

No. 785,846.

PATENTED MAR. 28, 1905.

K. WIESER.
IMPACT FUSE.

APPLIOATION FILED MAR. 9, 1904.

Fig. 1.

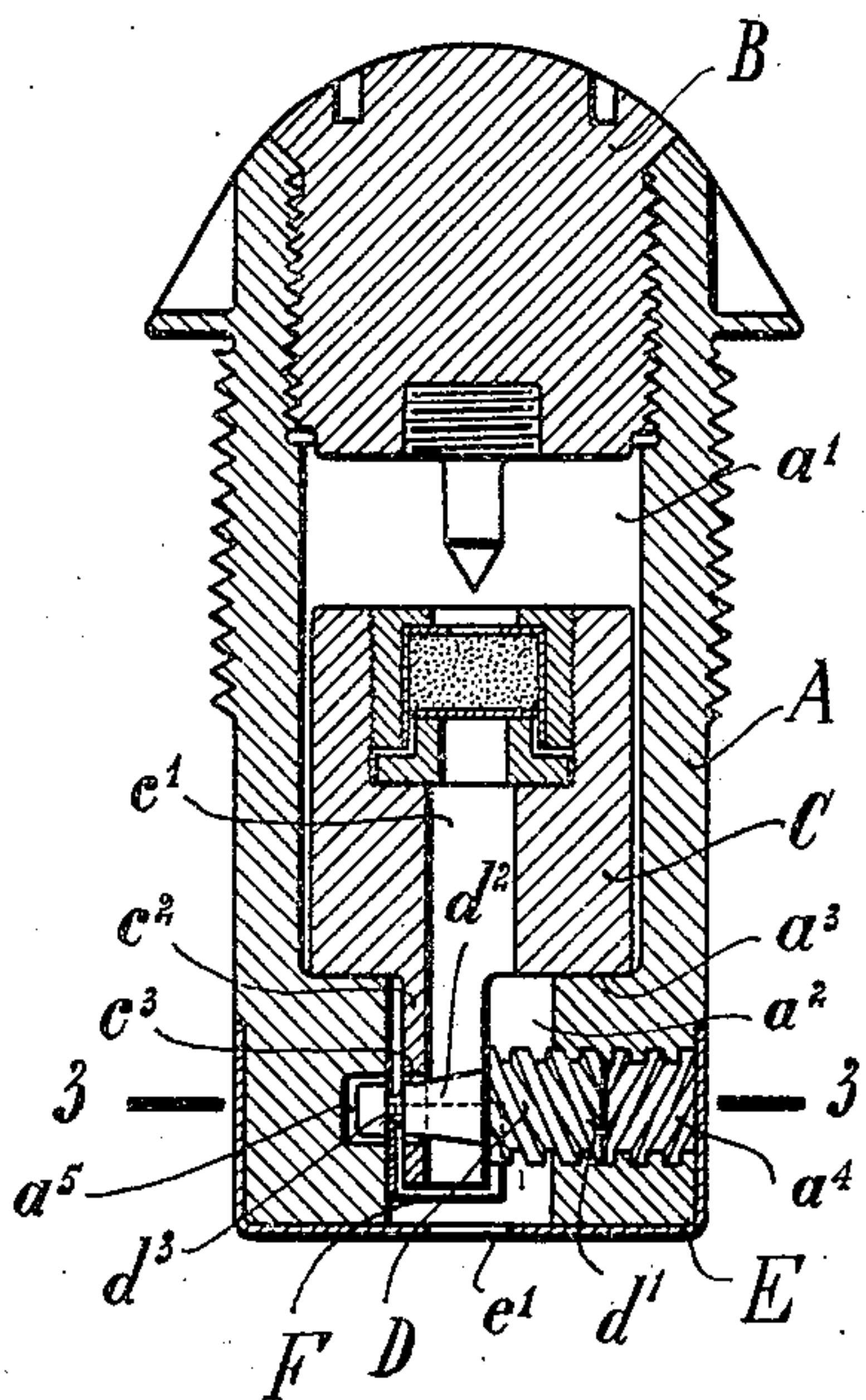


Fig. 2.

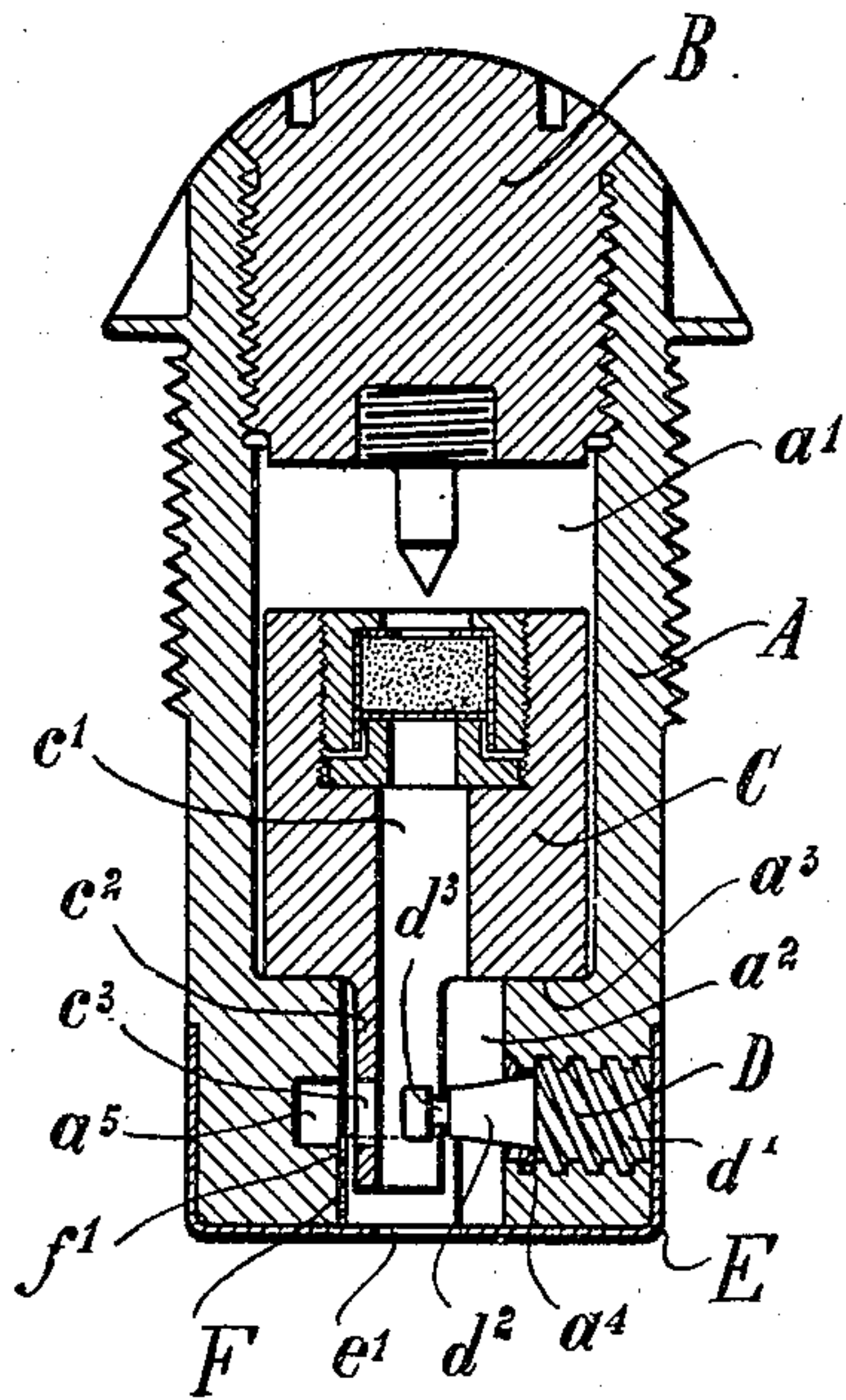


Fig. 3.

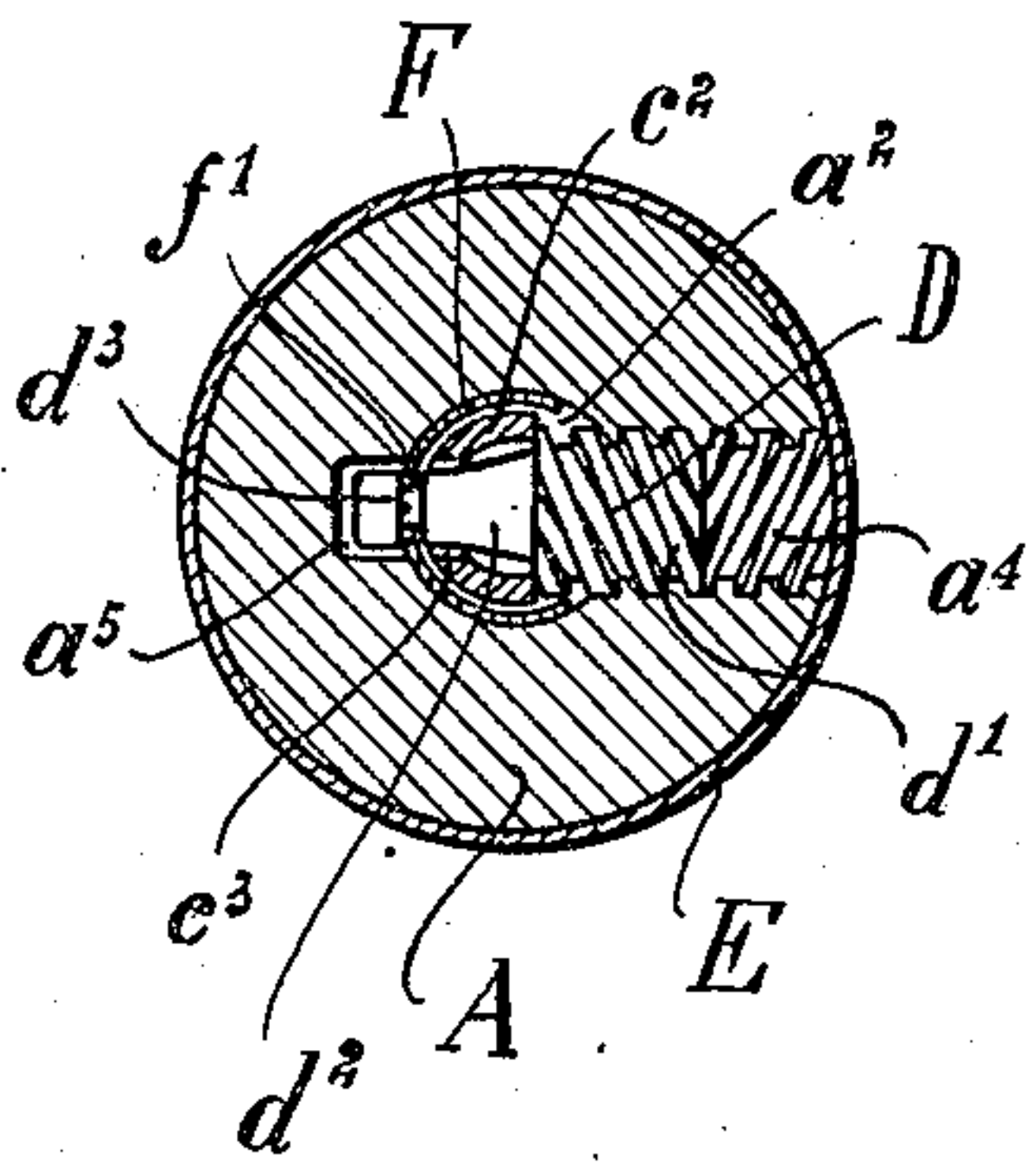


Fig. 4.

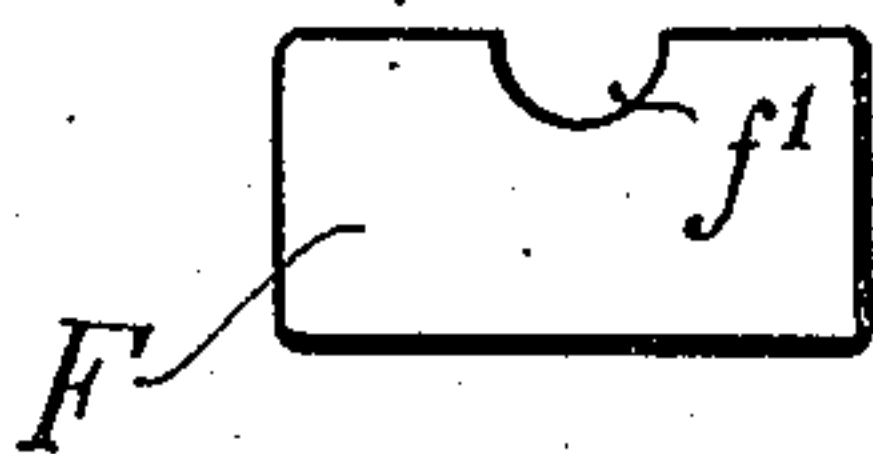
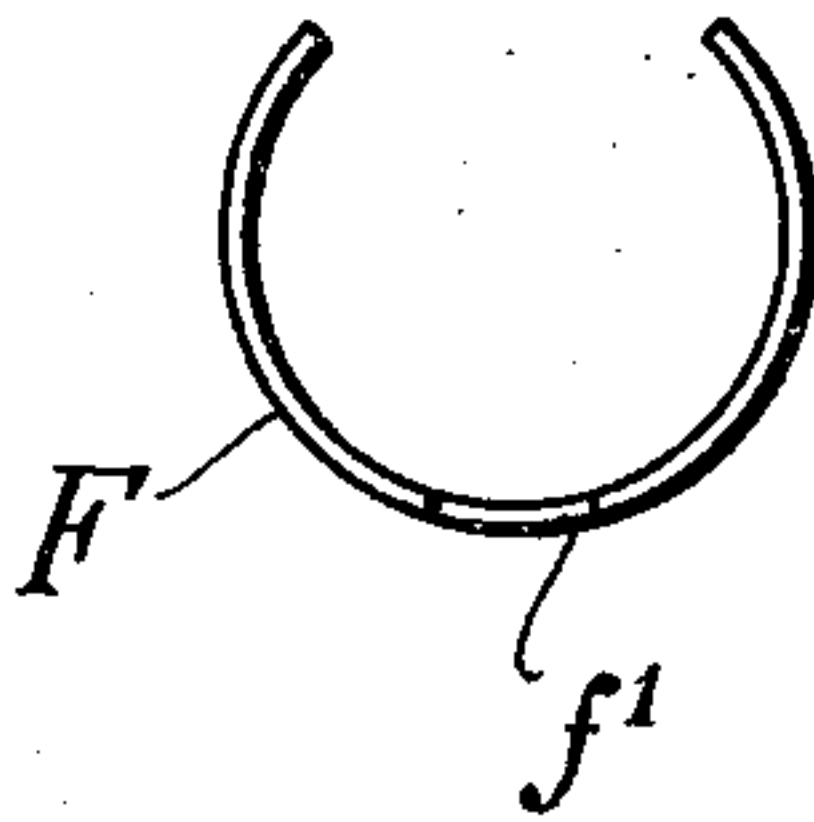


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

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IMPACT-FUSE.

SPECIFICATION forming part of Letters Patent No. 785,846, dated March 28, 1905.

Application filed March 9, 1904. Serial No. 197,326.

To all whom it may concern:

Be it known that I, KARL WIESER, a subject of the Emperor of Germany, and a resident of Rüttenscheid, near Essen-on-the-Ruhr, Germany, have invented certain new and useful Improvements in Impact-Fuses, of which the following is a specification.

The present invention relates to an impact-fuse with a securing device which is withdrawn by the centrifugal force during the rotation of the shot. The hitherto-known securing devices of the said kind have the drawback that they are withdrawn immediately when the rotation begins, and there is thus danger of a premature ignition or a bursting of a shell in the gun-barrel by reason of the movable portion of the impact-fuse rebounding from its foundation as a result of the reaction effect of the shock rising from the discharging of the gun.

The present invention has now for its object to provide an impact-fuse the securing device of which is retarded in releasing the movable part of the fuse, and thus prevents bursting of a shell in the barrel. The said object is obtained by having the movable part of the securing device forced to move in such a manner that its movement of withdrawal is a combination of an advancing and a rotating movement.

In the annexed drawings is shown one form of construction of my invention.

Figure 1 is a longitudinal section of the secured fuse. Fig. 2 is a view corresponding to Fig. 1, the securing device being withdrawn. Fig. 3 is a section on line 3-3, Fig. 1. Figs. 4 and 5 are detail views on a larger scale.

The description of the arrangement and manner of operation of the invention has reference to the secured position of the fuse, Figs. 1 and 3.

The fuse, which is of known construction, consists of the fuse-body A, the needle-carrier B, which is screwed into the head of the fuse-body, and the detonating or primer bolt C, provided with a central fuse-channel c' , which bolt is movably arranged in the central bore a' of the fuse-body. The bore a' terminates

toward the bottom of the fuse in a central bore a^2 of a diameter less than the diameter of the bore a' , so that an annular shoulder a^3 is formed, which serves as a base for the primer-bolt C. Said bolt C is provided with an offset c^2 , projecting into the bore a^2 and having the shape of a hollow-cylinder sector, the hollow space of which forms a prolongation of the fuse-channel c' . The offset c^2 is open to the right, and opposite this opening it is provided with a bore c^3 , the axis of which is perpendicular to the longitudinal axis of the fuse. The movable part of the securing device consists in a bolt D, which is situated in a bore a^4 in the fuse-body. The bore a^4 , the axis of which coincides with that of the bore c^3 , projects through the wall of the fuse-body which is opposite the open side of the offset c^2 and is closed from outside by a sheet-metal cap E, surrounding the bottom part of the fuse-body and provided with a fuse-opening e' . The securing-bolt D consists of a cylindrical part d' and a substantially conical part d^2 . The cylindrical part d' of the securing-bolt has external double screw-threads, which correspond to internal screw-threads in the bore a^4 of the fuse-body. The pitch-angle of these screw-threads is greater than their friction-angle. Furthermore, the weight of the securing-bolt is distributed in such a manner that its center of gravity is eccentric to the longitudinal axis of the fuse, which is the same as the longitudinal axis of the shot. By this arrangement of the securing-bolt the same is capable of automatically screwing itself into the bore a^4 of the fuse-body by means of the centrifugal force arising from the rotation of the shot. The part d^2 of the securing-bolt projects through the offset c^2 of the primer-bolt into a pocket a^5 in the fuse-body and is embraced by the wall of the bore c^3 , so that the primer in the bolt C is prevented from premature ignition. In the part of the core a^2 below the securing-bolt D is arranged around the offset c^2 an annular bent sheet-spring F, which bears yieldingly against the wall of the bore a^2 and is provided with a recess f' . (See also Figs. 4 and 5.) The edge

of the recess f' engages an annular groove d^3 of the securing-bolt D, and thereby holds the bolt in the secured position.

When the gun is discharged, the spring F moves by reason of the effect of its inertia, and the securing-bolt is thereby released. The bolt thereupon yields to the effect of the centrifugal force, and its screw-threads move so far into the bore a^4 of the fuse-body that the free end of its part d^2 leaves the bore c^3 in the offset c^2 of the primer-bolt C. The primer-bolt C is thus released, and the fuse is ready for ignition. The friction arising from the movement of the securing-bolt acts as a brake, so that the releasing of the movable part of the fuse is retarded.

I claim—

1. In an impact-fuse, the combination with a longitudinally-movable detonating-bolt, of a centrifugally-operated securing device movable transversely of the bolt to release said bolt and rotating during such movement on an axis transverse of the bolt.

2. In an impact-fuse, the combination with a longitudinally-movable detonating-bolt, of a centrifugally-operated securing device having a screw movement transversely of the bolt to release said bolt.

3. In an impact-fuse the combination of a securing device movable transversely of the longitudinal axis of the fuse by centrifugal force and means imparting a rotating movement to the securing device as it moves to re-

lease the fuse consisting of a screw, the pitch-angle of which is greater than its friction-angle, whereby the releasing of the movable part of the fuse is retarded and the bursting of the shell in the barrel is prevented.

4. In an impact-fuse, the combination of the longitudinally-movable detonating-bolt, having a transverse bore, the fuse-body having a screw-threaded transverse bore in line with the bore of the detonating-bolt, and the locking-bolt having a threaded portion engaging in the threaded bore of the fuse-body and having a portion moving by centrifugal force out of locking relation with the bore of the detonating-bolt.

5. In combination with the centrifugally-actuated securing device of a fuse, a locking means F normally engaging the securing device to prevent release of the fuse, but moving longitudinally of the fuse by its own inertia, when the shell is fired, out of locking relation to said securing device, said securing device having a groove d^3 and said locking means comprising the annular plate-spring fitting the longitudinal bore of the fuse and movable into and out of the groove of the securing device.

The foregoing specification signed at Düsseldorf this 26th day of February, 1904.

KARL WIESER.

In presence of—

WILLIAM ESSENWEIN,
PETER LIEBER.