

No. 714,469.

J. W. FOWLER.  
DETONATOR.

Patented Nov. 25, 1902.

(Application filed Apr. 14, 1900.)

(No Model.)

Fig. 1

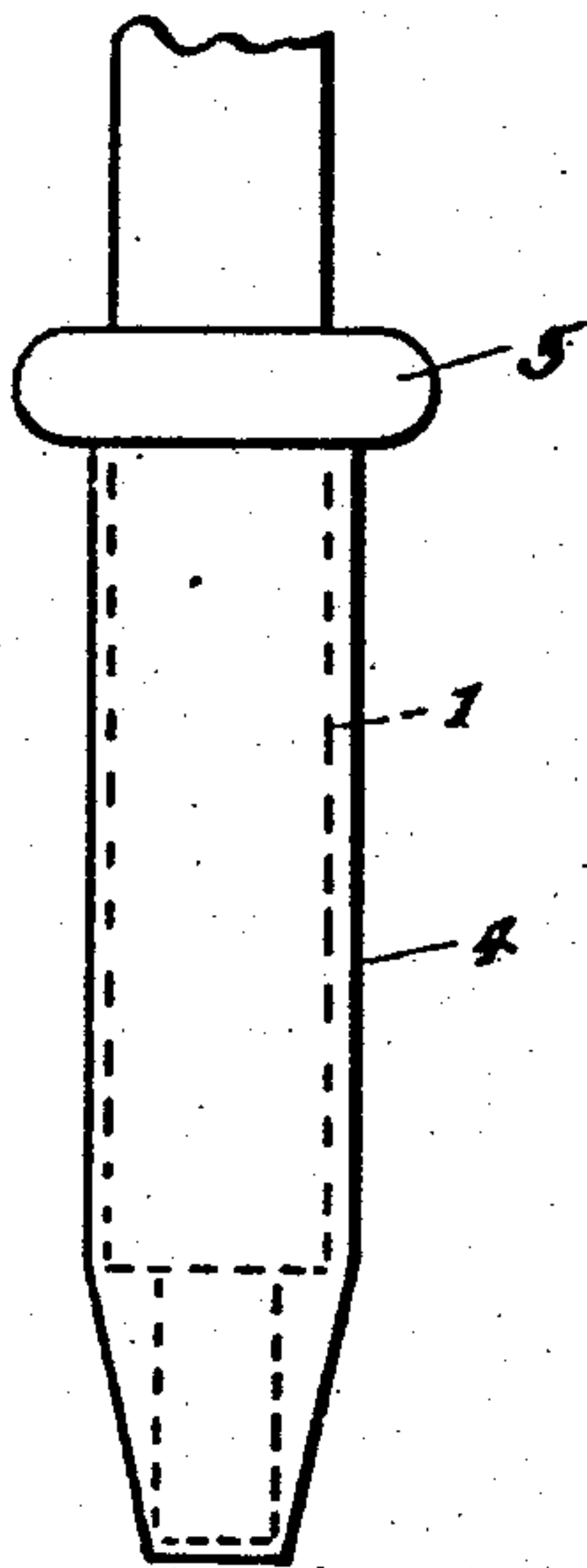


Fig. 2

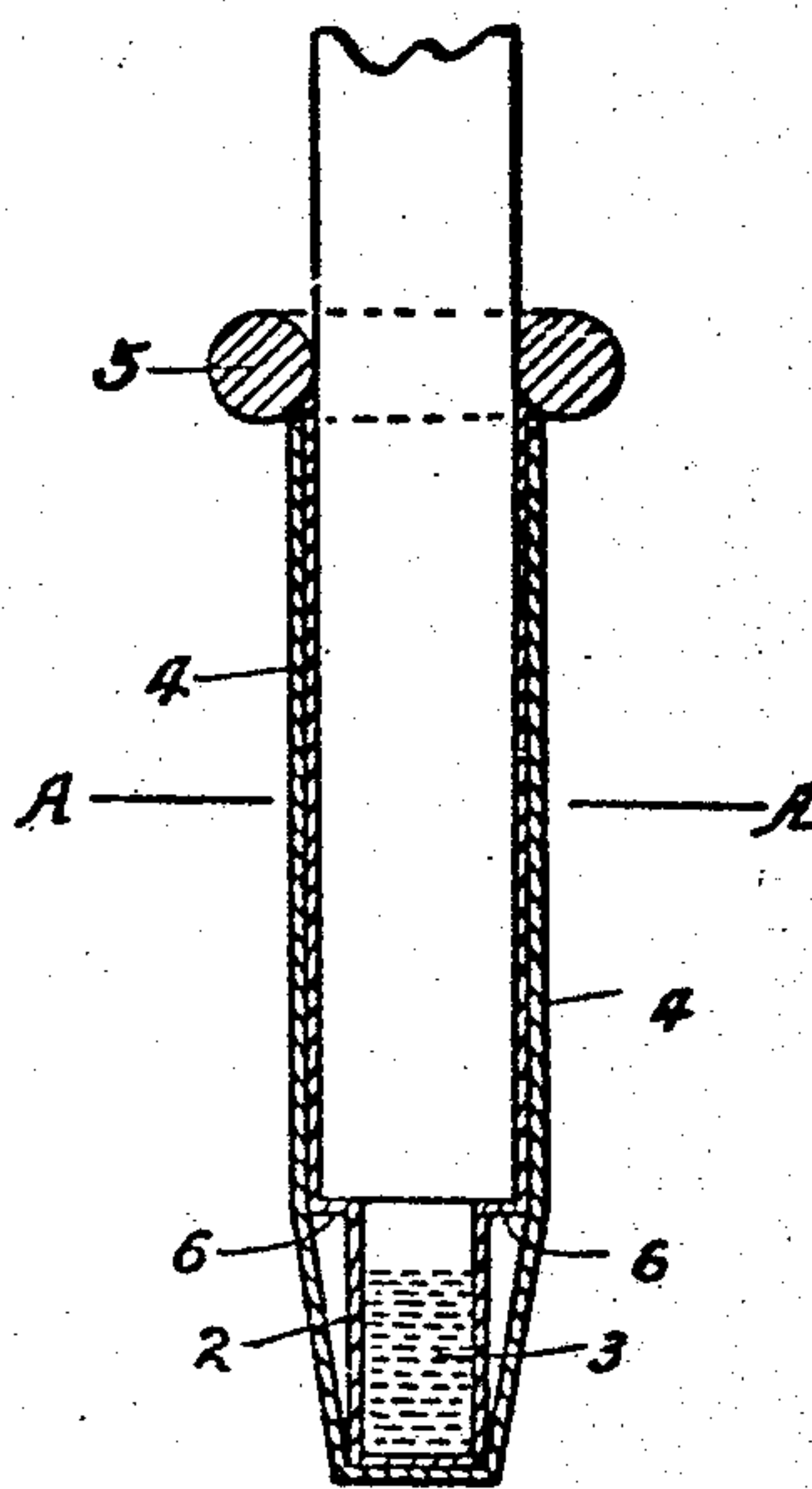


Fig. 3

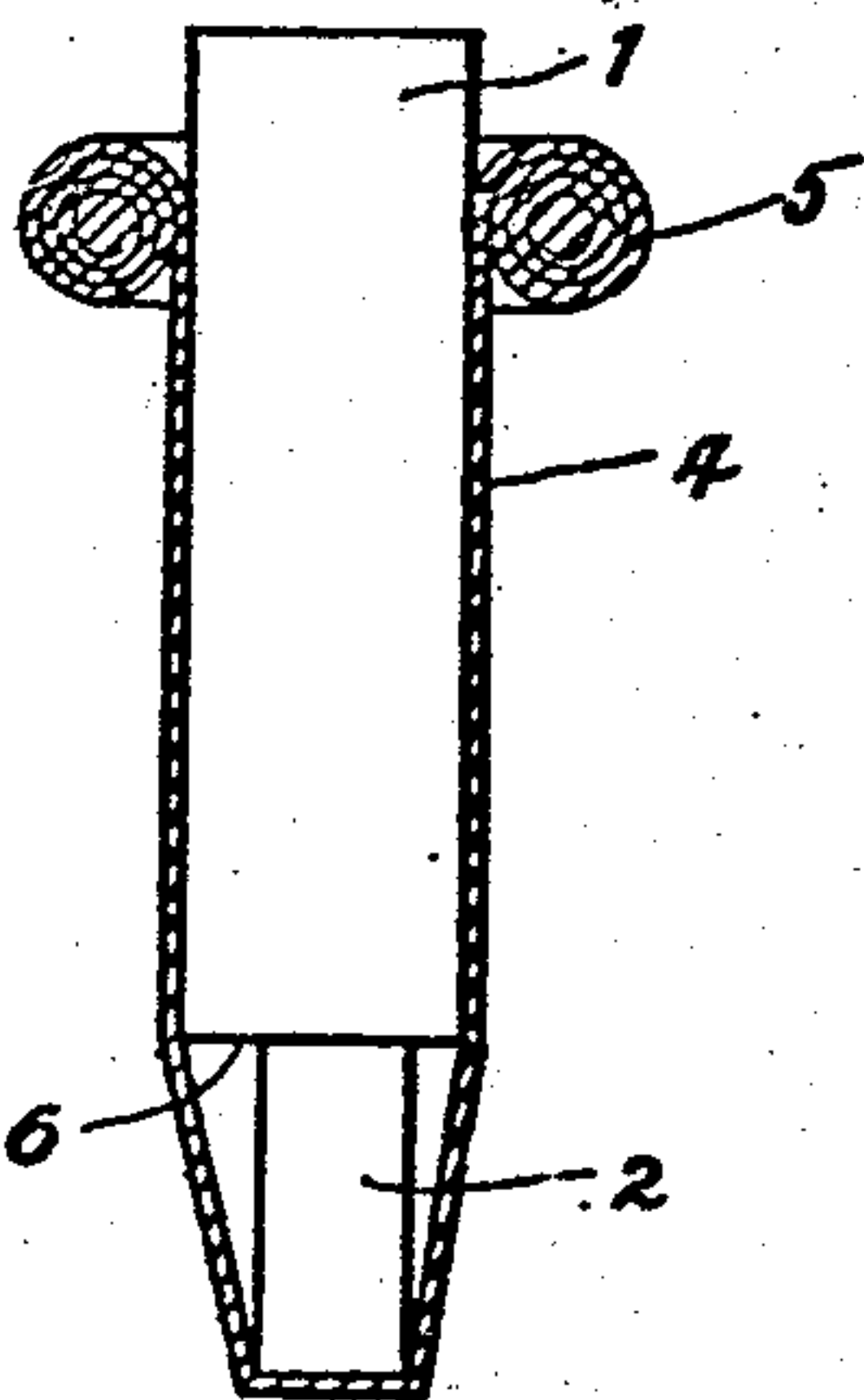
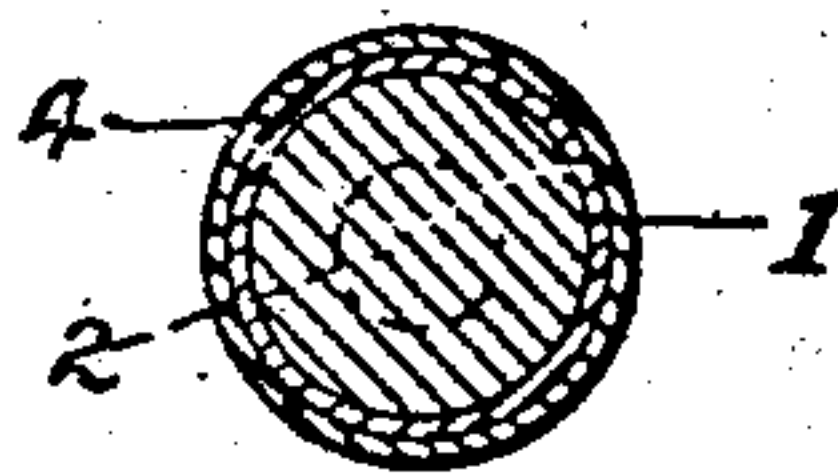


Fig. 4



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# UNITED STATES PATENT OFFICE.

JOHN WILLIAM FOWLER, OF AUCKLAND, NEW ZEALAND.

## DETONATOR.

SPECIFICATION forming part of Letters Patent No. 714,469, dated November 25, 1902.

Application filed April 14, 1900. Serial No. 12,961. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN WILLIAM FOWLER, a subject of the Queen of Great Britain, residing at Whangarei Heads, Auckland, New Zealand, have invented new and useful Improvements in Detonators, of which the following is a specification.

Hitherto it has been usual to secure detonators upon the ends of fuses by tying with a piece of string or the like.

The objects of this invention are to so construct and envelop the detonator that tying is unnecessary to remove liability of explosion when introducing the fuse into the detonator or when same is subjected to accidental concussion and to secure the easy and safe withdrawal of a charge when circumstances necessitate such to be done. At the bottom of the cap I form a well or recess to receive the nitroglycerin, which is thus protected from friction arising when the end of the fuse is fitted into the cap.

I envelop the detonator in a covering or bag of india-rubber or similar material to prevent the detonator exploding if it should be accidentally dropped or otherwise violently struck and to securely hold by compression and suction the fuse when inserted, and this suction also holds the cap to the fuse when the charge requires to be withdrawn, and also prevents the inflow of water into the cap. This covering or bag will also be suitable for use with the ordinary detonators now in use.

The drawings appended to this specification illustrate the invention.

Figure 1 is an exterior view of the detonator envelop or bag. Fig. 2 is a longitudinal

section of the same with the india-rubber cover. Fig. 3 is the same as Fig. 2 with the rim of covering or bag rolled back ready for insertion of fuse. Fig. 4 is a cross-section on line A A, Fig. 2.

Similar figures of reference indicate corresponding parts.

1 is the metal cap of the detonator, preferably of copper, cylindrical in shape.

2 is a well or recess formed in the bottom of the cap.

3 is nitroglycerin; 4, an outer cover of india-rubber or the like; 5, thick hold fast-rim on top end of covering or bag.

The fuse is made to fit tightly in the cap 1, which then holds the fuse and is prevented from slipping off when being lowered into the drill-hole, owing to the compression and suction afforded by rim 5 and cover 4. The end of the fuse will rest upon the shoulder 6, and thus be prevented from reaching the nitroglycerin 3.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

The combination of the cap 1 formed with a well 2 at bottom, of reduced diameter to contain the explosive 3, and with a shoulder 6 between the body of the cap and the well 2; a fuse fitting the cap and resting on the shoulder 6; and a suitable cover 4 holding the parts together, substantially as set forth.

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

JOHN WILLIAM FOWLER.

Witnesses:

ROBERT KNOX,

LEONARD KENNETH HARNETT.