May 10, 1932. W. G. WARREN 1,857,701

FLYING TARGET

Filed Oct. 22, 1931

Fig. 1.

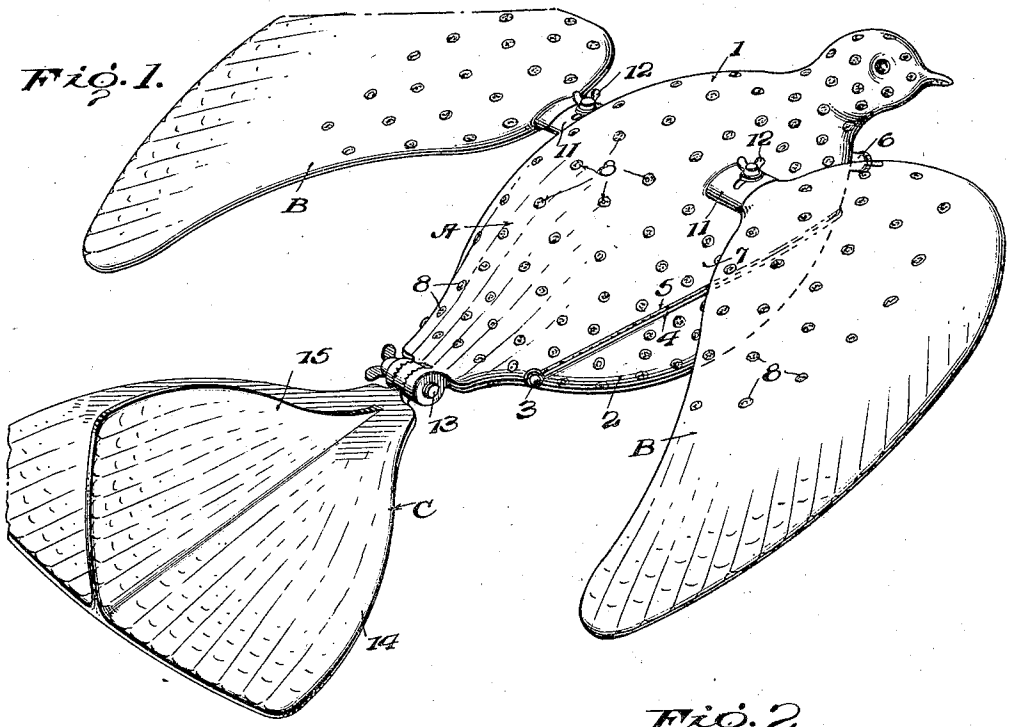


Fig. 2.

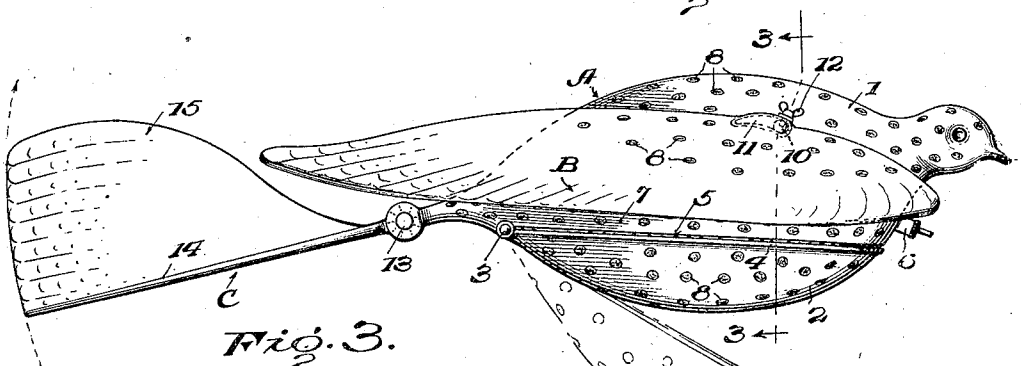
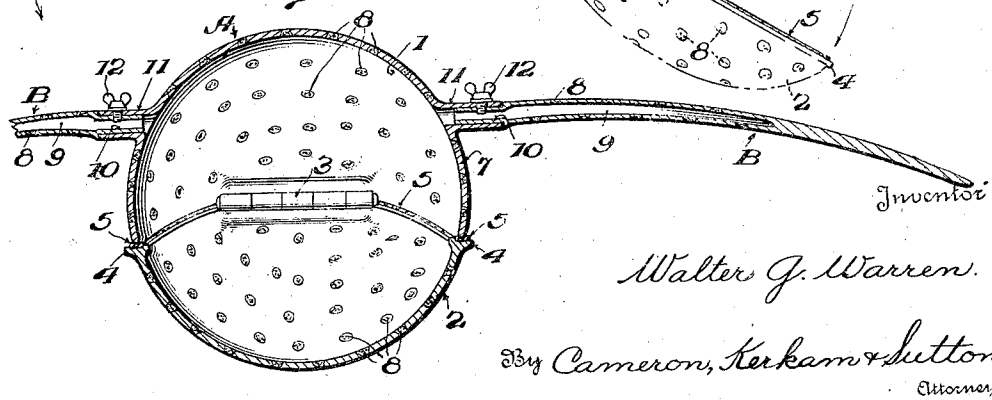


Fig. 3.



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Patented May 10, 1932 1,857,701

UNITED STATES PATENT OFFICE

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FLYING TARGET

Application filed October 22, 1931. Serial No. 570,426.

This invention relates to so-called flying targets for use in trap shooting, and has for one of its objects to provide a target of this character which will fall when a hit is scored, but will not be destroyed, and which can be reconditioned and used again.

Another object is to provide a target of this character which will more or less imitate the movements of a live bird when thrown from a trap in target shooting. Other objects will appear as the description of the invention proceeds.

Broadly stated, the invention consists of a hollow body composed of two separable parts, which parts are held together by reducing the internal air pressure of the body, to the end that the external atmospheric pressure will hold the parts together, and when the vacuum or partial vacuum is broken by admitting air to the interior of the hollow body, will permit the parts to fall apart. Preferably, though not necessarily, the two parts may be hinged together at a single point, to the end that when one of the parts drops downward, it produces a tumbling effect simulating that of a bird that had been brought down. The hollow body is preferably composed of metal, such as aluminum, tin, sheet iron or steel, pressed into form and, preferably said body, which, for example, may be in the form of a body of a pigeon, is separated into two parts or members along the line of a horizontal plane. When the two parts are placed together, the joint between the parts is sealed by a suitable gasket, so that the joint may be airtight, after which the air pressure within the body is reduced below the external atmospheric pressure, and the parts are held together by such pressure. If such a body is perforated, the vacuum (or partial vacuum) will be broken and the two members of the body will fall apart. Preferably, though not necessarily, the metal of the body is of sufficient strength to resist, and not be perforated, by the shot ordinarily used in trap shooting, and the body itself is provided with a plurality of perforations, and the exterior of the body covered with some readily frangible material, such as a thin coating of clay or adobe, which acts to seal the perforations airtight, but which, when the target is struck by the shot, is shattered, thus opening the perforations and breaking the vacuum. Where the metal of the body is such as to be readily perforated by a shot, the target can be reconditioned by simply recoating said body with the clay, adobe or other frangible material, which will serve to close the openings made by the shot.

Preferably, though not necessarily, the two members into which the body is divided along a horizontal plane may be hinged together at a single point, say at the rear end of the body, when the same assumes the form of a pigeon, and when the vacuum is broken, the lower member drops offering resistance to the air and causing a tumbling effect like that of a wounded bird. While the same does not form an essential part of the broad inventive idea, it is preferred to attach supporting planes or surfaces, preferably in the form of wings to the upper body member, which wings may, if desired, be hollow throughout part of their extent and have perforations therein covered with the frangible clay or adobe, and the hollow chambers in said wings which are in communication with the hollow body proper. Preferably said planes or wings are attached to the body by means of a hollow pivotal portion entering oppositely disposed sockets secured to the body, and such pivotal portions fixed in any desired adjusted position by means of suitable set screws. Preferably also a tail piece, which, if desired, may assume the form of the well known tail piece of an aeroplane, is adjustably fixed to the rear end of the body. By adjusting the supporting planes or wings and the tail portion, the target may be caused, when thrown or shot from a trap, to take an irregular line of flight.

The inventive idea may assume a variety of forms, one of which for the purpose of illustrating the invention is shown in the accompanying drawings, but it is to be expressly understood that such drawings are for the purpose of illustration only, and are not for the purpose of defining the limits of the invention, reference being had to the appended claims for this purpose.

In said drawings:

Fig. 1 is a perspective view of the invention here shown in the form of a pigeon;

Fig. 2 is a side view of the same, and

Fig. 3 is a transverse section on the line 3—3 of Fig. 2 looking in the direction of the arrows.

In said drawings, in which like reference numerals indicate like parts throughout the several views, A is the body portion, B, B indicate supporting planes or wing portions, and C is the tail portion. The body portion, here shown in the form of a pigeon, is composed of an upper member 1 and a lower member 2 hinged together at 3, which hinge is, in the instance shown in the drawings, placed at the rear portion of the body of the pigeon. The body is divided into the two members 1 and 2 along a horizontal plane, preferably somewhat below the median longitudinal plane, and the lower member 2 is provided with an exteriorly-extending flange 4 to serve as a guide and support for the target when it is placed in and expelled from a trap. This flange portion has a gasket 5 extending entirely around the same, which gasket is composed of any suitable material, such as rubber, and the lower edge of the upper member 1 seats snugly on the gasket 5. When the members 1 and 2 are pressed tightly together, as shown in Figs. 1 and 2, any suitable air exhausting pump may be attached to a valve 6, and the internal pressure within the body reduced below that of the external atmospheric pressure. If the walls of the body are imperforate, the external air pressure will effectively hold the two parts in closed position, as shown in Figs. 1 and 2, and when, for any reason, external air is admitted within the body portion, the lower member 1 will drop. If said lower member is hinged to the upper member, as shown in the drawings, said lower member will, as indicated in dotted lines in Fig. 2, and due to the resistance of the air, cause tumbling of the body. If, however, the hinge 3 is omitted, as it may be if desired, the members 1 and 2 simply fall apart.

If the body A has walls which are readily penetrated by a shot, the vacuum or partial vacuum will be broken by such penetration. Preferably, however, the body portion has provided in it a plurality of holes or perforations 8, and the exterior of the entire body is then covered with a very thin coating of some frangible material, such as clay or adobe, which can be applied when in a moist condition, but which, when dried, is readily shattered. In this case, whenever the shot from the charge strikes any part of the body, the coating is shattered and the perforations or holes opened, thereby breaking the vacuum or partial vacuum and permitting the members 1 and 2 of the body to fall apart. It will be readily understood that the body can be reconditioned for reuse by simply recoating the same with the frangible material and exhausting or partially exhausting air from the body, thus introducing a decided economy in the use of the target, since the target is not destroyed by a hit.

When supporting planes, here shown in the form of wings B, B, are employed, said planes are, throughout a large portion of their extent, provided with hollow air chamber 9, Fig. 3, and at the point where said planes or wings join the body, the joint is formed by a hollow shaft portion 10, Fig. 3, entering the sockets 11 projecting from opposite sides of the body. By this means the planes or wings B, B may be adjusted in any desired angles by simply turning the shaft portions 10 in the sockets 11 and fixing the same in such adjusted position by the means of set screws 12.

If desired, the motions of the body when projected from a trap may also be altered or controlled by means of the tail portion C hinged at 13 to the rear of the body, and preferably to the upper member 1 thereof. Any form desired may be given to this tail portion, but as here shown it has a horizontal member 14 and a vertical member 15, similar to those ordinarily used in aeroplanes.

It will be readily appreciated that, when the frangible exterior coating 7 is employed and the hit is made on any part of the body, whereby the coating is shattered, the target will fall, and, furthermore, that the same may be readily reconditioned by simply recoating the body. If the target assumes the form of a pigeon, as here illustrated, it will be readily seen that whenever a hit is made on any part of the target, whether the body or wing portions, the effect will be almost exactly similar to that which occurs when a live bird is hit.

While the invention is herein described in considerable detail, it will be readily understood that some parts of the invention may be used without the use of other parts, for example, the body portion may be used without wing portions, and the body portion may be composed of imperforate material which is readily penetrable by the shot of the charge, thus breaking the vacuum or partial vacuum, after which the target may be conditioned for reuse by simple coating it with readily shatterable material to close the perforation made by the shot; or the body may be provided with perforations and the body itself be made of material which would not be readily penetrated by the shot and the vacuum be broken by shattering the frangible coating. Various other modifications may be made without departing from the inventive idea involved, and all of such modifications as fall within the terms of the appended claims are intended to be covered hereby.

What is claimed is:

1. A flying target, comprising a hollow

body composed of a plurality of members snugly fitted together, the interior pressure of said body being less than atmospheric pressure whereby the members are held closed together by atmospheric pressure.

2. A flying target, comprising a hollow perforated body exteriorly covered with a coating of frangible material, said body being composed of a plurality of members snugly fitted together, and the interior pressure of said body being less than atmospheric pressure.

3. A flying target, comprising a hollow body composed of a plurality of members snugly fitted together, and winglike members jointed to said body, the interior pressure of said body being less than atmospheric pressure.

4. A flying target, comprising a plurality of members snugly fitted together to form a hollow body, and hollow winglike members in open communication with the interior of said body, the interior pressure of said body being less than atmospheric pressure.

5. A flying target, comprising a hollow body with perforated walls exteriorly covered with a coating of frangible material, and winglike members jointed to said body, the interior pressure of said body being less than atmospheric pressure.

6. A flying target, comprising a plurality of members snugly fitted together to form a hollow body, the interior pressure of said body being less than atmospheric pressure, and outwardly-extending oppositely disposed flanges on said body, whereby the target may be supported and guided in a propelling device.

7. In a flying target, the combination of a hollow body composed of a plurality of members, the interior pressure of said body being less than atmospheric pressure whereby the said members are held in assembled position by atmospheric pressure, and a hollow wing or plane in open communication with the interior of said hollow body.

8. In a flying target, the combination of a hollow body having its interior pressure less than atmospheric pressure, the walls of said body being composed of a plurality of members held together by atmospheric pressure and a plurality of hollow wings or planes adjustably connected to said body and in open communication with the interior of said hollow body.

9. A flying target as defined in claim 7 characterized by the fact that the hollow body is provided with a plurality of perforations covered with a frangible material closing said perforations.

10. A flying target as defined in claim 7 characterized by the fact that the hollow wing is provided with a plurality of perforations covered with a frangible material closing said perforations.

11. A flying target as defined in claim 8 characterized by the fact that the body and wings are provided with perforations covered with a frangible material closing said perforations.

12. In a flying target the combination of a hollow body composed of a plurality of members one of which is hinged to another, the interior pressure of said body being less than atmospheric pressure, with a plurality of hollow wing members in open communication with said body and a tail member hinged to said body.

13. A flying target as defined in claim 12 characterized by the fact that said body is provided with a plurality of perforations covered with a frangible material closing said perforations.

14. In a flying target the combination of a hollow body composed of a plurality of members one of which is hinged to another member, the interior pressure of said body being less than atmospheric pressure, with a plurality of hollow wings adjustably secured to said body and in open communication therewith, said body and wings being provided with a plurality of perforations covered with a frangible material closing said perforations, and a tail member hinged to said body.

In testimony whereof I have signed this specification.

WALTER G. WARREN.