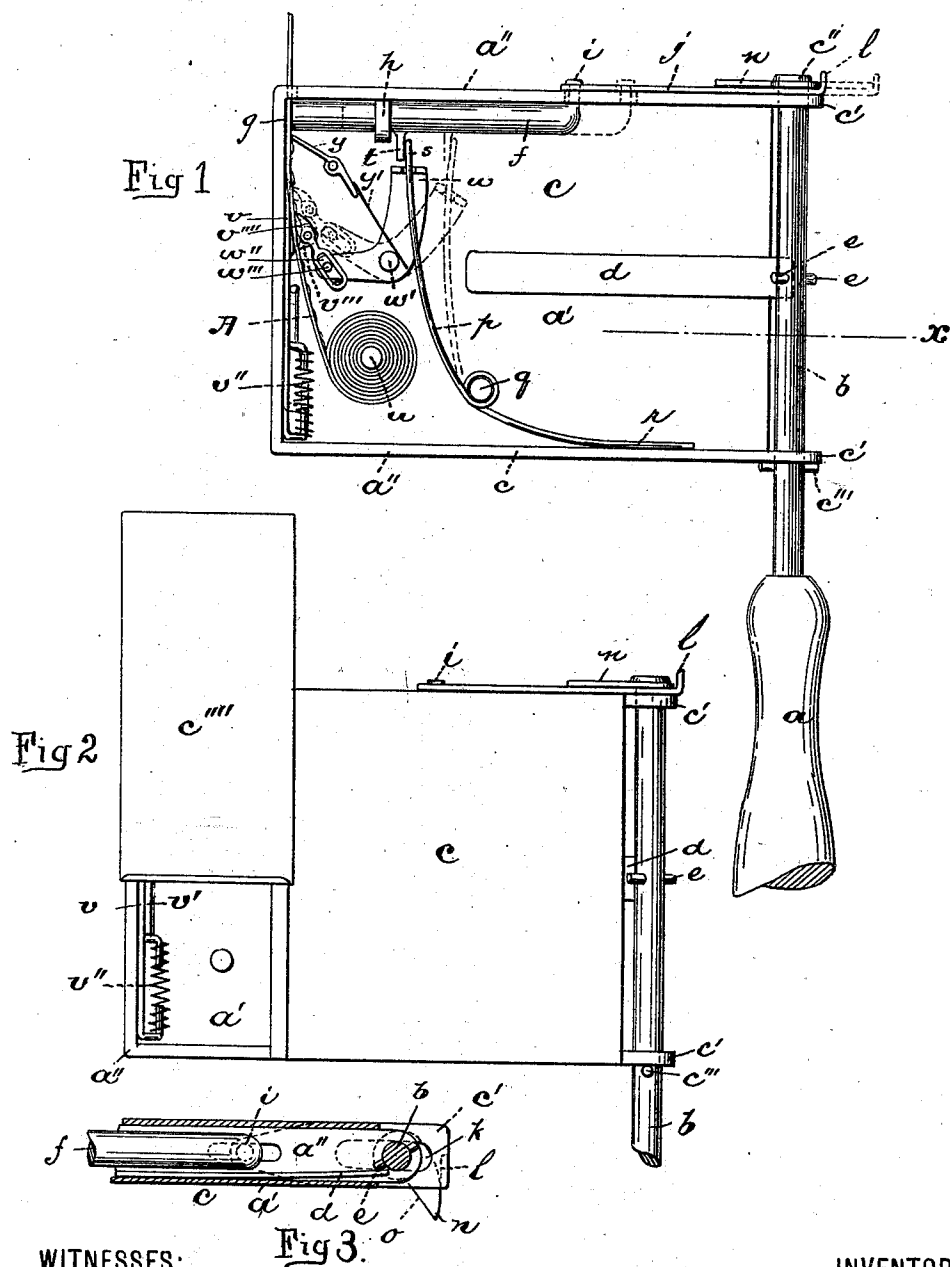


(No Model.)

F. A. FREYGANG.
DETONATING TOY.

No. 560,901.

Patented May 26, 1896.



WITNESSES:

Robert Solberg
L. B. Stuey

INVENTOR

Friedrich Albert Freygang

BY *Drake Co.* ATTY'S.

UNITED STATES PATENT OFFICE.

FREIDRICH ALBERT FREYGANG, OF NEW YORK, N. Y.

DETONATING TOY.

SPECIFICATION forming part of Letters Patent No. 560,901, dated May 26, 1896.

Application filed February 14, 1896. Serial No. 579,242. (No model.)

To all whom it may concern:

Be it known that I, FREIDRICH ALBERT FREYGANG, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Detonating Toys; 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 provide a detonating toy for children that may be used by them on the Fourth of July and similar occasions to secure a more rapid succession of reports or detonations by means which are easily operable by the child, and to secure other advantages and results, some of which will be hereinafter referred to in connection with the description of the working parts.

The invention consists in the improved detonating toy and in the arrangements and combinations of parts thereof, substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the views, Figure 1 is a plan of the improved toy, one of the side plates being removed to show the interior parts of the device. Fig. 2 is a similar plan, the said side plate being in position and a certain sliding cover being partly opened; and Fig. 3 is a section taken at line *x*.

In said drawings, *a* indicates a handle, and *b* a pivotal shank thereof.

c indicates a metallic box-shaped receptacle having ears *c'* *c'*, which are continuations of the strap-like frame *a''* or edge piece of the box or receptacle. Said ears are perforated and receive the said shank, the box thus being pivoted upon said shank. It is held from sliding thereon by a suitable head *c''* and pin *c'''*, or other means formed in any suitable manner. The said box or receptacle is free to rotate upon the shank when given the desired impulse by the hand in a manner common to similar toys now in use. Within said box or receptacle is arranged a spring *d*,

which is soldered or otherwise fixed at its inner end to the resonant side plate *a'* thereof. Said spring projects outward from the box toward the shank and is engaged by a projecting pin or pins *e* of the latter, the spring being so formed and arranged as to be alternately depressed and then allowed to spring to a normal position against the body of the shank and thus produce a succession of reports due to the impacts.

Within the box or receptacle is a hammer *f*, adapted to strike the frame *a''* at the inner side thereof, said frame thus serving as an anvil at *g*, the hammer being adapted to be thrown against the anvil repeatedly as the receptacle turns upon the shank. Suitable feeding mechanisms are employed for feeding a ribbon *A*, provided with a succession of detonating powders or caps between the hammer and anvil, so that as the said caps or detonating powders are forced forward they are exploded in very quick succession, producing loud reports, somewhat different in quality from those produced by the spring *d*. The hammer *f* is arranged to slide in suitable bearings *h*, and at its end, back from that engaging the ribbon, is turned, as at *i*, and extends through a slot formed in the frame *a''* of the receptacle. At the extremity of the turned end *i*, outside of the case or receptacle *c*, the hammer receives a link *j*, which latter is slotted, as at *k*, where it extends over the shank *b*, and at its extremity opposite that to which the hammer is connected said link is provided with a bend *l*, which forms a bearing for a cam *n*, fastened upon the end of the shank *b*. As the receptacle rotates or revolves upon the shank the bearing *l* repeatedly engages the eccentrically-curved surface of the cam, thus giving a longitudinal movement to the link *j* and the hammer *f*, attached thereto. When the said bearing arrives at the straight portion *o* of the cam, the link and hammer are allowed quick return movements under impulses given by a spring *p*. Within the case or receptacle the said spring *p* is suitably arranged in any manner proper to produce the desired vigorous return impulses. I may and ordinarily prefer to arrange the spring as shown in the drawings, in which the said spring is shown coiled around a pin or bearing *q*, at

one free end bearing upon the frame *c* of the case and at its opposite free end *s* engaging a projection *t* of the hammer, so as to throw said hammer forward against the anvil when released.

The feed device or mechanism for feeding the ribbon containing the detonating powders or succession of caps is shown more clearly in Fig. 1, where *u* indicates a pin having a roll of the said detonating ribbon. Adjacent to said pin *u*, at the end wall formed inside of the box by the frame *a''*, is a forwarding device or pusher comprising a sliding plate *v*, arranged against the said end wall and held in place by any suitable means—such, for example, as the stay *v'*. The said stay and the sliding plate each has bearings to receive a spring *v''*, by which the sliding plate *v* is thrown back preliminary to a forward movement, by which the tape or ribbon is fed to the hammer. Near the forward end of the sliding plate the same has an ear or projection *v'''*, carrying a pivot on which a pawl or dog *v''''* is fulcrumed. The ribbon passes between the plate and biting end of the dog, and when engaged by the latter it is forced forward between the anvil and the hammer, as will be clearly understood.

The dog and plate are reciprocated by a lever *w*, fulcrumed at *w'* and operated more or less directly from the hammer *f*, so that when said hammer is drawn back from the tape by the link *j* it turns the lever *w* on its fulcrum and turns the dog on its pivot to cause it to clutch or bite the ribbon and then forces said dog and the plate attached thereto forward to feed the tape, as before described. A slot *w''*, having a pin *w'''* of the lever *w* working therein, admits of the preliminary turning of the dog prior to its forward movement. A second dog *y* is held against the ribbon at a point close to the hammer and prevents back movement of said ribbon. Said dog *y* is held in position by the spring *y'*. The box may be provided with a sliding cover *c''''* or be closed in any other manner.

In operating the device the child, by suitable impulses given by the hand, turns the box or receptacle quickly around the shank *b* and produces quick reciprocations of the hammer *f* and spring *d*, an unwinding of the

ribbon, and a feeding of the same forward, so that a new charge of fulminating matter will be presented to the hammer at each forward stroke of the same.

The production simultaneously of two distinct sets of reports or detonations, both of which are made quite loud by the resonant material of the receptacle, is a feature deemed to be of value.

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

1. The combination with the handle and shank, of a pivotal box *c*, having a reciprocating hammer *f*, and means for operating the same when said box is turned on said shank and a detonating-ribbon-forwarding device, all arranged substantially as set forth.

2. The combination with the handle and shank having a cam projection, of a pivotal box *c*, having a reciprocating hammer *f*, a link *j*, having a bearing for said cam, a spring *p*, and means for forwarding fulminating ribbon, substantially as and for the purposes set forth.

3. The combination with the handle and shank, having a cam projection, of a pivotal box *c*, having a reciprocating hammer *f*, link *j*, operable by said cam projection, a spring *p* a plate having a fulcrumed dog and a lever receiving its movement from said hammer and operating said dog and plate for feeding fulminating ribbon forward and a receptacle for said ribbon, substantially as set forth.

4. The improved detonating toy comprising a resonant box and a handled shank for the same, on which said box is pivoted an impact-spring actuated by the rotating box to produce resonant blows, and a hammer, contained in said box and also actuated by the rotation of the box, to explode fulminating caps or matters, and a receptacle for said caps or fulminating matters, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 8th day of February, 1896.

FREIDRICH ALBERT FREYGANG.

Witnesses:

CHARLES H. PELL,
W. B. GANABRANTS.