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F. HENNEN

GUARD FOR EXPLOSIVE CHARGES

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Fig. 3.

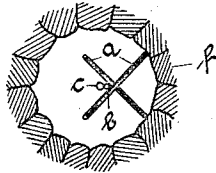


Fig. 4.

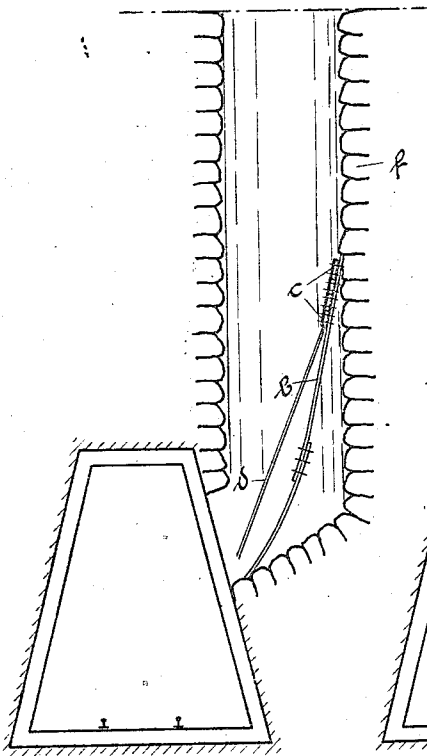
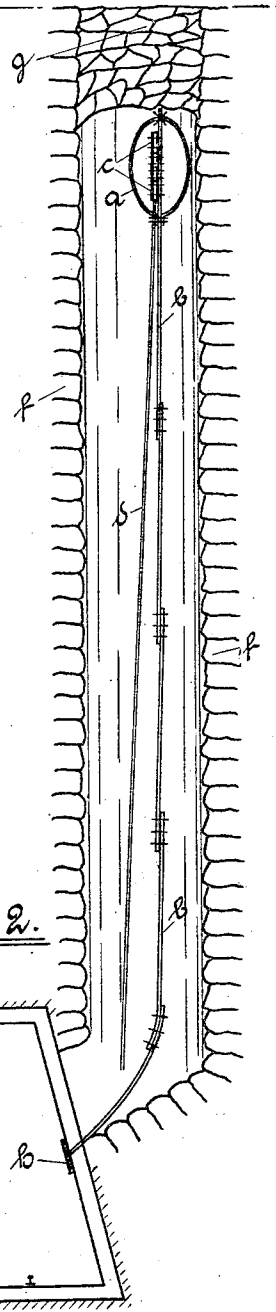


Fig. 2.



Inventor:
Friedrich Hennen
by *[Signature]*
attorney

UNITED STATES PATENT OFFICE.

FRIEDRICH HENNEN, OF BRACHTHAUSEN, NEAR KIRCHHUNDEM, GERMANY.

GUARD FOR EXPLOSIVE CHARGES.

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The conveyance of the minerals obtained from the demolishing of ore in mines to the conveying tracks is effected in steeply disposed dumps by the gravity of the masses in the galleries which are mostly lined with dry masonry in mine deposits and in which the conveying material (material to be heaped) rolls downwardly in order to be finally conveyed to the surface through the gallery mouth. In this connection it frequently occurs that the material to be heaped dumps inside the gallery and must be again moved which is effected by drawing wire ropes previously inserted into the gallery up and down, or with more certainty by bursting. The miner, by reason of the great danger to life, cannot enter the gallery. Difficulties are met with in the last method of inserting and raising the bursting charge, which in the known manner is effected through the gallery mouth by means of rods connected one to the other, of which the uppermost rod carries the bursting charge to be raised in the gallery.

The disadvantages of this method consist, the rod sticks to the joints and projections of the masonry and consequently cannot be raised high enough, whilst on the other hand the bursting charge bears against the masonry, the gallery is damaged by the breaking up of the masonry due to the explosion and frequently becomes quite useless. Disregarding the costs in reconstructing the masonry, this is combined with the greatest danger to life.

In contradistinction to this the object of the present invention is to effect a smooth raising of the bursting charge, which is also secured to the end of a rod but which is protectively surrounded by a suitably shaped wire basket attached to the rod.

In the accompanying drawing is illustrated the difficulty of the previous method and an example according to the invention in 3 figures.

Fig. 1 shows the placing of the rod according to the previous method.

Fig. 2 shows the arrangement of the bursting charge and a view of the wire basket when being raised by rods connected one to the other.

Fig. 3 shows a cross section of the wire basket.

In the drawing *a* indicates the wire bands which for example are arranged crosswise, having an elliptic or the like round shape being connected at their upper and lower ends by binding wire or the like to the upper rod *b* to which are successively connected further rods *b* which are securely fastened together. The bursting charge *c* with the igniting cord *d* is so connected to the top of the upper rod *b* that it is protectively surrounded by the wire bands and cannot come into contact with the masonry of the gallery. Contrary to the method shown in Fig. 1 which is retarded by the joints and projections of the masonry, the bursting charge *c*, protected by the wire bands according to Fig. 2 can be raised without resistance to the material which is firmly seated. The lowermost rod *b* in order to support the raised bursting charge, bears against a board *h* or the like secured to the gallery mouth. By reason of the burning of the igniting cord *d* the material will be again caused to move by reason of the shakings produced by the explosion of the bursting charge *c*, without the masonry protected by filling up from behind, being damaged.

The device can be of any suitable round shape and size and can be raised to any usual height independently of the cross sectional shape and construction of the gallery.

I claim:—

Device for raising the bursting charge in mine galleries and as a protection against damaging the gallery by the bursting operations to be carried out therein, comprising in combination an upper rod, wire bands crosswise secured at the top of said upper rod and of elliptic shape, a bursting charge on said upper rod protectively surrounded by said wire bands, and rods connected together to lift said bursting charge up to under the firmly seated mass of material and to hold it away from the walls of the gallery.

In testimony whereof I affix my signature.

FRIEDRICH HENNEN.