Feb. 7, 1961 W. R. TAGGERT 2,970,838

ARCHERY DEVICE

Filed Aug. 21, 1956

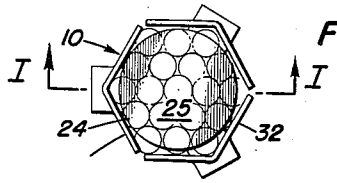


FIG. 2.

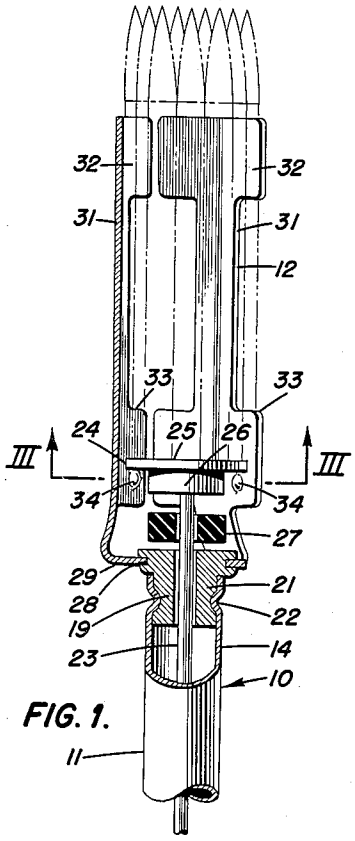
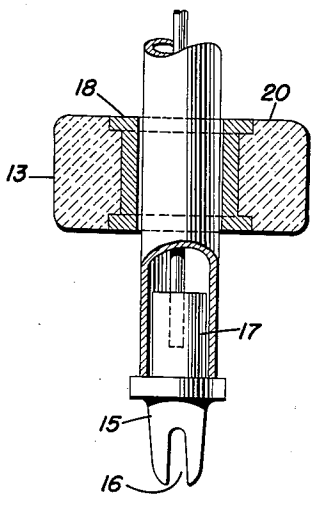


FIG. 1.



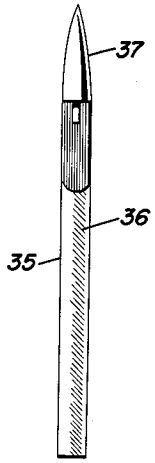


FIG. 4.

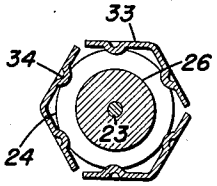


FIG. 3.

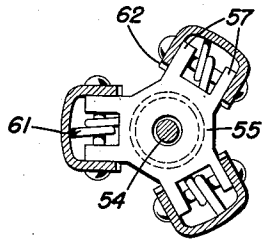


FIG. 6.

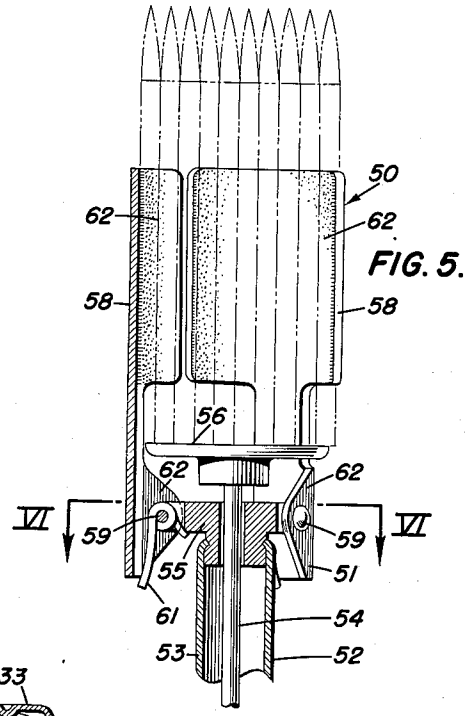


FIG. 5.

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ARCHERY DEVICE

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9 Claims. (Cl. 273—106.5)

This invention relates to an archery device and more particularly to apparatus for use with a bow in hunting small game.

There has recently been a considerable revival of interest in the art of hunting with the bow and arrow. This has come about not only because of the excellent exercise obtainable and because of the dangerous nature of fire arms, but also because this method of hunting places the hunter and the hunted on an even basis, so that a more sportsmanlike situation exists. Many states have recognized the desirability of stimulating interest in this sport and have passed laws setting aside a period of time preceding the regular firearms hunting season for hunting only with the bow and arrow. Generally speaking, arrows with sharp steel "hunting heads" are adequate for the satisfactory hunting of medium and large-sized animals. However, attempts to hunt small game, particularly birds, with this type of equipment usually leads to failure. Not only is the target too small and fast-moving, but an arrow which misses its mark is difficult, if not impossible, to locate in underbrush, so that hunting becomes very expensive. The present invention obviates these difficulties of the prior art in a novel manner.

It is therefore an outstanding object of this invention to provide an archery device which will permit the satisfactory hunting of small game.

Another object of the invention is the provision of an arrow-like device which gives a broad killing pattern similar to that of a shot gun.

A still further object of the instant invention is the provision of apparatus for the hunting of small game with the bow and arrow without the possibility of loss of expensive arrows.

Another object of the invention is the provision of an archery device for use with a bow for the release of a large number of small, inexpensive arrows or darts.

With these and other objects in view, as will be apparent to those skilled in the art, the invention resides in the combination of parts set forth in the specification and covered by the claims appended hereto.

The character of the invention, however, may be best understood by reference to certain of its structural forms, as illustrated by the accompanying drawings in which:

Figure 1 is a longitudinal sectional view of an archery device embodying the principles of the invention, the view being taken on the line I—I of Figure 2.

Figure 2 is an end view of the device,

Figure 3 is a sectional view of the device taken on the line III—III of Figure 1,

Figure 4 is a view of a dart particularly adapted to use in the practice of the invention,

Figure 5 is a sectional view of a modified version of the device, and

Figure 6 is a sectional view taken on the line VI—VI of Figure 4.

Referring first to Figure 1, which best shows the general features of the invention, the archery device, designated generally by the reference numeral **10**, is shown as consisting of a shaft **11**, a head **12**, and a reactor **13**. The shaft **11** is provided with an elongated tubular main body **14** preferably formed of aluminum. At one end, the body is furnished with a nock **15** having the usual notch **16** for a bow string. The nock is preferably formed of steel and has a cylindrical reduced portion **17** which fits loosely into the main body **14** of the shaft. The reactor **13** consists of a steel bushing **18** overlying the body **14** for smooth sliding thereover and of a generally annular cork float **20** surrounding and fixed to the bushing. At its other end, the main body is provided with a steel plug **19** which has a reduced portion **21** lying within the body. This reduced portion is held by the deformation of the body into an annular groove or restriction **22** in the reduced portion of the plug. Extending coaxially of the main body is a thin steel rod **23** which is firmly fixed at one end to the nock **15** and extends at the other end through the plug **19** in sliding relation thereto. The free end of the rod lies within the head **12** of the device and has fixed thereto a broad circular platen **24**. The platen has a flat surface **25** facing away from the rod and a substantial cylindrical boss **26** to which the rod is fixed. Surrounding the rod between the boss **26** and the plug **19** is an annular shock absorber **27** formed of rubber or the like.

The portion of the plug **19** which is not embraced by the body **14** is somewhat enlarged and is provided with an annular groove **28** in which is carried the head **12**. The head is formed of a single piece of sheet steel which is stamped and formed to provide a generally circular base **29** from which extend three fingers **31**. The base is provided with a central aperture the edge of which lies in the groove **28**. The fingers extend from the edge of the base in a direction away from and generally axial of the shaft. At its extreme end, each of the fingers is provided with two wings **32** which extend at an angle of 120 degrees to each other; the net effect is that the wings form a hexagon, as is evident in Figure 2. The portions of the fingers adjacent the base are provided with similarly-arranged fingers **33**. Furthermore, each finger is provided with a smooth inwardly-directed boss **34**. When the reduced portion **17** of the nock **15** resides in the body **14**, each boss **34** is located between the platen **24** and the plug **19** closely adjacent the platen.

Figure 4 illustrates rather clearly a dart **35** that is used in conjunction with the archery device. It consists of an elongated dowel **36** at one end of which is mounted a sharpened steel tip **37**. The dowel may be formed of wood or it may be a hard paper stick of the type used with candy lollipops.

The operation of the device will be readily understood in view of the above description. The hunter inserts a large number of darts **35** in the head of the device so that they are embraced and clamped by the wings **32** and **33** of the fingers **31**. The bundle of darts takes a hexagonal configuration, as is evident in Figure 2. The tips **37** extend outwardly and the other end of each dart rests against the surface **25** of the platen **24**. The archery device in this "loaded" condition is used with a bow in somewhat the same manner as an arrow, with the bowstring residing in the notch **16** of the nock **15** and the main body **14** resting against the bow. The hunter draws the bow with his forefinger and his middle finger, the nock **15** being clamped between them. In this condition, the reactor **13** is situated at the forward end of the device adjacent the head and the reduced portion **17** of the nock resides within the rear end of the main body **14**. The hunter sights the device in a manner similar to an arrow and then releases the bow string. The device leaps forward like an arrow, but the reactor remains in place with the shaft **11** sliding through it.

In a very short period of time the nock 15 strikes the reactor and, since it is too large to slide through, it tends to remain behind due to the braking effect of the reactor inertia. The rod 23 and the platen 24 tend to remain behind with the nock and the reactor, but the main body 14, the plug 19 and the head 12 continue forward. As this takes place, the bosses 34 on the fingers 31 engage the platen 24 and slide or cam along it, so that the fingers are forced outwardly from each other. The wings 32 and 33 cease to clamp the darts 35 so that they continue forward in free flight. As the darts move forward they tend to spread into a broad pattern, in a manner similar to the pellets from a shot gun, and a small, moving target is relatively easy to hit. The archery device proper falls to the ground a short distance from the hunter.

The cork float 20 is selected so that its buoyancy in water is greater than the weight of the archery device without the darts, so that, if the device falls into water, it will float and can be retrieved.

Figure 5 shows a modification of the invention in which the archery device 50 is shown as consisting of a head 51 and a shaft 52. The shaft comprises a tubular main body 53 having a rod 54 coaxial therewith. Only the end of the device near the head is shown, but it will be understood that a nock and reactor are provided in a manner similar to the embodiment shown in Figure 1. The forward end of the body is fixed to a plug 55, while the rod extends slidably through the plug and is provided with a platen 56. As is best shown in Figure 5, the plug 55 extends outwardly and is provided with hinge abutments 57 which cooperate with fingers 58 formed of sheet metal. A rivet 59 extends through each finger and serves to fasten it to the abutments 57 of the plug for pivoted movement. A spring 61 surrounds each rivet and has ends engaging the plug and its respective finger to bias the forward ends of the fingers resiliently toward each other. The forward ends of the fingers are provided with broad cylindrical clamping portions 62 that are lined with mohair. Preferably, there are three fingers spaced 120° apart around the plug; the clamping portions subtend 120° of a circle so that, when biased together, the fingers form a substantially complete circle to receive a circular bundle of darts. Each finger is provided with two flanges 62 through which the rivet 59 passes to promote the hinging action. Each flange is formed with a smoothly-curved edge which acts as a cam. The operation of this embodiment of the invention is similar to that described above in connection with the species of Figure 1; in this case, when the reactor draws the platen 56 rearwardly, it engages the cam-like flanges and forces the fingers 62 away from each other to release the darts.

It is obvious that minor changes may be made in the form and construction of the invention without departing from the material spirit thereof. It is not, however, desired to confine the invention to the exact form herein shown and described, but it is desired to include all such as properly come within the scope claimed.

The invention having been thus described, what is claimed as new and desired to secure by Letters Patent is:

1. An archery device for use with a bow in projecting a plurality of darts, comprising inwardly-biased fingers mounted in a group normally to hold the darts in a bundle, a platen lying among the fingers, a reactor slidable along the device relative to the platen and adapted on occasion to move the platen relative to the fingers, and means associated with the fingers and engageable by the platen to move the fingers outwardly to release the darts.

2. An archery device for use with a bow in projecting a plurality of darts, comprising an elongated tubular shaft, a nock mounted at one end of the shaft, inwardly-biased fingers mounted in a group at the other end of the shaft to hold the darts in a bundle, a platen lying adjacent the fingers and movable relative thereto along the axis of the shaft, means joining the nock to the platen, a reactor slidable on the shaft and adapted when the device is projected from a bow to engage the nock and move the platen relative to the fingers, and means associated with the fingers and engageable by the platen to move the fingers outwardly to release the darts.

3. An archery device for use in projecting a plurality of darts, comprising a shaft, a nock slidably mounted at one end of the shaft, inwardly-biased fingers mounted in a group at the other end of the shaft to hold the darts, a platen lying adjacent the fingers, means joining the nock and the platen, a reactor slidably mounted on the shaft and adapted on occasion to engage the nock and move the platen relative to the fingers, and means associated with the fingers and engageable by the platen to move the fingers outwardly to release the darts.

4. An archery device for use in projecting a plurality of darts, comprising an elongated tubular shaft, a nock slidably mounted at one end of the shaft, inwardly-biased fingers mounted in a group at the other end of the shaft to hold the darts, a rod fastened to the nock and extending through the shaft, a platen fastened to the rod and lying adjacent the fingers, a reactor slidably mounted on the shaft and adapted on occasion to engage the nock and move the platen relative to the fingers, and means associated with the fingers and engageable by the platen to move the fingers outwardly to release the darts.

5. An archery device for use in projecting a plurality of darts, comprising an elongated tubular shaft, a nock slidably mounted at one end of the shaft, a plug fastened to the other end of the shaft, inwardly-biased fingers mounted in a group on the plug to hold the darts, a rod fastened to the nock and extending through the shaft and the plug, a platen fastened to the rod and lying among the fingers, a reactor slidably mounted on the shaft and adapted on occasion to engage the nock and move the platen relative to the fingers, and means associated wtih the fingers and engageable by the platen to move the fingers outwardly to release the darts.

6. An archey device for use with a bow in projecting a plurality of darts, comprising an elongated tubular shaft, a nock slidably mounted at one end of the shaft, inwardly-biased fingers mounted in a group at the other end of the shaft to hold the darts, a rod fastened to the nock and extending through the shaft, a platen fastened to the rod and lying adjacent the fingers, a reactor slidably mounted on the shaft and adapted when the shaft is shot from a bow to engage the nock and move the platen relative to the fingers, and a cam associated with each finger and engageable by the platen to move the finger outwardly to release the darts.

7. An archery device for use with a bow in projecting a plurality of darts, comprising an elongated tubular shaft, a nock slidably mounted at one end of the shaft for engagement with the string of the bow, a plug fastened in the other end of the shaft, inwardly-biased fingers mounted in a group on the plug to hold the darts, a rod fastened to the nock and extending through the shaft and the plug, a platen fastened to the rod and lying among the fingers, a reactor slidably mounted on the shaft and adapted when the device is shot from a bow to engage the nock and move the platen relative to the fingers, and a cam associated with each finger and engageable by the platen to move the finger outwardly to release the darts.

8. An archery device for use with a bow comprising a plurality of darts, an elongated shaft, a nock mounted at one end of the shaft for engagement with the string of the bow, a head mounted at the other end of the shaft and including means for normally clamping the darts in a bundle, and means operable when the device is shot from a bow to act on the head to release the darts and to retard the flight of the device.

9. An archery device for use with a bow comprising a plurality of darts, an elongated shaft, a nock mounted at one end of the shaft for engagement with the string of the bow, a head mounted at the other end of the

shaft and including releasable means for normally retaining the darts in a bundle, a member slidable along the shaft when the device is shot from the bow to strike the nock and retard the flight of the device, and means for effecting release of the dart retaining means when the device is shot from the bow.

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