(No Model.)

S. JACKSON, Jr.

FUSE.

No. 534,107. Patented Feb. 12, 1895.

FIG. 1.

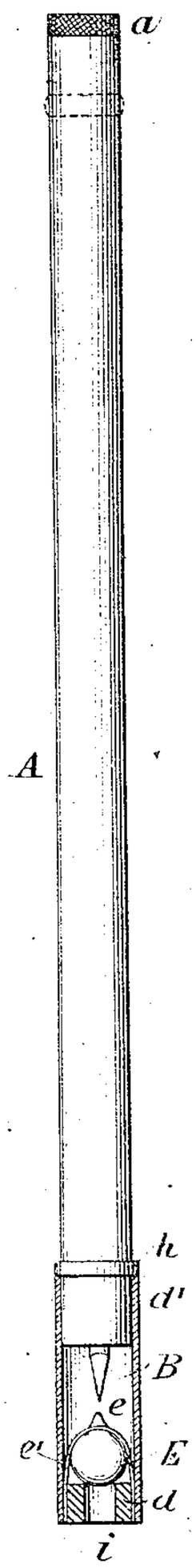


FIG. 3.

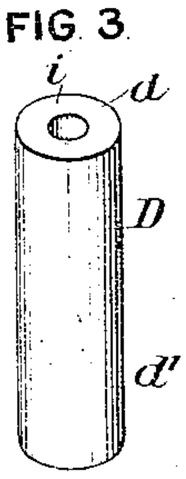


FIG. 5.

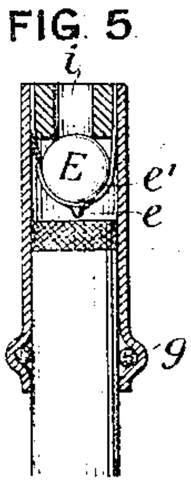


FIG. 4.

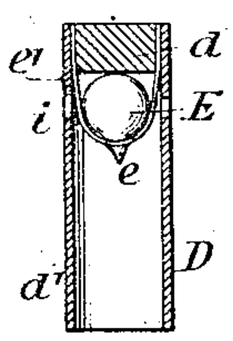
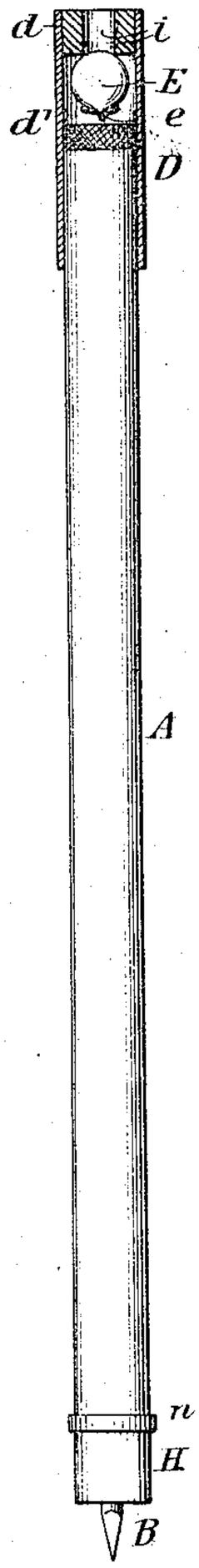


FIG. 2.



WITNESSES

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SAMUEL JACKSON, JR., OF PHILADELPHIA, PENNSYLVANIA.

FUSE.

SPECIFICATION forming part of Letters Patent No. 534,107, dated February 12, 1895.

Application filed January 19, 1894. Serial No. 497,383. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL JACKSON, Jr., a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Fusees, of which the following is a specification.

One object of my invention is to prevent the acid of an acid-ignited fusee from burning the hands of the brakeman or other person using it; a further object being to utilize the cap containing the acid receptacle as a protector for the spike of the fusee.

In the accompanying drawings:—Figure 1, is a view of a fusee with the cap in section and in position to protect the pointed spike. Fig. 2, is a view with the cap in position to ignite the fusee. Fig. 3, is a perspective view of the cap. Fig. 4, is a sectional view showing a modification; and Fig. 5, is a sectional view illustrating another feature of the invention.

My invention is especially applicable for use in railroad signals where the brakeman or signal man has to carry one or more of the fusees which must be ignited by striking the end of the fusee against some hard object while said fusee is held in the hand.

A is the body of the fusee containing the usual pyrotechnic compound and having at the lower end a base H in which is a spike B which can be forced into one of the ties adjacent to or between the rails of a track the fusee being closed at the opposite end *a*, preferably by a piece of fabric which can be readily severed.

D is a cap consisting of the head *d* and the deep flange *d'* which is adapted to pass over the end *a* of the fusee, as shown in Fig. 2, and in this cap is an acid receptacle E, made in the present instance of thin glass and having a projection *e*, said receptacle being secured to the interior of the cap by a band *e'*. In the head *d* of the cap is a vent opening *i* for the escape of the surplus acid when the cap is forced down upon the end of the fusee so as to shatter the receptacle E. The force of the explosion scatters the acid and if the only avenue of escape for the same is between the body of the fusee and the deep flange of the cap, the acid has a tendency to splash upon the hands or clothes of the brakeman and thus cause the burning of the same, quite a number of severe burns having resulted from the use of the old style fusees where in cases of emergency the same were used hurriedly and without sufficient care. By making the vent opening *i* in the cap the surplus acid is discharged away from the brakeman and I have found by experiment that the objection above noted is entirely overcome. The opening *i* in the head of the cap also acts as a seat for the acid receptacle E, the point *e'* of said receptacle being arranged as shown so that it will cut through the fabric cover of the fusee and cause the acid to at once ignite the compound therein.

While I prefer to make the vent opening in the head of the cap one or more openings may be made in the flange of the same, as shown in Fig. 4, as a substitute for the opening in the head.

On the lower end of the fusee is a shoulder *h* forming in the present instance a part of the base H which carries the spike B, the diameter of this base being the same as the head of the fusee, so that when the fusee is carried by the brakeman the cap can be slipped over the base thus protecting the sharp point of the spike B, as shown in Fig. 1, the shoulder *h* preventing the spike from coming into contact with the acid receptacle in the end of the cap.

The flange *d'* of the cap D may, if desired, be provided with a packing *g*, Fig. 5, preferably of some absorptive material which will form a tight joint between the fusee and the cap, so as to prevent the escape of the acid at that point, or the packing may be secured to the fusee in some instances instead of to the cap as shown for instance by dotted lines in Fig. 1.

It will be understood that the cap with the opening therein can be used upon a fusee which is provided with a handle as well as upon a fusee provided with a spike.

I claim as my invention—

1. The combination in an acid ignited fusee, of the body of the fusee containing a pyrotechnic compound, a cap adapted thereto and having openings therein for the free escape of the surplus acid when the acid receptacle is broken, said acid receptacle being seated

in the head of the cap, and a device for securing the receptacle in position, substantially as described.

2. The combination of the body of the fusee containing the pyrotechnic compound, a cap adapted thereto and having an opening *i* in the head of the same, an acid receptacle seated in the opening *i* and a band securing said receptacle in position within the cap, substantially as described.

3. The combination in a fusee, of the body having a base with shoulder thereon and a spike secured thereto, with a cap containing an acid receptacle and adapted to be fitted upon said base, substantially as described, whereby when the cap is thus applied to the base and in contact with the shoulder thereon, the spike will be out of contact with the acid receptacle.

4. The combination in a fusee, of the body portion, a cap, an acid receptacle carried by the cap and a packing of absorbing material between the cap and body, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL JACKSON, JR.

Witnesses:
WILLIAM A. BARR,
JOSEPH H. KLEIN.