

(No Model.)

E. L. ZALINSKI.
MAGNETO ELECTRIC FUSE.

No. 384,662.

Patented June 19, 1888.

Fig. 1.

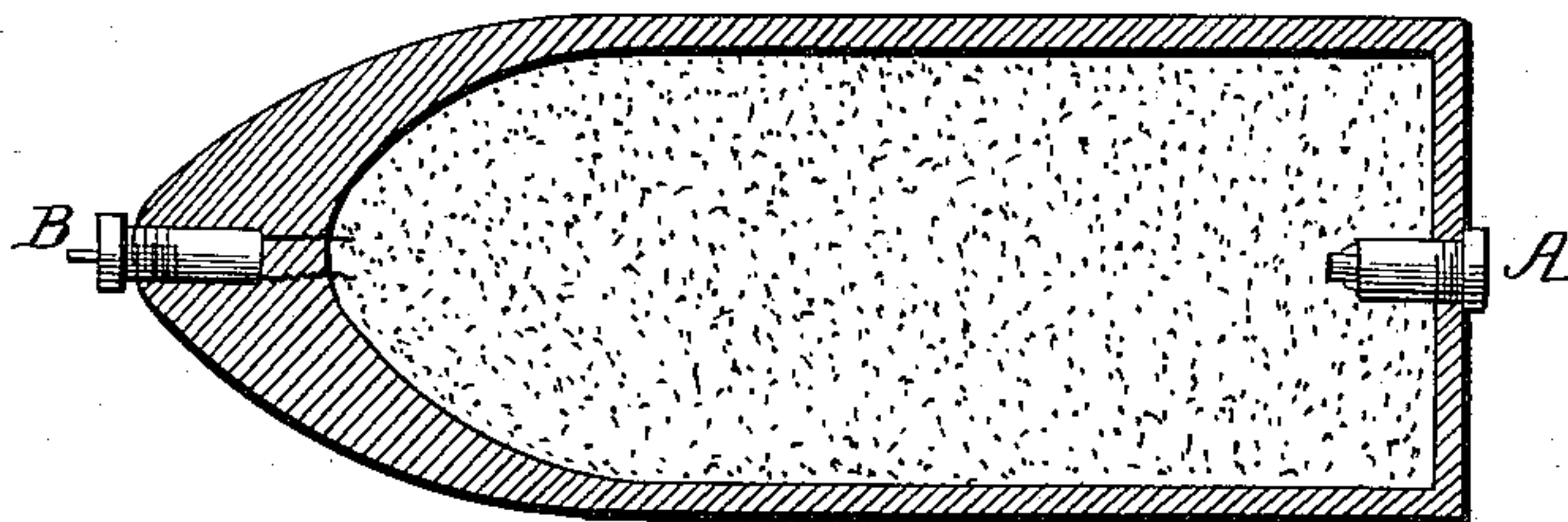


Fig. 2.

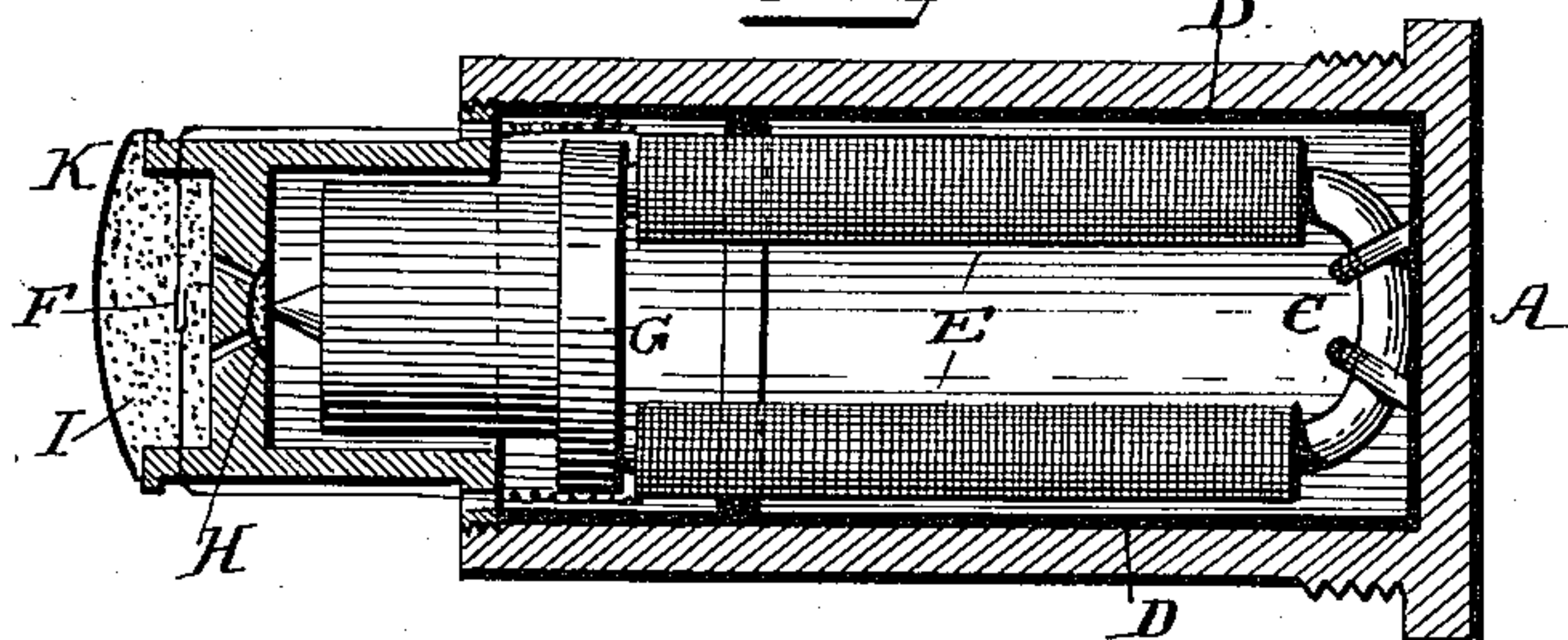


Fig. 3.

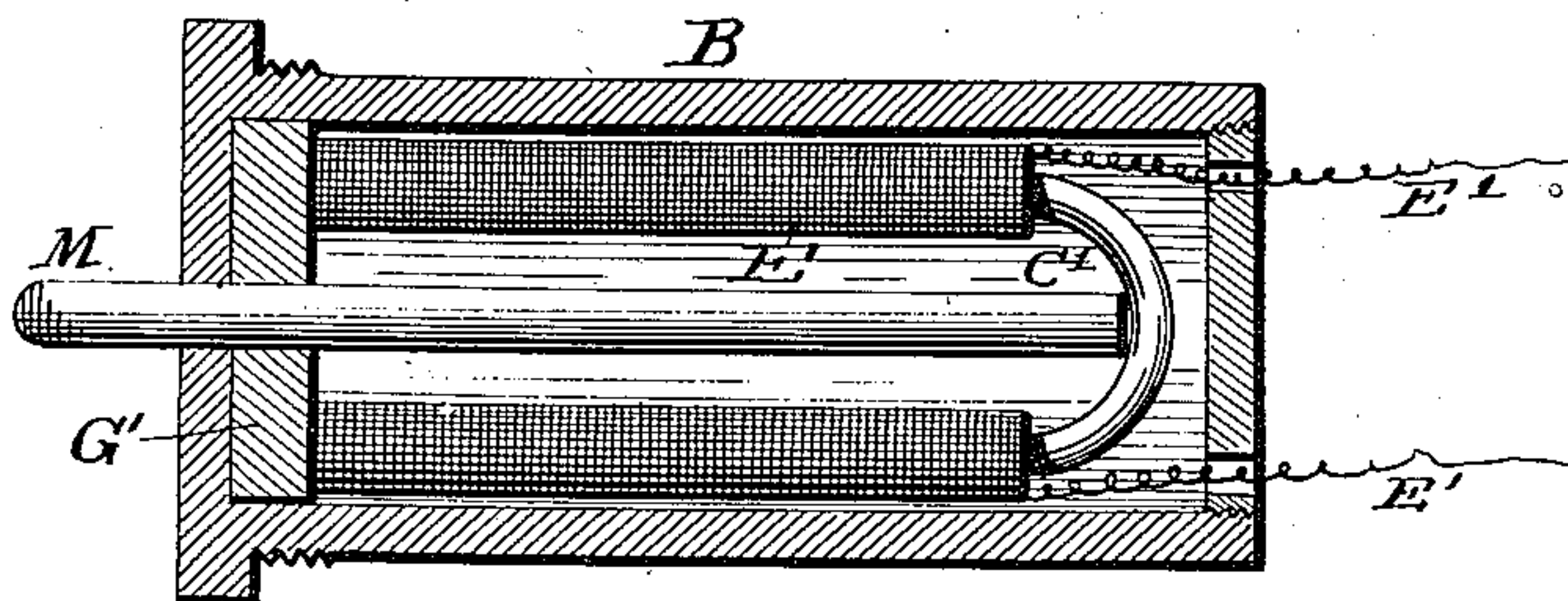
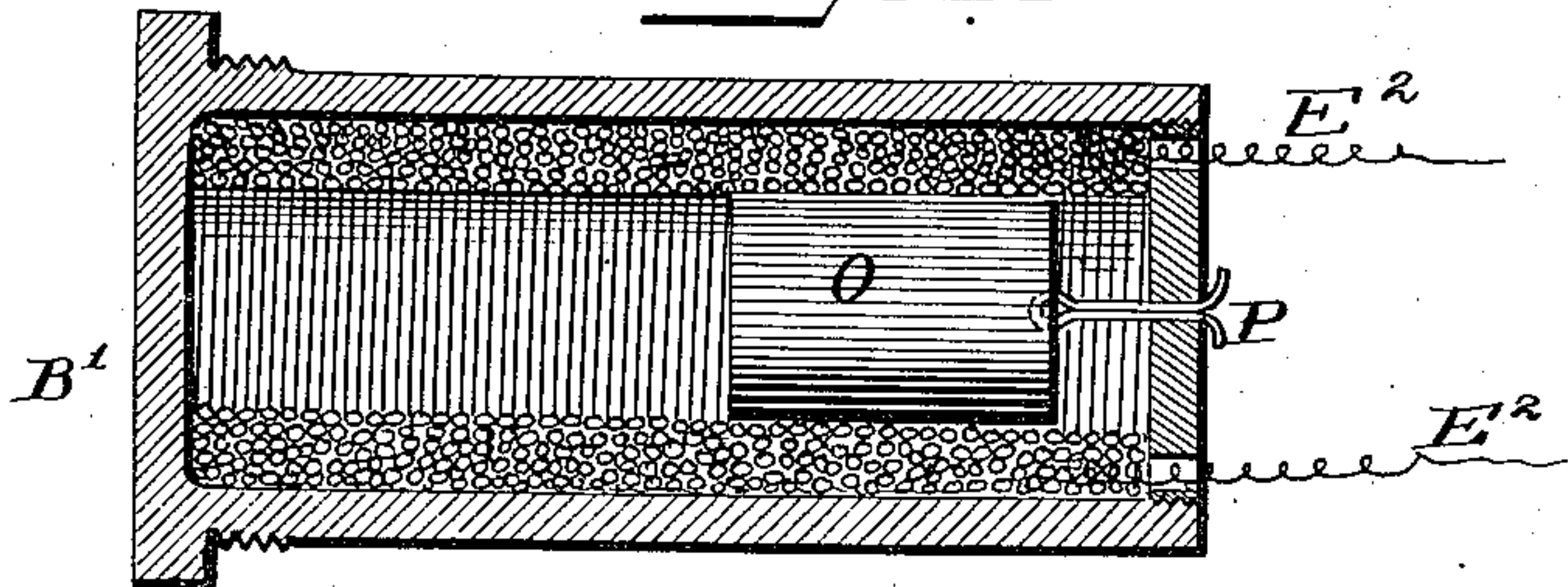


Fig. 4.



WITNESSES.
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EDMUND L. ZALINSKI, OF THE UNITED STATES ARMY.

MAGNETO-ELECTRIC FUSE.

SPECIFICATION forming part of Letters Patent No. 384,662, dated June 19, 1888.

Application filed November 4, 1887. Serial No. 254,225. (No model.)

To all whom it may concern:

Be it known that I, EDMUND L. ZALINSKI, lieutenant of artillery, United States Army, stationed at Fort Hamilton, in the State of New York, have invented certain new and useful Improvements in Magneto-Electric Fuses, of which the following is a specification, reference being had therein to the accompanying drawings.

15 This invention relates to magneto-electric and similar fuses for projectiles and torpedoes.

The invention consists in the connection of an electric primer or firing device of well-known construction with a magneto device for producing an electric circuit.

I have heretofore patented a number of devices relating to electric fuses. Taken in connection with said patents the present invention will be more readily understood.

20 Figure 1 is a longitudinal section of a shell, showing location of front and rear fuses. Fig. 2 is a longitudinal section of a shell containing electro-magnet. Fig. 3 is a section of front fuse having electro-magnet and connections. Fig. 4 is a modification showing solenoid arrangement for magneto current.

25 In the drawings, A indicates a fuse-casing for the base of a shell, and B a fuse for the point of a shell. Both these fuses may be used in a shell at the same time. In practice with large shells charged with high explosives I generally use more than one fuse for certainty of action.

30 In the casing A there is a horseshoe or other magnet, C, held in an insulating-cup, D. The magnet is surrounded by a coil of insulated wires, E, the ends of the wires leading to an electric primer, F, the primer being of common construction in fuses of this class. The ends of the magnet C hold an armature, G, which armature may be of considerable weight. This armature fits in the casing in such manner as to have a forward movement when released from the magnet C. The front of the armature by preference has a firing-pin or projecting point in line with a fulminate-charge, H, which communicates with a detonating-charge, I, covered by a cap, of metal or rubber, K, at the front of the fuse. When this fuse is applied to the base of a shell, the armature will remain in contact with the magnet until the

concussion of striking a target causes the armature to move forward. The movement of the armature causes a magneto-electric current to pass through the wires and explode the primer F. At the same time the armature acts in usual manner as a percussion striker.

35 In the fuse B, which operates on the same general principle, the armature G' is fixed and the magnet C' is made movable by means of a spindle, M, extending from the front of the fuse. When the spindle is driven in, as by striking a target, the magnet and armature are separated and an electro-magnetic current is induced through the wires E' E', which wires are connected with an electric primer in usual manner.

The modification shown at B' illustrates a fuse in which a sliding plunger, O, passing through the magnetic wire E², induces a current leading to the primer. The weight or plunger O is temporarily secured to the fuse-case by a weak fastening, P, so that the shock of striking will break the fastening and permit the weight to move in its coil, acting in principle much as a solenoid.

40 It will be apparent that many other modifications can be readily devised by a skilled electrician from the suggestions above. I therefore do not desire to limit myself to precise constructions, but expect my claims to cover equivalents in all cases.

45 It is apparent that the magnet itself may be the plunger to act as a striker in the percussion-fuse, and that it will operate as a percussion-fuse whether the electric primer be present or not.

I claim—

1. A projectile containing a magneto-electric fuse consisting, essentially, of a magnet and armature movable relatively to each other and an electric circuit closing through a primer, said circuit being closed by the release of the armature from the magnet, the combination being and operating substantially as described.

2. In a shell-fuse, the combination of a coil and magnet and armature movable relatively to each other, and conductors leading from the magnet to an electric primer in the shell.

3. In a shell-fuse, the combination of a coil and magnet, an armature, and a projecting

spindle in position to separate the armature and magnet, substantially as described.

4. The combination, in a shell-fuse, of a magnet and a coil of wire in proximity to the same,
5 an electric primer connected to the coil, and an armature acting as a plunger held to the magnet by the magnetic attraction but detached by concussion, as set forth.

5. In combination with the usual elements
10 of a shell-fuse, a detonating-plunger held in po-

sition in the shell away from the detonator by magnetic attraction, but in position to be detached and permitted to act as a striker when the shell strikes, as set forth.

In testimony whereof I affix my signature in 15
presence of two witnesses.

EDMUND L. ZALINSKI.

Witnesses:

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