April 17, 1962 C. AYALA 3,029,556

TOY

Filed March 10, 1958

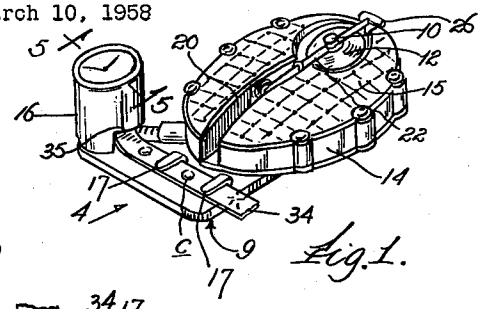


Fig. 1.

Fig. 2.

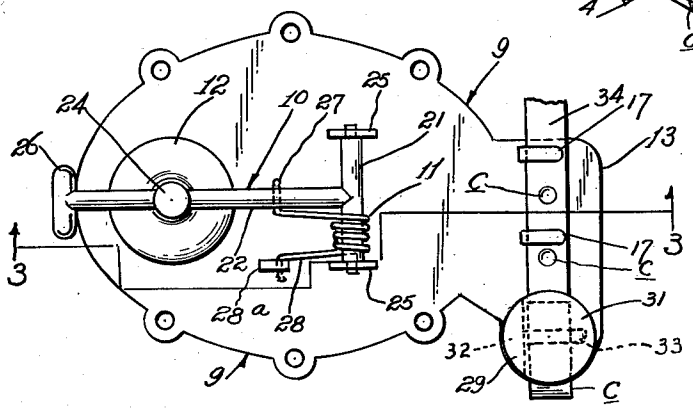


Fig. 3.

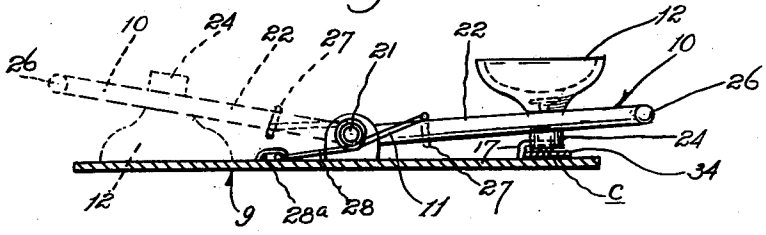


Fig. 4.

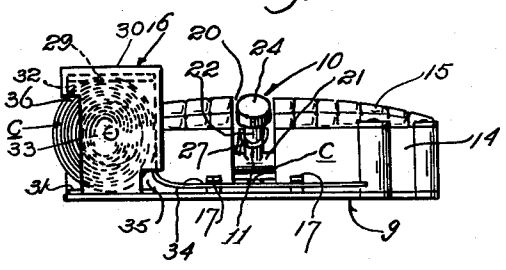
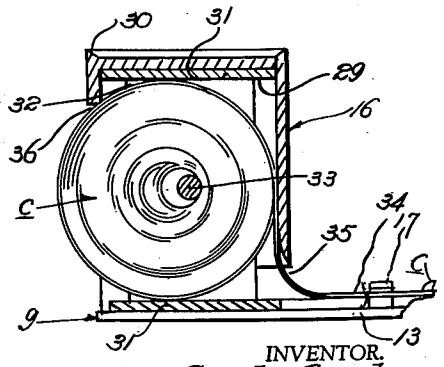


Fig. 5.



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The present invention relates generally to a detonating toy and, more particularly, to a toy which is operable to detonate caps after a time delay.

Noise making toys are very intriguing to children. One of the ways of creating a noise in a toy is by the means of a detonating cap. Various ways have been used to detonate caps, such as by means of a hammer activated by the manual operation of a trigger, or by means of a hammer activated by the device striking an object. The present invention describes a toy that explodes a cap a predetermined time after being set to operate. This is intriguing to children because of the surprise created by the delayed detonation.

The principal object of the present invention is to provide a toy which detonates caps after a time delay. Another object is the provision of a simple, inexpensive cap detonating toy which can be economically manufactured and which will be durable in use. Still another object of the present invention is a provision of a detonating toy that has a novel magazine for holding a roll of caps.

Further objects and advantages of the invention will become apparent from the following description and accompanying drawings:

In the drawings:

FIGURE 1 is a perspective view of a detonating toy embodying various of the features of the present invention, the toy being illustrated in non-firing or cocked position;

FIGURE 2 is a plan view of the detonating toy shown in FIGURE 1 with covering portions removed to show certain operating parts of the toy;

FIGURE 3 is a sectional view taken along line 3—3 of FIGURE 2, the toy being illustrated in firing position;

FIGURE 4 is an elevational view from the general direction of arrow 4 in FIGURE 1; and

FIGURE 5 is an enlarged, sectional view taken along line 5—5 in FIGURE 1.

The operating mechanism of the present invention can be applied to various forms of toys. Because of the delayed action of the detonation of a cap, the toy is ideally suited to being used in a manner similar to a time bomb. As shown in the drawings, the operating mechanism of the device is located in an enclosure or housing which has an outer contour which resembles a form of fragmentation case as in a time bomb.

The detonating toy illustrated in the drawings includes a base **9** on which is carried a hammer **10** which is movable between a firing and a non-firing position and which is adapted to detonate a cap *c*. A means **11** is provided for urging the hammer **10** towards the firing position. An arresting or time delay means **12** is provided for maintaining the hammer **10** in non-firing position for a predetermined period of time after being set in that position.

More specifically, the base **9**, on which the components of the device are carried, is composed of a material which is able to withstand the rough handling and shock that a toy of this nature is subjected to. The base **9** may conveniently be formed from a sheet of steel, it should be obvious, however, that other materials could be used.

The shape of the base **9** depends upon the form of the detonating toy described. The base **9** of the illustrated toy has a main portion which is oval in shape and an irregularly shaped extension **13** at one end of the main portion. The base **9** is shaped in this way so that the toy as described subsequently simulates a time bomb.

The hammer **10** is also composed of a material which is not damaged by an impact. Even though in the described embodiment the hammer is made of metal it should be understood that other materials can be used, and the hammer **10** can be constructed in a single piece or can be fabricated from a number of separate pieces suitably joined together.

In the illustrated embodiment, the hammer **10** includes an elongated cylindrical stem or shank portion **22**, a cylindrical shaft portion **21**, extending laterally from opposite sides of one end of the stem portion **22**, and a boss or striking portion **24** extending transversely intermediate the ends of the stem portion **22**. The hammer **10** is pivotally mounted at one end to the base **9** so that the hammer **10** swings in a perpendicular plane along the major axis of the oval portion of the base. The hammer **10** is mounted on the oval portion of the base at a point intermediate the extremes of its major axis so that the striking portion **24** extends downwardly in position to engage a cap *c* located in the base extension **13** when the hammer **10** is in its firing position. The ends of the shaft portion **21** are reduced in diameter and are journaled in suitable bearings **25** arranged on the base **9**. In the illustrated structure the bearings **25** comprise tabs struck out of the base **9**, the tabs being provided with centrally located holes in which are inserted the ends of the shaft portion **21**. The hammer **10** is preferably provided with a cylindrical handle portion **26** which extends laterally from opposite sides of the end of the stem portion **22** which is opposite the shaft portion **21**. The handle **26** in the illustrated embodiment is arranged parallel to the shaft **21** but, of course, the handle **26** can be fabricated in any convenient form. The ends of the handle portion **26** may be rounded as illustrated.

As previously indicated, a means **11** is provided to urge the hammer **10** towards the firing position. In the illustrated embodiment the urging means **11** is a coiled spring disposed on one of the extending arms of the shaft portion **21**. One end **27** of the coiled spring **11** is extended and engaged with the hammer **10**, preferably by bending it partially around the stem portion **22**, as shown in FIGURE 2 of the drawings. The other end of the coiled spring **11** is extended to form a substantially L-shaped arm **28** which is suitably engaged with the base **9**, such as by being inserted into a loop **28***a* struck out of the base **9**.

The arresting means **12**, as previously indicated, maintains the hammer **10** in non-firing position for a predetermined time. Various forms of time delay devices may be used for the arresting means **12**, such as an adhesive connection, or a friction connection, which yield after a prolonged period under stress.

The arresting means **12**, in the illustrated embodiment, is a suction cup which is attached to the stem portion **22** of the hammer **10** opposite to the striking portion **24**. This allows the suction cup **12** to be engageable with the base **9** when the hammer **10** is rotated approximately 180° from the firing position into a non-firing position (as shown by dotted outline in FIG. 3). It should be understood that the suction cup **12** may extend from any location along the stem portion **22** of the hammer **10**.

The suction cup **12** is attached to the stem portion **22** of the hammer **10** in a suitable manner, such as by engaging a suitable recess in the end portion of the suction cup **12** over a button-shaped extension on the stem portion **22** of the hammer **10** as illustrated.

In the illustrated embodiment, the oval portion of the base **9** is covered by an enclosure **14** which is, as previously indicated, a fanciful representation of a time bomb. The enclosure **14** is attached to the base by suitable means, such as rivets. The enclosure **14** may be made of any

suitable material, however, it is convenient to fabricate it from plastic or the like. The enclosure **14** is oval in horizontal outline and has an upper surface **15** which is scored to represent a fragmentation case. A slot **20** extends along the longer axis of enclosure **14** and is of such a width as to allow for the movement of the hammer **10**. Near the end of the enclosure **14**, opposite the end towards the base extension **13**, the slot **20** is circularly widened to allow the suction cup **12** to engage the base **9**.

Preferably, a cap guide **17** is provided on the base extension **13** so as to hold a cap *c* in position for engagement by the striking portion **24** of the hammer **10**, and also so that the cap *c* is prevented from adhering to and being lifted by the hammer **10**. The cap guide **17** comprises a pair of clips which are situated so as to be on either side of the striking portion **24** when the hammer **10** is in its firing position. These clips **17** extend upwardly from the base **9** and thence horizontally so the caps *c* are positioned between the clips **17** and the base **9**. These clips **17** may be made integral with the base **9**.

A magazine **16** may be provided to hold a roll of caps *c* so that a continuous supply of caps *c* is available. The magazine **16** is located on the base extension **13** so that a rolled off end portion **34** of a roll of caps is in correct feeding relation to the cap guide **17**. The magazine **16** includes a fixed holder **29** and a removable cover **30**. The fixed holder **29** which is attached to the base **9**, has an upper and lower cylindrical disk-shaped portions **31** and a connecting portion **32** which is a segment of a cylinder. The lower disk-shaped portion **31** is firmly attached to the base extension. A spindle **33** projects outwardly from the front surface of the connecting portion **32** approximately mid-way between the disk portions **31**. In operation, a roll of caps *c* is placed on the spindle **33** between the disk portions **31** in such a way that the rolled off end portion **34** is removed from the side of the roll of caps *c* closest to the guides **17**.

The removable cover **30** is substantially in the form of a tube with one end closed. The internal diameter of the cover **30** is of such a size as to slidably engage the disk portions **31**. The cover **30** has oppositely disposed slots **35** and **36** which extend from the open end of the removable cover **30**. The slot **35** which is arranged so as to be towards the guide **17** is shorter than the slot **36** which is arranged so as to be away from the guide **17**. The shorter slot **35** is used to guide the rolled off end portion **34** of the roll of caps *c* and the larger slot **36** provides an opening through which the roll of caps *c* can protrude. The protrusion of the roll of caps *c* allows a larger roll of caps *c* to be used than would ordinarily be usable in similar space and still allows the roll to be

unwound easily. The top inner edge of the shorter slot **35** is rounded so as not to snag the caps *c* as they pass therethrough.

The magazine **16** is shaped to represent a time mechanism for a time bomb and a representation of a face of a time clock or dial may be placed on its upper surface.

In operation, a roll of caps *c* is placed on the spindle **33** in the magazine **16** and the cover **30** is arranged in place. The rolled off end portion **34** of the roll of caps *c* is placed under the guides **17** and one of the caps *c* is arranged in position under the striking portion **24** of the hammer **10**. The hammer **10** is then rotated to its non-firing position and the suction cup **12** depressed against the base **9**. After a time interval the suction cup **12** releases and the hammer **10** is propelled into engagement with the cap *c* to cause an explosion thereof.

Various other changes and modifications may be made in the above described toy without departing from the scope of the invention. Various of the novel features of the invention believed to be new are set forth in the following claim.

I claim:

A toy time bomb that explodes a cap a short time after being set to operate comprising a base, a guide on said base for caps which are to be exploded, a magazine for holding a roll of caps to be fed through said guide, and a hammer pivoted to said base, said hammer including an elongated stem having a cap striking portion carried thereby and extending transversely from said stem in one direction so as to engage a cap to be fed through said guide to explode it, said stem having a time delay element carried thereby and extending transversely from said stem in the opposite direction, said time delay element being adapted to coact with said base to release said hammer after a lapse of time, said base having an overlying cover element simulating an explosive device, and said magazine simulating a timing device, whereby the impression conveyed by the appearance of the toy is that of a time bomb.

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