Oct. 11, 1949. G. S. STEVENS 2,484,320

TOY PROJECTILE

Filed Feb. 5, 1946

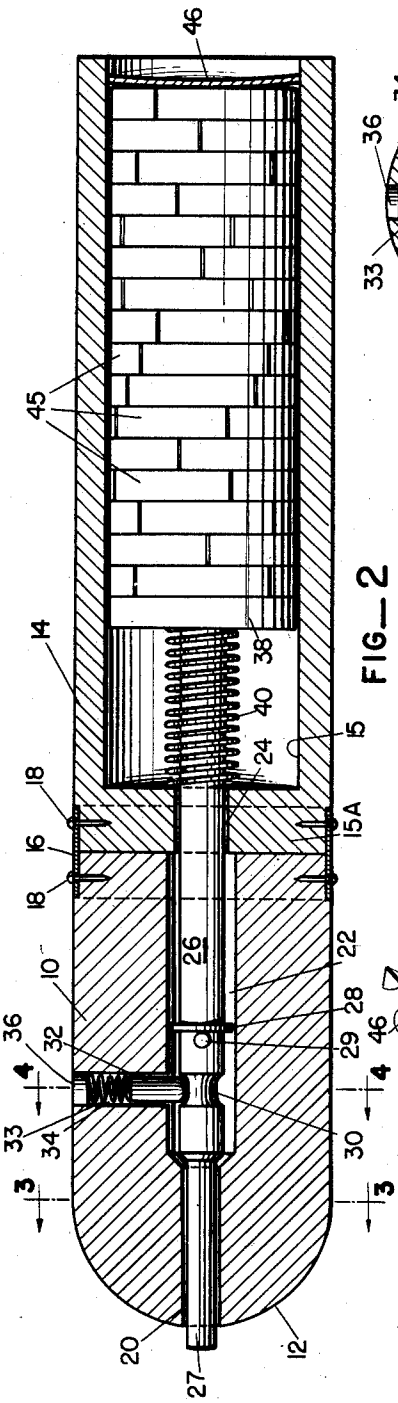


FIG_2

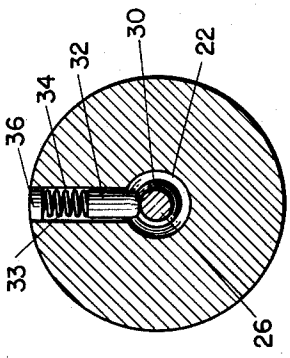


FIG_4

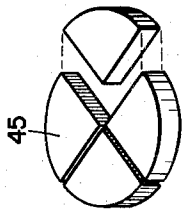


FIG_5

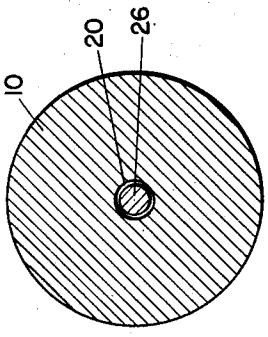


FIG_3

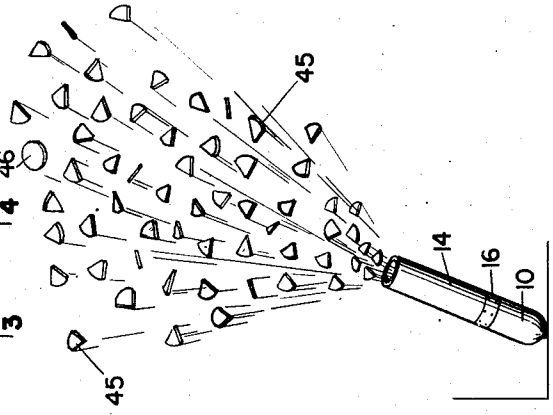


FIG_1

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TOY PROJECTILE

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4 Claims. (Cl. 273—106)

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This invention relates to toy projectiles and, more particularly, to a projectile containing a plurality of fragmentation elements, and adapted to be manually charged with such and to discharge the same upon impact.

It is an object of my invention to provide a toy projectile that is easy to construct and which comprises a minimum of parts, and which functions upon impact.

Another object of my invention is the provision, in a toy projectile of the type described, of a deformable latching element, which readily displaces itself from the latching position upon impact.

Still another object of my invention is the provision, in a toy projectile of the type described, of fragment discharging and dispersion means, which is easy and simple to construct and which is not deleteriously affected by hard and constant usage.

The foregoing objects, and others ancillary thereto, I prefer to accomplish as follows:

According to a preferred embodiment of my invention, I provide a body having a fragment receiving chamber, in which is mounted a spring pressed ejector for the fragments. Also, cooperating with the walls of the chamber is a fragment securing means for use during non-ejecting periods of the projectile. In the body, mounted for sliding axial movement, is a pin which is attached to the spring pressed ejector, and which cooperates with certain detent means to hold the ejector in a cocked position. This pin extends outside the body for contact with another object in tripping the detent means and permitting the ejector to function.

The novel features that I consider characteristic of my invention are set forth with particularity in the appended claims. The invention itself, however, both as to its organization and its method of operation, together with additional objects and advantages thereof, will best be understood from the following description of a specific embodiment when read in connection with the accompanying drawings, in which:

Fig. 1 is a perspective view of my toy projectile as it appears at the moment of impact and projection of the fragments contained therein;

Fig. 2 is a longitudinal sectional view of the projectile;

Fig. 3 is a cross sectional view of the body of the projectile taken on line 3—3 of Fig. 2;

Fig. 4 is a cross sectional view taken on line 4—4 of Fig. 2; and

Fig. 5 is a perspective view of a group of fragments used in the projectile.

A toy projectile, to be entertaining and useful, must have at least two totally distinct characteristics. It must be capable of being produced at a low cost and it must be so simple in construction and operation that it is within the comprehension of children, so that youngsters may learn to assemble and re-assemble the parts, even with their limited knowledge of mechanics.

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In a preferred embodiment of the invention as shown in the accompanying drawing, there is a forward nose section 10, generally of circular cross section shape, having a rounding forward end 12, and a rear hollow cylindrical section 14, axially aligned with section 10. These two sections 10 and 14 are secured together by a ferrule 16, which may be attached to each of the sections by escutcheon pins 18, or the like.

At the axis of body 10, there are bores 20 and 22, in communication with each other, the latter being larger than the former. Section 14 has at its closed end 15A, bore 24 in alignment with bores 20 and 22. A pin 26 is slidably mounted in bores 20, 22 and 24, and has a washer 28 positioned in the chamber or bore 22. The washer 28 is secured by a pin 29 against movement on pin 26. Pin 26, forward of the washer 28, has an annular groove 30, with which the spring pressed detent 32 mounted in the lateral cavity 34, co-operates. The detent 32 and its spring 33 are held in place by a fixed plug 36 fitted in the outer end of passage 34. In Fig. 2, the pin 26 is shown in the cocked position, with the ejector head 38 thereon, secured under the expansive force of spring 40 which is mounted around pin 26.

The ejector 38 is mounted within chamber 15 of body 14, which chamber also receives and holds a plurality of segmenting fragments 45, here shown to comprise quadrants of relatively thin cylindrical material, which can be assembled as shown in Figs. 2 and 5. The fragments 45 are retained in chamber 15 by means of a thin distortable disc 46, presumably of a size slightly larger than the cross section of chamber 15, which may be pressed into place and slightly dished to form a fragment retainer means.

When the projectile has been cocked and charged with fragments, and the fragments latched in place as shown in Fig. 2, it may be either thrown by hand or otherwise projected through the air to contact with an object, such as the floor, or other toys. Upon such contact, when the projecting tip 27 of the projectile strikes the object, the pin 26 is urged rearward, and the groove 30 is dislodged from its latching position with detent 32. In such case, the spring 40 forces the ejector head 38 rearward, and the retaining action of disc 46 being overcome, the fragments 45 are caused to be ejected in a blast as suggested in Fig. 1. The action of spring 40 is facilitated by the fact that the forward or tip end 27 of rod 26 is slightly reduced in cross section, and once the rod 26 is caused to travel rearward a sufficient distance to overcome the de-

tent's positioning, the detent thereafter rides freely on this reduced portion 27.

While I have shown and described a specific embodiment of my invention, it will occur to those skilled in the art that various changes and modifications may be made without departing from the invention, and I therefore aim in the appended claims to cover all such changes and modifications as fall within the true spirit and scope of my invention.

Having thus described my invention, I claim:

1. A toy bomb-like projectile, comprising: an elongated body having a nose and a relatively lighter tail section, said nose section having a bore therein longitudinal of the body and extending rearward to the tail section, said tail section having an enlarged chamber longitudinal of said body in communication with said bore and open at the rear end, an ejector longitudinally movable in said enlarged chamber, a forwardly extending rod connected to said ejector and adapted to slidably move in said bore, expansible spring means in the forward end of said enlarged chamber and operable upon said ejector to urge the latter rearward, impact-releasable latch means carried by said nose section and engageable in said bore with said rod to secure the same in an adjusted position and the spring forward of the ejector, compressed, said rod being of a length that it protrudes from said bore forwardly of said nose section, when secured by said latch means, said latch means being operable to release said rod when the latter strikes a solid object, a plurality of shrapnel-like pieces within said chamber to the rear of the ejector piston, and dislodgeable means in the opening at the rear of said tail section for temporarily retaining said pieces against said piston ejector and within said chamber.

2. The structure according to claim 1 including means for limiting rearward movement of said ejector to within said chamber.

3. The structure according to claim 1 in which the dislodgeable means comprises a thin plate of size that its periphery frictionally engages the walls of said chamber sufficiently to retain the pieces therein from unintentional dislodgment but to only immaterially interfere with their displacement from the chamber when the ejector is urged rearward by the spring means.

4. The structure according to claim 1 in which the latch means for the rod includes a spring pressed detent and the rod has a recess to be engaged by the nose of said detent.

GEORGE S. STEVENS.

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