Aug. 24, 1954 D. G. GAROFALOW 2,686,987

TOY AERIAL BOMB

Filed Jan. 11, 1954

FIG. 1.

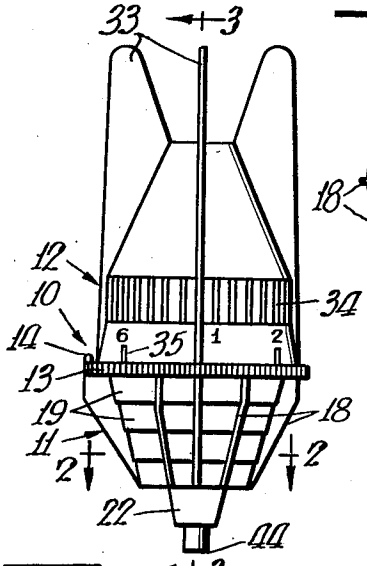


FIG. 2.

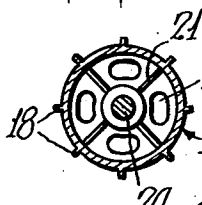


FIG. 3.

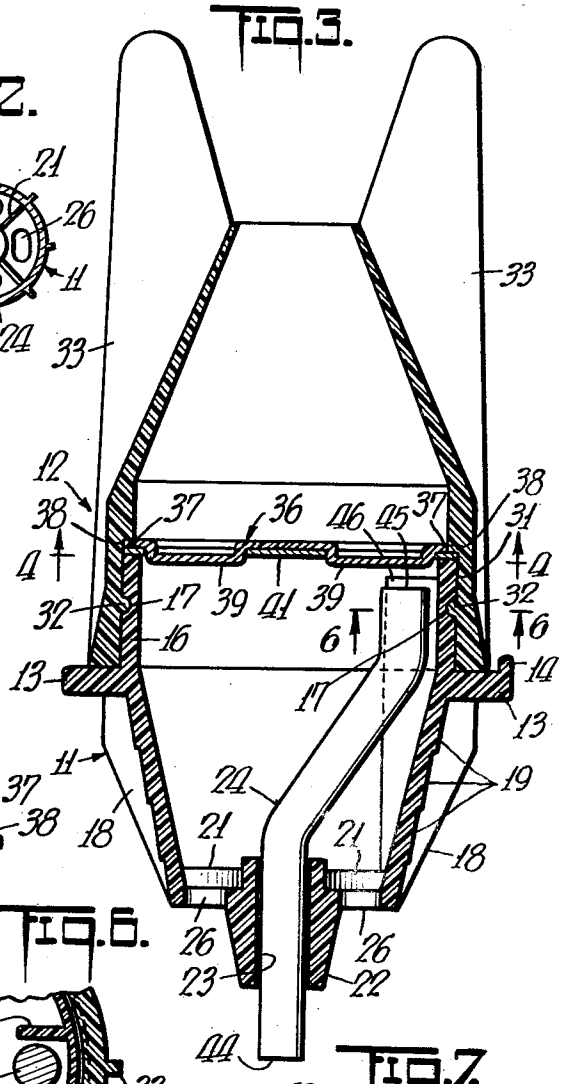


FIG. 4.

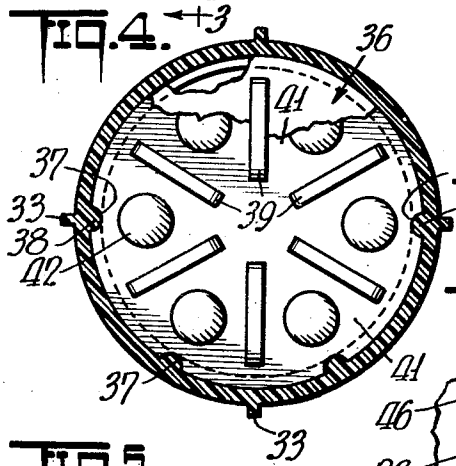


FIG. 6.

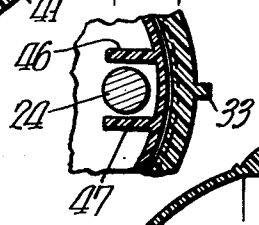


FIG. 5.

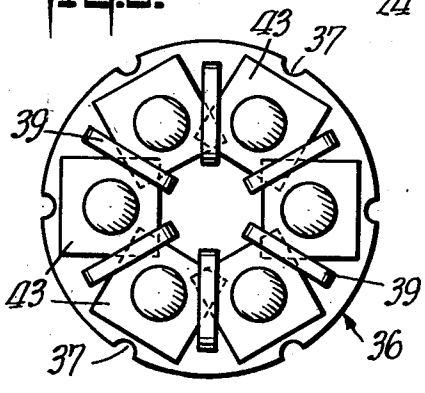
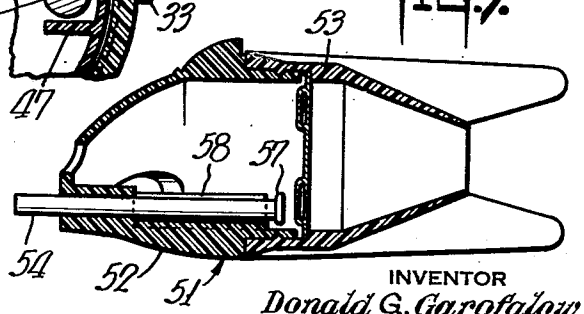


FIG. 7.



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TOY AERIAL BOMB

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4 Claims. (Cl. 46—200)

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The present invention relates generally to a toy device of the noise creating type, and it has particular relation to a toy aerial bomb that can be thrown or tossed and which, when striking the ground or other hard surfaces, will effect a detonation, simulating an explosion.

There are mainly two different types of toy aerial bombs using caps as the explosive charge, but they are either of the single cap capacity or of the automatic type. Neither type of bomb has had very great commercial success. The single cap capacity type requires disassembling and reloading after each explosion, and therefore has not met with much commercial success because more time is spent in disassembling and loading the bomb than in firing the same. The automatic type of aerial bomb contains a roll of caps and has automatic advancing means for feeding a new cap successively as fired, but this type has not been too successful because its cost is away beyond the reach of most customers and the intricate mechanism has frequent mechanical failures that are beyond the capabilities of their owners to repair.

An object of the present invention is to provide a construction for a toy aerial bomb that is simple, durable and inexpensive.

A further object of the invention is the provision of a flexible plastic toy aerial bomb that is capable of operating successively for a limited number of times without requiring disassembly or reassembly, but may be reloaded by merely turning the sections approximately sixty degrees with respect to each other.

Another object of the invention is to provide a plastic toy aerial bomb that is capable of receiving a plurality of conventional single caps as well as a sheet of conventional disk-type caps which may be inserted as a unit, thereby providing a common source of ammunition since both types of caps are readily available on the open market.

A further object of the invention is the provision of a light weight and durable aerial toy bomb that can be molded of a flexible plastic material into two main sections which are readily separable for loading and/or unloading, and may be easily and quickly assembled by merely snapping said sections together, thereby requiring no tools or having no loose parts which may be dropped or lost during the disassembly and reassembly operations.

Another object of the invention is to provide a light weight flexible plastic aerial bomb formed of two semi-spherical sections that readily separate and snap together, and which permits relative rotational movement between sections for resetting for each successive explosive charge.

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Various other and further objects and advantages of the invention, which result in simplicity, economy and efficiency, will be apparent from the following detailed description, wherein two preferred forms of embodiment of the invention are shown, reference being had for illustrative purposes to the accompanying drawings, forming a part hereof, in which:

Figure 1 is a side elevational view of a toy aerial bomb constructed in accordance with the principles of the invention;

Figure 2 is a cross-sectional view on a slightly smaller scale of the toy aerial bomb shown in Figure 1, the same having been taken substantially along the line 2—2 of Figure 1, looking in the direction of the arrows;

Figure 3 is a longitudinal sectional view, on an enlarged scale, of the toy aerial bomb shown in Figure 1, the same having been taken substantially along the line 3—3 thereof, looking in the direction of the arrows;

Figure 4 is a cross-sectional view of the toy aerial bomb shown in Figure 3, the same having been taken substantially along the line 4—4 thereof, looking in the direction of the arrows and showing a disk-type sheet unit containing six caps mounted therein;

Figure 5 is a view similar to the view shown in Figure 4, but illustrating the manner in which a series of six individual caps may be loaded in position for firing successively;

Figure 6 is a fragmentary cross-sectional view of the firing pin guiding and aligning means shown in Figure 3, the same having been taken substantially along the line 6—6 thereof, looking in the direction of the arrows; and

Figure 7 is a modified form of a toy aerial bomb in which a straight firing pin is used instead of the eccentric firing pin shown in the construction depicted in Figures 1 to 6.

Referring now to the drawings, there is shown in Figure 1 an assembled toy aerial bomb 10 made of a suitable flexible material such as polyethelene plastic. The aerial bomb 10 is of a hollow cylindrical construction having its largest circumference intermediate its ends, and tapers conically in opposite directions. The aerial bomb 10 is separable at a point contiguous to its largest circumference into a nose section 11 and tail section 12.

The nose section 11, as best shown in Figure 3, has a main circumferentially extending rib 13, which projects radially outwardly and provides

the largest circumference for the bomb 10. The rib 13 has a small arm or protuberance projecting outwardly and longitudinally rearwardly, as indicated at 14, which serves as an indicator in cooperation with a visual indicating means provided on the surface of the tail section 12 as will hereinafter be more fully described. Extending rearwardly of the main rib 13 of the nose section 11 is a reduced circumferentially extending and longitudinally projecting flange 16, having a narrow semi-circular groove 17 extending circumferentially thereof intermediate its ends.

The forward end of the nose section 11, which is that portion projecting forwardly of the main rib 13, tapers conically and is provided with a series of circumferentially spaced and longitudinally extending ribs 18 and a series of relatively wide and flat circumferentially extending ribs 19, providing an attractive step-like surface embellishment for the intermediate portion of the forward nose section 11. The forward open end of the embellished portion of the nose section 11 is provided with a spider 21, as best shown in Figure 2, which serves as a support for a greatly reduced and slightly tapered nose 22. The nose 22 is provided with an axial bore 23 for receiving a firing pin 24, as best shown in Figure 3. The apertures 26 between the arms of the spider 21 provide openings where the smoke and noise caused by the explosion of the charge may escape.

The tail section 12 tapers conically rearwardly, but its forward end is provided with an axial bore 31 of a length and diameter adapted to receive the flange 16 of the nose section 11 in a frictional sliding fit. A circumferential rib 32 of a semi-circular shape projects inwardly of the bore 31, and is adapted to snap into the correspondingly shaped groove 17 of the nose section 11 when the two sections are cooperatively assembled. The outer surface of the tail section is provided with a series of four longitudinally extending stabilizing fins 33 spaced ninety degrees from each other, said stabilizing fins 33 increasing in height as they extend rearwardly of the tail section 12 to form substantially a straight line along their outer edges. Forwardly of the front ends of the stabilizing fins 33 is a circumferentially extending band of relatively short longitudinally extending ribs 34 forming an attractive embellishment for an intermediate portion of said tail section 12. A circumferential visual indicating scale or indicia 35 extends forwardly and contiguously of the ribs 34 of the tail section 12, which, when it is assembled telescopically over the rear end of the nose section 11, as best shown in Figure 1, provides means for indicating by the position of the knob 14 on the scale 35 the position of the firing pin 24 with respect of an explosive charge.

A removable metal plate member 36 is adapted to be mounted fixedly between the assembled nose section 11 and tail section 12 to provide a suitable anvil for exploding the caps. The plate member or anvil 36 is circular in shape and is provided with a series of six circumferentially spaced notches 37 spaced at sixty degree intervals, which correspond in shape and spacing with integral protuberances 38 located on the inside of the tail section 12. The plate member 36 has a series of radially extending raised ribs 39, which are formed by punching and bending portions of the metal plate outwardly from the main plate member. These radial ribs 39 form centering or positioning means for a circular sheet 41 of conventional disk-type caps 42, as best shown in Figure 4, which have slots cut therethrough between the individual caps 42 corresponding substantially in size and shape to the ribs 39. When it is desired to use single caps 43 as the explosive charge for the bomb 10, such single caps 43 may be provided from the conventional roll of caps (not shown) by merely tearing them off to form single caps 43, as best shown in Figure 5.

The firing pin 24 is a piece of heavy metal wire or rod-like material, which is bent eccentrically, as best shown in Figure 3. It is inserted through the bore 23 of the nose 22 from the inside of the nose section 11 while the bomb 10 is disassembled with its forward end 44 projecting outwardly a short distance. Its opposite or firing end 45 is positioned between two spaced guide ribs 46 and 47 (see Figure 6) which serve to hold the inner end of said firing pin in position for alignment with the caps 42. The overall length of the firing pin 24 is such that, when its forward end 44 projecting through the nose 22 strikes a hard surface, its rear firing end 45 will strike and explode a cap 42 against the metal plate member or anvil 36 without permitting the forward end to pass entirely within the nose section 11.

When the protuberances 38 on the inside of the tail section 12 engage the notches 37 in the anvil plate member 36, the caps 42 or 43, whichever type is being used, will be aligned with the visual indicating indicia 35 so that one cap is directly below each number on the scale. In this way, one cap 42 or 43 is always in alignment with the firing pin 24 when the indicator knob 14 is aligned with a number.

When the toy aerial bomb 10 has been loaded with caps and assembled with the indicator knob 14 pointing at the numeral "1" on the visual scale 35, it is ready to be exploded. This may be accomplished merely by tossing it high in the air or throwing it directly at a target. The stabilizing fins 33 will always cause the bomb 10 to strike the target or other hard surface area nose first, whereby the projecting end 44 of the firing pin 24 is driven back into the nose section 11 and causing its rear end 45 to strike a cap 42 or 43 held against the anvil 36, exploding the same. When an explosion takes place, the smoke and noise will have a tendency to pass out through the open ends of the bomb 10. The bomb 10 may be picked up immediately. When its tail section 12 is turned with respect to the nose section 11 until the next number "2" is aligned with the indicator 14, again the bomb 10 is reset and ready to be thrown and again exploded. This operation may be repeated until all six caps have been detonated. The bomb will then require reloading.

Reloading of the bomb 10 may be accomplished by holding the nose section 11 in one hand and the tail section 12 in the other hand, twisting the two sections with respect to each other and at the same time pulling them apart. The bomb 10 will separate easily and quickly into two sections, i. e., nose section 11 and tail section 12, whereupon the metal anvil plate 36 may be removed, cleaned of refuse from the burnt-out caps and refilled with a fresh supply of caps. The two sections of the bomb 10 may then be telescoped together until the rib 32 engages the groove 17. It is now ready for six more successive explosions.

Referring now to Figure 7, there is shown a modified form of aerial bomb 51, consisting of a hollow cylindrical construction having its largest circumference intermediate its ends, which ends

taper conically in opposite directions. The aerial bomb **51** is separable like the aerial bomb **10** into a nose section **52** and tail section **53**. The aerial bomb **51** is constructed substantially like the aerial bomb **10** except for its firing pin **54** and internal supporting structure, which serve to hold said firing pin in position. In the aerial bomb **51**, the firing pin **54** is made in the form of a rivet, having an enlarged head **57**. The firing pin **54** is held in position within the nose section **52** by means of spaced ribs **58**, which are molded as an integral part of the nose section **52**. The rear end of the ribs **58** serve to limit the forward distance of travel of the firing pin **54** since its enlarged head **57** is too wide to pass therebetween. In all other respects, except for a slight variation in the design, shape and other inconsequential features, which are obvious from the drawing, the structural and operating features of the aerial bomb **51** are similar to or identical with the corresponding features of the aerial bomb **10**.

Although I have only described in detail only two modifications which the invention may assume, it will be readily apparent to those skilled in the art that various other modifications may be made therein without departing from the spirit thereof or from the scope of the appended claims.

What I claim is:

1. A toy aerial bomb comprising a hollow cylindrical structure being readily separable into a nose section and a tail section, said nose section carrying a firing pin having one end projecting forwardly of its nose, said tail section having stabilizing means for causing said bomb to land on the projecting end of said firing pin, and an anvil mounted between said assembled nose and tail sections adapted to hold a series of caps in spaced arrangement, one of said sections being rotatable with respect to the other section whereby said caps mounted on said anvil may be positioned one at a time behind said firing pin.

2. A toy aerial bomb comprising a hollow cylindrical structure open at opposite ends and being readily separable into a nose section and a tail section, said nose section carrying a firing pin having one end projecting forwardly of its nose, said firing pin having means for maintaining it within said nose section, said tail section having stabilizing means for causing said bomb to land on the projecting end of said firing pin, and an anvil mounted removably within said

hollow structure adapted to hold a series of caps in spaced arrangement, one of said sections being rotatable with respect to the other section whereby said caps mounted on said anvil may be positioned successively behind said firing pin.

3. A toy aerial bomb comprising a flexible plastic material in the form of a hollow cylindrical structure having openings at opposite ends, said hollow structure being readily separable into a nose section and a tail section, an anvil carried by said tail section, a firing pin carried by said nose section having one end projecting forwardly of said bomb and its other end adjacent said anvil, said anvil having means for receiving a plurality of caps in spaced circumferential arrangement, one of said sections being movable with respect to the other section for aligning said caps on said anvil one at a time with said firing pin, and means carried by said tail section for causing said bomb when thrown to land on the projecting end of said firing pin.

4. A toy aerial bomb having a multiple cap arrangement comprising a nose section and a separable tail section, means for releasably securing said sections together to form a hollow structure, an anvil adapted to be secured fixedly between said sections when they are assembled, a firing pin carried by said nose section, said firing pin having a length to project through the end of said nose section when its opposite end is adjacent said anvil, said firing pin having means adapted to cooperate with means formed integrally with said nose section for maintaining its position within said nose section, index means carried by one of said sections and positioning means carried by the other section, said index means being adapted to cooperate with said positioning means to indicate the position of said anvil with respect to said firing pin, and means carried by said tail section to cause said bomb to land on the projecting end of said firing pin when thrown.

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