

No. 763,229.

PATENTED JUNE 21, 1904.

C. P. WATSON.  
SHELL FUSE.

APPLICATION FILED JULY 23, 1903.

NO MODEL.

Fig. 1.

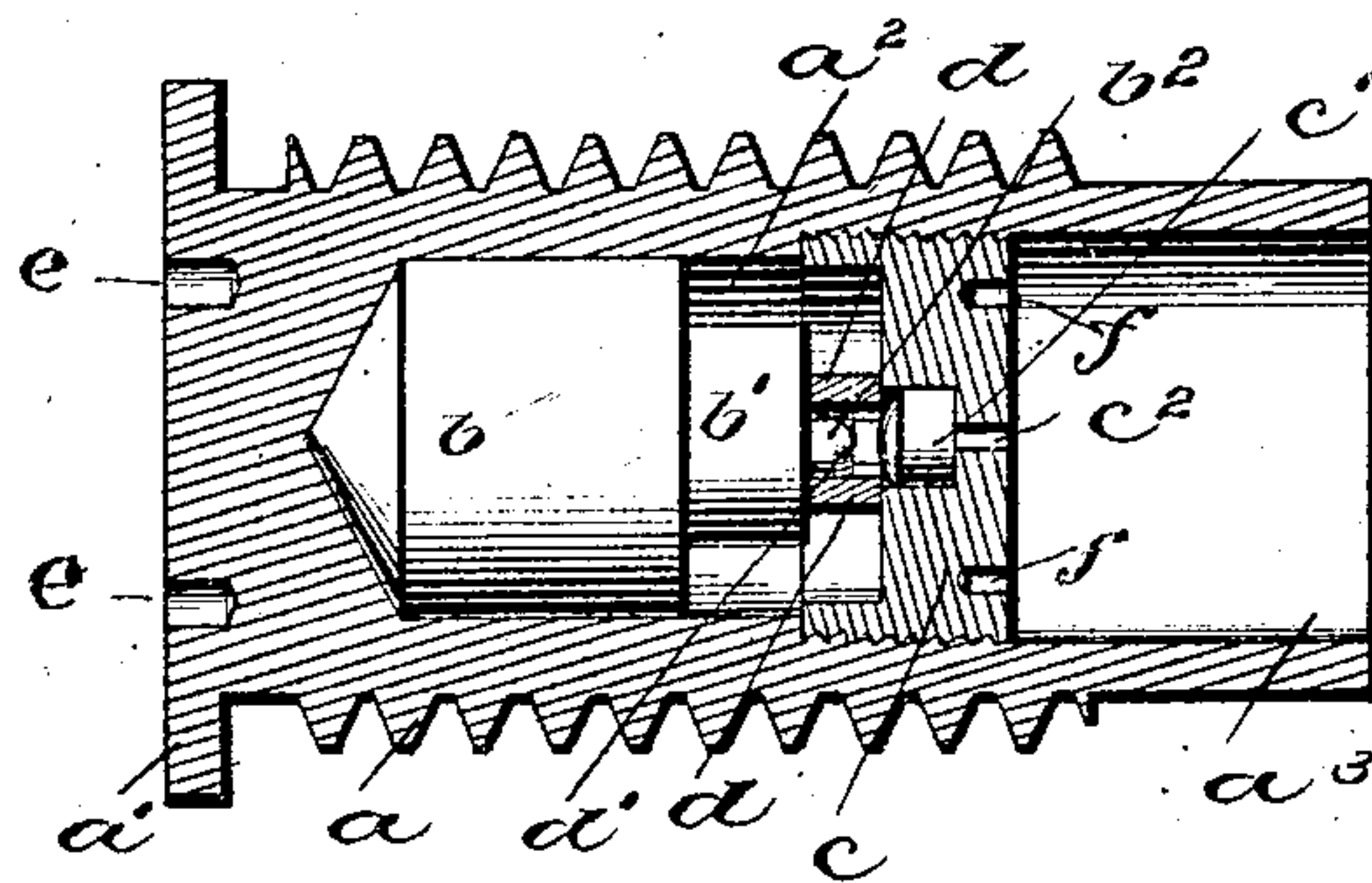


Fig. 2.

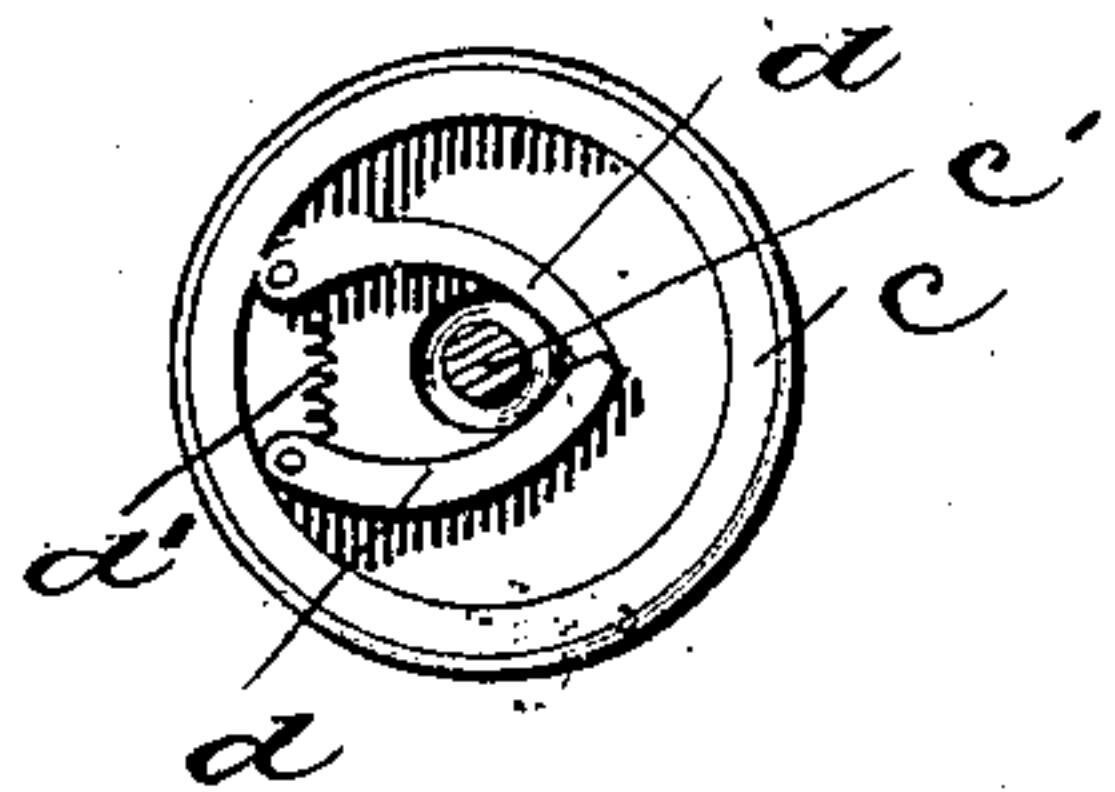


Fig. 3.

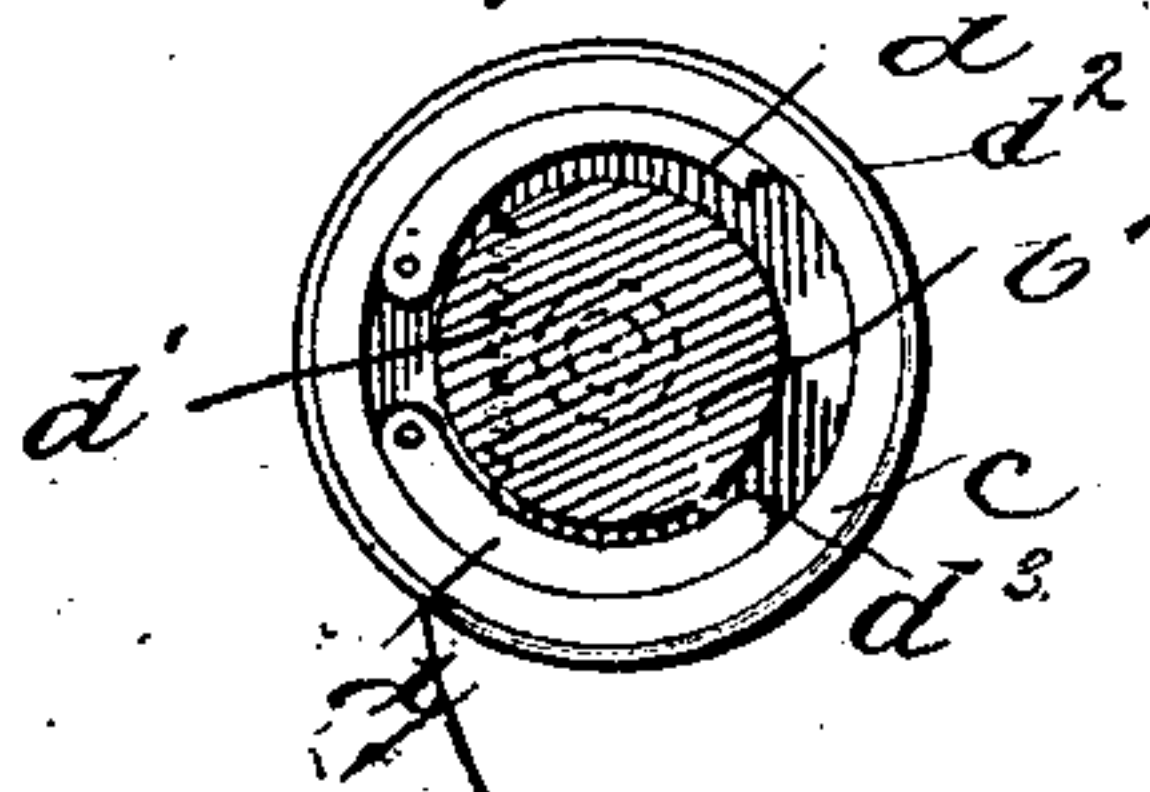


Fig. 4.

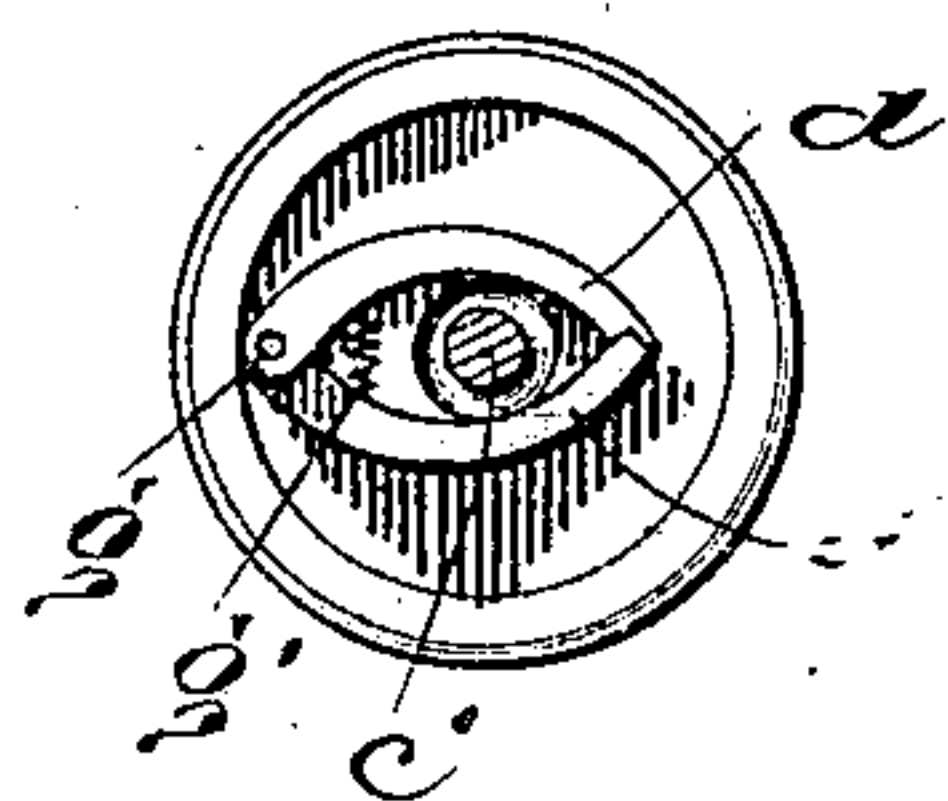
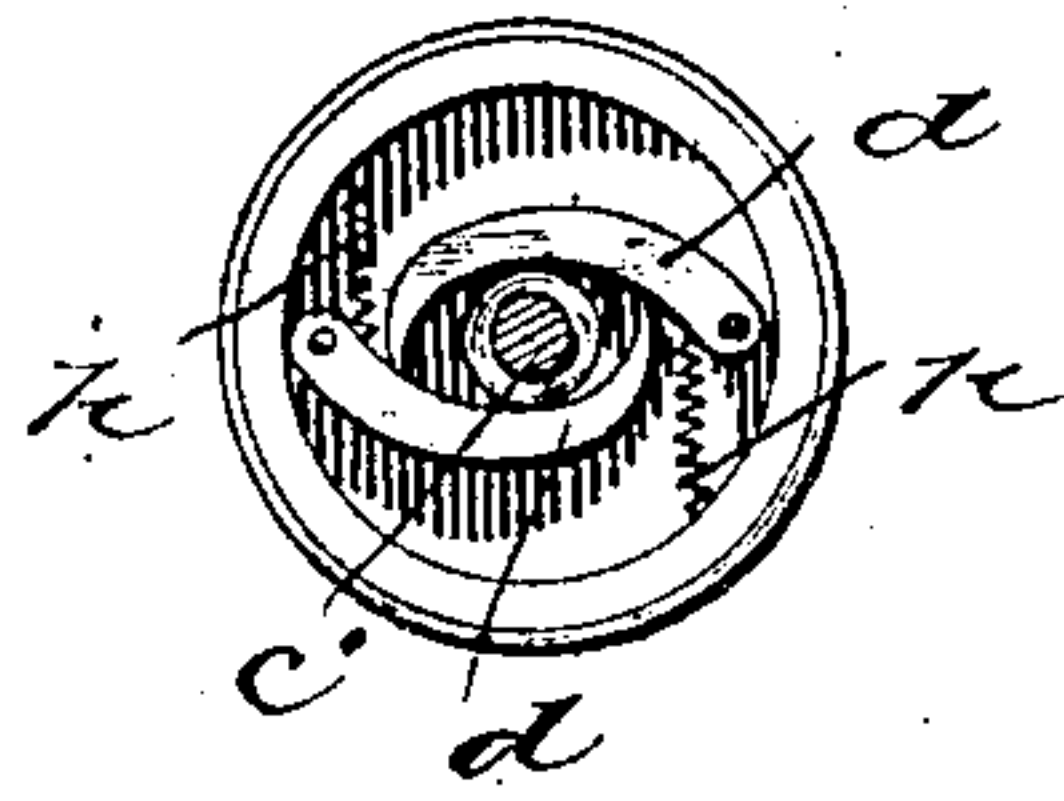


Fig. 5.



Witnesses:

*Jno. Smith*  
*J. J. Johnson*

By *his* Attorney

Inventor

*Chas. P. Watson*  
*J. R. Nottingham*

## UNITED STATES PATENT OFFICE.

CHARLES P. WATSON, OF YORK, PENNSYLVANIA.

## SHELL-FUSE.

SPECIFICATION forming part of Letters Patent No. 763,229, dated June 21, 1904.

Application filed July 23, 1903. Serial No. 166,761. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES P. WATSON, a citizen of the United States, residing at York, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Shell-Fuses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to percussion-fuses for explosive shells; and it consists, essentially, of a novelly constructed and arranged mechanism interposed between the hammer and detonating-cap capable of holding the hammer normally out of contact with the cap and being operated upon by centrifugal force to permit said hammer upon the impact of the shell to be projected against said cap.

One of the principal objects of this invention is to provide a means that will render the handling of this class of shells perfectly safe, and yet when fired from a gun will operate to set the hammer free, so that it will be projected against the detonating-cap upon the impact of the shell with absolute certainty.

Other objects of the invention will become readily apparent upon a more detailed description thereof.

In the drawings, Figure 1 is a longitudinal sectional view of my improved device; Fig. 2, a plan view of the inner face of the cap-carrying plug, showing the hammer-restraining mechanism in closed or normal position; and Fig. 3, a similar view showing the hammer-restraining mechanism in open position, with the reduced end of the hammer in cross-section projected between the levers of said mechanism; Fig. 4, a modified form of hammer-restraining mechanism, and Fig. 5 another form of said mechanism.

Referring to the several views, the letter *a* indicates the fuse-body, having the usual flanged head *a'* and chamber *a''*. A portion of the outer surface of the fuse-body is screw-threaded, so as to adapt it to be screwed into the breech of the shell.

In the rear portion of the chamber *a''* is loosely seated a hammer *b*, said hammer hav-

ing a reduced end portion *b'*, provided with a firing-pin *b''*.

A portion of the inner wall of the chamber *a''* is screw-threaded to receive a screw-threaded plug *c*, carrying a detonating-cap *c'* and having a firing channel or hole *c''*, communicating with the priming-charge chamber *a''*. The inner end of the plug is counterbored, and situated in said counterbored end are two levers or arms *d d'*, which are preferably pivoted on the plug and have their free ends normally held together by a spring *d''*, the spring being attached to the levers or arms at such a point distant from their pivots as to readily permit said levers or arms to separate under the action of centrifugal force developed by the rapid rotation of the shell during its flight. The end of one lever may be provided with an indent *d'''* and the end of the other lever with a correspondingly-shaped projection *d'''* to hold the ends of said levers in slightly-locked position until overcome by the action of centrifugal force. The levers *d d'* are of sufficient thickness to prevent the firing-pin from coming in contact with the detonating-cap, and their normal position (between the inner faces of the reduced end *b'* and the plug) is positively maintained until forced out of such position by the action of centrifugal force, the tension force of the spring being readily overcome.

Both the flanged head of the fuse-body and the outer end of the plug are provided with sockets *e e* and *f f*, respectively, to receive the forked ends of a suitable tool for securing the parts in their respective places and for removing the same.

In the modification shown in Fig. 4 the levers *d d'* are hinged together at one end by a pin *g*, which is preferably secured in the face of the plug, and the free ends of said levers are held normally together by a spring *g'*.

In the modified form shown in Fig. 5 each lever is pivoted on the face of the plug, at opposite sides thereof, with the free end of each resting against the inner side of the other, and springs *h h* are provided to hold said levers in their closed or normal position.

In each modified form the face of the re-



duced end of the hammer will rest or abut against the levers, and thereby prevent the firing-pin from coming in contact with the cap until said levers are thrown out by centrifugal force.

Other modifications in the details of construction may be made without departing from the spirit or scope of my invention or sacrificing the principle thereof.

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

1. In a shell-fuse, the combination with a suitably-chambered stock, having a closed end and an open end, a hammer loosely seated in the chamber, and having a reduced forward end portion provided with a firing-pin, and a removable cap-carrying plug seated in the open end of said chamber, of a pair of wings or levers, pivoted on the face of the cap-carrying plug and arranged in the path of the forward movement of the hammer, and means normally holding the free ends of the wings in closed position, whereby said hammer is prevented from accidentally contacting with the cap, but free to strike the cap, upon impact, when the wings or levers are acted upon by centrifugal force.

2. In a shell-fuse, the combination with a suitably-chambered stock, having a closed end and an open end, a hammer seated loosely in

the chamber, and having a reduced forward end portion provided with a firing-pin, and a removable cap-carrying plug, seated in the open end of said chamber and having a counterbored face, of a pair of wings or levers pivoted within the counterbored face of the cap-carrying plug, and means normally holding the wings in closed position, whereby said hammer is prevented from accidentally contacting with the cap.

3. In a shell-fuse, the combination with a suitably-chambered stock, having a closed end and an open end, a hammer loosely seated in the chamber, and having a reduced forward end portion provided with a firing-pin, and a removable cap-carrying plug, seated in the open end of said chamber and having a counterbored face, of a pair of wings or levers, pivoted within the counterbored face of the cap-carrying plug and arranged in the path of the forward movement of the hammer, and a spring normally holding the free ends of the wings in closed position, whereby said hammer is prevented from accidentally contacting with the cap.

In testimony whereof I affix my signature in the presence of two witnesses.

CHARLES P. WATSON.

Witnesses:

J. R. NOTTINGHAM,  
HARRY S. WELCH.