

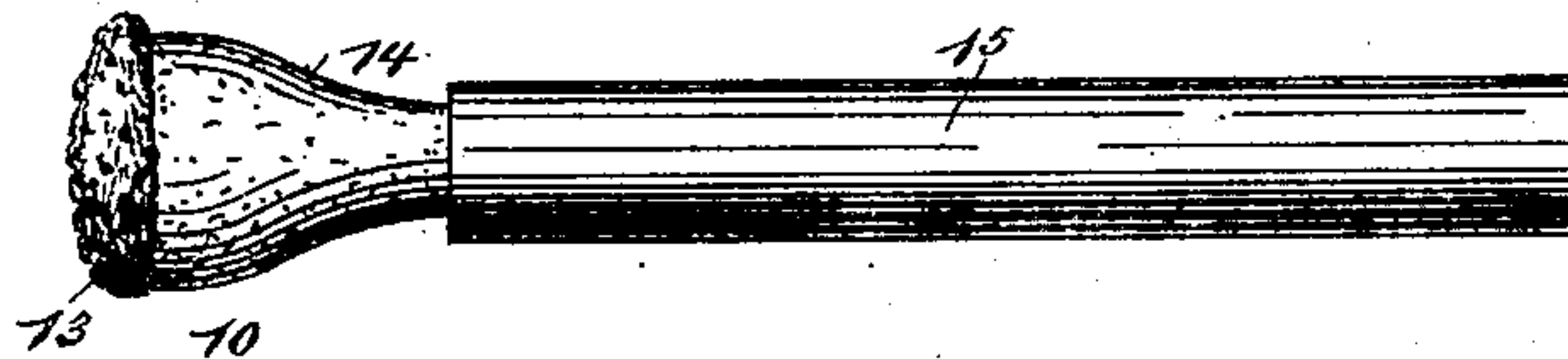
(No Model.)

W. C. MATTHEWS.  
FUSE LIGHTER.

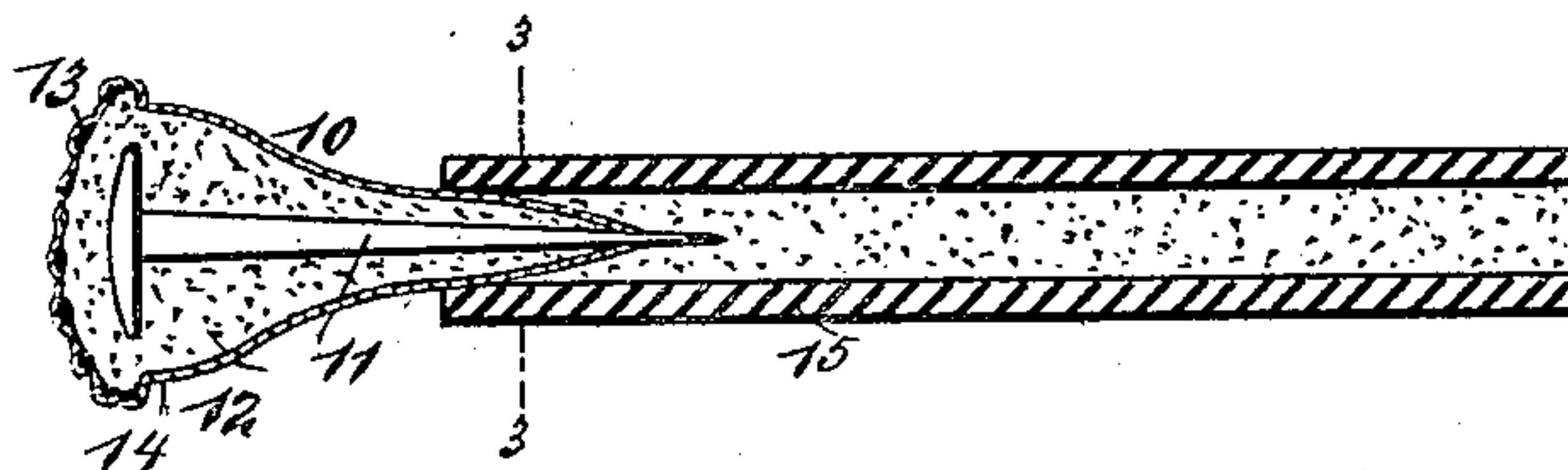
No. 504,603.

Patented Sept. 5, 1893.

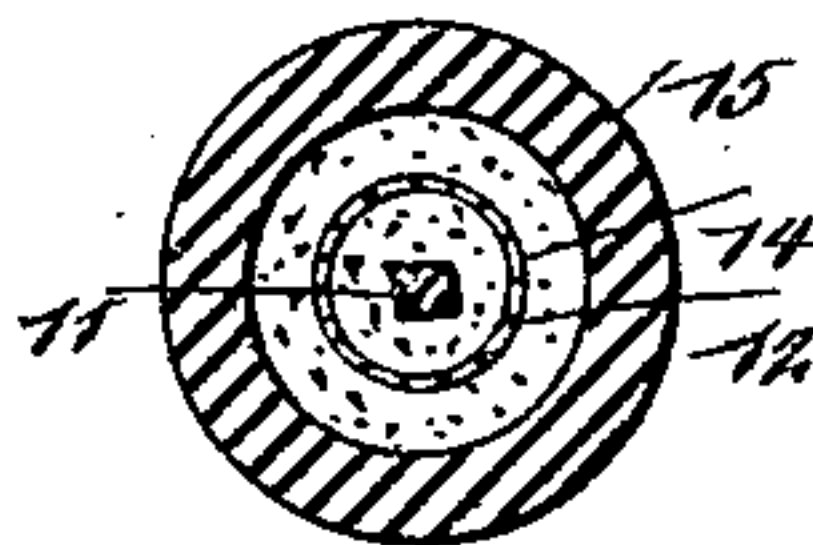
*Fig. 1*



*Fig. 2*



*Fig. 3*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILLIAM C. MATTHEWS, OF DENVER, COLORADO.

## FUSE-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 504,603, dated September 5, 1893.

Application filed December 19, 1892. Serial No. 455,660. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM C. MATTHEWS, of Denver, in the county of Arapahoe and State of Colorado, have invented a new and Improved Fuse-Lighter, of which the following is a full, clear, and exact description.

My invention relates to improvements in that class of devices which are used for lighting fuses, but not to that class such as squibs, which perform in a measure the function of a time fuse, and are composed in part of slow burning materials which are adapted to ignite the powder in the fuse. A common way of igniting the fuse is to slit the fuse near the end, then press out the sides of the slit and insert in the fuse, through the slit, a small quantity of dynamite which is lighted by a match and which ignites the powder. This is an objectionable method, however, as unless great care is exercised the dynamite will fall out and, moreover, it takes time to slit the fuse. It is necessary, however, to have the fire thrown well into the fuse in order to properly ignite the powder of the latter, and the object of my invention is to produce a cheap and simple lighter which is impervious to moisture, which may be used with absolute safety, which may be instantly thrust into the end of a fuse, which ignites readily, and which when lighted, throws its fire well into the fuse so as to ignite the latter in the proper manner.

To these ends my invention consists in a fuse lighter, the construction of which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of my fuse lighter, as applied to a fuse. Fig. 2 is a longitudinal section of the same, and Fig. 3 is a cross section on the line 3—3 in Fig. 2.

The fuse lighter 10 is formed upon a metallic tack 11, the point of which protrudes from the finished article, and this enables the lighter to be easily inserted in the end of the fuse. The tack is preferably provided with a head so that the combustible matter which is fastened around it may be held securely in place, but it may be used without a head.

To form the fuse lighter, the tack 11 is dipped into a mixture of gun-powder, glue,

and water, which quickly hardens around the tack, and which, when dried, is readily combustible and the glue of which serves to hold the whole mass in proper place upon the tack. The mixture may be molded around the tack if desired. While this mixture is still plastic, it is formed into a generally conoidal shape, corresponding approximately to the shape of the tack, and the point of the mass terminating with the point of the tack. After this mixture is shaped upon the tack, as shown best in Fig. 2, its head is dipped into grained powder, and after this the whole mass is dipped into melted paraffine. The gun-powder which is in the body of the mass will not ignite readily, as the body has no sharp corners; and the object of dipping the mixture into grain powder is to enable the grains to project somewhat from the end of the fuse lighter so that they will readily ignite when a lighted match is applied to them, and when these grains are lighted they instantly ignite the body of the lighter. A paraffine covering is put on to keep the body of the fuse lighter from being injured by dampness.

The composition above described is especially well suited for the purpose to which it is put, but I do not limit myself to the composition described, as other combustible compounds may be formed into a fuse lighter having a central metallic tack, without departing from the principle of my invention.

When the fuse lighter is used, its point is thrust into the end of a fuse 15, as shown in Figs. 1 and 2, after which a lighted match is applied to the head of the fuse lighter, that is, to the powder grains 13, and these grains igniting cause the whole mass of the fuse lighter to be also ignited, and the body of the fuse lighter burns quickly, and as it is in contact with the powder in the fuse, the latter at once takes fire.

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

1. A fuse lighter, comprising a combustible body having a pointed metallic end adapted to be inserted in a fuse, substantially as described.

2. A fuse lighter, comprising a metallic tack, a combustible body formed upon the tack and having the end next the point reduced, and



a waterproof coating for the body, substantially as described.

3. A fuse lighter, comprising a metallic tack, a combustible body formed upon the tack and  
5 having a reduced end adjacent to the tack point, the body having also grains of powder on its larger end and having a waterproof coating, substantially as described.

4. A fuse lighter, comprising a tack, a body

composed of powder and glue formed upon the tack and having a reduced end next the tack point, grained powder secured to the larger end of the body, and a waterproof covering for the body, substantially as described.

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