

W. KINGSLEY.

Shell-Fuse.

No. 36,468.

Patented Sept. 16, 1862.

Fig. 1.

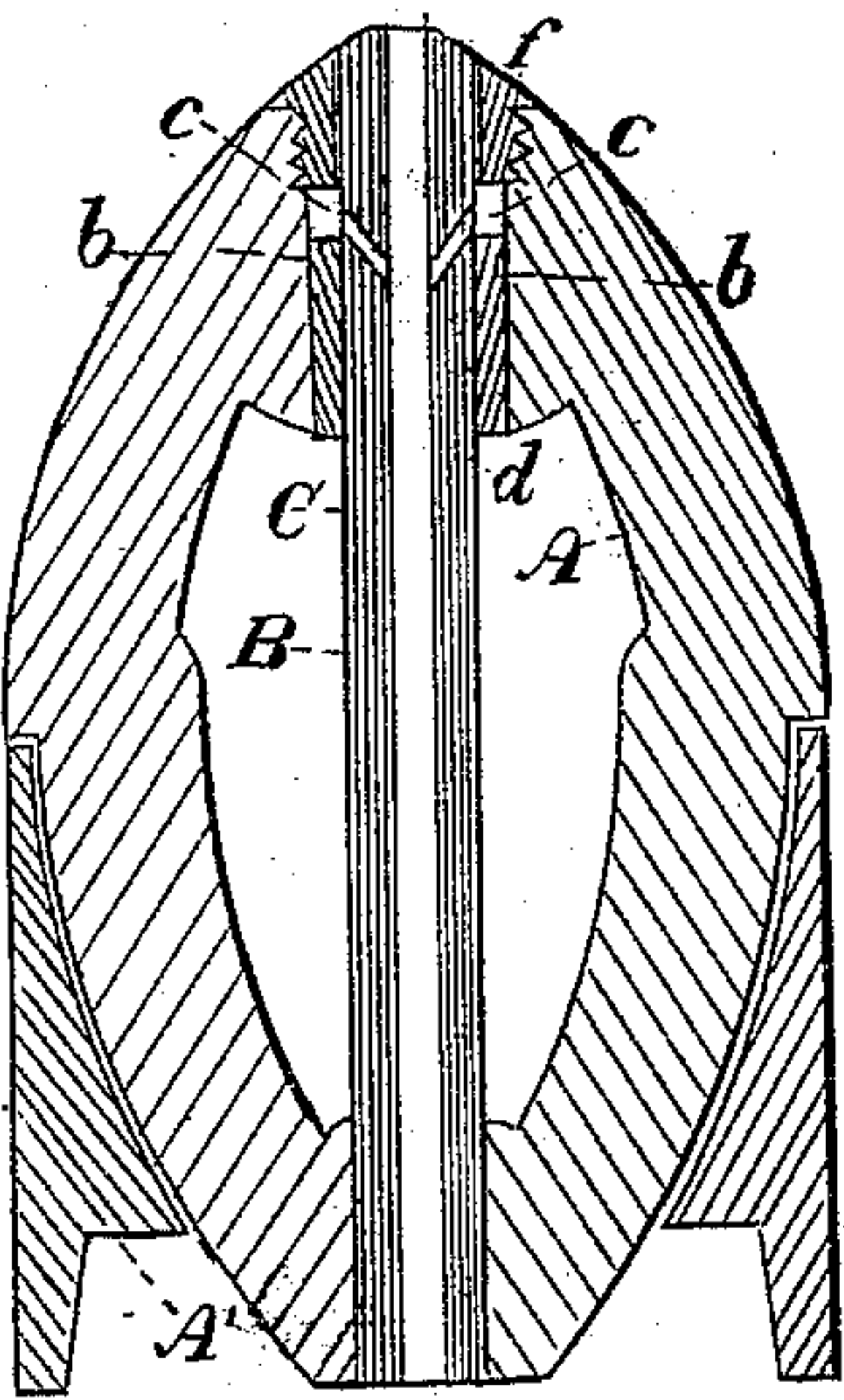
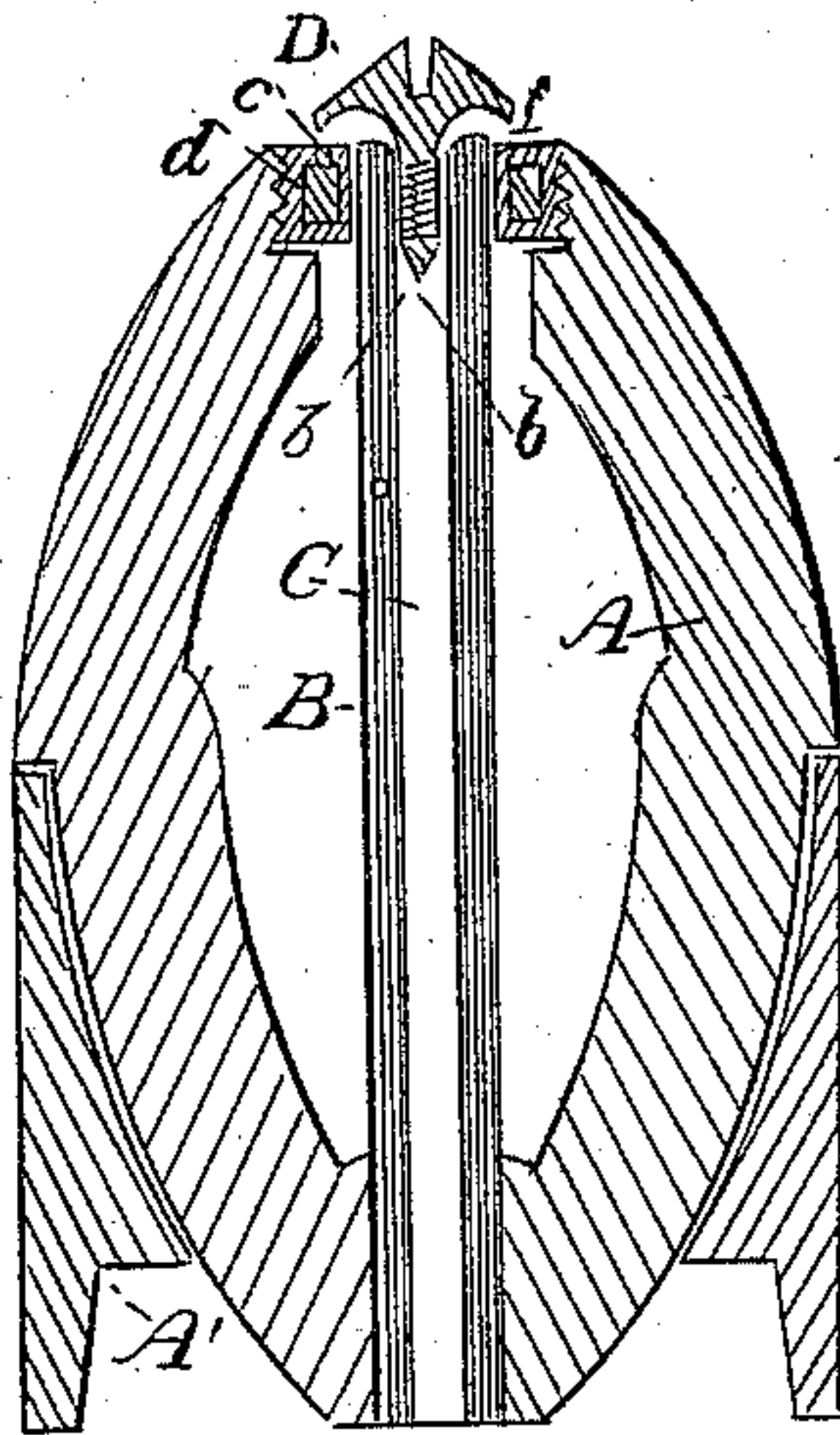


Fig. 2.



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WM. KINGSLEY, OF NEW YORK, N. Y.

IMPROVEMENT IN IGNITING EXPLOSIVE SHELLS.

Specification forming part of Letters Patent No. 36,468, dated September 16, 1862.

To all whom it may concern:

Be it known that I, WILLIAM KINGSLEY, of the city, county, and State of New York, have invented a new and Improved Method of Igniting Fuses in Shells; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a section of a shell taken in the plane of the axis, showing the position of the tube and fuse plug; and Fig. 2, a like section, except that it represents a different arrangement of fuse and passage or opening to the fuse.

The same letters indicate like parts in both figures.

In the usual mode the fuse is placed in the forward end of the shell and ignited by the passage of the flame of the discharge around the shell and between it and the bore of the gun. As the fuse is placed at or near the center of the shell, it often happens that the flame produced by the discharge fails to reach and ignite the fuse. This, however, is not the only objection to this method.

The importance of packing shells so as to admit of discharging them from rifled cannon is well recognized; but when packing of any kind is used, the first effect of the explosion of the charge of the gun is to expand the packing so as to stop all windage, from which it results that the flame cannot pass to the front end to light the fuse. To avoid this in shells provided with lead packing grooves have been made in the packing for the passage of the flame; but this is very defective for the reason that these grooves are liable to become closed up by expanding or upsetting the lead packing. For these reasons shells thrown from rifled cannon have heretofore been generally provided with percussion-priming so arranged as to explode the contained charge on striking; and as it is often important to have shells explode before striking any object, and this can only be effected by fuse-shells, it has generally been deemed necessary to discharge them from smooth-bored guns, thereby losing all the recognized advantages of firing from rifled guns.

The object of my said invention is to insure the ignition of the fuse at the front end whether the shells be or be not provided with packing, and whether to be fired from cannon

smooth or rifled bore; and to this end my said invention consists in making shells with a tube the bore of which passes through from the rear to the fuse in front, so that the flame produced by the explosion of the charge of powder shall pass through to the fuse in front and insure the ignition thereof.

In Fig. 1 of the accompanying drawings, A represents a shell, which may be made of any desired form, and which, if desired, may be provided with any suitable kind of packing, as at A'. A tube, B, with a central bore, C, extends entirely through the shell, and may be cast with or made separate from and inserted in the shell; but if made separate it should be so inserted and secured in the rear end of the shell as to prevent the passage of flame to the charge inside the shell. At the forward end sufficient space should be left around the tube B for charging the shell, and in this space the fuse-plug *d* is inserted, and the whole inclosed by a screw-cap, *f*, an open space, *c*, being left between the inner end of the cap and the fuse *d* for the passage of the flame. The tube B is provided with one or more inclined branch holes, *b b*, extending from the bore C to the open space *c* between the cap *f* and the fuse *d*. When such a shell is fired from a gun, the flame from the exploded charge in the gun passes freely through the central bore, C, of the tube and through the branch holes to the open space *c*, and hence strikes and ignites the fuse *d*, which will fire the charge within the shell at the time determined by the fuse itself.

In Fig. 2 a similar shell and central tube are represented as in Fig. 1, and the parts indicated by corresponding letters; but instead of a plug-fuse a paper fuse, *d*, is represented as placed in a suitable cavity in the cap *f*. To the upper end of the bore of the tube is fitted and tapped a screw, D, the head of which is of sufficient diameter to extend over the fuse. The under face of this head is concave, and the stem of the screw is either grooved longitudinally in one or more places, or a segment cut off, so as to form one or more passages from the bore of the tube to the space between the under part of the head of the screw and the upper surface of the cap *f*, containing the fuse.

From the foregoing it will be seen that when the charge in the gun is exploded the flame

will pass through the bore of the tube to the curved under surface of the head of the screw, by which it will be deflected directly against the fuse, to ignite it wherever it is cut.

I have in the foregoing described two modes, in which I have contemplated the application of my said invention; but I do not wish to be understood as limiting my claim of invention to such modes, as other and equivalent modes may be substituted.

What I claim as my invention, and desire to secure by Letters Patent, is—

Making fuse-shells with a tube or passage from the rear end to the fuse in front, substantially as and for the purpose specified.

WM. KINGSLEY.

Witnesses:

WM. H. BISHOP,
A. DELACY.