

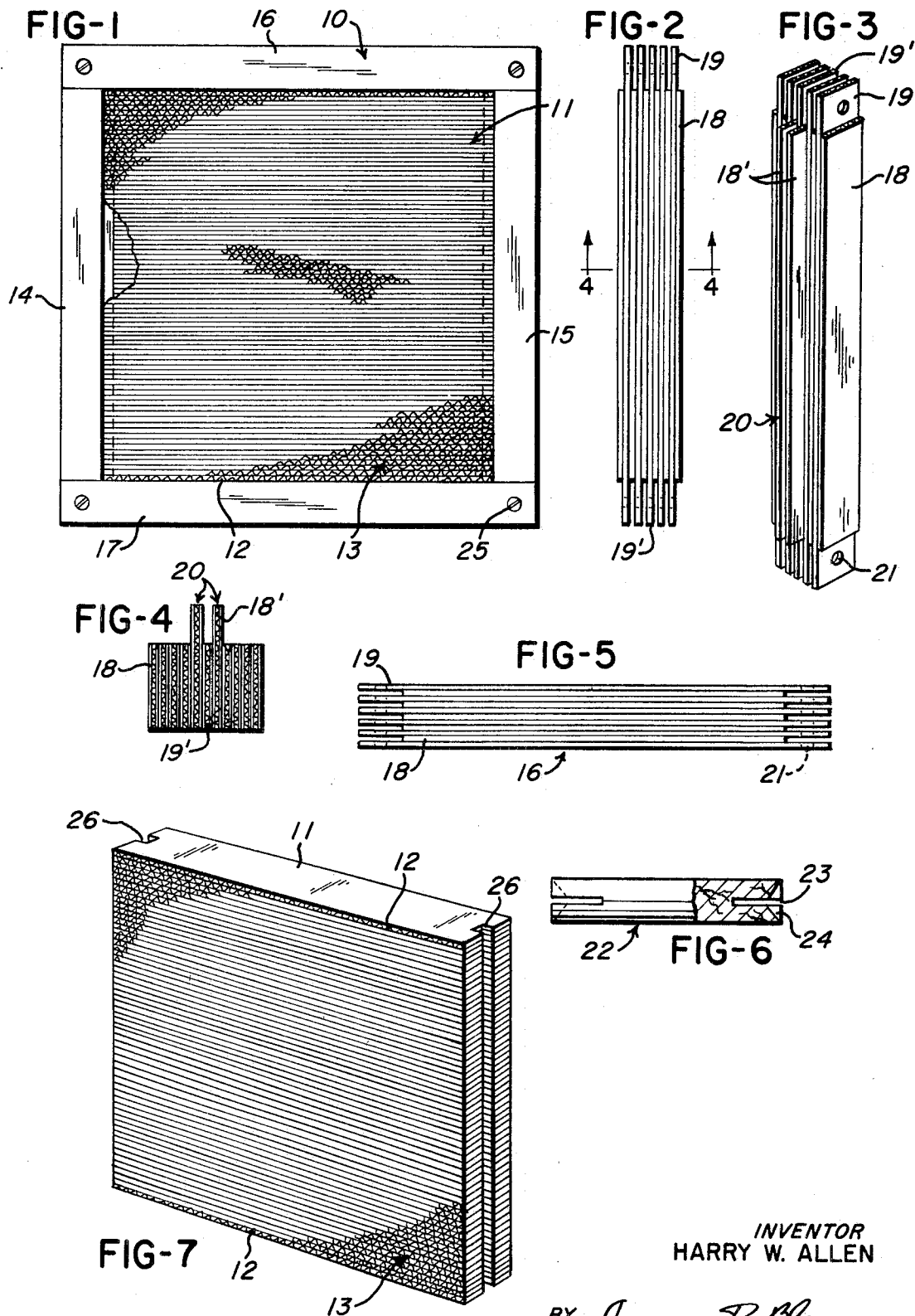
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SEGMENTED PIERCEABLE TARGET

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1

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SEGMENTED PIERCEABLE TARGET
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3 Claims

ABSTRACT OF THE DISCLOSURE

A target structure capable of extended useful life characterized by a segmented form, the segments, in a preferred embodiment, including a plurality of releasably confined corrugated cardboard strip elements, the composite of which presents a honeycombed impact surface. The strips are mutually grooved to provide channels at each side of the impact surface, which channels engage longitudinal projections extending from the side frame elements.

This invention relates to improvements in target structures for aerodynamically shaped projectiles. It has particular advantage in application to archery targets and for purposes of illustration will be so described, though not so limited.

Archery targets of the prior art have assumed various shapes and have been contrived of various materials. Currently most targets are made of dry prairie hay which is spiraled into a cylindrical form, sewed together and encased in burlap. The target per se is then directly applied or attached to the burlap. These targets are expensive. Moreover, they are heavy, extremely so with increasing size. This last makes them very awkward to handle. More objectionable, however, in a relatively short period of time they are badly torn by impacting arrows and are very difficult to repair in any satisfactory manner. Further, they are vulnerable to moisture. The described targets, nevertheless, have been adopted for present use with the objective of alleviating similar more serious problems and other problems which have appeared in the use of prior art targets. Other types of materials such as wood, cork or paper have been previously employed for targets but their form has been such that they either provide an unsatisfactory surface for retention of arrows which impact thereon or they have disintegrated too rapidly in use. The latter fact makes them extremely costly for the service rendered.

The present invention affords a solution to the above mentioned problems. It provides a low cost target structure which nevertheless affords an ideal impact surface designed to minimize the impact damage. Embodiments feature a segmented structure the elements of which are not only readily replaceable but interchangeable. In use, if a particular segment or segments become particularly damaged, they may be quickly and easily and very inexpensively replaced. In the alternative, they may be repositioned to render the most used portions of the impact surface whole. Thereby one can get the optimal useful life from the original low cost target structure. The invention target is, moreover, strong, light in weight and basically provides an ideal honeycombed type impact surface. The target body is such it will stably lodge impacting arrows or like projectiles yet permit their ready withdrawal with a minimum damage thereto.

A primary object of the invention is to provide a target structure which is economical to fabricate, efficient and satisfactory in use and adaptable to a wide variety of applications.

Another object of the invention is to provide a target structure which may be easily and quickly repaired.

2

A further object of the invention is to provide a strong, light weight target structure which has an extended useful life.

An additional object of the invention is to provide a novel segmented target structure the segments of which may be readily replaced and/or interchanged.

A further object of the invention is to provide a unique target structure the elements of which are individually replaceable thin strips of paper-like substance.

Another object of the invention is to provide a target structure possessing the advantageous structural features, the inherent meritorious characteristics and the means and mode of use here described.

With the above and other incidental objects in view as will more fully appear in the specification, the invention intended to be protected by Letters Patent consists of the features of construction, the parts and combinations thereof, and the mode of operation as hereinafter described or illustrated in the accompanying drawings, or their equivalents.

Referring to the accompanying drawing wherein is shown one but obviously not necessarily the only form of embodiment of the invention,

FIG. 1 is a front elevation view of a target in accordance with the present invention;

FIG. 2 is an outer side view of a side component of the target frame;

FIG. 3 is a perspective view of the frame component of FIG. 2;

FIG. 4 is a view taken on line 4—4 of FIG. 1;

FIG 5 illustrates the top and bottom component of the target frame;

FIG. 6 illustrates the dowel pin used in locking the frame; and

FIG. 7 illustrates, in perspective view, the replaceable and interchangeable strip inserts, the edges of which make up the primary target surface.

Like parts are indicated by similar characters of reference throughout the several views.

The preferred embodiment of the invention here illustrated is made up substantially entirely of narrow generally rectangular elongated strips of corrugated paper or corrugated board. It includes a rectangular frame 10 which releasably confines a vertically stacked series of superposed, generally rectangular, strip inserts 11. So stacked, the strip edge portions 12 each present a corrugated cross section and they mutually form a honeycombed impact surface 13.

The frame 10 includes side portions 14 and 15, a top portion 16 and a bottom portion 17.

The side portions 14 and 15 have an identical composition. Each has a laminate form, being comprised of successively alternated short strips 18 and long strips 19 of the corrugated paper or paper board. The strips are narrow and rectangularly formed. In building the side portions, two strips 18 are placed outermost and longitudinally centered in reference to immediate abutted long strips 19. Further strips are positioned intermediately of the so-abutted strips 19 and are similarly alternated and centered in reference to adjacent strips. The so-related strips 18 and 19 are then glued in face abutting relation to achieve an integral laminate form. As seen in FIGS. 2 and 3 of the drawings, the ends of the longer strips 19 form spaced fingers which equally project beyond the respective ends of the short strips 18. The sides 14 and 15 are each distinguished by a long strip 19' at its center and strips of equal width except for the strips 18' abutting the respective faces of the central strip 19'. The strips 18' have equal width, are relatively wider than the other strips, and are so disposed that their additional width is projected inwardly of the inner periphery of the

frame 10. The inwardly projected portions of strips 18' on the sides 14 and 15 form anchor guides 20 at either side of the frame.

The top and bottom frame portions 16 and 17 are also composed of alternated short and long strips 18 and 19 of the corrugated paper or paper board. In this case also, the strips are glued together in face abutting relation to achieve a laminate structure the same as the side portions 14 and 15. However, in the case of the portions 16 and 17 all the strips have the same width and two long strips 19 are disposed outermost with the intermediate strips being alternated as previously described.

Due to the reverse composition of the respective sides 14 and 15 and the top and bottom portions 16 and 17, their projected fingers, formed by strips 19, interfit, in an obvious manner, at right angles to each other. This last produces a rectangular laminate sandwich of the fingers at each corner of the frame 10. The interfit fingers have matching apertures 21 which align to provide a through opening at each corner of the frame. Each through opening receives a friction fit dowel pin 22.

Each pin 22 has each of its ends provided with a short diametral slot 23 and countersunk at 24, as seen in FIG. 6 of the drawings. As a pin is set through the interfit fingers in each corner of the frame, a screw 25 is threadably engaged in the countersunk portion 24 at either end thereof to spread the bifurcation provided by the slot 23 and thereby produce a binding together of the related fingers.

The strip inserts 11 are individual filler sections for the frame 10. As seen in FIG. 7, each insert, which is a corrugated paper or paper board sandwich, has a rectangular notch 26 in either end. The notches 26 are of a size to accommodate the anchor guides 20 and thus enable a slidable interfit therewith of the strip inserts.

To assemble the invention target is a simple procedure. The side portions 14 and 15 are first connected to the bottom portion 17 of the frame 10 as described. This disposes anchor guides 20 in inwardly projected relation to either side of the frame which is then open at its top. The strip inserts are then disposed above the frame to align their notches 26 with the guides 20 and then quickly dropped in the frame. The guides facilitate a quick, gravity influenced, precise positioning of the inserts as they drop inwardly of the frame. Once the frame is filled, its top portion 16 is applied to have the projected fingers to either end thereof interfit with the mating fingers projected upwardly of side portions 14 and 15. This establishes the apertures 21 in the interfit fingers in a quick alignment. On applying a dowel pin 22 at each of the top corners of the frame, in an obvious manner, to lock the fingers together and complete the frame and applying the screws 25, as described, the target is complete. It then presents the corrugated cross section of the inserts 11 to form a honeycomb impact surface 13 to both the front and rear of the target. A bullseye may be then imposed on either surface, in any conventional manner.

It should be seen from the preceding how one can achieve a simple and inexpensive target in accordance with the invention. In the use of the stacked thin strip inserts, it has been found that the vertical compression under which they are placed seems to influence the target to be more durable. An arrowhead, on impacting with the target surface 13, lodges securely without undue damage and is capable of being readily withdrawn with the target structure tending to substantially achieve its original form. In the instances where repeated use eventually creates a critical distortion of the target surface, one may then remove the top frame portion 16, in an obvious manner, and relocate the damaged strips to areas less likely to be critical in reference to impact. In the alternative, it may be seen that the strips are so inexpensive they may be disposed of and replaced by other strips in a very economical and quick fashion. The strips

of course are nominal in cost. A further possibility in use of the simple target of the invention is that the damaged strips may be reversed from front to rear and add to its useful life.

Accordingly, the invention produces a target which is not only economical, but durable and one which is extremely flexible, easily dismantled and readily assembled. Economy is self-evident in the preferred materials employed in accordance with the illustrated embodiment. It should be recognized, moreover, that the materials described need not be limiting and the parts may be similarly achieved and fabricated of other materials, such as plastic without departing from the spirit and scope of the invention.

From the above description it will be apparent that there is thus provided a device of the character described possessing the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportions, detail construction and arrangement of parts without departing from the principle involved or sacrificing any of its advantages.

While in order to comply with the statute the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific features shown, but that the means and construction herein disclosed comprise but one of several modes of putting the invention into effect, and the invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

Having thus described my invention, I claim:

1. A target device comprising a segmented structure, the target components of which are individually replaceable vertically stacked, generally rectangular, strips of corrugated paper cardboard, means providing a releasable interconnection of said components to form an integrated target surface, the edge portions of said strips being positioned to form said target surface and to give it a honeycomb configuration, in such configuration the strips individually accommodating the lodging of an arrow without material damage to the target, said strips having a slip fit assembled relation to facilitate their removal and replacement, the ends of said strips being mutually grooved to provide therein channels and there being frame elements arranged to contain said ends of said strips, said frame elements having at their most adjacent sides projections which extend longitudinally thereof and provide slide guides formed to interfit in the grooved ends of said strips whereby said strips may be slidably inserted between and contained by said frame elements and similarly removed.

2. A target device is in claim 1 characterized by said frame elements also being formed of corrugated paper cardboard in laminate form.

3. A target device as in claim 1 characterized by said frame elements being comprised of strips of said paper in laminate form, edge portions of spaced strips in each of said frame elements being disposed to form laterally spaced projections which provide said slide guides.

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