(No Model.)

J. R. POWELL.

MINER'S SQUIB.

No. 260,410. Patented July 4, 1882.

Fig. 1.

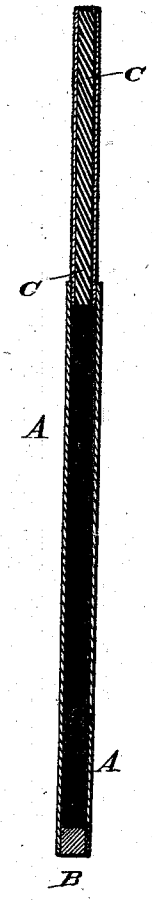


Fig. 2.

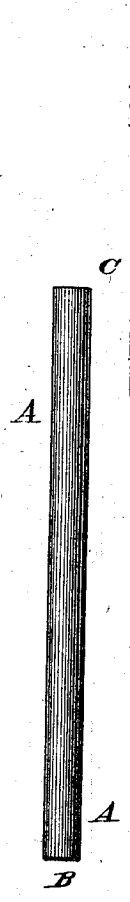
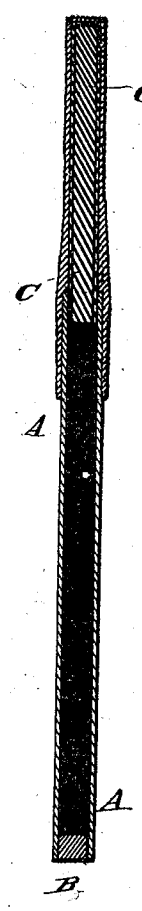


Fig. 3.



WITNESSES:

Fred. L. Dieterich,

P. C. Dieterich.

INVENTOR.

John R. Powell,

by Brown & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN R. POWELL, OF PLYMOUTH, PENNSYLVANIA.

MINER'S SQUIB.

SPECIFICATION forming part of Letters Patent No. 260,410, dated July 4, 1882.

Application filed March 2, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. POWELL, of Plymouth, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Miners' Squibs; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Figure 1 is a longitudinal sectional view of my improved squib. Fig. 2 is a side view, showing the match detached from the squib-tube; and Fig. 3 is a longitudinal sectional view, showing a modification.

Corresponding parts in the several figures are denoted by like letters of reference.

This invention relates to miners' squibs used for exploding blasting-charges; and it consists in certain improvements in the construction of the match and the method of attaching it to the squib-tube, as will be hereinafter fully described, and particularly pointed out in the claim.

In miners' squibs as heretofore made the match has usually been made of twisted paper or other substance suitably treated and attached to the squib-tube.

To prevent the powder from getting from the latter into the folds of the match, and thus cause danger of premature discharges, it has been customary to use a "choke" or plug of suitable non-inflammable material inserted into the end of the tube. The reliability of the choke, however, as a safeguard is very doubtful, and to do away therewith, and to so construct and attach the match as to make an absolutely safe squib, is the object of my invention.

In the drawings hereto annexed, A represents the squib-tube, which is filled with gunpowder and sealed in the usual manner at its lower end, as shown at B.

C is the match, which I prefer to make of some solid substance, such as wood, pasteboard, or similar material. Twine or cord may, however, be used, inasmuch as it, when properly treated, as will be presently described, becomes sufficiently dense for the purpose for which it is intended. The match C is to be coated, by immersion or in any other suitable manner, with melted rosin, Burgundy pitch, tallow, or with a mixture of gunpowder with glue or flour-paste, or with other inflammable and adhesive substance. The size of the match is to be so proportioned that its end will readily enter into the open end of the squib-tube, where it is now inserted and secured by means of the adhesive inflammable coating, which, when dry, binds the match firmly in its place. After inserting the match it may, together with the end of the squib-tube, be immersed once more in the coating compound, which will thus completely envelop it and hold it with absolute security. In Fig. 3 of the drawings I have illustrated a squib treated in this manner.

By my invention the match is permanently and safely attached to the squib-tube, and it forms a seal or choke for the open end of the latter. The match, being made of solid substance, is free from the danger to which twisted matches are exposed.

I am aware that matches for miners' squibs have been made of twisted or untwisted tubes, with or without filling, coated with inflammable material, as in the patent to Daddow, No. 148,674, March 17, 1874, and such I do not claim.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

As an improved article of manufacture, the herein-described improved miner's squib, consisting essentially of the squib-tube, the match inserted in the open end of the same, so as to form a seal or choke, and held in place by the adhesive inflammable material with which it is coated, and a second coat of inflammable material applied to the end of the squib-tube and to the match after the latter has been adjusted in position, for the purpose of holding and sealing it more securely, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JOHN R. POWELL.

Witnesses:
THOS. M. HOWELLS,
JOHN T. LEWIS.