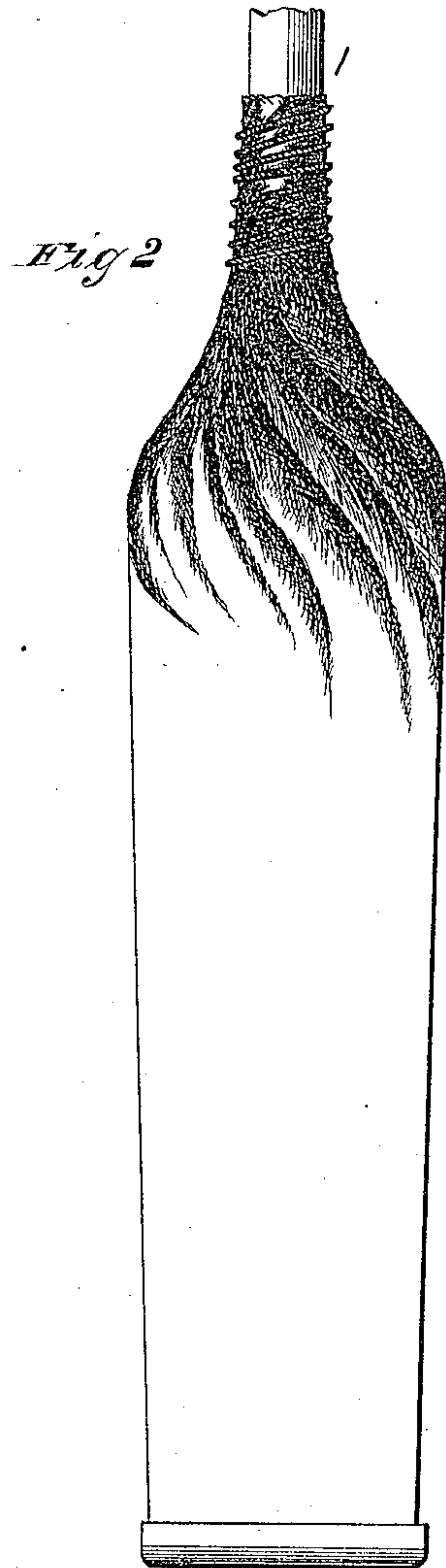
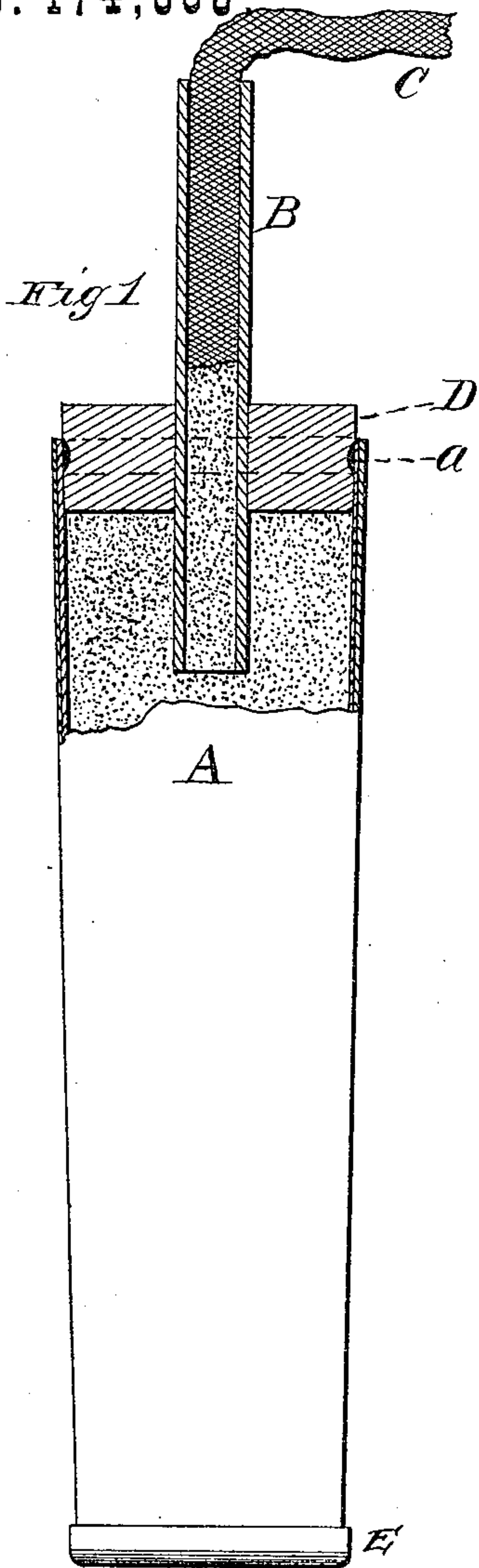


F. W. SMITH.  
BLASTING CARTRIDGE.

No. 174,868

Patented March 14, 1876.



WITNESSES  
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By

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# UNITED STATES PATENT OFFICE

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## IMPROVEMENT IN BLASTING-CARTRIDGES.

Specification forming part of Letters Patent No. 174,868, dated March 14, 1876; application filed  
December 14, 1875.

*To all whom it may concern:*

Be it known that I, F. W. SMITH, of Bridgeport, in the county of Fairfield and in the State of Connecticut, have invented certain new and useful Improvements in Blasting-Cartridges; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to improvements in blasting-cartridges, as hereinafter more fully set forth.

In the accompanying drawings, making a part of this specification, Figure 1 represents a view of a blasting-cartridge with the top part in section, showing my invention. Fig. 2 represents a view of the common mode of connecting the fuse-pipe to the top of the cartridge-case.

In blasting-cartridges the case is filled with powder, and a short pipe is inserted in the top. Within this pipe is placed the fuse. As commonly used, the pipe is connected to the case by twisting the latter, which is usually of paper or muslin, around the tube, and then tying it with a string, as shown in Fig. 2.

This process is defective in several particulars: First, it takes time and labor to make the connection; second, the joint, when made, is not a tight one, and is liable to let in moisture to the powder; third, a loss in the length of the case is experienced, hence a loss in the amount of powder in the case; fourth, the case is more or less injured in crimping it into folds, and leakage thereby often occurs.

Other objections than the above could be mentioned to the old mode, but the above are all overcome by my invention.

A represents a cartridge-case, made of paper, muslin, or any similar material. B represents the short metallic tube into which the

fuse C is inserted. The bottom of the case is closed, and protected by an exterior metallic cup, E, and powder is filled in through the open top. In the top I place a rigid plug, D, which is preferably made of wood for the sake of economy, but it can be made of any other material stiff enough to extend the mouth of the case. This plug is provided with a central orifice, into and through which is passed the tube B, and is made to closely fit the top or mouth of the case, making a close joint, excluding moisture and obviating the other difficulties arising from the old mode of attaching the fuse-tube.

In some cases I provide the plug with a circumferential groove, *a*, around its edge, so that in case the mouth of the case is a little large a string or wire may be wrapped around the outside of the case, and force the material of the same into the groove to form a tight joint; but, ordinarily, this groove will not be needed, as the plug should be made slightly larger than the case, and pressed into the mouth of the same.

Having thus fully described my invention, what I claim is—

The within-described blasting-cartridge, consisting of the case A, of muslin or other similar material, having its bottom protected by the exterior metal cup E, the rigid plug D in the mouth of the same, the fuse-pipe B, passing through said plug, and the fuse C, all as herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 23d day of November, 1875.

FRIEND W. SMITH.

Witnesses:

C. M. ALEXANDER,  
J. M. MASON.