Aug. 27, 1929. Y. IKEDA 1,725,760

ARCHERY BOW AND PROJECTILE

Filed April 3, 1928

Fig. 1.

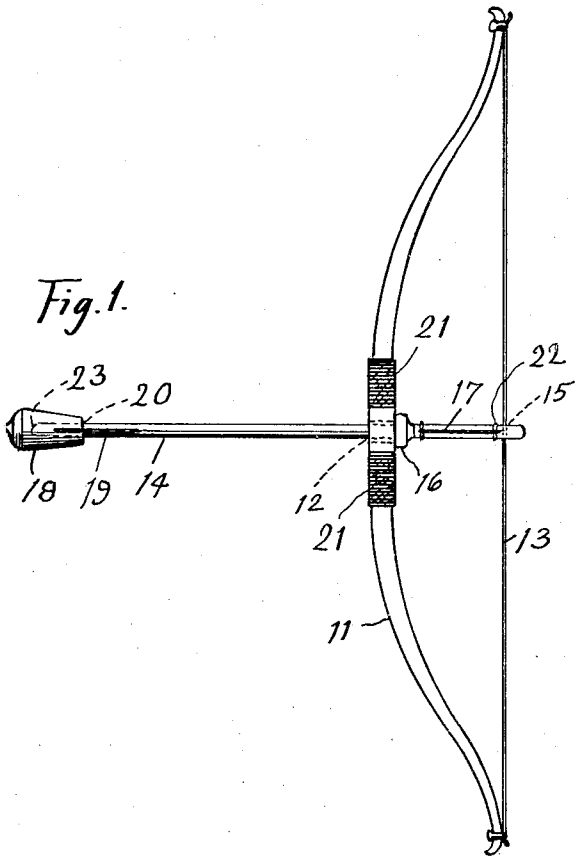



Fig. 2.

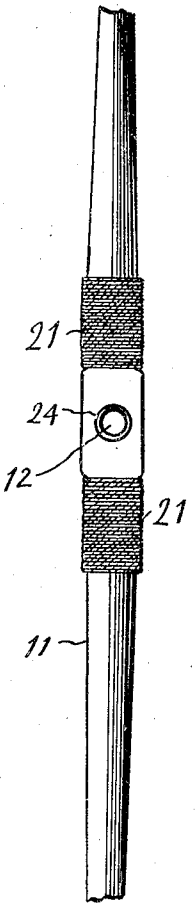



Fig. 3.

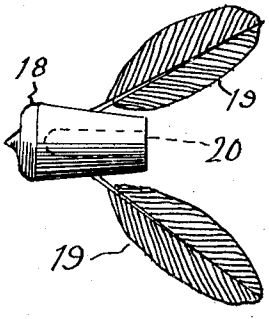
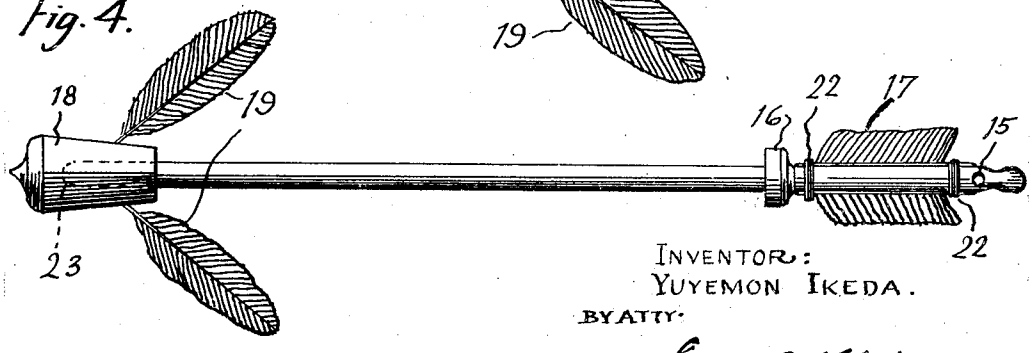



Fig. 4.




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# UNITED STATES PATENT OFFICE.

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## ARCHERY BOW AND PROJECTILE.

Application filed April 3, 1928. Serial No. 266,993.

This invention relates to improvements in archery-bows and a projectile therefor, and its objects are, to provide a device of this character, adapted for more accurate aim, and adapted for a more economical projectile.

My invention consists in passing the bow-string through the end of an arrow-shaped rod, and in passing the arrow-shaped rod through a hole in the bow, and in providing a detachable head for the arrow-shaped rod. The arrow head forms the projectile that is projected in flight, when the bow is drawn and released.

In the drawings, Figure 1 is a side view of a bow and its projectile, constructed in accordance with my invention. Fig. 2 is a fragmentary view of the bow, showing the hole adapted to receive the arrow-shaped rod. Fig. 3 is a top plan view of the projectile detached. Fig. 4 is a top plan view of the arrow-shaped rod with the projectile thereon.

Referring to the drawings in detail, the bow 11, is provided at the central part thereof with an aperture 12, and is provided with a bow-string 13. The arrow-shaped rod 14, passes through aperture 12 in the bow, and has a hole 15, through which the bow-string passes. The shaft 14, has a fixed collar 16, and between the bow-string and collar, the feathers 17.

The projectile which I employ with the bow and arrow-rod as described, consists of a body member 18, provided with opposed feathers 19, and with a hole 20. The bow, above and below the aperture 12, is wrapped with a strong cord 21. The arrow-rod 14, is provided with feathers 17, consisting of halves of a split feather. These halves are glued to the rod and also wrapped with cords 22.

In use, the detachable arrow-head 18, is positioned on the end 23, of rod 14, with the feathers 19, in practically a horizontal plane. The feathers 17, are disposed in a horizontal plane, and are applied on rod 14 in a straight line. Feathers 19, are curved slightly, to give rotary movement to the projectile in flight. The operator grasps the bow in the usual manner, and the rod 14, in the usual manner. The rod 14 is then drawn back similar to the drawing of an ordinary arrow, and is suddenly released. The recoil of the bow forces the rod 14 forward, and the projectile leaves the end of rod 14, and continues in flight.

My improvement consists in providing the projectile and the rod 14, with the feathers as described. The line of sight in firing will be a straight line from the eye of the operator to the mark. The elevation required may be accurately determined by observing the distance between the feathers 19, on the projectile and the feathers 17 on the arrow-rod 14, or it may be stated, the distance of feathers 19 above the line of sight.

Another method of obtaining elevation is as follows: The arrow-rod 14, is loose upon the bow-string 13. The rear end of the rod 14 may therefore be adjusted up and down upon bow-string 13, and the inclination of the rod relative to a right angle with the bow-string, before drawing the bow, determines the elevation that is given the projectile in flight. The hole 12 is provided with a metal bushing 24. Collar 16 stops movement of rod 14 suddenly, thereby insuring free delivery of the projectile therefrom.

From the foregiong description and drawings, it may be seen that I have provided an improved form of archery-bow and projectile. The projectile is more economical in manufacture, than the whole arrow of ordinary construction. The rod which projects the projectile is limited in movement by the bow-string, and by the shoulder or collar 16, and the emplacing of the feathers 19, at a distance from the eye, enables the operator to elevate accurately for distance shooting.

What is claimed is:

1. The combination with an arrow-rod, a bow having a central aperture through which the arrow-rod passes, and a bow-string for the bow and passing through the butt end of the arrow-rod, of feathers on the arrow-rod serving to prevent rotation of the arrow-rod, a collar on the arrow-rod positioned apart from the bow-string, a detachable projectile mounted on the arrow-rod and adapted to be projected therefrom, and feathers on the projectile serving to maintain the steady flight of the projectile, and to determine the elevation to be given prior to discharge of the bow and projectile.

2. In a bow and projectile device, a bow

member having a central aperture, a bow-string for the bow, an arrow-rod connected to the bow-string and passing through the aperture in the bow, a collar on the arrow-rod spaced apart from the bow-string, feathers on the rod adjacent to the bow-string, and a detachable projectile member mounted on the outer end of the arrow-rod.

3. The combination with an arrow-rod, a bow having a central operture through which the rod passes, and a bow-string fixed to the bow and passing through the butt end of the rod, of a detachable projectile mounted on the outer end of the rod, and adapted to be projected therefrom in flight, and a collar on the arrow-rod and limiting its movement relative to the bow.

In testimony whereof, I hereunto affix my signature.

YUYEMON IKEDA.