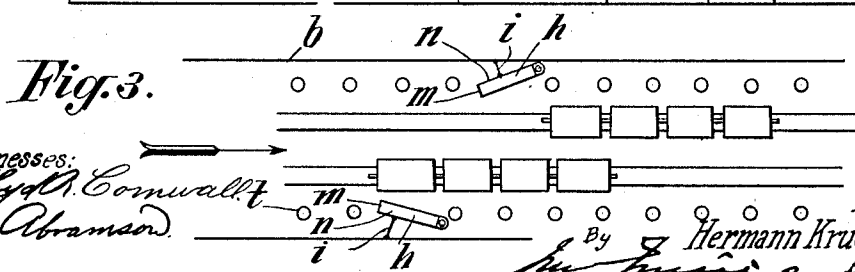
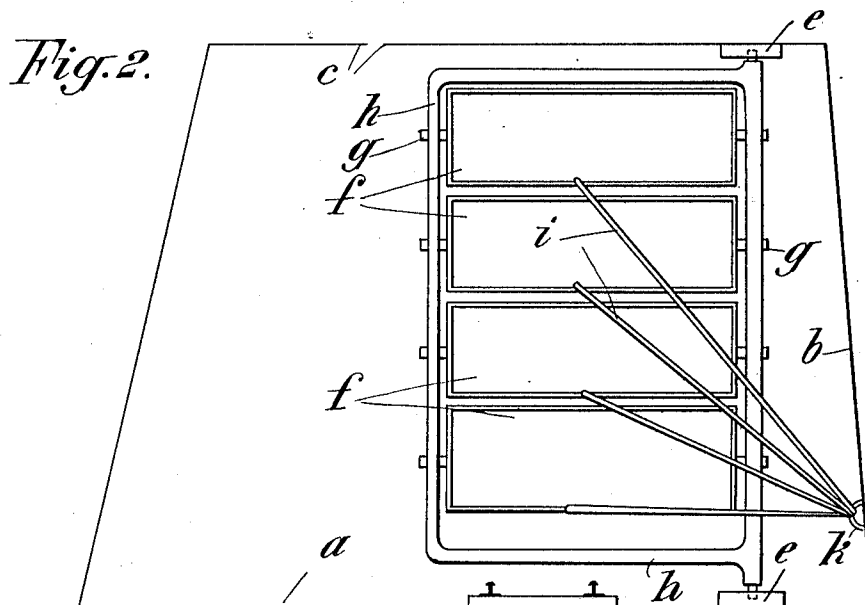
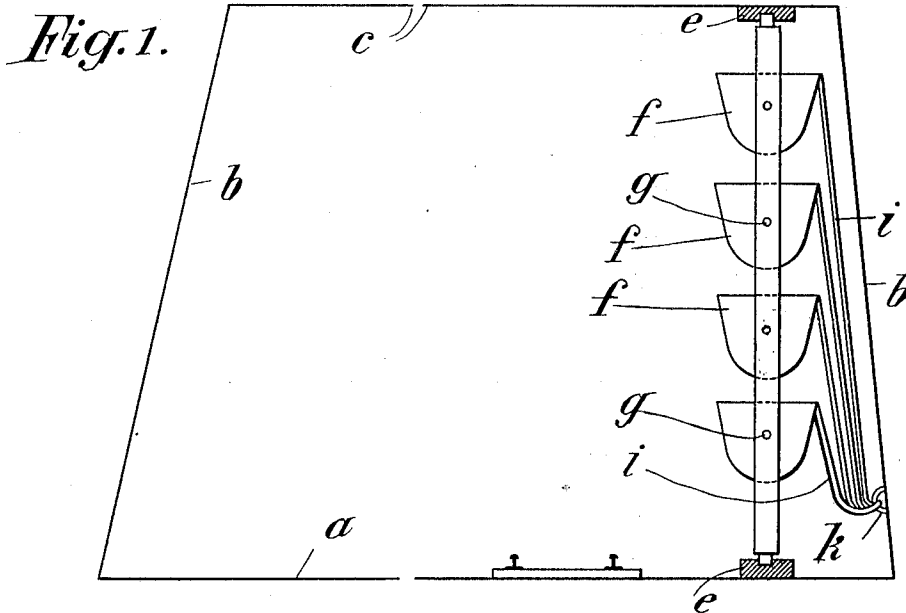


H. KRUSKOPF.
FIRE EXTINGUISHING DEVICE FOR LOCALIZING COAL DUST EXPLOSIONS.
APPLICATION FILED SEPT. 14, 1911.

1,022,368.

Patented Apr. 2, 1912.

2 SHEETS-SHEET 1.



Witnesses:

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H. Abramson

Inventor:

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H. KRUSKOPF.

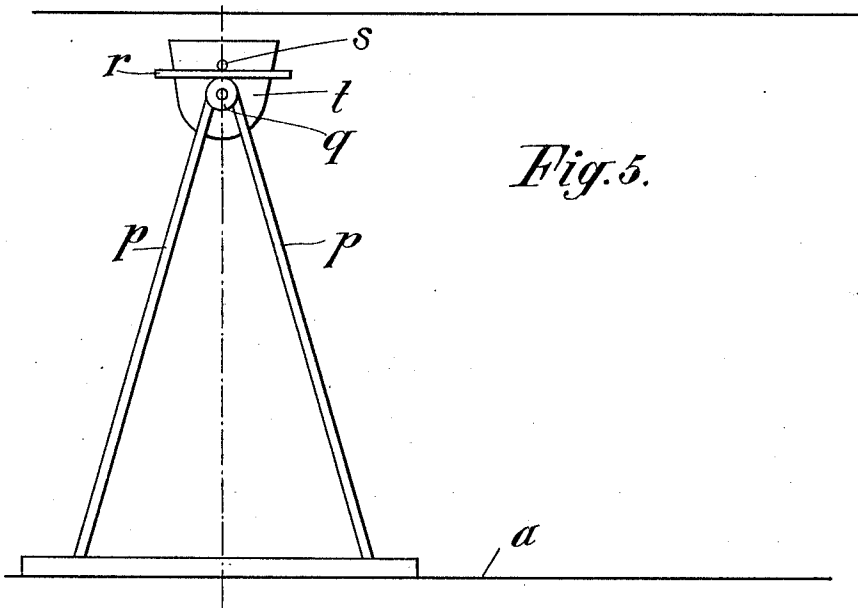
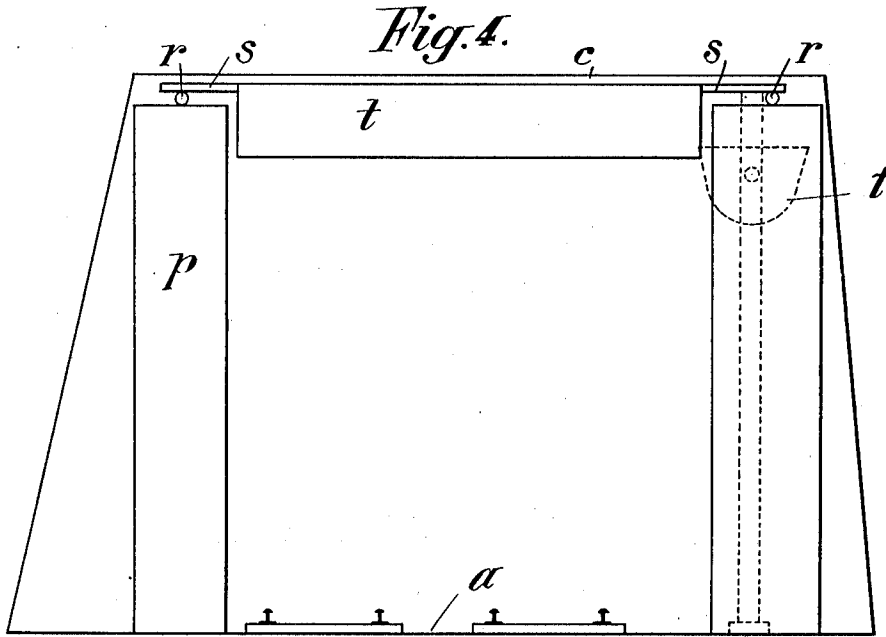
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

HERMANN KRUSKOPF, OF DORTMUND, GERMANY.

FIRE-EXTINGUISHING DEVICE FOR LOCALIZING COAL-DUST EXPLOSIONS.

1,022,368.

Specification of Letters Patent.

Patented Apr. 2, 1912.

Application filed September 14, 1911. Serial No. 649,368.

To all whom it may concern:

Be it known that I, HERMANN KRUSKOPF, a subject of the Emperor Germany, and resident of Dortmund, Germany, have invented certain new and useful Improvements in Fire-Extinguishing Devices for Localizing Coal-Dust Explosions, of which the following is a specification.

Experiments made in the French experimental gallery at Lievin have proved that it is possible to avoid the spreading of coal dust explosions by throwing instantaneously a certain amount of water in the hot gases. With this object in view, receptacles filled with water were placed in the experimental gallery upon planks supported near the ceiling so that the rush of air which precedes an explosion would overthrow the receptacles and cause them to fall from the planks and release the water.

The means employed to carry out the above mentioned experiments are too complicated for practical application in mines and would furthermore be dangerous.

According to the present invention the receptacles are not located near the ceiling, but they are disposed in a special manner near one of the walls of the mine. The receptacles are supported on a pivoted frame to swing against one wall of the mine, or outwardly therefrom. The frame is swung away from the wall, by the strong air current which precedes an explosion and thereby automatically tilts the receptacle and releases the contents, the onrushing air current acting on the cooling fluid, carries the latter forward and sprays the gallery and extinguishes the flame and prevents further explosions.

In the accompanying drawing, Figure 1 is a vertical section of a gallery illustrating the application of my invention. Fig. 2 is a similar view, but showing the pivoted frame as swung transversely of the gallery. Fig. 3 is a diagrammatic plan view of a gallery showing the improvement in position. Fig. 4 shows additional devices placed up the gallery with respect to main device. Fig. 5 is a side view corresponding to Fig. 4.

a indicates the floor of a gallery of the side walls, and c , the ceiling.

A frame h is disposed alongside the usual tracks and is provided with trunnions e , mounted in suitable bearings in the top and bottom of the gallery. Mounted trans-

versely in the frame h are receptacles f , provided with trunnion g , which fit in the vertical bars of said frame. The receptacles are arranged one above the other and the trunnions are so situated that each receptacle will normally assume a position to hold the cooling fluid. To the upper edges of the receptacles are attached the ends of ropes, the opposite ends being secured to hooks k , on the side walls b . When the frame is swung so as to lie adjacent the side wall b , the ropes hang in a loose condition and their weight serves to hold said frame in this position. When a current of air rushes through the gallery in the direction of the arrow indicated in Fig. 3 the frame is swung transversely of the gallery as shown in Fig. 2 and the ropes are thereby drawn taut and serve to automatically tilt the receptacles on their pivots and throw the cooling fluid in the path of the air current.

The frames h and the receptacles f are located on both sides of the tracks and if desired a plurality of the frames may be employed.

By the arrangement described no provision is provided for checking the explosion in the space formed between the top of the gallery and the topmost receptacle F . To meet this contingency, I provide the construction shown in Figs. 4 and 5. This arrangement is placed at a convenient distance ahead of the frame or frames h , and comprises side supports p each of which is hinged at its upper end at q . The supports are broad to provide ample surface against which the current of air will contact and throw them over. On the upper end of each support is a bearing r formed of a round piece of metal and on which the trunnions are supported. When the current of air strikes the supports p and knocks them over, the trunnions glide on the rods r and the receptacle is turned over close to the ceiling of the gallery.

Having fully described my invention, what I claim and desire to secure by Letters Patent is:

1. A fire extinguishing device for localizing coal dust explosions in mine galleries, comprising a pivoted frame, a plurality of superposed receptacles pivotally mounted on the frame, and containing fire extinguishing fluid, ropes on each of said receptacles, said ropes being fastened on a common hook on the wall of the mine gallery,

said ropes hanging freely when said frame is turned at the side of the gallery and being tightened when the frame is swung away from the side of said gallery, the tightening
5 of the ropes causing the receptacles to tilt and pour the contents of same to check an explosion.

2. A fire extinguishing device for localizing coal dust explosions in mine galleries
10 comprising a pivoted frame, including a vertical post, journals or trunnions on the ends of said vertical post, bearings for said trunnions, a plurality of superposed receptacles pivotally mounted on said frame and
15 containing fire extinguishing fluid, a rope on each of said receptacles, said ropes being fastened at their opposite ends to a common support, said ropes hanging freely when said frame is turned adjacent the side wall
20 of the gallery and being tightened when the frame is swung away from said side wall, the tightening of the ropes causing the receptacles to tilt and pour the contents to check explosions.

25 3. A fire extinguishing device for localizing coal dust explosions in mine galleries, comprising a pivoted frame, receptacles mounted on the frame and containing fire extinguishing fluid, and means for removing

the fluid from the receptacles said means being operated by the force of an explosion. 30

4. A fire extinguishing device for localizing coal dust explosions in mine galleries comprising a frame, fire extinguishing fluid receptacles mounted on the frame and means
35 operated by the force of an explosion for releasing the fire extinguishing fluid.

5. In a fire extinguishing device for localizing coal dust explosions in mine galleries, the combination of a pivoted frame, receptacles containing fire extinguishing fluid
40 mounted on the frame, means connected to the pivoted frame and operated by the latter to tilt the receptacles and release the fluid portable supports, a receptacle mounted
45 on the portable supports above the plane of the topmost receptacle mounted on the frame and adapted to be tilted when the portable supports are overthrown, the portable supports being overthrown, and the
50 pivoted frame being swung, by the force of an explosion.

In testimony whereof I have hereunto set my hand in presence of two witnesses.

HERMANN KRUSKOPF. [L. s.]

Witnesses:

L. NUFER,

CHAS. J. WRIGHT.