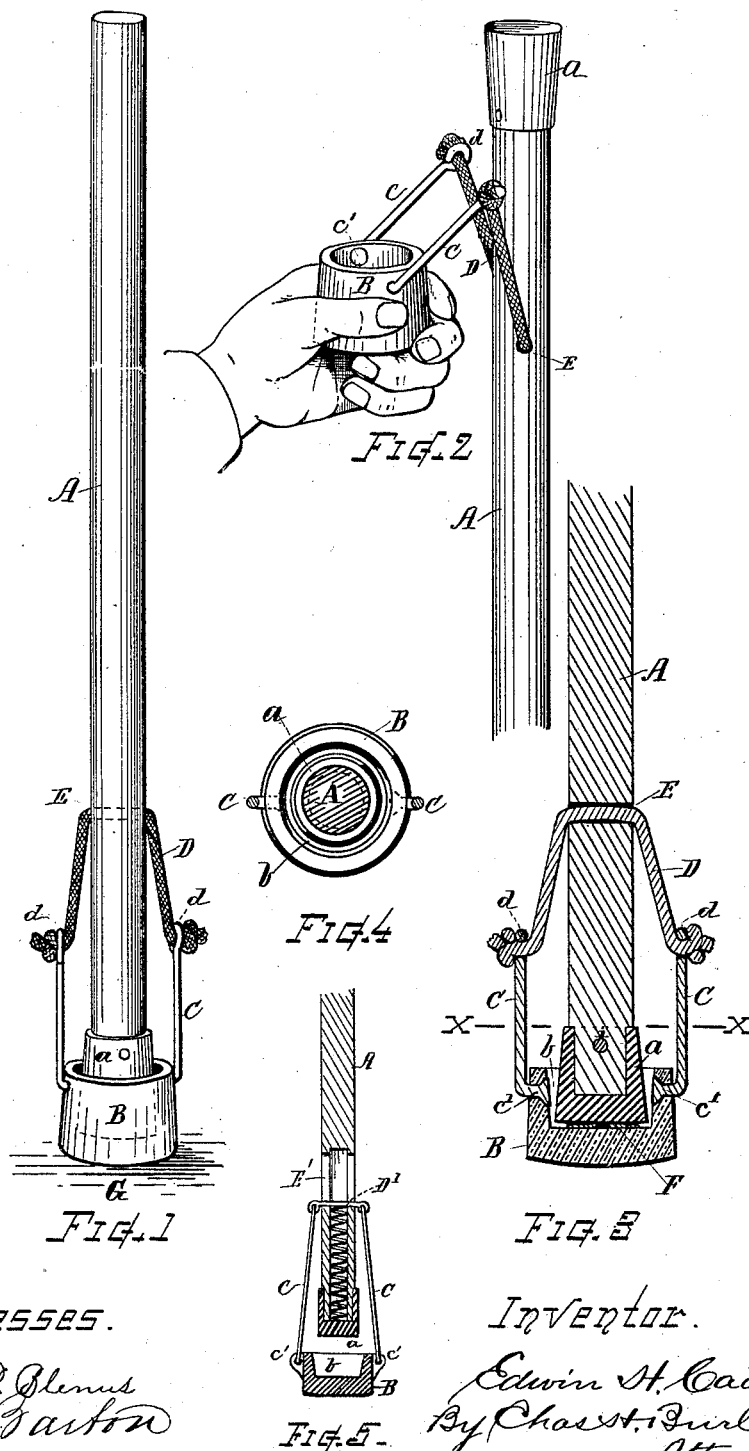


(No Model.)

E. H. CADY.
TOY DETONATOR.

No. 423,215.

Patented Mar. 11, 1890.



Witnesses.
Ella P. Blum
W. B. Barton

Inventor.
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UNITED STATES PATENT OFFICE.

EDWIN H. CADY, OF GARDNER, MASSACHUSETTS.

TOY DETONATOR.

SPECIFICATION forming part of Letters Patent No. 423,215, dated March 11, 1890.

Application filed November 16, 1889. Serial No. 330,517. (No model.)

To all whom it may concern:

Be it known that I, EDWIN H. CADY, a citizen of the United States, residing at Gardner, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Implements for Exploding Fulminate Caps or Detonating Substances, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

The object of my present invention is to provide a simple, safe, and efficient bomb or implement for use as a Fourth-of-July toy for exploding paper fulminate caps or firing detonating substances; and my invention consists, essentially, in an implement composed of a shell or cup for containing the cap or detonating substance, combined with a long handle, rod, or staff having a suitable end, head, or metal ram that matches into the hollow of the shell, a flexible attachment whereby said shell is retained in connection with the staff, and a spring or elastic device adapted for normally retaining said shell against the end of the staff with a yielding pressure, while permitting its removal therefrom for charging, as more fully hereinafter explained.

In the drawings, Figure 1 is a perspective view showing my implement with the shell resting upon the end of the staff. Fig. 2 is a view of the shell and staff separated as when charging the shell. Fig. 3 is a longitudinal section. Fig. 4 is a transverse section; and Fig. 5 shows, on smaller scale, a modification in which a coiled-wire spring is employed to give the yielding pressure.

Referring to parts, A denotes the long handle or staff, which may be of wood, and similar in size and shape to an ordinary broom-handle, or larger or smaller, as desired, and re-enforced on its end by a metal tip or ram *a*, the end face of which is flat or slightly rounded.

B indicates the metallic shell or cup, the hollow *b* in which is somewhat larger than the face on the ram or end of the staff *a*, which latter fits loosely therein and matches against the bottom surface of the shell. At the sides of the shell there are provided ears or wire links C C, flexibly connected by their head

being loosely confined within suitable openings in the sides of the shell, as at *c' c'*. The top ends of the wire C C, which are bent to form eyes *d*, are in the present instance connected to the staff A by an elastic cord or spring D, that passes through a hole E formed in the staff, as illustrated, or is otherwise attached thereto for equivalent action.

The hollow of the shell B is preferably made of a size suitable to receive one of the small paper boxes, such as fulminate caps are ordinarily put up in for market, so that a full box or any less number of such caps can be exploded at a charge.

When charging, the shell B is removed from the end of the staff and is held in the hand, as indicated in Fig. 2. The cap or detonating substance is dropped into the shell, which is then replaced on the staff with the ram or tip resting on the charge, as at F, Fig. 3. The elastic cord or spring D serves to draw the shell against the end of the staff, so that the charge F is securely held between the face of the ram *a* and bottom of the shell B until such time as it is to be exploded. The exploding or firing is effected by holding the staff near its top end and striking or thrusting the end with the shell down upon the pavement G, or against some other hard body, so as to crush the fulminate between the metallic end of the staff and bottom of the shell, when a very loud detonation results. The spring D permits the shell to yield away from the tip *a* of the staff sufficient to release the gases without the shell escaping therefrom and without danger to the boy or person using the toy.

The metallic shell is of course made of sufficient strength to resist the concussion without fracture. The sides of the shell are best made with an outward inclination, so that the space or clearance around the tip or ram *a* increases rapidly as the latter is raised from the bottom of the shell.

In Fig. 5 I have shown a modification in which the yielding action for pressing on and permitting the shell to be drawn from the end of the staff is attained by a coiled-wire spring or springs instead of an elastic cord. In this the staff is chambered for containing the coil-spring D', and the hole E' is elongated to permit action of the spring. The links C are

somewhat longer than those shown in the other figures.

I claim as my invention to be herein secured by Letters Patent—

5 1. An implement or toy for exploding fulminate caps or detonating substances, consisting of a staff, a removable metallic shell arranged over the ends thereof, and having a
10 the charge, flexibly-attached links connecting said shell and staff, and a spring or elastic part combined with said links, whereby said shell is normally drawn toward the end of the staff by yielding pressure, substantially as set
15 forth.

2. In an implement for exploding paper caps or detonating substances, a long handle, rod, or staff having a metal tip or ram thereon, in combination with a shell having a hollow matrix with outwardly-flaring sides that
20 fits loosely over said ram and matches against

the face thereof, and a yielding connection whereby said shell and staff are attached to each other and adapted for operation in exploding a charge in said shell by thrusting
25 the end of the staff with the shell against the pavement, substantially as set forth.

3. In combination, substantially as described, the wooden staff or handle having the metal tip fixed thereon, the cup-shaped
30 metallic shell, the side links loosely fixed in said shell, and the elastic cord or spring arranged through an opening in the staff with its ends connected to the respective links, for the purposes set forth.

Witness my hand this 11th day of November, A. D. 1889. 35

EDWIN H. CADY.

Witnesses:

THATCHER B. DUNN,
CHARLES B. BOYCE.

Correction in Letters Patent No. 423,215

It is hereby certified that in Letters Patent No. 423,215, granted March 11, 1890, upon the application of Edwin H. Cady, of Gardner, Massachusetts, for an improvement in "Toy Detonators," an error appears in the printed specification requiring correction, as follows: In line 8, page 2, the word "ends" should read *end*; and that the Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 8th day of April, A. D. 1890.

[SEAL.]

CYRUS BUSSEY,

Assistant Secretary of the Interior

Countersigned:

C. E. MITCHELL,

Commissioner of Patents.