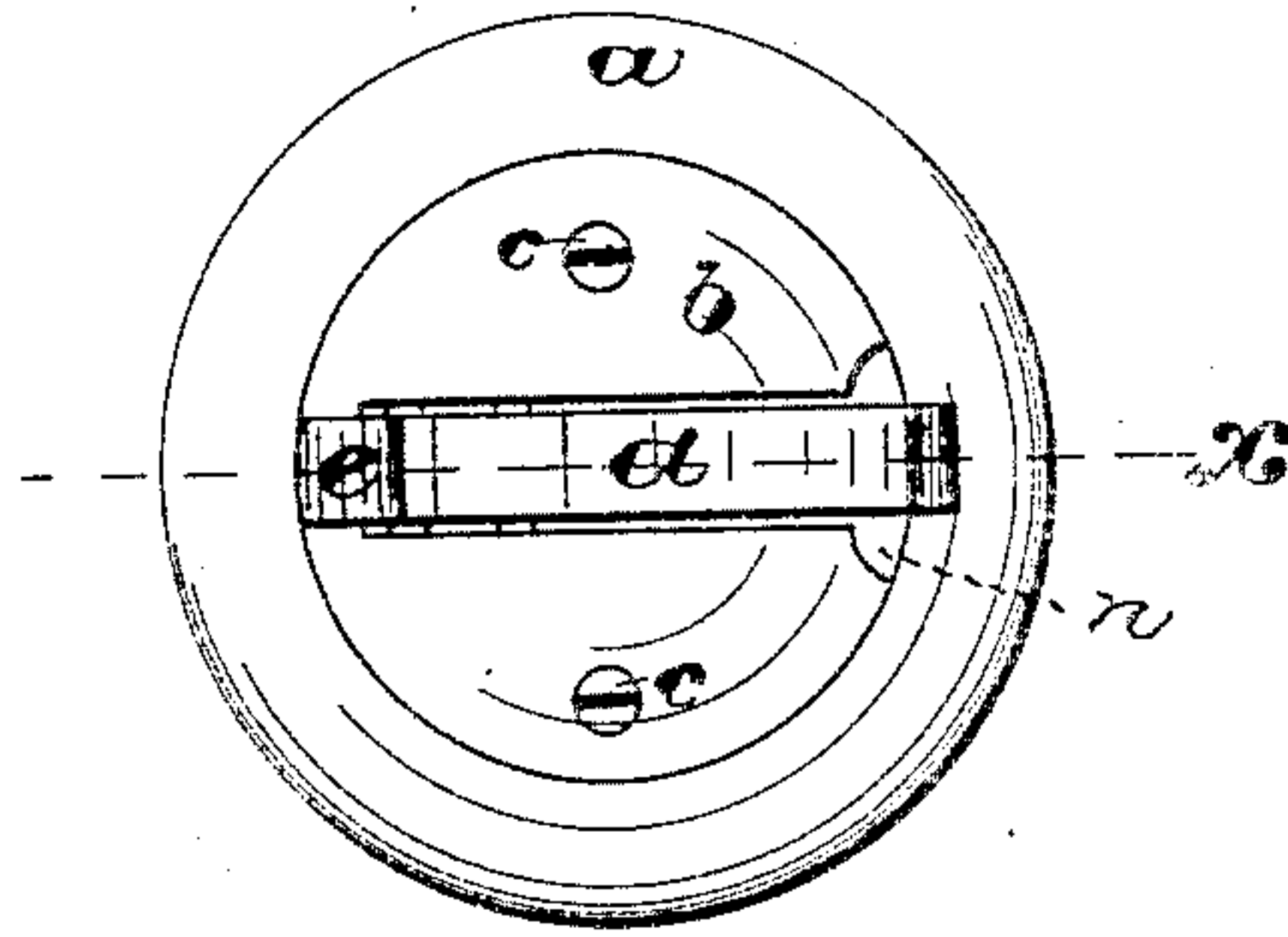


(No Model.)

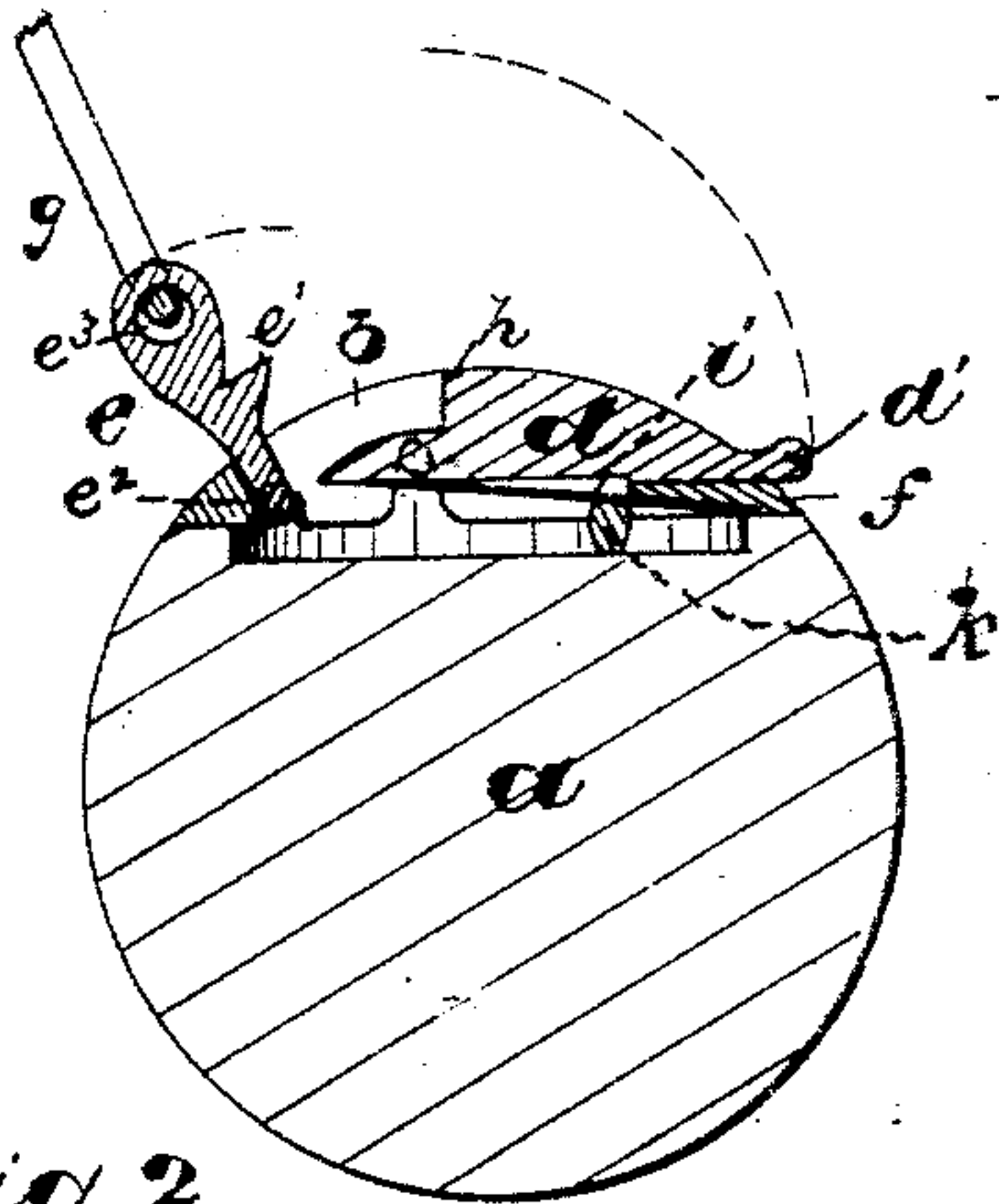
S. ARMSTRONG.  
DETONATING BALL.

No. 387,574.

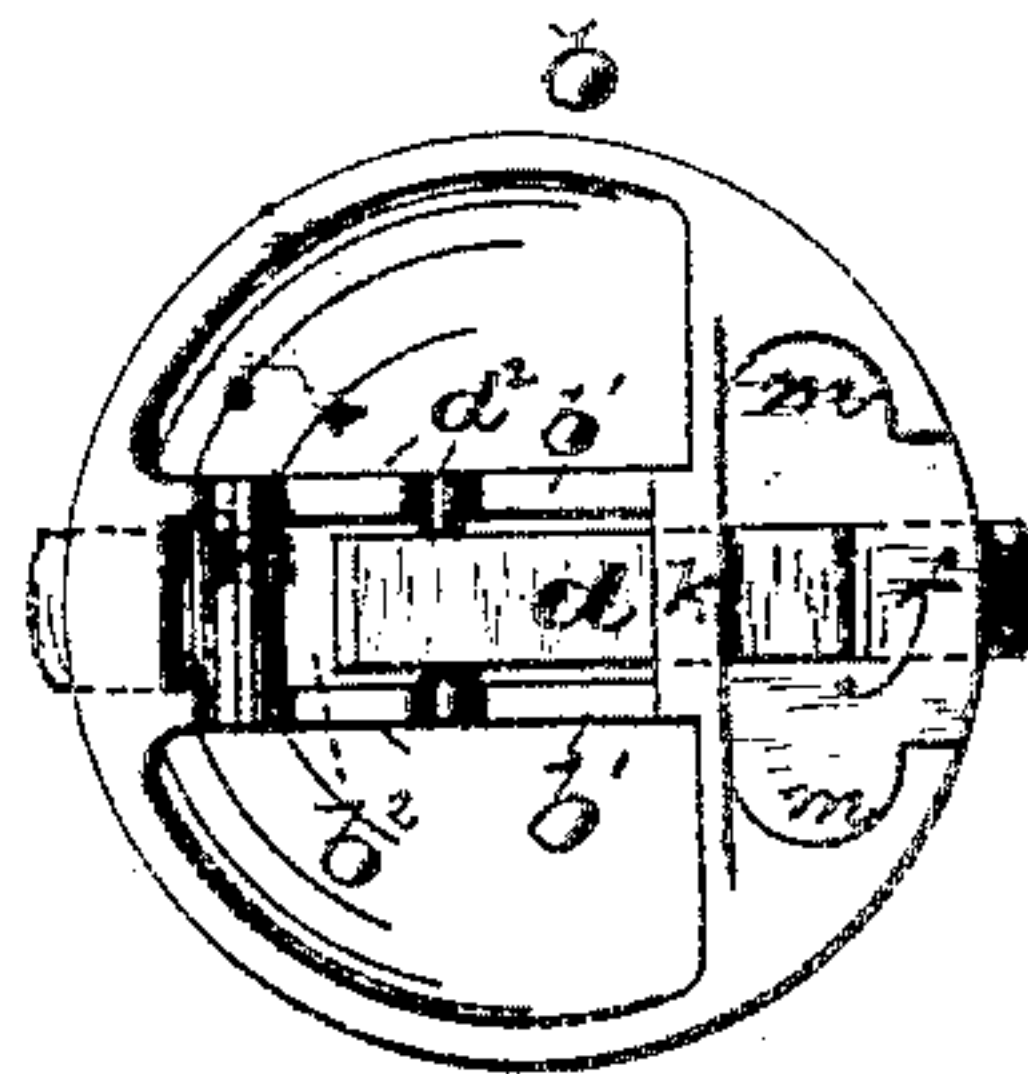
Patented Aug. 7, 1888.



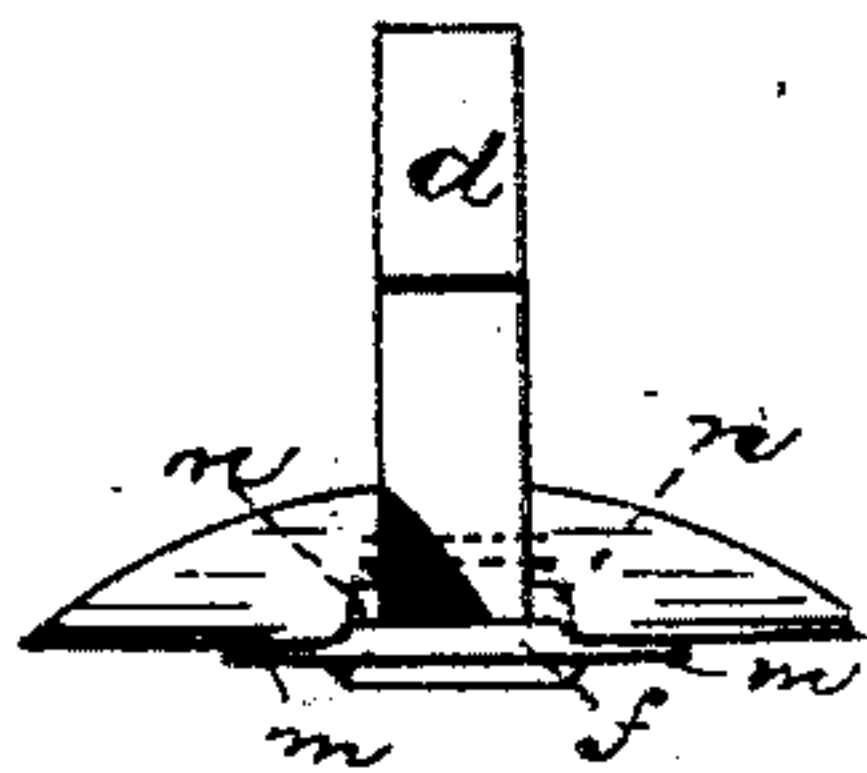
*Fig. 1.*



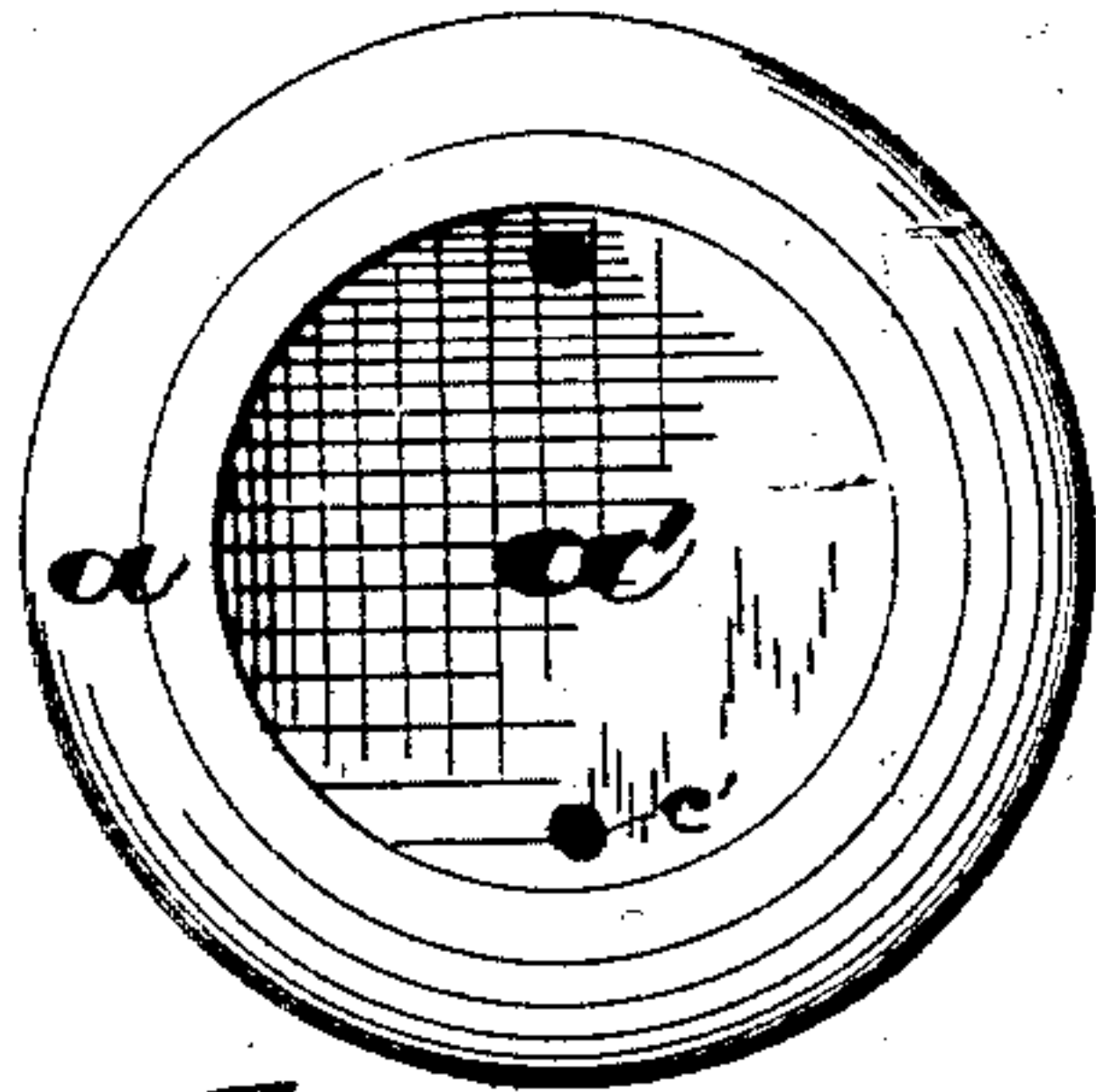
*Fig. 2.*



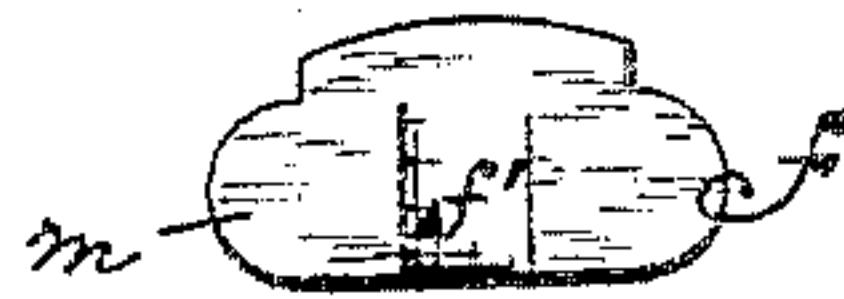
*Fig. 3.*



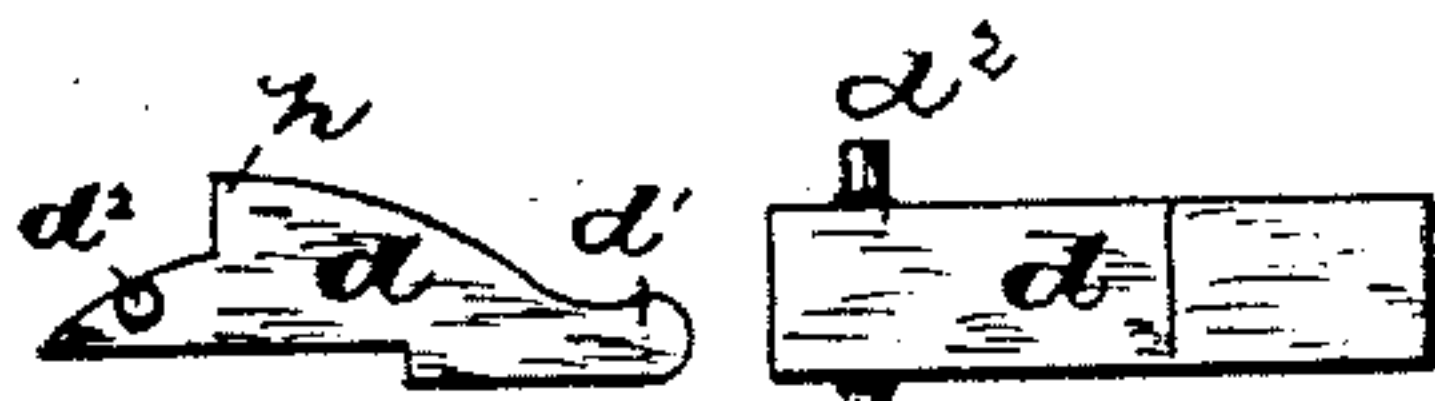
*Fig. 4.*



*Fig. 5.*

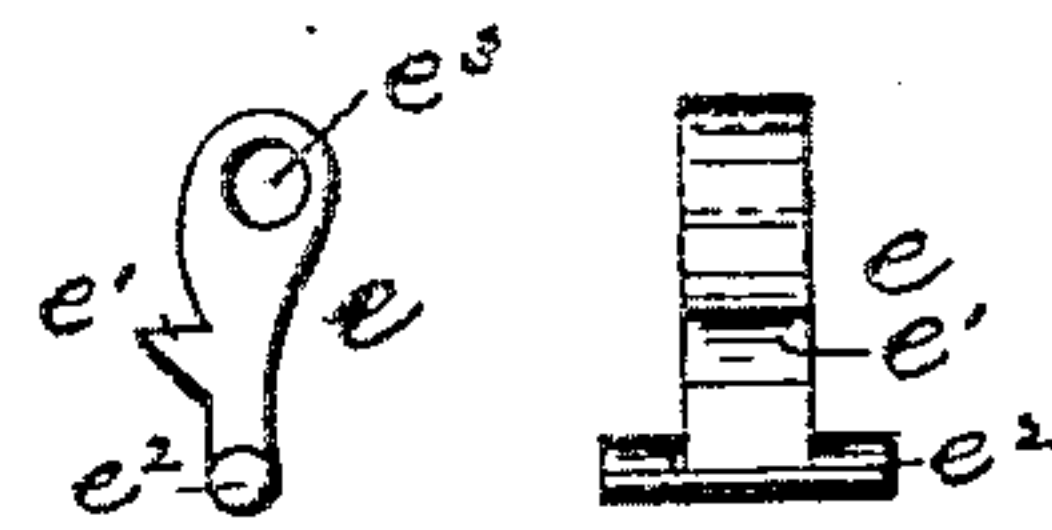


*Fig. 6.*



*Fig. 7.*

*Fig. 8.*



*Fig. 9.*

INVENTOR

WITNESSES:

E. L. Sherman,  
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Samuel Armstrong,

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# UNITED STATES PATENT OFFICE.

SAMUEL ARMSTRONG, OF NEWARK, NEW JERSEY, ASSIGNOR TO EZRA J. WARNER, OF SAME PLACE.

## DETONATING BALL.

SPECIFICATION forming part of Letters Patent No. 387,574, dated August 7, 1888.

Application filed February 25, 1888. Serial No. 265,258. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL ARMSTRONG, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Detonating Balls; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to produce a new and improved detonating-ball toy; and it consists in certain improvements in the manufacture and in the arrangement and combination of parts, substantially as will be hereinafter set forth, and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several figures, Figure 1 is a plan view of a detonating ball embodying my improvements. Fig. 2 is a sectional view of Fig. 1 through line X. Fig. 3 is a plan view of the underside of plate *b*, Fig. 1, with its attachments and co-operative parts. Fig. 4 is a plan view showing the cavity in the ball for receiving the detonating mechanism. Figs. 5, 6, 7, 8, and 9 are detail views of parts. Fig. 10 is a front elevation of the plate with the hammer raised, showing the anvil in position.

In said drawings, *b* is a slotted segmental metallic plate covering a recess, *a'*, designed to receive the detonating mechanism, and secured to the ball by screws *c c*, working in screw-holes *c'*.

*d* is a hammer provided with pins *d'*, working pivotally in holes or slots in the turned-down ribs *b'* of the plate *b*. This hammer is of the contour of the ball, and projects, as at *d'*, to form a finger-piece for raising the hammer.

*i* is a flat spring held in position between the ribs *b'* by the cross-bar on the under side of the plate *b*, and on which the rear end of the hammer rests, as shown in Fig. 2.

*e* is a detent pivotally connected to the plate

*b*, as at *e'*, and having a hole, *e''*, in which a cord, *g*, may be secured. Said detent has also a bearing or holding surface, *e'*, to engage the shoulder *h* on the hammer when raised up in the direction of the dotted lines, Fig. 2.

*f* is an anvil fitting into recesses *m m* on the under side of the plate *b*, and held in position in said recess by one end of the spring *i*, as shown in Fig. 2.

The detonating cap is placed on the anvil, and is held in position by being pressed into the arched space formed by cutting away the end of the ribs *b'*, as shown at *n*, Figs. 1 and 10.

In operating this device the hammer is raised and the detent brought forward until the detent has sufficient hold on the hammer to hold it in its upward position against the action of the spring. A detonating cap or wafer of fulminate is then placed on the top of the anvil and held there by any desirable means. The ball is then thrown from the hand, and one end of the cord or string being held in the hand the motion of the ball is suddenly stopped when it has reached the limit of the cord. The detent is withdrawn from the hammer, which in its turn is thrown by the action of the spring with great force upon the cap or fulminate, thus causing it to explode with a loud noise.

Having thus described the invention, what I claim as new is—

1. The improved toy herein described, consisting, essentially, of a ball with a slotted plate attached thereto by screws or other suitable means, said plate having ribs on the under side, between which the spring is held, said ribs being provided with notches to receive the pivots of a hammer and a detent, and said plate also having a bar crossing the said slot and adapted to hold the spring in position, a hammer pivoted to said plate and provided with a shoulder for engagement with a detent, and a projection serving as a finger-piece, a spring to actuate said hammer and also hold the anvil in place, a detent to hold the hammer away from contact with the plate, and an anvil fitted into a recess in said plate and held in place by the spring, substantially as set forth.

2. In a detonating ball, the combination,



with a ball having a portion removed, of a slotted plate adapted to fill said removed portion and secured to said ball by screws or other suitable means, a flat spring held in position on said plate, an anvil held in position on said plate by said spring, and a hammer working in the slot in said plate and held down in contact with the anvil by the action of the spring, all substantially as shown and described.

3. In a detonating ball, the combination, with a ball having a portion removed, of a slotted plate adapted to fill said removed portion and secured to said ball by screws or other suitable means, a spring held in position on said plate, an anvil held in position on said plate by said spring, a hammer working in the slot in the plate and in pivotal connection therewith, and held down in contact with the anvil by the action of a spring, and a finger-piece on the end of the hammer for raising said hammer from contact with the anvil, all substantially as shown and described.

4. In a detonating ball, the combination, with a ball having a portion removed, of a slotted plate adapted to fill said removed portion and secured to said ball by screws or other suitable means, a spring held in position on said plate, an anvil held in position on said plate by said spring, a hammer working in the slot in the plate and in pivotal connection therewith, and held down in contact with the anvil by the action of a spring, a finger-piece on the end of the hammer for raising said hammer from contact with the anvil, and a detent working in the slot in said plate and pivotally connected therewith and adapted to hold said hammer in position away from contact with said anvil, all of said parts being arranged and adapted to operate substantially as and for the purposes set forth.

5. In a detonating ball, the combination, with a ball having a portion removed, of a slotted plate adapted to fill said removed portion

and secured to said ball by screws or other suitable means, a spring held in position on said plate, an anvil held in position on said plate by said spring, a hammer working in the slot in the plate and in pivotal connection therewith, and held down in contact with the anvil by the action of a spring, a finger-piece on the end of the hammer for raising said hammer from contact with the anvil, a detent working in the slot in said plate and pivotally connected therewith and adapted to hold said hammer in position away from contact with said anvil, and a cord or rope secured to said detent and adapted to release said detent from contact with said hammer, all said parts being arranged and adapted to operate substantially as and for the purposes set forth.

6. The detonating device herein described, consisting, essentially, of a slotted plate, ribs and cross-bar on the under side of said plate, a spring resting between said ribs and held in position by said cross-bar, a hammer working in said groove and pivotally connected with said plate, an anvil for holding said cap or wafer of fulminate, and a detent working in said slots and pivotally connected with said plate and adapted to hold said hammer away from contact with the anvil, said detent being also provided with a loop or means whereby a cord or rope could be attached thereto, and by drawing or pulling upon said cord the detent would be released from contact with the hammer and the hammer be thrown with great force upon the cap and explode, all as described, as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 18th day of February, 1888.

SAMUEL ARMSTRONG.

Witnesses:

E. L. SHERMAN,  
OLIVER DRAKE.