thick and dipping at an angle of 25 degrees.

Officials of the coal company insist the fire, which was discovered February 5, 1859, was of incendiary origin.

In the year 1860 it was decided to make an open cut at a point 3500 feet west of No. 1 slope from the surface between Summit Hill and Lansford, down to the lowest level of No. 2 slope workings. This slope had been sunk by the company in 1850 on the south dip of the Mammoth vein, where the coal measured 55 feet in thickness and had a dip of 21 degrees. It was finally extended to the sixth level.

The company in 1861 sought to drive an open cut into the blazing main. Eight thousand dollars was expended on the work. In the following year $13,000 was expended; in 1863, $18,500; in 1864, $16,000, and in 1865, $22,000 spent. The company was not in the financial condition to continue this cut and it was abandoned in 1865.

In 1866 the fire was apparently making no progress. Watchmen were employed day and night to report any new outbreak. In fact, the fire seemed to make no progress westward from 1867 to 1895, the officials reported, and in 1867 a thorough underground examination of the fire at the old No. 1 slope was made and it was reported that to all appearances it was dying out.

In 1883 what is known as the Davies slope was sunk by George M. Davies. In 1895 the east gangway of this slope was extended to a point where it broke into a fire that had been smoldering in the old workings for years. The extension of this gangway gave vent to the fire and it commenced to spread rapidly. The gangways and headings were immediately closed to shut off the air and steps were taken to confine the fire zone. Pumping machinery was erected at the mouth of No. 9 tunnel, the nearest available point where water in sufficient quantity could be obtained, and two lines of column pipe 10 and 12 inches in diameter, 5700 feet long, were laid to drill holes that had been made directly over the fire. The pump could not be used until December, owing to a prevailing drouth. Culm was shipped from the Hauto washery and flushed into the burning area through the drill holes.

In 1895 a plan was adopted to fill the north outcrop full of culm, a process which is going on in the anthracite towns today to fill up the space occupied by the millions and perhaps billions of tons of coal taken out. This flushing of culm was intended to shut off the air and make a fire barrier of culm.

The officials of the company were chagrined in 1900 to find that, during the summer, the fire was gaining headway and was spreading rapidly to the west. As the appliances for furnishing water to wash the culm into the burning mine were inadequate, it was decided to provide another pump of larger capacity and it was installed at the mouth of No. 9 tunnel. During the winter months the culm often froze in transit from the collieries to the drill holes, making it difficult to unload from the cars, and to overcome this trouble two plants had to be erected for the purpose of providing hot water to thaw the culm. In 1901 57 six-inch holes were drilled a combined length of 6414 feet and 91,000 tons of culm flushed into the old workings. The following year 22 were drilled and in 1903 58 six-inch holes were drilled and 28,000 tons of culm flushed into the burning area. Drilling and flushing continued until 1908, when 750 holes had been driven and thousands of tons of culm flushed into the burning mass. This line of drill holes was 250 feet east of the old open cut. This barrier of culm failed to stop the fire's westward spread, for in 1908 smoke and steam poured out of the open cut. Another examination of No. 2 slope was made and it was found that the fire had advanced to within 100 feet of the slope.

Everything ingenuity could devise was brought into play against the subterranean monster. The officials of the company at the Coaldale colliery No. 9, in the Lansford basin, had the No. 9 water-level tunnel extended west around the nose of the anticlinal into the Summit Hill basin, and the east gangway from No. 11 Foster's water-level tunnel had been extended east and connected with No. 9 west gangway. These gangways were at the elevation of 1063 and the overflow of water from the Summit Hill basin passed out through them. This was part of the open-cut plan to isolate the fire, started in 1908, and was virtually finished by December, 1909, at an expenditure of $470,000.

The fire was again found spreading to the westward along the south outcrop. A railroad was constructed into the outcrop and the vein was flushed full of culm for a distance of 400 feet to seal it up at this point.

But the company felt some other means might be employed to prevent further destruction of valuable coal, not to speak of the expense which had already accumulated in fighting the greatest and most stubborn of all mine fires. So in November, 1913, they decided to make an open cut on the south outcrop to cut off the fire in its march toward the Springdale tunnel workings. It was 1915 before the work of constructing the open cut was completed.

It was in the year 1912 that the coal company constructed cross sections to make an estimate of the amount of coal remaining on the anticlinal and on the south dip of the Summit Hill workings, west of the clay-fire barrier. The vein averages 55 feet thick and dips 21 degrees south.

Such an excavation averaged 90 feet in depth with four feet of clay and 86 feet of sandstone overburden. In this way all coal could be removed down to the level of the water at the west end. By so doing the danger of the fire getting into the Lansford basin may be removed.

One hundred feet of stratum had been left between the face of the stripping and the clay barrier, and this was broken and cracked from old mining activities. In August, 1915, steam was discovered coming out of the crevices on the west side of the clay barrier, the temperature ranging from 100 to 150 degrees. It was not thought the fire had found its way across the barrier, but that it was burning fiercely on the east side and the heat had been transmitted through the clay to the west side. As a precaution, the company again resorted to drilling holes on the west side of the barrier and commenced flushing the old workings adjoining the clay barrier with culm, thus increasing the width of the fire barrier. The temperature in the holes was found to range from 85 to 240 degrees.

Mining on the west third level was suspended October 11, 1915, and water was turned into the drill holes the same way. Weir measurements were taken every hour to ascertain the increased flow of water. The average flow into the mine was 1160 gallons per minute.

After 39 days of flooding operations were resumed in the west third level.

As another precaution to prevent the fire's spread, a tunnel is being driven from the west water level, Buck mountain vein, gangway No. 9 colliery, south through the anticlinal to the Summit Hill basin. This tunnel will be driven to the Skidmore vein with 30 feet of sandstone between.

And so, while mine officials since the days of 1859 have longed for the day when they might see the great fire subdued, they have only succeeded in checking it.

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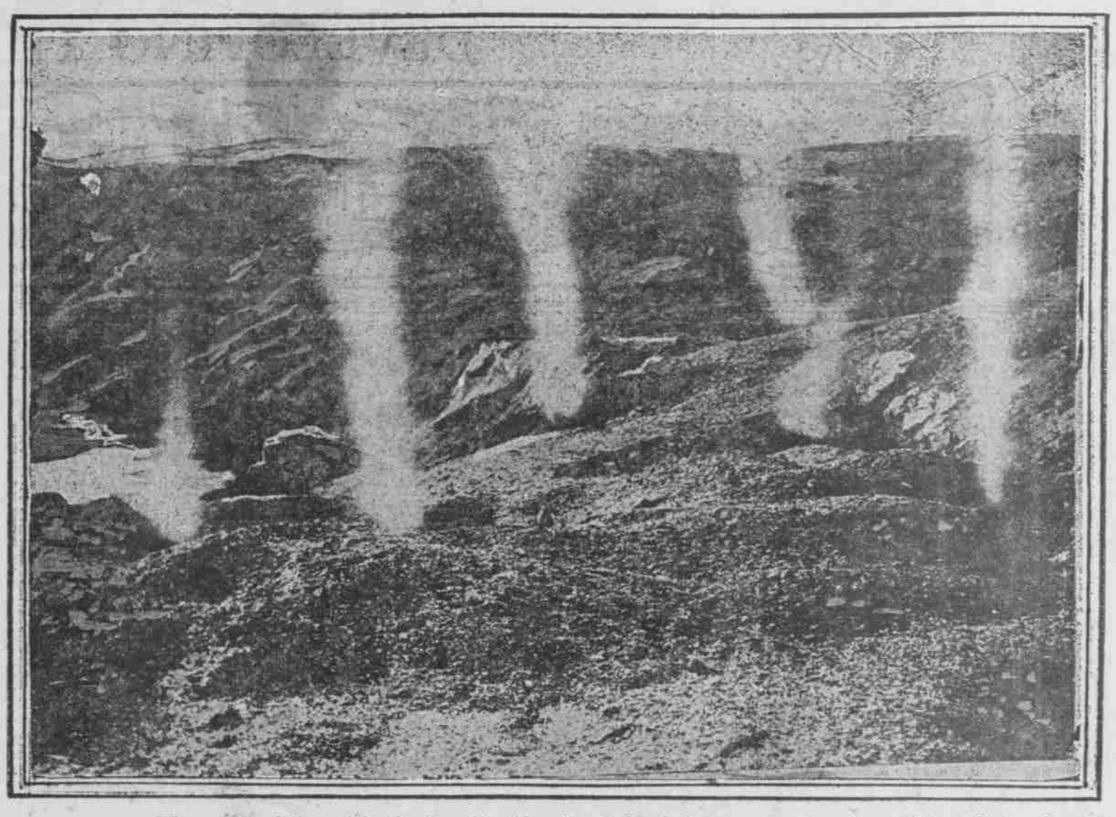

Where your winter coal is "heating all outdoors" and threatening to sweep through one of the richest coal regions of the world. A fortune awaits the man who can smother the flames.

FILM CENSORSHIP WANTED

Germany Said to Be Flooded With Indecent Motion Pictures.

BERLIN. — (By the Associated Press.)—Some relief from the "enlightenment" or "explanation" films that have been deluging Germany since the revolution is coming, though slowly, from an unexpected source—from boys and girls in a great many small cities who have seen one or more of the films and who have banded together to boycott them. Such organizations have been formed in Leipsic, Hamburg and in such Berlin suburbs as Friedenau, Lichterfelde and Lankwitz.

Yet such isolated protests against the evil cannot do much to put down the entire system, and, as the Prussian minister president announced yesterday, there is no legal way of stopping the films except under the law against lewd pictures and drawings.

A conservative writer in the Kreuz Gazette blames unscrupulous film producers for "the plague" and at the same time says the decent producer is under tremendous pressure because he simply cannot make his decent films marketable, and is inevitably drawn by the generally prevailing tendency for salacious pictures, which the writer terms as a spot of shame on German public life.

Judge Heliwig in the Conservative Monthly declares that children and young people are learning familiarity with subjects which they never even dreamed of a few years ago, and that the situation is an "example of the benefits of the revolution."

Dr. Heliwig despairs, however, of accomplishing much except by law, for he has seen, night after night, long queues of girls and young men waiting to get into the "explanation" films and shunning the few theaters where decent films are displayed.

Trappers Beyond Arctic Circle.

FORT YUKON, Alaska.—All of Fort Yukon's white trappers have left for their winter trap lines scattered over hundreds of miles of Arctic mountains and plains. The men will spend the entire winter in the white lands beyond the Arctic circle, and will return when the winter breaks.