No. 823,681. PATENTED JUNE 19, 1906.

C. L. GULICK.

PERCUSSION FUSE.

APPLICATION FILED FEB. 8, 1905. RENEWED MAY 22, 1906.

Fig. 1.

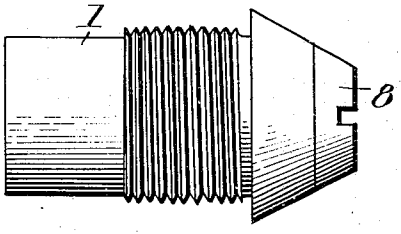


Fig. 2.

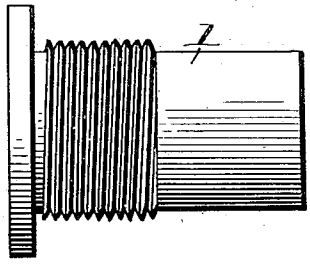


Fig. 3.

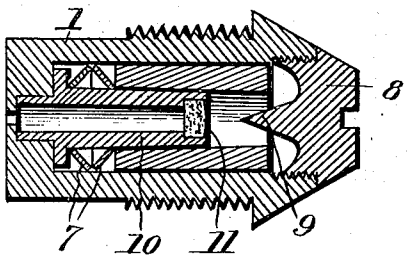


Fig. 4.

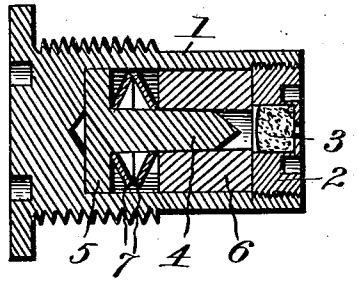


Fig. 5.

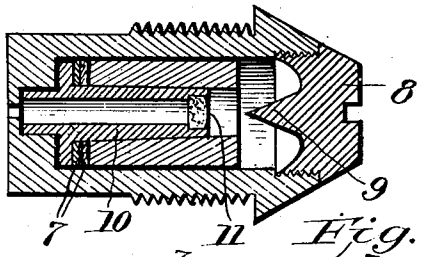


Fig. 6.

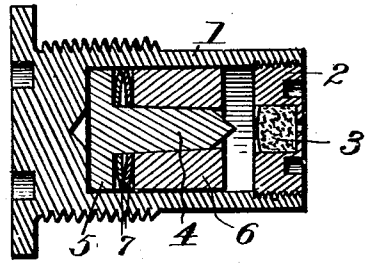


Fig. 8.

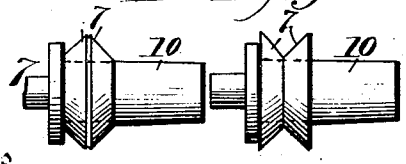
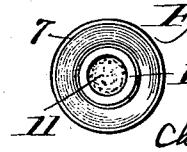


Fig. 7.

Fig. 9.



Witnesses

C. H. Wheeler.

C. W. Shepard.

Inventor

Charles L. Gulick

by James W. Bevans

his Attorney.

UNITED STATES PATENT OFFICE.

CHARLES L. GULICK, OF BRIDGEPORT, CONNECTICUT.

PERCUSSION-FUSE.

No. 823,681. Specification of Letters Patent. Patented June 19, 1906.

Application filed February 8, 1905. Renewed May 22, 1906. Serial No. 318,230.

To all whom it may concern:

Be it known that I, CHARLES L. GULICK, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Percussion-Fuses, of which the following is a specification.

This invention relates to improvements in percussion-fuses; and the object thereof is to provide a fuse of this type of exceedingly simple construction, employing but few parts, and which will be normally "unarmed" and will not "arm" by accidental dropping, but which will be "armed" by the "set-back" and will be reliable and effective in use.

With the above objects in view my invention consists in the novel features of construction hereinafter fully described, particularly pointed out in the claims, and clearly illustrated by the accompanying drawings, in which—

Figure 1 is a side elevation of a "nose-fuse" constructed in accordance with my invention; Fig. 2, a similar view of a "base-fuse;" Fig. 3, a longitudinal sectional view of the nose-fuse, showing the normal position of the parts; Fig. 4, a similar view of the base-fuse; Fig. 5, a longitudinal sectional view of the nose-fuse, showing the position of the parts after the fuse has armed by the action of the set-back; Fig. 6, a similar view of the base-fuse; Fig. 7, an enlarged view, in side elevation, of the plunger of the nose-fuse with the collapsible disks thereon; Fig. 8, a similar view showing a slightly different arrangement of the disks, and Fig. 9, a plan view of one of the disks.

Referring now more particularly to the base-fuse, 1 indicates the fuse-case, screw-threaded exteriorly, as in the ordinary construction, for insertion in the base of the shell. The inner end of the case is threaded interiorly to receive the usual plug 2, carrying the primer 3. Arranged to move freely longitudinally in the fuse-case is a plunger 4, which is tapered slightly. The outer end of the plunger is pointed to explode the primer when brought in contact therewith upon impact of the shell, while the opposite end thereof is formed with a base 5, which centers it in the case.

6 designates a masking member having a slightly-tapered bore to receive the plunger 4. This member is normally held with its outer end projecting beyond the pointed end of the plunger, and thus masking the same by two collapsible disks 7. These disks are formed substantially cup-shaped, with a central perforation therein, whereby they may be slipped upon the plunger with their larger ends in contact, as shown in Fig. 7, or with their smaller ends in contact, as illustrated by Fig. 8, said disks being placed between the base 5 of the plunger and the inner end of the member 6. The disks, by reason of their "cup shape," are very strong and cannot be collapsed or flattened by the jar or blow caused by dropping the shell from a considerable height, but upon the firing of the gun they are flattened, as shown in Figs. 5 and 6, by the set-back, which forces the masking member backward upon the plunger. By reason of the taper of the plunger and the bore of the masking member upon set-back the latter is wedged upon the former, with the point of said plunger projecting beyond the outer end of said member and the parts held together to move as one upon impact of the shell. Upon impact of the shell the plunger and masking member move forwardly and the point of the former comes into contact with and explodes the primer.

The disks are cheap in construction, and by reason thereof and the quick and simple manner in which the parts may be assembled the fuse can be constructed at a smaller cost than those in which a shear-pin is used and those of more complicated construction.

The figures of the drawings illustrating the nose-fuse show a slightly-different arrangement of the parts necessary in a fuse of this type. In this form of fuse the plug 8 of the fuse-case 1 carries the firing-point or projection 9, while the plunger 10 is provided with the primer 11. The masking member 6 and disks 7 are of the same construction as described, and the operation of the parts is the same as in the base-fuse. Said member instead of masking the firing-point covers the primer until moved backward by the set-back, when it moves a sufficient distance on the plunger to permit the primer to contact with the firing-point when the parts move forward on impact of the shell.

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

1. In a percussion-fuse, a member adapted to normally prevent contact between the primer and firing-point, and a substantially

cup-shaped disk for holding said member in this position adapted to be collapsed or flattened by said member on "set-back."

2. In a percussion-fuse, a member adapted to normally prevent contact between the primer and firing-point, and two substantially cup-shaped disks placed in contact for holding said member in this position adapted to be collapsed or flattened by said member on "set-back" caused by the firing of the gun.

3. In a percussion-fuse, a fuse-case, a plunger movable longitudinally therein, a primer and a firing-point carried one by the plunger and the other by the fuse-case, a member movable on the plunger, and a substantially cup-shaped disk arranged on said plunger for holding said member in position preventing contact between the primer and firing-point adapted to be collapsed or flattened by said member on "set-back."

4. In a percussion-fuse, a fuse-case, a plunger movable longitudinally therein, a primer and a firing-point carried one by the plunger and the other by the fuse-case, a member movable on the plunger, and two substantially cup-shaped disks arranged on said plunger for holding said member in position preventing contact between the primer and firing-point adapted to be collapsed or flattened by said member on "set-back."

5. In a percussion-fuse, a fuse-case, a plunger movable therein tapered slightly, a primer and a firing-point carried one by the plunger and the other by the fuse-case, a member having a tapered opening to receive the plunger, and a collapsible disk on said plunger for holding said member in position preventing contact between the primer and firing-point adapted to be collapsed by the plunger on "set-back."

6. In a percussion-fuse, a fuse-case, a plunger movable longitudinally therein, a primer and a firing-point, carried one by the plunger and the other by the fuse-case, a member movable on the plunger, and a bowed or arched member arranged on said plunger for holding said first-mentioned member in position preventing contact between the primer and the firing-point, said bowed or arch-shaped member adapted to be collapsed or flattened on set-back.

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

CHARLES L. GULICK.

Witnesses:

E. W. SHEPARD,

KENNETH P. CLARKE.