United States Patent [19]

Imatt et al.

[11] **3,855,991**

[45] **Dec. 24, 1974**

[54] **ARCHERY BOW WITH ARROW GUIDE MEANS IN HAND GRIP**

[76] Inventors: **Alexander Imatt,** 1595 N. Calle La Cumbre; **Derek A. Brand,** 2132 Lyndhurst Ave., both of Camarillo, Calif. 93010

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[21] Appl. No.: **422,327**

[52] **U.S. Cl.**.... **124/24 R,** 273/DIG. 7, 273/106.5 A, 124/30 R, 124/30 A

[51] **Int. Cl.**..... **F41b 5/00**

[58] **Field of Search**..... 124/22, 23 R, 24 R, 41, 124/30 A, 30 R; 273/106 A, 106.5 A, 106.5 B

[56] **References Cited**

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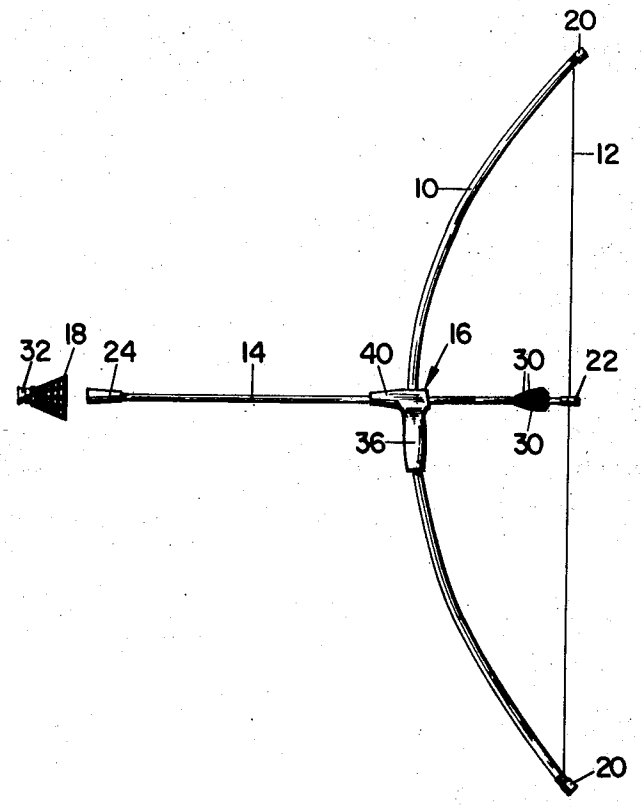
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Primary Examiner—Richard C. Pinkham
Assistant Examiner—William R. Browne
Attorney, Agent, or Firm—Ross, Ross & Flavin

[57] **ABSTRACT**

An archery bow having an arrow which has one end fixedly connected to a bow-string and a portion of the body of the arrow resting in a handgrip mounted on the bow. The handgrip has a passage therethrough that receives the bow and a passage spaced from the lateral face of the bow for receiving the arrow. The end of the arrow has a missile mounted thereon so that when the forward movement of the arrow is stopped suddenly by the bowstring the forward momentum of the missile will cause the missile to leave the arrow and travel through the air.

1 Claim, 7 Drawing Figures



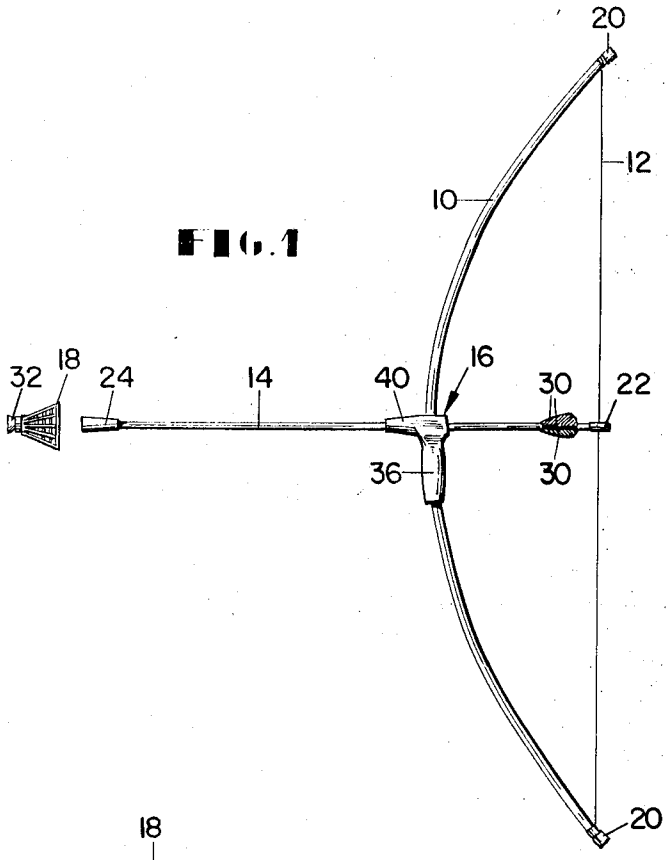


FIG. 1

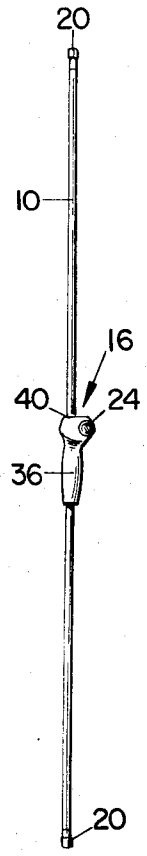


FIG. 2

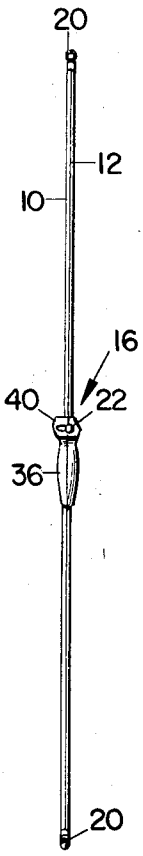


FIG. 3

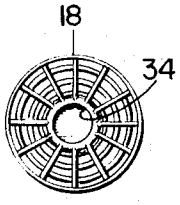


FIG. 4



FIG. 5

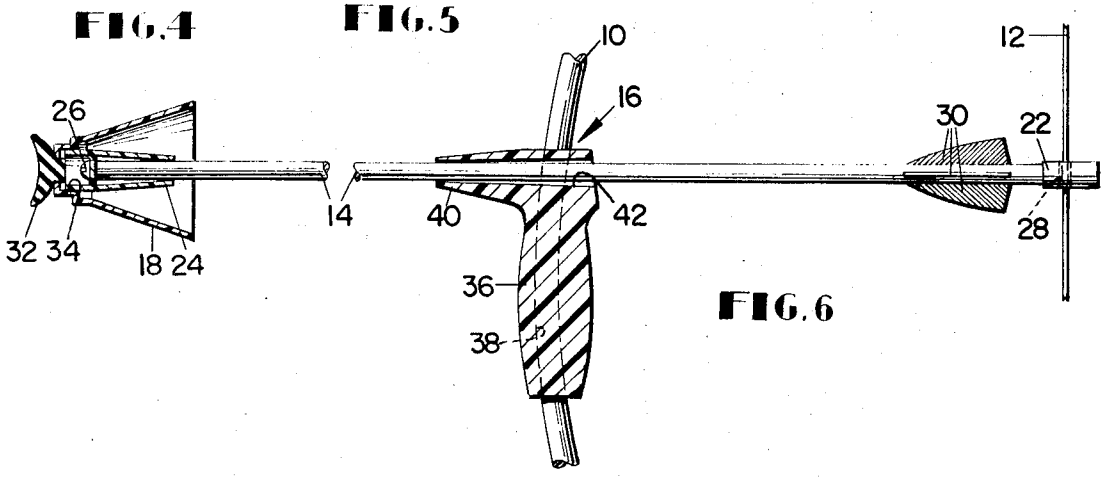


FIG. 6

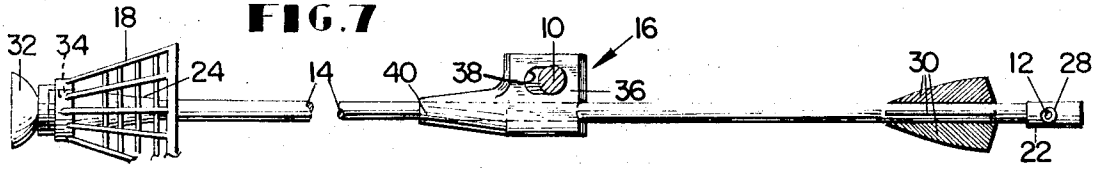


FIG. 7

ARCHERY BOW WITH ARROW GUIDE MEANS IN HAND GRIP

A primary object of the invention is to provide a safe archery game which can be used either indoors or outdoors without fear of damage to property or injury to persons.

As features worthy of note, we employ a captured arrow and a missile in the form of a shuttlecock having a suction cup associated therewith so that the shuttlecock will releasably adhere to a target or other surface.

We employ a combination grip and arrow guide for sureness of performance, economy of manufacture, and ease of assembly.

In the drawing:

FIG. **1** is a side elevational view of apparatus embodying a preferred form of the invention, and showing the shuttlecock immediately after leaving the arrow;

FIG. **2** is an end elevational view thereof as seen from the left of FIG. **1,** with the shuttlecock omitted for clarity;

FIG. **3** is an end elevational view thereof as seen from the right of FIG. **1**;

FIG. **4** is an enlarged end elevational view of the shuttlecock, as seen from the right of FIG. **1**;

FIG. **5** is an enlarged end elevational view of the arrow tip as seen from the left of FIG. **1**;

FIG. **6** is an enlarged, broken cross-sectional view taken through the shuttlecock, and arrow guide of the apparatus of the invention and showing the shuttlecock in ready-to-be-fired position on the arrow; and

FIG. **7** is a top plan view of the FIG. **6** structure.

The apparatus hereof generally includes a bow **10,** a bowstring **12,** a capitive arrow **14,** a grip **16,** and a missile in the form of a shuttlecock **18.**

Bow **10** is preferably, but not necessarily, fabricated from fiberglass and is in the form of a rod having chambered through holes therein, not shown, adjacent its opposite ends for the passage of the bowstring therethrough. End caps **20** are fitted on the opposite ends of the bow.

Arrow **14** is provided with a nock **22** sleeved thereon at one end thereof and a tip **24** sleeved thereon at the opposite end thereof, the nock being fixed thereto as by crimping or the like and the tip being fixed thereto as by a screw **26.**

Bowstring **12** passes freely through an opening **28** which extends vertically through the arrow and nock whereby the arrow is captured relative to the string.

The arrow is provided with the usual trio of sighting feathers **30** adjacent the nock.

Shuttlecock **18** is preferably molded from a light-

weight thermoplastic material and is provided with a rubber suction cup **32** at its forward or base end.

Arrow tip **24** is snugly but releasably receivable in central annular recess **34** provided in the base end of the shuttlecock as best been in FIG. **6.**

Grip **16** is centered on the bow and comprises a hand grip portion **36** having a vertically-disposed passage **38** therein through which the bow passes and an arrow guide portion **40** having a horizontally-disposed passage **42** therein through which the arrow passes. The grip may be anchored to the bow as by pushnuts or the like, not shown, if desired.

The arrow passes freely through passage **42** which tapers outwardly from front to rear to permit a limited degree of movement of the arrow for sighting purposes.

The apparatus hereof is used in the same manner as the ordinary bow and arrow. However, herein, the arrow is captured relative to the bowstring, with the shuttlecock being impelled toward a suitable target.

In use, after the shuttlecock is loaded on the end of the arrow, the hand grip portion is grasped with one hand while the arrow is drawn back with the other hand. When the arrow is released, it travels rapidly forwardly, with the shuttlecock being separated from the arrow and impelled forwardly when the arrow reaches the home or rest position.

The arrow is drawn and fired in the same manner as a conventional bow and arrow. After the arrow is fired, it stops after its full stroke and remains with the bow. The shuttlecock continues the flight and lands where the arrow would normally land.

Because of the aerodynamic nature of a shuttlecock, its velocity slows down rapidly and is therefore only effective for a very short range. A standard shuttlecock is used for indoor play and a more streamlined projectile with a greater range because of less air resistance is used outdoors.

The suction cup on the end of the shuttlecock provides a safe means by which the shuttlecock adheres to a target or wall, while not inflicting damge or injury if it should accidently strike an unwanted target.

We claim:

1. A missile projecting system in a bow and arrow comprising, a resilient bow, a bowstring, an arrow captured at one of its ends on the bowstring, an integral hand grip mounted on the bow and forming an arrow guide and a passage for the bow to pass therethrough, said grip having an arrow guide which is spaced laterally from one side of the bow when the grip is mounted on the bow, and a missile releasably fixed to the free end of the arrow, the missile being a shuttlecock having a suction cup theron.

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