

(No Model.)

S. JACKSON.

SIGNAL FUSEE.

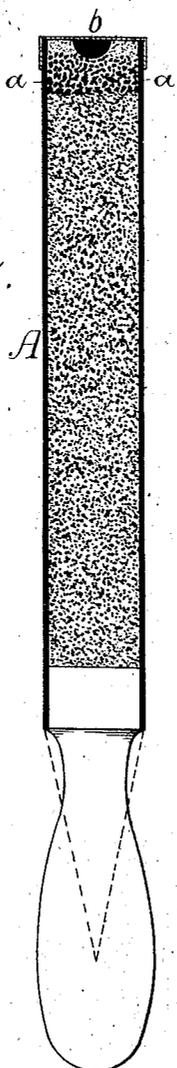
No. 246,780.

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FIG. 2.



FIG. 1.



Witnesses:

James F. Tobin.
H. L. Fulenwider.

Inventor:

Samuel Jackson
by his Attorneys
Howson and Sons

UNITED STATES PATENT OFFICE.

SAMUEL JACKSON, OF PHILADELPHIA, PENNSYLVANIA.

SIGNAL-FUSEE.

SPECIFICATION forming part of Letters Patent No. 246,790, dated September 6, 1881.

Application filed June 9, 1881. (No model.)

To all whom it may concern:

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

The object of my invention is to so construct a pyrotechnic signal-fusee that while the same can be readily ignited when required for use the accidental ignition of the fusee by friction, impact, or fracture during the transportation or storage of the same will be effectually prevented, and this object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section of my improved signal-fusee, and Fig. 2 a sectional view of the cap to be used when the inflammable material at the end of the tube has to be ignited.

The tube A is preferably made of stiff paper or pasteboard in the same manner as the tubes of sky-rockets, Roman candles, and other analogous fire-works, the tube being furnished at its lower end with a handle, B, if the signal has to be held in the hand; or the tube may have a pointed end or spike, as shown by dotted lines, if the signal has to be stuck in the ground.

The main body of the tube is packed with inflammable material, which, when ignited, will burn with a brilliant flame, which can be observed in the dark from a great distance. The filling material may, for instance, be nitrate of strontia, in which case the flame will be of a brilliant red color; or the filling material may be such that the flame will be of a green color or any other color that may be desired.

The outer end of the tube is packed with a hard composition, *a*—such, for instance, as is used in making rocket-stars. Thus, when the tube contains nitrate of strontia, this hard composition may consist of carbonate of strontia, which forms a plug in the end of the tube A, and serves not only to retain the nitrate powder therein, but to prevent the access of moisture to said powder, the latter being thus kept constantly dry and in an inflammable condition. A small button, *b*, is embedded in the hard composition *a*, which fills the end of the tube A, and this button is surrounded by a composition consisting of chlorate of potash

and some carbonaceous material, this compound being held in place by a light textile or paper covering, and being of such a character that it can be instantly ignited under the circumstances described hereinafter.

The signals may be stored away or carried on the cars of a train without danger of accidental ignition by friction or impact; but when required for use the signals should be provided with caps G, each containing a small glass vessel, *d*, filled or partly filled with sulphuric acid, so that after the cap has been placed on the end of the tube A and has been struck against any hard object the glass will break, owing to the contact of the vessel with the button *b*, and the sulphuric acid will be brought into contact with the inflammable material surrounding the button, and instant ignition will take place, the ignition being accompanied with such violence that the cap G will be at once forced from the tube A, the contents of which will continue to burn with a brilliant flame, which imparts the desired signal.

The packing *a* may be made hard enough to resist the blow on the button *b* for producing ignition; or, in some cases, the packing *a* may be made so hard that the button *b* can be dispensed with. The use of the button is preferred, however, on account of its greater certainty of action. In all cases, however, the two materials—one in the cap and the other in the tube—for causing ignition by their combined action, should, when separate, be non-ignitable by friction or contact, so that there can be no danger of explosion as long as the said caps and tubes are contained in separate receptacles.

I claim as my invention—

The combination, in a signal-fusee, of the tube A and cap G, made separately from but attachable to each other, and each provided with materials, substantially as described, which will not of themselves ignite or explode by friction, impact, or fracture, but which, by their joint action, will effect the ignition of the signal, as set forth.

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

SAMUEL JACKSON.

Witnesses:

JAMES F. TOBIN,
HARRY SMITH.