Nov. 14, 1961 E. V. PULLEN 3,008,714

TOY TARGETS

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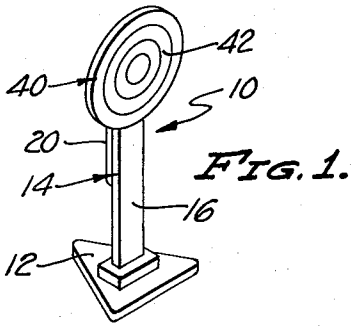


FIG. 1.

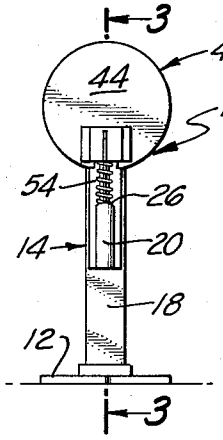


FIG. 2.

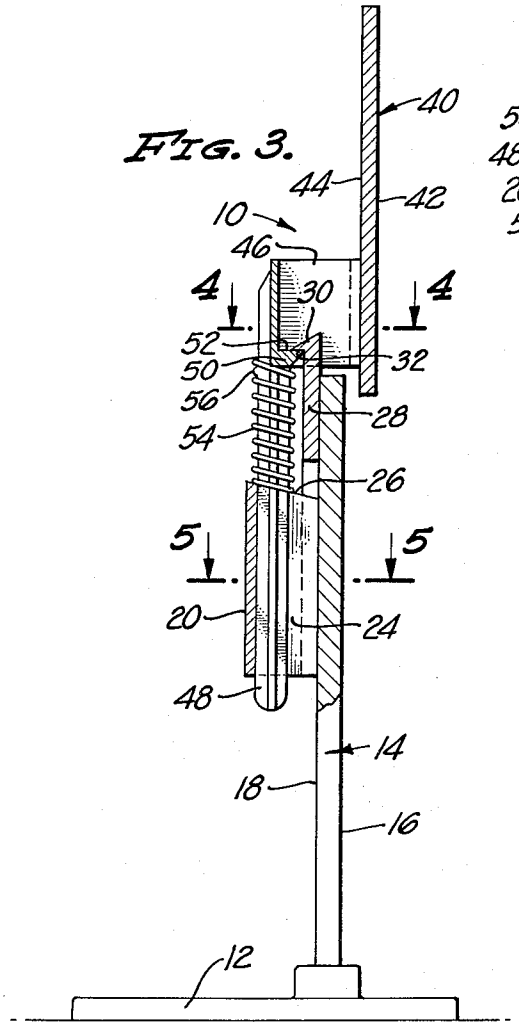


FIG. 3.

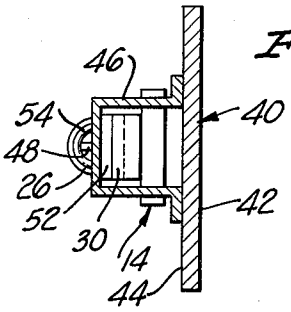


FIG. 4.

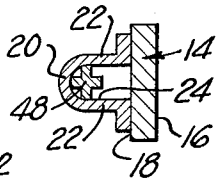


FIG. 5.

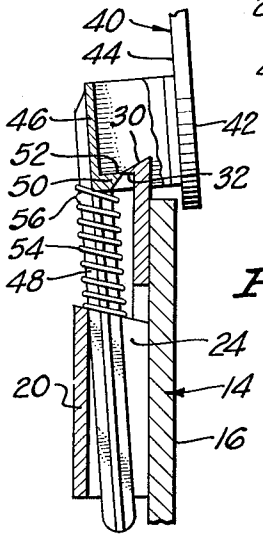


FIG. 6.

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TOY TARGETS

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This invention pertains to new and improved toy target structures.

It is always difficult to understand why children tend to prefer various types of toys. At the present time they seem to prefer toy targets which are constructed so that when these targets are engaged by a projectile a part of such a target flies up into the air. Various types of targets performing in this general manner are well established commercially at the present time.

Unfortunately the prior targets of this general category suffer from several inherent limitations and disadvantages. A principal one of these factors is cost. It is well known that the toy field is a highly competitive market. For a toy producer to make money on a toy target part of which is designed so as to fly into the air when the target is engaged by a projectile, it is necessary for such a producer to provide a device of this type which can be built domestically at a lower cost than various structures for the same purpose can be produced abroad.

A general object of the present invention is to provide new toy target structures which may be inexpensively produced. A related object of this invention is to provide toy target structures which, although inexpensive, are very reliable in operation. A related object of this invention is to provide toy target structures of this type which are also very easy to assemble and use and which, therefore, can be used as an item of play by even very small children.

These and various other objects and advantages of this invention will be fully apparent from a detailed consideration of the remainder of this description including the appended claims and the accompanying drawing in which:

FIG. 1 is a perspective view of a toy target structure of this invention;

FIG. 2 is a rear elevational view of this target structure;

FIG. 3 is a cross-sectional view taken at line 3—3 of FIG. 2;

FIG. 4 is a cross-sectional view taken at line 4—4 of FIG. 3;

FIG. 5 is a cross-sectional view taken at line 5—5 of FIG. 3; and

FIG. 6 is a partial view similar to FIG. 3, illustrating the operation of a toy target structure illustrated.

The accompanying drawing is primarily intended so as to clearly illustrate a presently preferred operative mechanism of a toy target structure of this invention. For commercial reasons toy targets of this invention are preferably modified in various different ways so as to contain amusement and attention-catching indicia upon various non-operative parts employed in them.

As an aid to understanding this invention it can be stated in essentially summary form that it concerns toy targets, each of which includes fixed and movable parts. Latches are located upon these parts in such a manner that they are normally held together so as to hold the movable part with respect to the fixed part. Further, with the toy targets of this invention a spring is located on one of the parts so as to engage the other of the parts, and this spring is used so as to bias the latches against one another so that upon contact of the movable part with a projectile this movable part deforms the spring used, enabling the two latches employed to be released from one another so that the spring can propel the movable part away from the fixed part.

The actual nature of this invention is best more fully explained or described by referring directly to the accompanying drawing. Here there is shown a toy target structure 10 of the present invention including a base 12 which holds a vertical upright part 14 which may be referred to as a "fixed" part. This part 14 has a front surface 16 designed to be exposed to the user of the target structure 10 and a rear surface 18. This rear surface 18 holds a generally U-shaped channel member 20, having diverging side extremities 22 which are secured to the rear surface 18. The member 20 defines with the rear surface 18 an elongated channel 24 having an open top; the channel 24 is of greater depth than width as shown. This channel 24 is surrounded at the top of the channel member 20 by a flat surface 26 which slopes downwardly toward the front surface 16 of the part 14.

The channel member 20 is preferably formed so as to include an upper extremity 28 extending from the extremities 22. This upper extremity 28 carries a latch 30 located so as to be spaced from the surface 26. The latch 30, as indicated in FIGS. 3 and 6 of the drawing, projects from the rear surface 18 so as to have a flat ledge 32 located at an angle to the surface 26. Preferably this ledge 32 is located at substantially a right angle to the part 14.

On the target structure 10 there is also employed a movable part 40 which is designed so as to have a front surface 42 located generally parallel to, but spaced from the front surface 16 of the part 14 when this structure is assembled. This part 40 also has a rear surface 44 which carries by means of parallel brackets 46 secured to it an elongated rod 48 of slightly less width than the channel 24. This rod 48 is preferably formed so as to include a latch 50 similar to the latch 30 spaced generally between the brackets 46. The latch 50 includes a flat ledge 52 corresponding to the ledge 32. These ledges 32 and 52 are normally held against one another through the use of a coil spring 54. This coil spring 54 as shown in FIG. 3 of the drawing is disposed around the rod 48 and is of larger diameter than the width of the channel 24; it engages both the latch 50 and the surface 26, and is under compression when the target structure 10 is in an assembled configuration. Preferably a small bump 56 formed on the rod 48 fits within adjacent turns of the spring 54 so as to permanently connect or attach this spring 54 to the rod 48.

When the toy target structure 10 has been assembled in the manner described in the preceding discussion it is ready for use. During such use when the part 40 is hit by a projectile or virtually anything else causing a force component directed normal to the front surface 42 the coil spring 54 deforms slightly, allowing the ledges 52 and 32 to slide away from one another as indicated in FIG. 6 of the drawing. When these ledges 32 and 52 are free of one another the spring 54 propels the part 40, including the rod 48 and the spring 54, upwardly.

After the toy target 10 has been used in this manner it may be reassembled by simply inserting the rod 48 within the channel 24 and forcing downwardly on the part 40 until such time as the coil spring 54 is under compression and the ledges 32 and 52 are opposite one another. At this point the spring 54 will tend to move the part 40 so that these ledges 32 and 52 become engaged because of the fact that the surface 26 is slanted slightly as indicated in the preceding discussion. Such slanting of the surface 26 causes a force component exerted by the spring 54 when this spring is under compression which moves and firmly and securely holds the latches 30 and 50 together. Thus, the spring 54 not only holds the parts 14 and 40 of the toy target structure together so as to prevent inadvertent relative motion between these two parts, but it also aids in making certain that these

two parts are latched satisfactorily during assembly of the target structure **10**. The shape of the channel **24**, and the disposition of the spring **54** around the rod **48** contribute to the effectiveness of the structure **10**. These shapes serve to aid in holding the parts in the desired operative position, and facilitate assembly of the structure **10**.

Those skilled in the art to which this invention pertains will realize that a variety of differently appearing toy targets may be made utilizing the essential features or principles of the invention. In the embodiment of the invention shown the operative parts attached to fixed parts **14** and to the movable part **40** are preferably constructed as shown since they, with the exception of the spring **54**, can be easily and cheaply manufactured at a nominal cost using injection molding techniques and since they may be easily secured to virtually any type of members serving as parts **14** and **40**. It is, however, possible to modify the toy target structure **10** of this invention in a number of different manners. As an example of this the sequence of operative parts shown may be reversed so that the spring used is held by a fixed part such as the part **14** around a rigid rod corresponding to the rod **48** attached to this part. When this is done, of course, the means defining a channel are secured to a movable part corresponding to the part **40** shown employed in such a target. Because of the fact that the structures of this invention are susceptible of such modification, this invention is to be considered as being limited only by the appended claims forming a part of this disclosure.

I claim:

1. A toy target structure which includes: first and second parts; first and second latch members formed on said first and second parts, respectively, each of said latch members including a flat surface designed to be held against the flat surface on the other of said latch members so as to hold said first and said second parts with respect to one another, means defining a channel on one of said parts, said channel having a top surface slanted at an angle to and located adjacent to the flat surface on said latch member upon said one of said parts; a rod attached to said other of said parts, said rod being located so as to extend into said channel when said flat surfaces of said latch members are engaged with one another; and a coil spring located around said rod, said coil spring being under compression and engaging said slanting surface on said other part, and serving to hold said flat surfaces in engagement with one another.

2. A toy target structure as defined in claim 1 wherein the end of said coil spring adjacent to the other of said parts is attached to said other of said parts.

3. A toy target structure which includes: a fixed part; means defining a channel having an open end and a slanting surface surrounding said open end mounted on said fixed part; a first latch member located on said fixed part so as to be spaced from said open end of said channel and so as to be in alignment with said channel; a movable part; rod means attached to said movable part so as to extend therefrom, said rod means fitting within said channel from the open end thereof; another latch member mounted on said movable part, said other latch member being adapted to engage said first latch member so as to hold said movable part with respect to said fixed part; coil spring means positioned around said rod means, said spring means engaging said other latch member and said surface around said open top and being under compression, said spring means serving to hold said latch members against one another so that when said movable part is engaged by a projectile said spring means will be deformed propelling said movable part from said fixed part and releasing said latch members from one another.

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