United States Patent [19]

DeVogelaere

[11] **3,720,411**

[45] **March 13, 1973**

[54] **PORTABLE TARGET TO RECEIVE, CONTAIN, AND PREVENT SPLASHBACK OF MEDIUM VELOCITY PROJECTILES**

[76] Inventor: **George E. DeVogelaere,** 594 Landing Road North, Rochester, N.Y. 14625

[22] Filed: **March 8, 1971**

[21] Appl. No.: **122,027**

[52] **U.S. Cl.**.....**273/102.4,** 273/102 S, 273/DIG. 4

[51] **Int. Cl.** **F41j 1/14**

[58] **Field of Search** .....273/102 R, 102 S, 102.2 R, 273/102 B, 102.4

[56] **References Cited**

UNITED STATES PATENTS

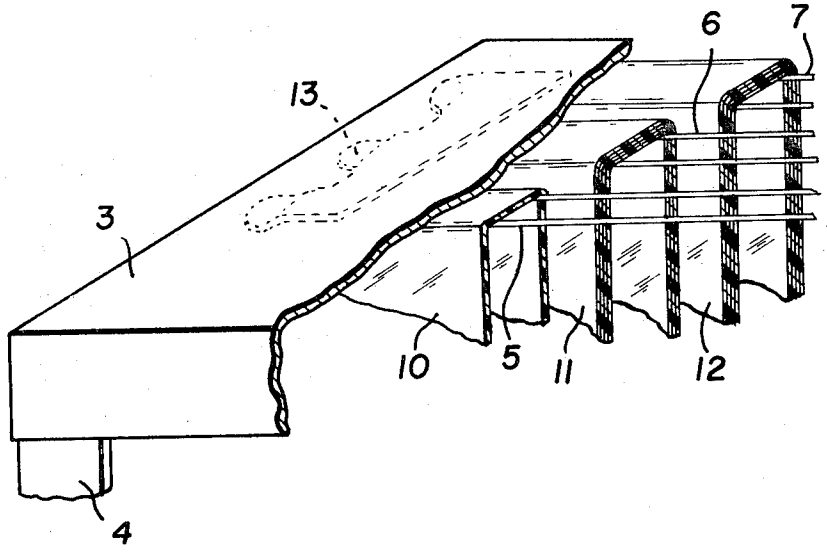
3,122,367	2/1964	Dale	273/102.4
3,088,738	5/1963	Meyer	273/102 B
3,100,115	8/1963	Breneman	273/102.4
1,928,768	10/1933	Sell	273/102 B
2,294,730	9/1942	Eggers	273/102 B

Primary Examiner—Richard C. Pinkham
Assistant Examiner—Marvin Siskind
Attorney—T. V. Crevling

[57] **ABSTRACT**

A portable target for receiving and containing projectiles built in a conventional rectangular box shape but substantially thicker to contain in back of the target image paper, a plurality of penetratable resilient arrestor sheets of sufficient size to fill the target to accept and arrest a projectile entering its open face by penetrating a number of the arrestor sheets without splashing out of the target. A single arrestor sheet is used between the target paper and the rest of the arrestor sheets to eliminate splash back from the projectile that can either tear the target paper or come out of the target.

3 Claims, 6 Drawing Figures



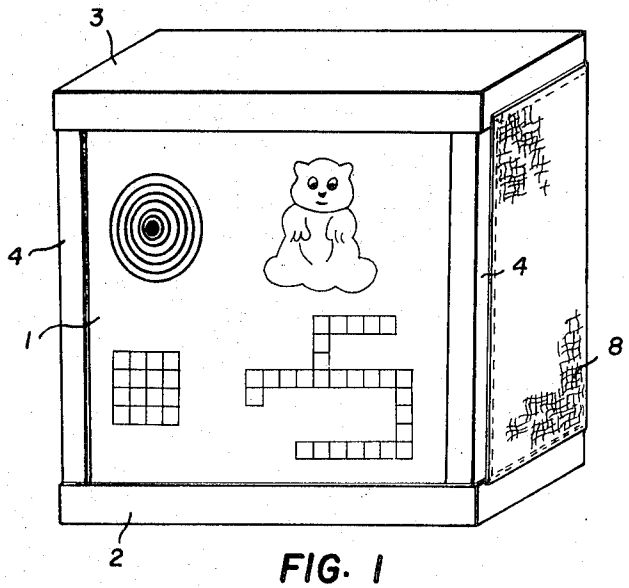


FIG. 1

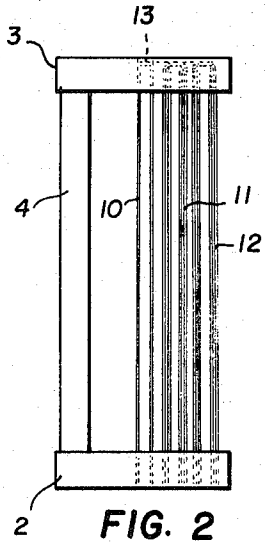


FIG. 2

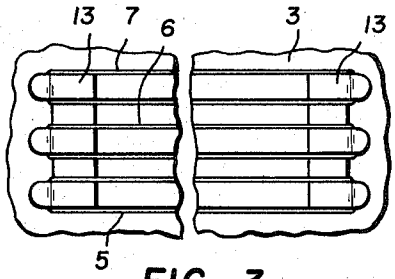


FIG. 3

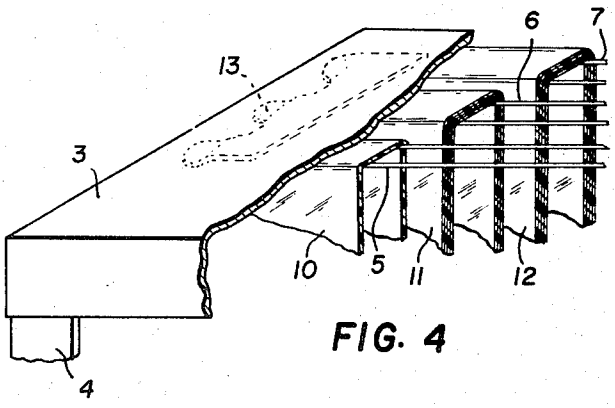


FIG. 4

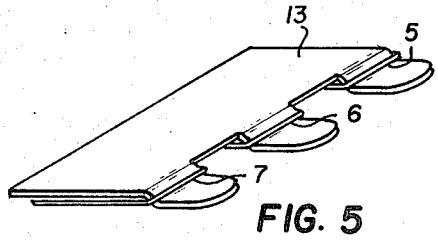


FIG. 5

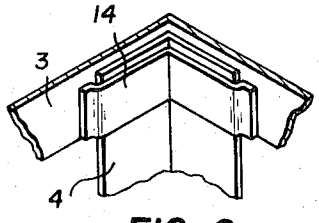


FIG. 6

INVENTOR.
GEORGE DE VOGELAERE

BY Thomas V Crowling
Agent

PORTABLE TARGET TO RECEIVE, CONTAIN, AND PREVENT SPLASHBACK OF MEDIUM VELOCITY PROJECTILES

This invention relates to devices for receiving and containing without spillage or splashback, ordance of medium velocity propelled from weapons and in one of its aspects this invention relates to portable targets that receive and contain projectiles of medium velocity of up to about 600 ft. per second.

Arrestor backstops for high velocity projectiles normally contain rigid materials and large amounts of earth, sand, wood, and metal to contain the projectiles. The use of low velocity projectiles such as some air rifles, pellet guns and the like required very little to contain the projectile. The use of three or four layers of cardboard, plastic sheeting, canvas and the like was adequate. Also small metal targets which used the deflection principle was often used. The trouble with the targets for low velocity projectiles was that the projectile often bounced back, tearing the target paper, destroying the reliability of the score or bounced out of containing area of the target assembly creating a hazard. It is well known that the accuracy of these weapons were poor as the projectile did not have quite enough velocity to maintain true flight, and as a result the shooter had to position himself close to the target to get increased accuracy and thus reducing his safety. If he used the targets for high velocity projectiles, he generally found himself having to modify the range firing conditions to get close enough to hit the target with any accuracy.

Manufacturers of low velocity weapons to fill a need for increased accuracy, increased the velocity of their weapons from well under 400 ft. per second to about 600 ft. per second. When this was done the accuracy went up sufficiently to maintain good groupings at about 25 to 30 feet, but the low velocity targets failed to contain the projectile. This was mainly due to splash back from the projectile stop when an increased stop was inserted.

I have built a target assembly that will safely contain the projectile but in doing so found that the splashback of the projectile destroyed both the target paper and also the safety of the device. I have discovered a way to overcome these defects.

One object of this invention is to provide a new device for containing medium velocity projectiles.

Another object of this invention is to provide a new, inexpensive, lightweight, easily-portable target for containing medium speed projectiles.

Another object of this invention is to provide a device for the training people in the proper and safe use of weapons using accurate medium speed projectiles inside homes and other buildings without other safeguards.

One of the main advantages of this invention is the ready adaptability of this device for moving and still target shooting.

Another advantage of this invention is its safe utility with all types of shooters from the novice to the expert.

This invention consists of a device for receiving and containing medium speed projectiles, comprising a frame surrounded on the sides and back with a cloth curtain and having suspended within the frame a plurality of penetrable resilient liners in a plurality of positions and a splashback preventive layer.

The invention is illustrated in the accompanying drawings wherein

FIG. 1 is an isometric view of the completely set-up target of this invention.

FIG. 2 is a side view of the target showing the arresting sheets and the splashback sheet, with the curtain removed.

FIG. 3 shows the supporting members located in the top of the target for supporting the arresting layer.

FIG. 4 is FIG. 1 broken away in part to show the arresting sheets in position.

FIG. 5 is an enlarged view of one clip for holding the supporting members.

FIG. 6 shows an inside view of the way in which the target frame is assembled.

Referring now to FIG. 1, the assembled target 1 comprises a box-like base 2 with sides about 2 inches high and a top 3 identical on its exterior to the base but slightly larger so that it fits over the bottom for compact storage and portability of the entire target assembly. A handle (not shown) can be attached to the back of the top section of the device for easy carrying. The uprights 4 support the top from the bottom, and the arrestor support appendages on clips 13, which are attached to the top hold the supports 5, 6, and 7 which hold the arrestor sheets 11 and 12 and the splashback liner 10 so that they fill the area in the target assembly to stop any projectile entering the face of the target. A curtain 8 attached to the uprights 4 is used to cover the sides and back of the target assembly to avoid any spillage of the spent projectiles in those areas.

FIG. 2 illustrates the spacing of the arrestor sheets and the splashback sheet which is critical to stopping the projectiles without splashback.

FIG. 3 illustrates the supports 5, 6, and 7 for the arrestor sheets 10 and 11 which are held by clip 13 as shown in FIG. 5.

FIG. 4 illustrates the target with the front and side broken away to show the arrestor sheets 11 and 12 spaced in back of the splashback liner 10 supported by supports 5, 6, and 7.

FIG. 5 illustrates one of the clips 13 which are mounted inside the top of the target and hold the supports in their proper position.

FIG. 6 illustrates from the inside one type of clip 14 used to releasably hold uprights 4 in both the top and bottom of the target.

The frame of this target is preferably made of metal of a gauge thick enough to withstand the projectile but thin enough to be as light as possible. Other materials that are also useful include plastics, wood, and the like.

The curtain is preferably made of cloth such as canvas, nylon, sailcloth, and the like, as it must withstand considerable handling. The curtain can be fastened to the uprights and/or top of the frame by snaps, hooks, catches, or other types of fasteners.

The arrestor sheets used in this invention must be of a penetrable, resilient material such as a soft plastic. Unhardened or calendered polyolefins such as polyethylene sheeting is desirable as the material is inexpensive and readily replaceable after several thousand penetrations to avoid the penetration of a projectile through the liners and into the curtain. The number of arrestor sheets required to arrest all of the medium speed projectiles to zero velocity is a minimum of 24 sheets of a 4 mil polyethylene sheet, or its

equivalent. The elasticity of the sheet, its thickness, and how they are spaced are important if the arrestor sheets are to work most effectively. The four mil polyethylene sheets described are positioned as follows:

position 1: The splashback single sheet (**10** of FIG. **2**) is placed ahead of the others to stop any projectile from being forced backward from the arrestor sheets, tearing the target paper, and being expelled into the room.

position 2: There are **8** sheets long enough to form a double layer of sheets which will allow for each set of sheets to move, changing the direction of the projectile flight path slightly along with substantially reducing the velocity of the projectile with each layer. position **3** is a duplication of position 2.

The supports for the arrestor sheets are made of flexible materials such as rubber bands, elastic bands, wires or the like, and are mounted on the clips (**13** of FIG. **5**). For best utility the spacing between each layer hanging from the supports should be about 1 inch apart to allow each sheet or set to move freely. The layers and sheets must move freely at the bottom to work most efficiently.

The target paper shown as part of the design of FIG. **1** can be a single sheet, or can be a target roll with mounts in the forward corners inside the frame. Motors, springs, cranks and the like can be used to move the target roll either across or vertically. One use for such a roll is to provide a program for shooting for training. Likewise, the use of a blank area on the target paper as a projection screen for projecting pictures to provide either still or moving picture targets thereon.

The portable target described in this invention can and does stop all medium speed projectiles that are on the market, including the Daisy 300 B—B weapon which is one of the more powerful weapons of this type found.

The invention has been described in considerable detail with particular reference to certain preferred embodiments thereof, but it will be understood that variations and modifications can be affected within the spirit and scope of the invention as described hereinabove.

I claim,

1. A collapsible and portable ricochet proof target for receiving and containing air powered projectiles comprising a rectangularly shaped frame having an open face, consisting of a rigid base, a plurality of penetrable upright members adapted to be releasably fastened in at least two corners of said base, two of said upright members forming the sides of said target face, a penetrable rigid top adapted to receive and be supported by the tops of said upright members forming a frame consisting of a box-like frame at least as large as the base, a curtain fastened to said members to enclose the sides and back of the target to arrest any glancing projectiles, the improvement which comprises,

a. a plurality of supporting members fastened inside the top of said target at a position wider than said open face.

b. a multiplicity of resilient penetrable projectile arrestor sheets larger than the open face of said target, held in position by said supporting members and arranged in four separate hanging positions within said target body, and

c. a single projectile penetrable resilient splashback sheet held by the supporting member closest to the target face in a position such that the entire splashback sheet is spaced from the arresting sheets and the face of the target to prevent projectile splashback.

2. The target as claimed in claim **1** wherein the penetrable resilient arrestor sheets are made of polyolefin sheets.

3. The target, as claimed in claim **1** wherein the penetrable resilient arrestor sheets are made of **4** mil unhardened polyethylene.

* * * * *