United States Patent

Feldman

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[45] **May 16, 1972**

[54] ELASTIC DEVICE FOR PROJECTING CANS

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[52] **U.S. Cl.** .....**124/17,** 124/41, 273/106 R, 30/16, 30/22

[51] **Int. Cl.**.....**F41f 7/00**

[58] **Field of Search**.....124/5, 7, 17, 20, 41

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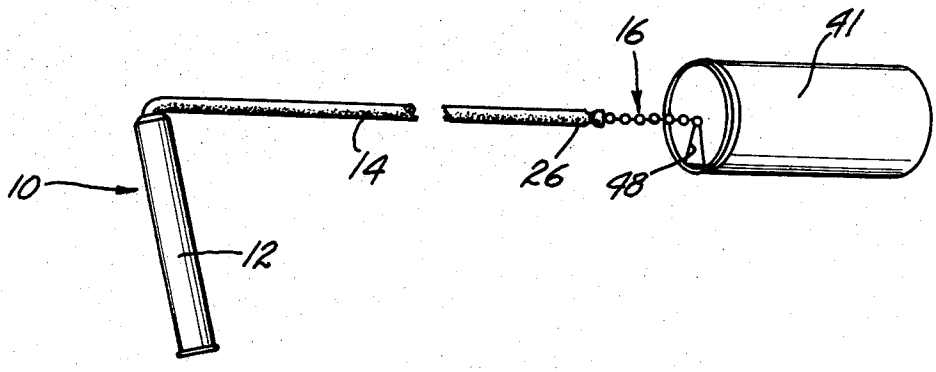
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[57] **ABSTRACT**

A sling for hurling empty beverage cans into the air for target practice, comprising a handle having a length of elastic rubber tubing connected to one end thereof, wherein the rubber tubing has a length of ball chain attached to its other end. One of the balls of the chain is hooked into the apex of a V-notch cut into the end of the can by a punch having its pointed end shaped to provide a good seat for the ball chain.

6 Claims, 9 Drawing Figures



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SHEET 1 OF 2

FIG. 1.

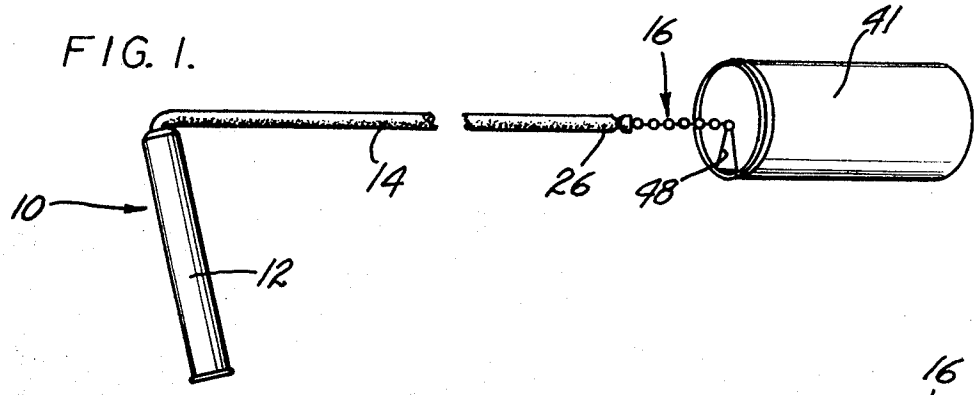


FIG. 2.

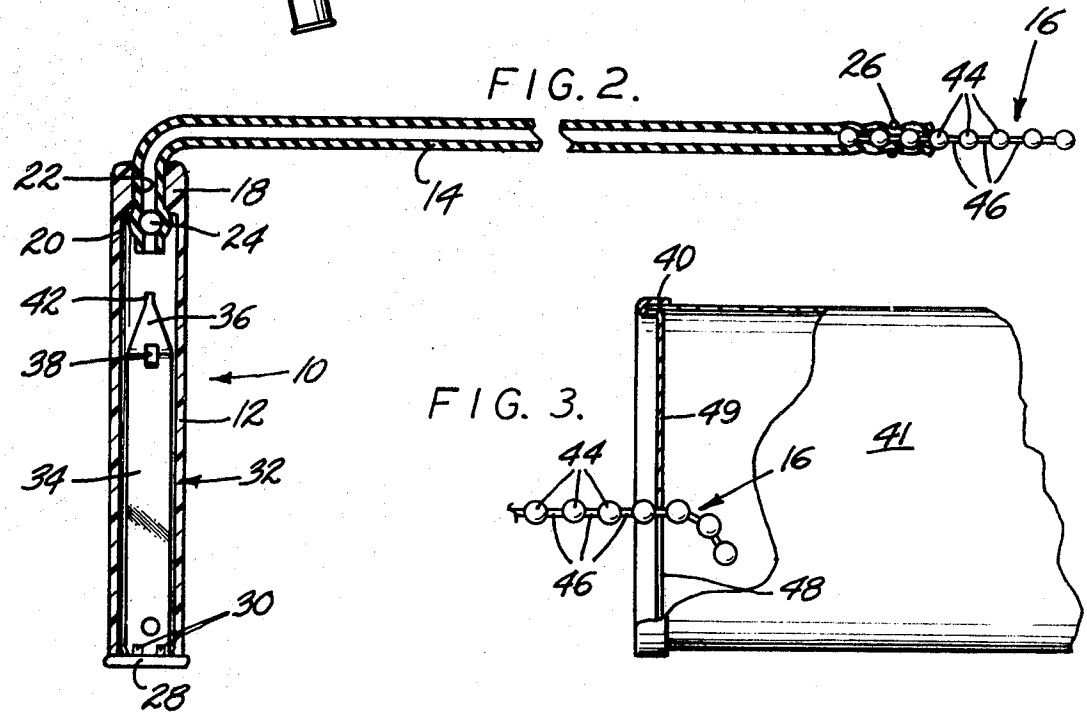


FIG. 3.

FIG. 5.

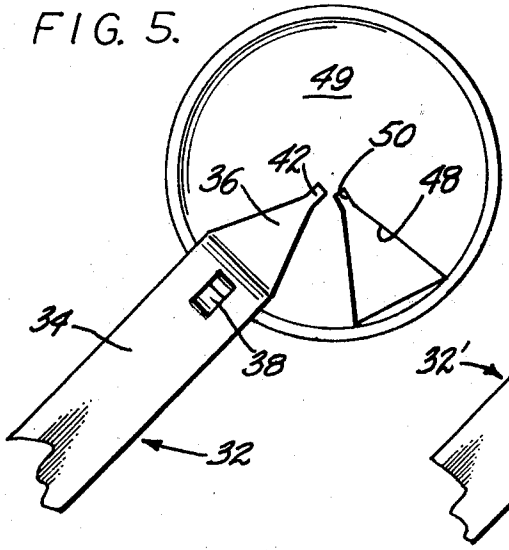
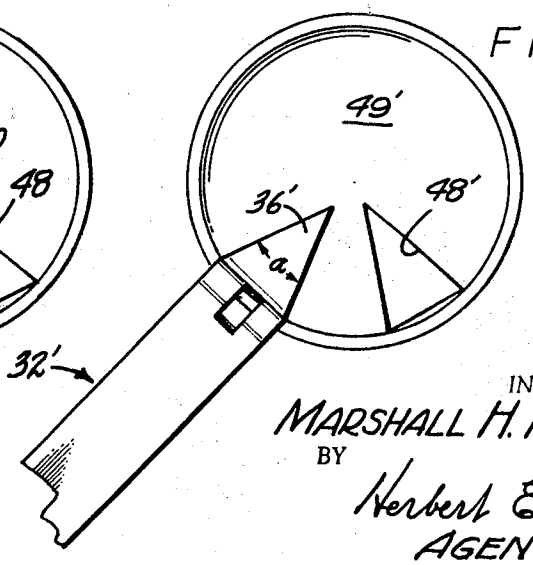
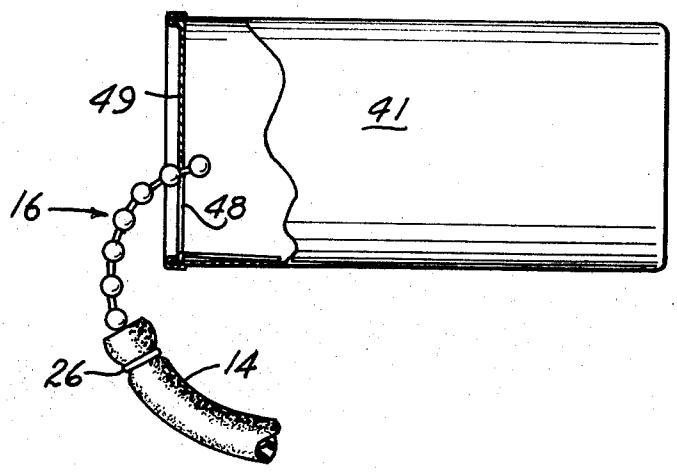


FIG. 4.



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FIG 6



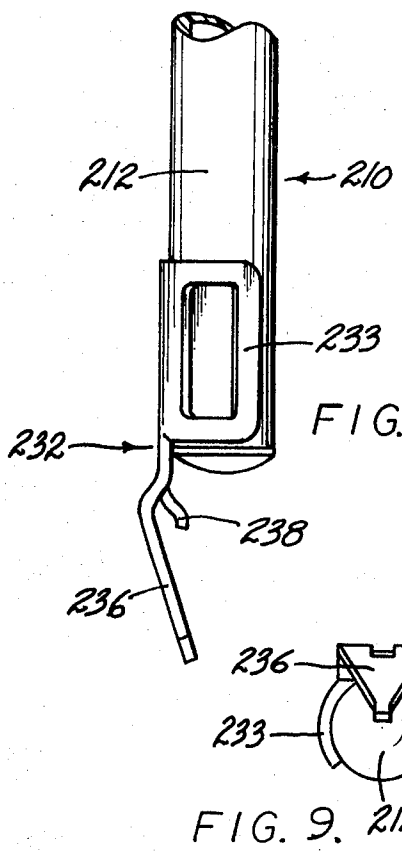
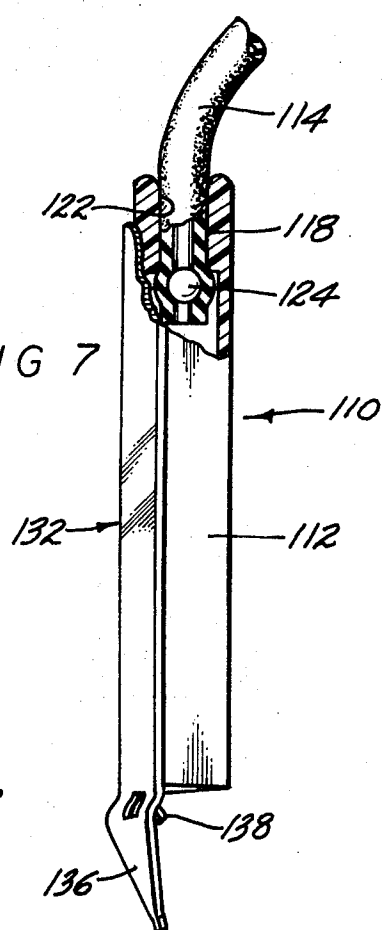


FIG. 8.

FIG. 9.

FIG 7



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ELASTIC DEVICE FOR PROJECTING CANS

BACKGROUND OF THE INVENTION

This invention pertains to missile launching devices, and more particularly to a sling for hurling empty beverage cans into the air so that they can be used for target practice. Heretofore, the only devices of this kind known to applicant have been rather expensive implements using cartridges or springs. These have been too costly or bulky, and have had other undesirable features that make them unsuitable for use in the field. The only other alternative has been to throw the cans by hand, but this becomes tiring after a while. Empty beverage cans make ideal targets, as they cost nothing; make a loud noise when hit; and can be used over and over again before they finally have to be discarded. What is needed is an inexpensive, lightweight, compact can launching device that can be tucked into a corner of a gun case or slipped into a pocket.

SUMMARY OF THE INVENTION

The primary object of this invention is to provide a sling that is specially designed to hurl empty beverage cans into the air.

Another object of the invention is to provide a device of the class described that is extremely inexpensive, lightweight, compact, and simple and easy to sue and in which the elastic member can be quickly and easily replaced if it becomes broken or excessively stretched.

These and other objects and advantages of the present invention will become apparent to those skilled in the art from the following detailed description of the preferred embodiment, with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the invention, showing the ball chain in the end of the elastic rubber tubing engaged in the V-notch formed in the end of a beverage can, and the can pulled back in readiness to be shot into the air;

FIG. 2 is a sectional view through the sling of the invention, showing the manner in which the rubber tubing is attached to the handle and to the ball chain, and also showing the specially formed punch enclosed within the handle;

FIG. 3 is an enlarged, partially cut-away, fragmentary view of the end of the can, showing the manner in which the ball chain seats in the apex of the V-notch;

FIG. 4 shows one form of can punch used with the invention, and the kind of V-notch that it punches in the can;

FIG. 5 is a view similar to FIG. 4, but showing another form of can punch and the kind of V-notch hole that it punches in the end of a can;

FIG. 6 is a view similar to FIG. 3, but to slightly smaller scale, showing the can in flight after being released, at the moment of separation from the ball chain;

FIG. 7 is a partially cut-away view of another embodiment of the invention, in which the punch is integral with the handle;

FIG. 8 is a fragmentary view of still another form of the invention, in which the punch is clipped to the bottom end of the handle; and

FIG. 9 is an end view of the device shown in FIG. 8.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In FIGS. 1–6 of the drawings, the sling of the invention is designated in its entirety by the reference numeral 10, and comprises a straight, tubular handle 12, to one end of which is connected a length of elastic rubber tubing 14, that terminates in a short length of ball chain 16.

The handle 12 may be made of wood or metal, or molded of plastic, and is preferably about 1 inch in outside diameter, and about 6 inches long, although these dimensions are not critical. The handle has relatively thin walls except at the top end, where the wall thickness is increased at 18 to form an inner shoulder 20. The thickened portion 18 has a bore 22 of reduced diameter, which is just large enough to pass the end of the rubber tubing 14 down through it. The tubing 14 is pushed all the way down through the center of the handle 12 and out through the bottom end thereof, where a ball 24 of larger diameter than the inside diameter of the tubing is forcibly inserted into the end thereof. This causes the tubing to stretch around the ball and forms a substantial enlargement, which seats against shoulder 20 and prevents the tubing from being pulled out of the handle.

At its other end, the tubing 14 has the short length of ball chain 16 attached thereto. This is accomplished by inserting 3 or 4 of the balls on the chain into the interior of the tubing, as shown in FIG. 3, and then constricting the tubing tightly between two adjacent balls by means of a wire or cord 26. In this way, the ball chain is prevented from pulling out of the tubing.

The bottom end of the handle 12 is closed by a cap 28 having spring fingers 30 that are inserted into the central bore of the handle. One purpose of the cap 28 is to enclose the interior of the handle so that a can punch 32 can be loosely carried therein. The can punch 32 is similar to the well-known beverage can opener, and comprises an elongated flat bar 34 of steel, having a pointed punch end 36, and a hook 38 which is adapted to engage and grip the peripheral flange 40 at the end of the can 41 (see FIG. 3). Formed at the extreme end of the pointed punch 36 is a narrow nose 42, preferably having parallel sides which are spaced apart slightly less than the diameter of the balls 44, but not more than the diameter of the links that connect them together. When the punch 32 is used in the usual manner, it produces a generally V-shaped, or triangular shaped hole 48 in the end 49 of the can, with a narrow notch 50 at the apex of the hole, in which one of the links 46 can seat.

To launch a beverage can having a hole 48 formed in the end thereof, the ball chain 16 is inserted into the opening 48 and is hooked into the notch 50, with one of the balls 44 seated against the margin of the notch on the inside of the can, as shown in FIG. 3. The sling 10 and can 41 are then held as shown in FIG. 1; usually with the handle 12 gripped in the left hand and the can 41 gripped in the right hand. The can 41 is then drawn back as far as possible, stretching the rubber tubing 14. The sling and can are aimed for the area to which the can is to be launched, and the can is released. As the can flies forwardly, propelled by the tension of the elastic tubing, it reaches the point ahead of the handle 12 where the ball chain flips down out of the notch 50, as shown in FIG. 6, and the can continues its flight, free of the sling. Since the notch 50 is slightly off-center with respect to the can, the line of pull of the tubing passes through the center of gravity of the can at a slight angle to the longitudinal axis of the can, and this causes the can to tumble in flight.

Another version of the punch is designated by the reference numeral 32′ in FIG. 4. In this punch, the pointed end 36′ is made with a more sharply pointed end than is usually provided with the conventional can opener, and the included angle *a* is only about 40°, instead of the usual 60°. This makes a triangular-shaped opening 48′ in can end 49′ which has a sharply pointed apex and a small included angle between the sides, so that the link 46 is able to crowd down into the very tip end of the apex, and the ball 44 is able to seat against the inside of the can along the margins of the two converging sides that form the apex.

Another embodiment of the invention is shown in FIG. 7, where it is designated by the reference numeral 110. In this embodiment, the handle 112 is constructed the same as in the previous form, and has a thickened wall portion 118 at the top end thereof, with a central bore 122 of a diameter just large enough to pass the end of the rubber tubing 114. A ball 124 is pushed into the end of tubing 114 causing the latter to swell outwardly so that it cannot be pulled through the bore 122. Fixed to one side of the handle 112 and extending parallel thereto is a punch 132, the pointed end 136 and hook 138 of which project beyond the bottom end of the handle.

Can sling **110** is used in exactly the same manner as the earlier described model except that it is not necessary to remove a cap from the bottom end of the handle and remove the punch from the inside in order to punch holes in the ends of empty cans. Instead, all that is necessary is to turn the handle **112** around and use the point **136** on the can without further ado. Being attached to the handle **112**, the punch **132** cannot be lost, which is a big advantage, as loss of the special punch may terminate the target practice activity. The sling of the present invention does not work satisfactorily with a conventional can opener, or with a pull-tab can, as the point of the opening formed thereby is too large and rounded to provide a good hold for the balls **44**.

FIGS. **8** and **9** show still another form of the invention, designated by the reference numeral **210**. Here the handle **212** is made the same as in the earlier embodiments, and punch **232** is clipped onto the lower end portion thereof, with its point **236** and hook **238** projecting beyond the bottom end of the handle. Punch **232** is provided with opposed, cylindrically curved clamping members **233**, which fit snugly against and clamp tightly to the handle **212**.

From the foregoing description, it will be evident that the invention provides a simple, inexpensive device for launching empty beverage cans into the air for target practice, and that considerable enjoyment and benefit can be derived from these otherwise useless, discarded cans.

While I have described the illustrated embodiments of the invention in considerable detail, it will be understood by those skilled in the art that the invention is not limited to the exact details shown, but may take various other forms within the scope of the claims.

I claim:

1. A sling for hurling empty beverage cans into the air for target practice, said sling comprising:

a handle adapted to be held in one hand;

a strip of elastic, rubber-like material attached at one end to said handle; and

a length of ball chain connected to the other end of said elastic strip, said ball chain consisting of a plurality of balls joined together by links, any one of said balls being seatable in the apex of a V-shaped hole in the end of a can, whereby said can may be drawn back to stretch said elastic strip, and then released, said ball chain disengaging itself from said can as the latter flies beyond the end of said elastic strip and said ball chain.

2. A sling as in claim **1**, wherein at least two of said balls on the end of said ball chain are inserted into said other end of said tubing, and means for tightly constricting said tubing between said two balls, thereby preventing said ball chain from being pulled out of said tubing.

3. A sling as in claim **1**, which further includes a punch for punching said V-shaped hole in said can end, said punch having a pointed end that is formed to produce a hole having its apex shaped to fit snugly around one of said ball chain links, thereby providing a good holding seat for the adjacent ball around a substantial portion of said apex.

4. A sling as in claim **3**, wherein said punch has a pointed end that comes to a sharp point such that the included angle between the side edges of said pointed end is not more than about **40** degrees.

5. A sling as in claim **3**, wherein said punch has a pointed end that terminates in a nose which cuts a V-shaped opening in said can end with a narrow notch at the apex, the width of said notch being less than the diameter of said balls, but slightly greater than the diameter of said links, whereby one of said links can fit snugly within said notch, and the adjacent ball has good seating contact with the underside of the can end around the margins of said notch.

6. A sling as in claim **3**, wherein said punch is attached to said handle and said pointed end projects below the bottom end of the handle.

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