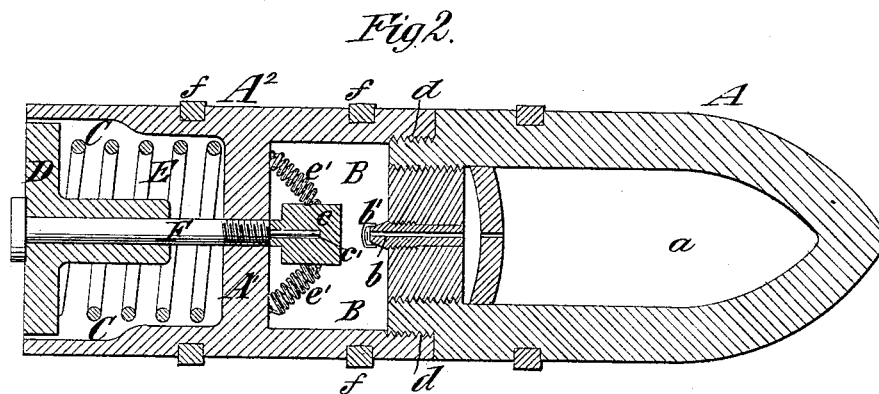
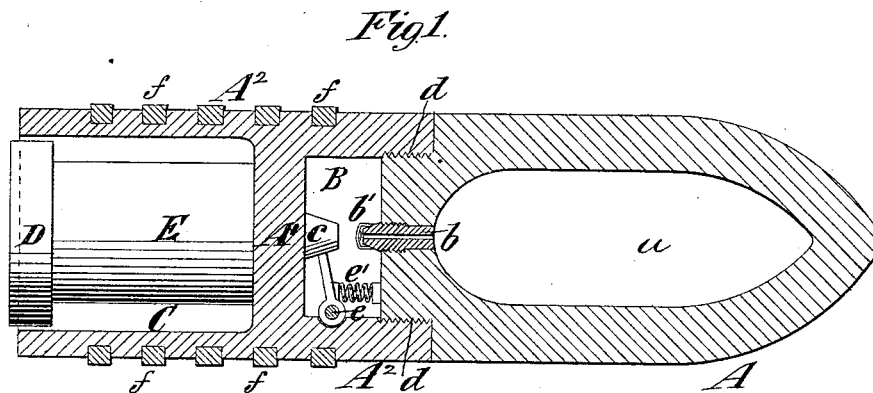


(No Model.)

B. T. BABBITT.
ORDNANCE PROJECTILE.

No. 346,343.

Patented July 27, 1886.



Witnesses.
Emil Hertel.
O. Sundgren

Inventor
Benj. T. Babbitt
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Brown & Hall

UNITED STATES PATENT OFFICE.

BENJAMIN T. BABBITT, OF NEW YORK, N. Y.

ORDNANCE PROJECTILE.

SPECIFICATION forming part of Letters Patent No. 346,343, dated July 27, 1886.

Application filed February 2, 1886. Serial No. 190,607. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN T. BABBITT, of the city and county of New York, in the State of New York, have invented a new and useful Improvement in Ordnance Projectiles, of which the following is a specification.

My invention is applicable to shells charged with nitro-glycerine or other explosive material which is exploded by concussion; and it relates to means employed for exploding or firing the explosive charge at the instant the shell strikes.

My invention relates to those shells or projectiles in which the explosion of the bursting-charge within the shell is effected through the explosion of a cap or primer by a hammer, which is held out of contact with the cap or primer until the shell strikes, and is then caused to strike the cap with a force sufficient to explode it, and to thereby fire the explosive charge in the shell.

The invention consists in a novel combination and construction of the mechanism whereby the hammer is controlled, as hereinafter particularly described, and pointed out in the claim.

In the accompanying drawings, Figure 1 is a longitudinal or axial section of a shell embodying my invention, in which the hammer is pivoted; and Fig. 2 is a similar view showing a sliding hammer.

Similar letters of reference designate corresponding parts in both figures.

A designates the body of a shell, which has within it a chamber or space, *a*, for the reception of nitro-glycerine or other explosive charge, and also has a firing-tube or primer, *b*, extending to the space *a*. This firing-tube or primer is to receive a cap or exploder, *b'*, and *c* designates a hammer, which, when the shell strikes an object, will be thrown against the cap or exploder *b'* by the momentum due to its weight, and will thereby explode the cap *b'* and fire the charge of explosive in the shell.

As here represented, the shell is constructed with a chamber, B, in rear of the explosive charge, and in this chamber the hammer *c* is arranged. The chamber B is closed from the rear of the projectile by a partition, A', which is formed in the rear portion, A², of the projectile.

The parts A A² may be of cast-iron, steel, or other suitable metal, and are, as here represented, connected by a screw-thread, *d*.

The hammer *c* (shown in Fig. 1) is attached to a helve, which is pivoted at *e*, and by means of a spring, *e'*, the hammer is held out of contact with the cap or exploder *b'*, and against the partition A', until such time as the shell strikes an object; and when this occurs the momentum due to the weight of the hammer *c* will cause it to overcome the resistance of the spring *e'*, and to strike the cap *b'* with a force sufficient to explode it.

The hammer *c* (shown in Fig. 2) consists simply of a block of metal of sufficient weight, which is free to slide upon a fixed pin, *e'*, and has attached to it springs *e'*, for holding it back out of contact with the cap or exploder *b'*.

In order to gradually overcome the inertia of such a projectile in firing, and to start it gradually, whereby the liability of a premature explosion of the charge confined in the shell is obviated, I employ at the rear of the shell a yielding and spring-supported base portion or follower, attached to the projectile, and capable of a limited movement independently thereof. As here represented, the rear portion of the shell is made cup-shaped or recessed at C, and contains a base-piece or follower, D, which is supported by a spring, E, and which fits the cup-shaped portion or recessed portion C.

The spring E (shown in Fig. 1) consists of a block or piece of india-rubber; but in Fig. 2 I have shown a spiral spring of metal.

The base-piece or follower D may be guided and have its outward movement limited by a rod or pin, F, on which it slides, as shown in Fig. 2, and the fixed pin *e'*, on which the hammer *c* slides, may be formed by a continuation of the rod or pin F.

The projectile may be provided with ordinary gas-check rings, *f*.

I am aware that it is not new to employ in a shell two glass vessels containing liquids which, when mixed, will form a compound which will be exploded by the striking of the shell, and a rod sliding through the rear portion of the shell, so that it will be forced ahead by the firing-charge in the gun and caused to break the glass vessels and allow their con-

tents to be mixed, a spring being applied to the sliding rod to hold it out of contact until forced ahead by the pressure produced by the explosion of the firing-charge in the gun. This
5 sliding rod has not the weight necessary to cause it to act as a hammer by its momentum when the shell strikes, and the shell is not closed in the rear of the rod, so that the rod will not be affected by the explosion of the
10 firing-charge in the gun. In these respects my shell differs from that above described as old, and I do not desire to include the latter in my invention.

What I claim as my invention, and desire to
15 secure by Letters Patent, is—
The combination, with a projectile having a

chamber, *a*, for explosive, and having a separate chamber, *B*, permanently closed at the rear end of the projectile, and a firing-tube, *b*, for the cap, of a hammer, *c*, in the chamber *B*,
20 and a spring, *c'*, permanently connected with the hammer, and serving to move and hold the hammer away from the cap upon the tube *b* until the shell strikes, whereupon the momentum of the hammer will overcome the force of
25 the spring, and the spring will yield to permit the hammer to strike a cap on the tube *b*, substantially as herein described.

B. T. BABBITT.

Witnesses:

HENRY T. BROWN,
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