

No. 712,932.

S. JACKSON, JR.

Patented Nov. 4, 1902.

FUSEE.

(Application filed May 4, 1898.)

(No Model.)

Fig. 1.

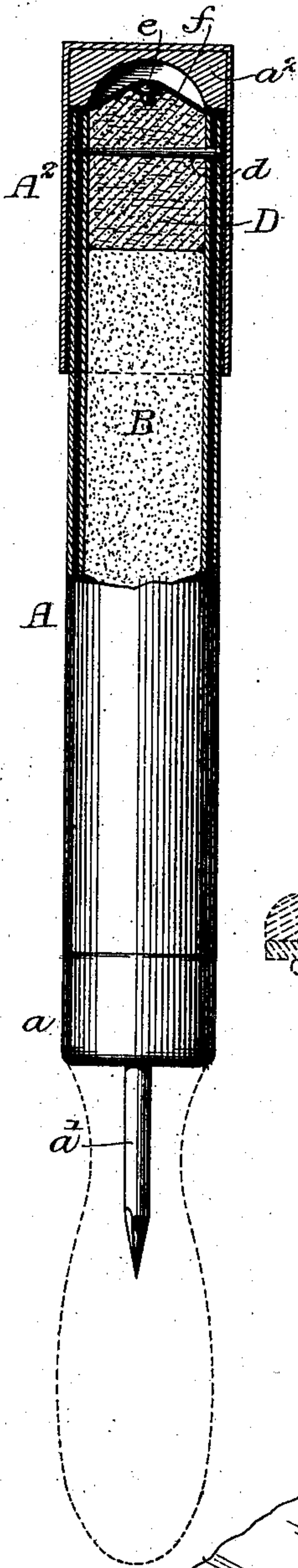


Fig. 3.

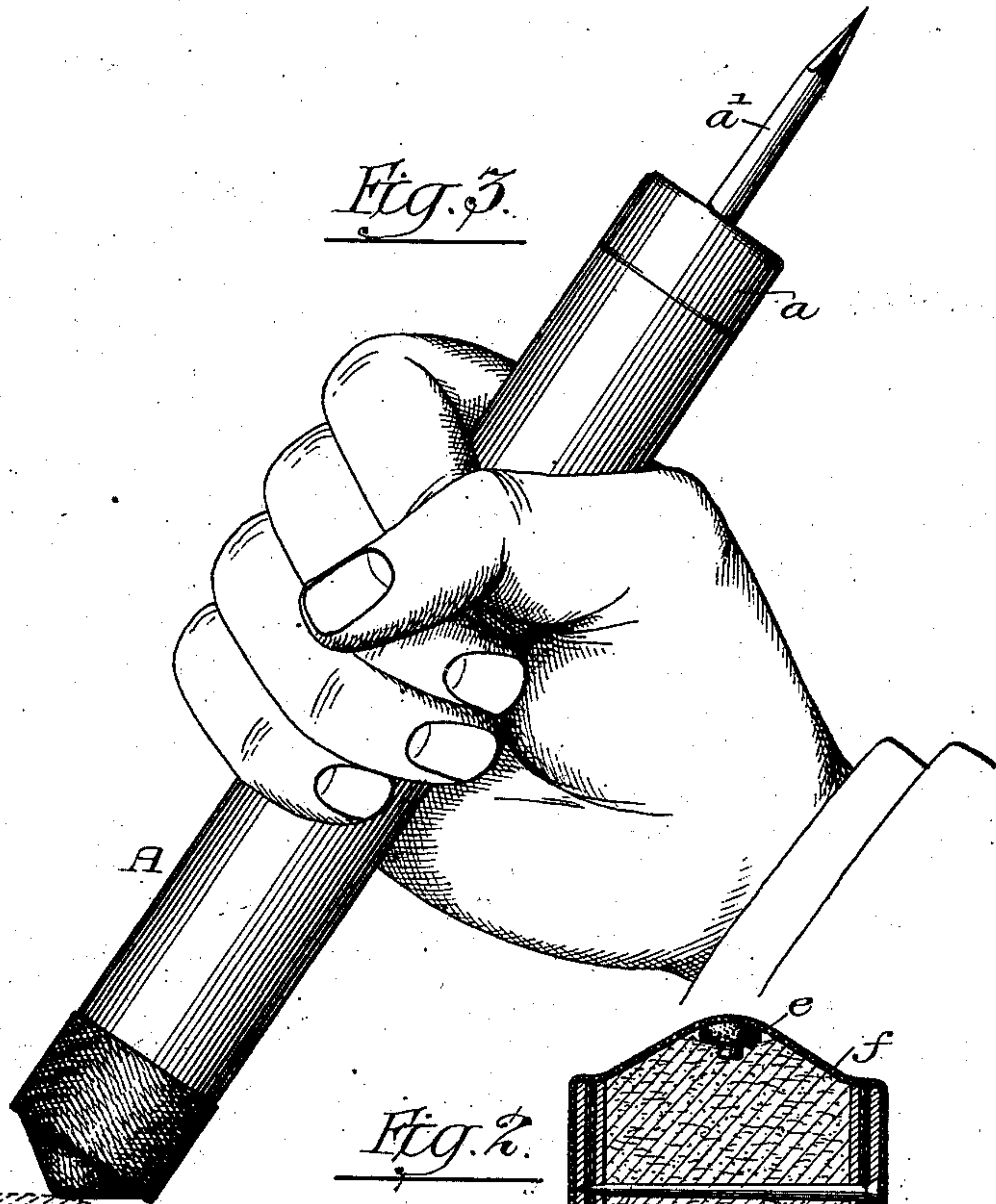


Fig. 2.

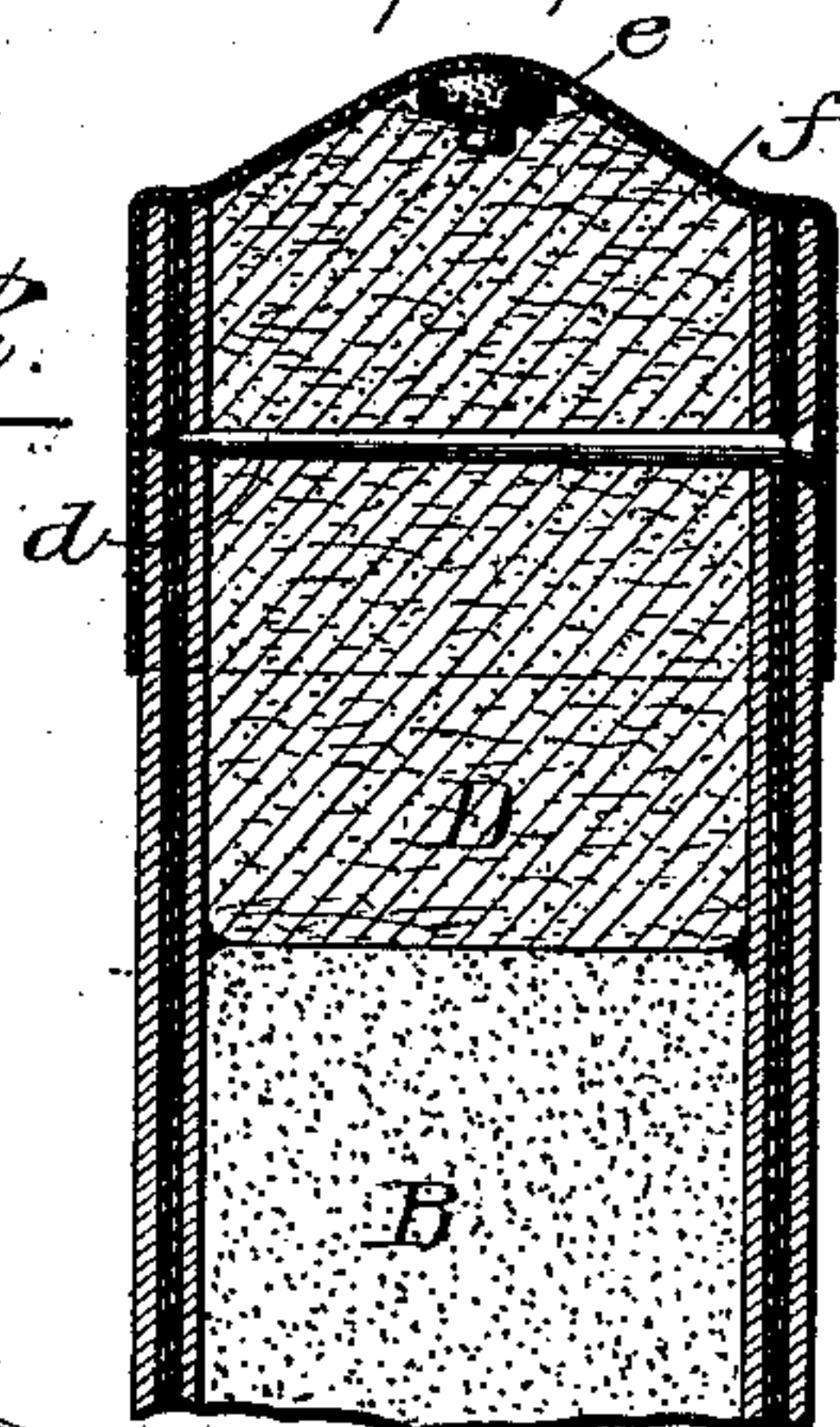
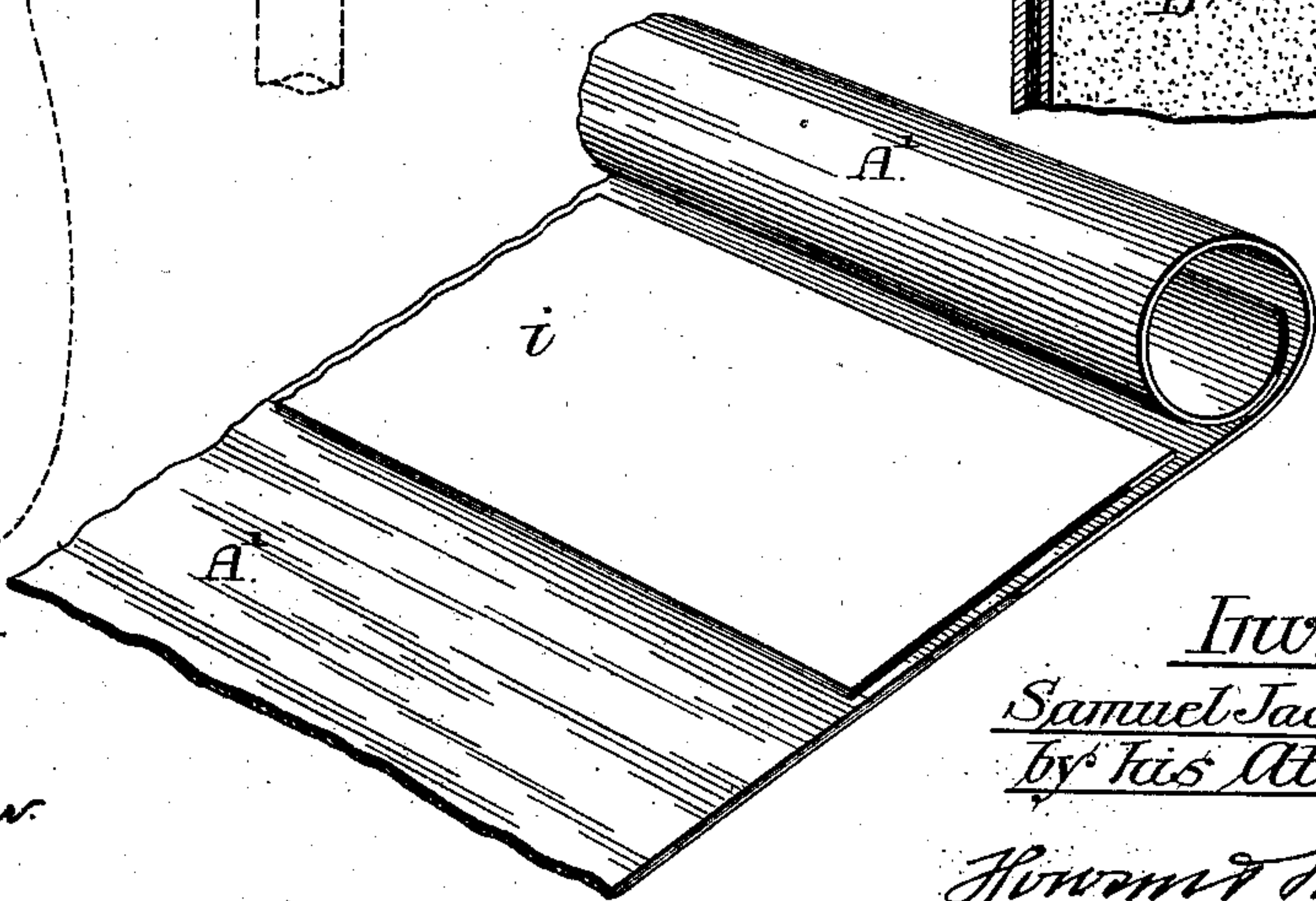


Fig. 4.



Witnesses:-

Louis M. Whitehead,
Wm. A. Raw.

Inventor:-

Samuel Jackson Jr.
by his Attorneys.

Howard & Howard

UNITED STATES PATENT OFFICE.

SAMUEL JACKSON, JR., OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND WILTON D. JACKSON, OF PHILADELPHIA, PENNSYLVANIA, TRADING UNDER THE FIRM-NAME OF SAMUEL JACKSON'S SONS.

FUSEE.

SPECIFICATION forming part of Letters Patent No. 712,932, dated November 4, 1902.

Application filed May 4, 1898. Serial No. 679,720. (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
5 Improvements in Fusees, of which the following is a specification.

My invention relates to that class of fusees especially used as signals on railroads or ships or for pyrotechnic displays.

10 The fusee is mainly used on railroads by the rear brakeman of a train who ignites the fusee and throws it from the rear of the train, or, if the train has slowed up, fastens it in the ties or uses it as a hand-signal, as circumstances require.

The object of my invention is to make a cheap and practical fusee that can be ignited readily by percussion, which will be waterproof, and from which the material cannot
20 be dislodged by the action of throwing the fusee from the train. This object I attain in the following manner, reference being had to the accompanying drawings, in which—

Figure 1 is a view, partly in section, of my
25 improved fusee, showing the cap applied. Fig. 2 is an enlarged sectional view of the head of the fusee. Fig. 3 is a view showing the method of igniting the same, and Fig. 4 is a view showing the method of wrapping the
30 waterproof material within the casing.

A is the casing of the fusee. This casing is made of a sheet of paper rolled up into form, as clearly indicated in Fig. 4. In order to make this casing waterproof, I insert in the
35 roll of paper A' a sheet of waterproof paper *i*—such, for instance, as paraffin-paper—and of such a length that when rolled up with the paper of the casing it will form a waterproof lining between the inner and outer folds of
40 the paper A' forming the casing.

Secured to one end of the casing A is a plug *a*, of wood or other material, having either a spike *a'*, as shown in full lines in Fig. 1, or a handle, as shown in dotted lines in said figure. If the fusee is to be used as a hand-sig-
45 nal, then the handle form is preferable; but if it is to be used as a fixed signal on a track, for instance, then the spiked form is preferable.

50 Within the fusee is a slow-burning illumi-

nating material B, preferably in powdered form and of the desired color. In the present instance the fusees are made with the illuminating material of a red color, indicating danger. At the end of the fusee is a quick-burn-
55 ing illuminating material which is made, preferably, in the form of a paste and inserted in the end of the fusee upon the slow-burning material, and this quick-burning material solidifies and acts as a plug D for the end of
60 the fusee, preventing the loose slow-burning material from escaping, and as this material is waterproof it also prevents moisture gaining access to the slow-burning material. It sometimes occurs when this material is ig-
65 nited and the fusee thrown from a train that the plug of quick-burning material becomes loose, and consequently the fusee is useless. To overcome this objection, the plug D is fastened by a transverse pin *d*. This
70 pin is inserted in the material when it is soft, so that when the material becomes hard the pin holds it securely in the casing. On the end of this quick-burning material D is an igniting compound *e*—such, for instance, as
75 used on a parlor-match or other material which will ignite by percussion.

In order to hold the material within the fusee, I place over the end of the casing a muslin cover *f* and cement said cover to the
80 casing. Inclosing the end of the casing is a protective cap A², preferably made of paper and having a wooden end *a*², provided with a cavity, so that when said cap is placed in position over the end of the fusee it will not
85 touch the ignitable part of the latter, but will protect it from injury, the cap resting upon the end of the fusee-casing. Such construction permits the transportation of the fusee without danger.

The fusee cannot be ignited until the cap is removed, when by simply striking the end of the fusee upon a hard substance—such, for instance, as the hand-rail of a car, as shown in Fig. 3—the material will readily ig-
95 nite, the quick-burning compound being first consumed during the time that it takes to place the fusee in position on the track or while it is being thrown from the car. As soon as the quick-burning material is con- 100

sumed the slow-burning material is ignited, and the fusee will then give a steady light for a given length of time, depending upon the amount of illuminating material carried
5 within the casing.

I claim as my invention —

1. The combination in a fusee, of a casing, a mass of slow-burning material within the same, a mass of quick-burning material carried by the casing and having a portion projecting in tapering form beyond the end of
10 said casing, and an ignitable substance secured permanently at the smaller end of the tapering projection and adapted to be ignited by percussion.
15

2. The combination in a fusee, of a casing, a mass of slow-burning material and a mass of quick-burning material within the casing, the latter mass solidifying after insertion and
20 retaining the slow-burning material in place, and an ignitable substance secured permanently at the end of the quick-burning material and adapted to be ignited by percussion, substantially as described.

25 3. The combination in a fusee, of a casing, a mass of slow-burning material and a mass

of quick-burning material within the casing, the latter mass solidifying after insertion and forming a plug to retain the slow-burning material in place, an ignitable substance secured permanently at the end of the quick-burning material and adapted to be ignited
30 by percussion, and a fabric covering for the end of the casing, said cover inclosing both the ignitable material and the illuminating material, substantially as described. 35

4. The combination in a fusee, of the casing, slow-burning illuminating material within the casing, quick-burning material mounted in one end of the casing, said quick-burning material being in the form of a plug, a
40 pin securing the plug to the casing, an ignitable material at the end of the quick-burning plug and a covering inclosing the same, substantially as described. 45

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

SAMUEL JACKSON, JR.

Witnesses:

CHAS. H. BANNARD,
HENRY HOWSON.