

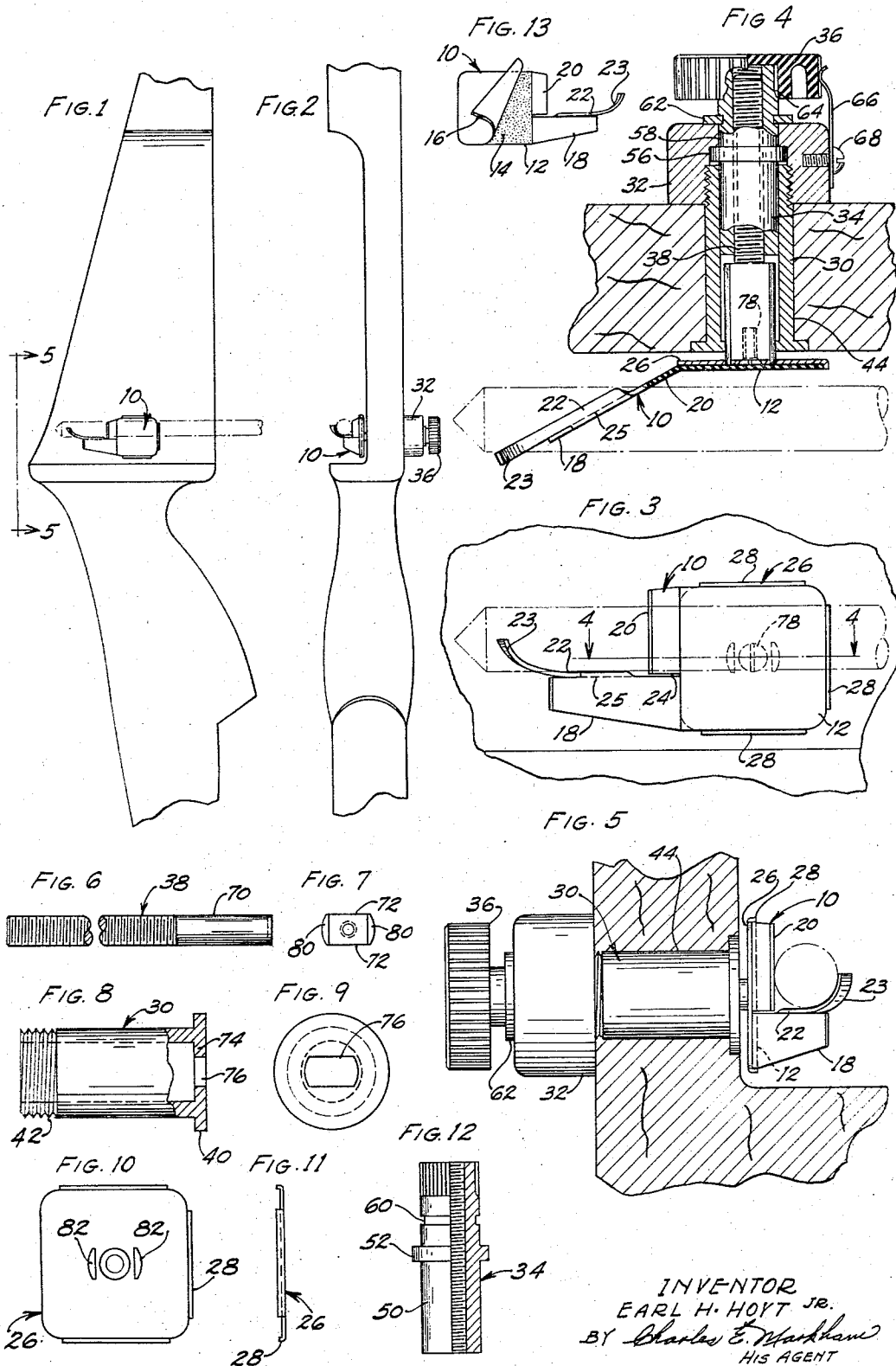
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E. H. HOYT, JR

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ARROW REST FOR AN ARCHERY BOW

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INVENTOR
EARL H. HOYT JR.
BY *Charles E. Markham*
HIS AGENT

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ARROW REST FOR AN ARCHERY BOW

Earl H. Hoyt, Jr., 11510 Natural Bridge Road,
Bridgeton, Mo. 63042

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This invention relates generally to archery apparatus and particularly to a flexible arrow rest for an archery bow and to mechanism for adjustably positioning the rest in and out with respect to the arrow side of a bow.

It is an object of the invention to provide a generally new and improved arrow rest which is particularly economical to produce and convenient to attach to a bow.

A further object is to provide adjustable mounting means for the arrow rest.

A further object is to provide a resilient and noiseless arrow rest stamped and formed from a sheet of suitable synthetic plastic material and provided with an adhesive surface for convenient attachment of the rest either directly to the bow or to adjustable positioning mechanism mounted on the bow.

A further object is to provide an arrow rest having a resilient arrow retaining element to prevent the arrow from falling off the rest.

Further objects and advantages will appear from the following description when read in connection with the accompanying drawing.

In the drawing:

FIG. 1 is a side elevation of an arrow rest together with adjustable mounting means constructed in accordance with the present invention and shown attached to the handle section of a typical modern longbow;

FIG. 2 is an elevational view of the arrow rest and adjustable mounting means as seen from the string side of the bow;

FIG. 3 is an enlarged side elevational view of the arrow rest and adjustable mounting means shown in FIG. 1;

FIG. 4 is a cross-sectional view of the arrow rest and adjustable mounting means taken along line 4-4 of FIG. 3;

FIG. 5 is an enlarged elevational view of the arrow rest and adjustable mounting means looking in the direction of arrows 5-5 of FIG. 1;

FIGS. 6 and 7 are side and end views, respectively, of the adjusting mechanism transmission screw;

FIGS. 8 and 9 are side and end views, respectively, of the adjusting mechanism drive sleeve;

FIGS. 10 and 11 are side and edge views, respectively, of the adjusting mechanism mounting plate;

FIG. 12 is a half sectionalized side view of the adjusting mechanism drive sleeve; and

FIG. 13 is a back side view of the arrow rest per se.

Referring to the drawing in more detail, numeral 10 generally indicates the arrow rest in FIGS. 1 to 5 and 13. The arrow rest 10, adapted to be mounted flat against a vertical supporting surface, is constructed from suitably flexible sheet stock by blanking, slitting and forming. Preferably the material is synthetic plastic sheet stock of suitable flexibility and resistance to wear and in the order of 30 to 40 thousandths thick. I have found 35 thousandths thick commercial nylon sheet stock to be a satisfactory material from which to construct the arrow rest.

The arrow rest 10 comprises a flat, generally rectangular attaching portion 12, to the back side of which is applied a suitable pressure sensitive adhesive 14, and a protective sheet of thin, flexible, synthetic plastic material 16 overlying the adhesive and adapted to be peeled off at the time of application of the rest to the bow, see FIG. 13. The rest 10 further comprises a lower supporting leg 18 and a shorter upper arrow spacing portion or lip 20. The supporting leg 18 and arrow spacing lip 20 extend

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forward and outward at an angle to the front face line of the attaching portion 12 and are separated from each other by slitting the sheet stock as at 24, see FIG. 3. When the rest is mounted in a vertical position, the arrow spacing lip and arrow support leg are easily flexed by horizontally applied force, and the arrow support leg offers considerable resistance to any downward force of an arrow resting on the upper edge thereof. The support leg 18 and arrow spacing lip 20 are shown in alignment, but the angles of these two elements with respect to the attaching portion 12 may be different.

Formed as a part of support leg 18 and coextending along the horizontal upper edge thereof and projecting beyond the end thereof is a relatively narrow strip portion 22. The strip 22 is formed at a right angle to the support leg 18 and is connected to the support leg only along an inner end portion thereof, as indicated by dotted line 25. The remaining outwardly extending portion of strip 22 is detached from support leg 18, and an outer end portion of the strip is curved upwardly to form an arcuate free end 23 adapted to embrace an arrow resting upon the attached horizontal inner end portion of the strip, as indicated in FIGS. 3 and 5. The forward end of an arrow is indicated in dot-dash line in these views. Due to its length the free detached outer portion of strip 22 flexes sufficiently under the weight of an arrow to permit accommodation of arrows of different diameter between the edge of arrow spacing lip 20 and the arcuate end 23 of strip 22, but the arcuate forming of the outer end of the strip adds sufficiently to the rigidity of that portion to enable it to retain the forward end of an arrow on the support portion even though a bow is rotated considerably toward a horizontal position. This feature is particularly desirable on hunting bows and in this connection, due to the fact that bows of relatively heavy pull weight and relatively heavy arrows are used in hunting, a somewhat less flexible strip 22 having a somewhat more extensive curved end to embrace the arrow more than is illustrated may be used without interference with the departure of the arrow.

The resilient arrow spacing portion or lip 20 spaces the arrow from contact with the solid surface of the bow or mounting plate to which the arrow rest is attached and due to its horizontal resiliency cushions any inward lateral thrust of the arrow under shooting conditions.

In the illustrated form of the invention, the arrow rest 10 is shown attached by adhesion to the surface of a mounting plate 26 for adjustable positioning in and out with respect to the arrow side of a bow, but it is to be understood that the arrow rest 10 may be attached by adhesion or by any other means directly to the side of the bow if desired, or the mounting plate 26 may be fixed to the arrow side of a bow to receive replaceable adhesively attached arrow rests.

The flat mounting plate 26 is provided with short outwardly formed projections or flanges 28 along three sides thereof which function to accurately locate the arrow rest 10 thereon and further act to prevent slipping of the rest on the surface of the mounting plate under temperature conditions which may reduce the strength of the pressure sensitive adhesive sufficiently to otherwise permit it to do so. It is to be understood that the projections 28 may have any form and may be arranged to enter perforations in the attaching portion 12 of the rest. The flanges 28 are preferably not wider than the thickness of the sheet stock from which the arrow rest is constructed.

The mechanism for adjustably positioning the mounting plate in and out with respect to the arrow side of the bow face comprises a retaining sleeve 30, a nut 32, an internally threaded drive sleeve 34, a knob 36, and a transmission screw 38. The retaining sleeve 30 has a flange 40 at one end and an exterior threaded portion at

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the other end thereof. The sleeve 30 is adapted to be entered into a bore 44 extending through the bow handle section from its arrow side to the opposite side. The bore 44 is counterbored on the arrow side of the bow to receive the flange 40 of the retaining sleeve 30. The sleeve 30 is entered into bore 44 from the counterbored side and is of sufficient length to project from the other side of the bow and receive the round nut 32 which when tightened holds the sleeve firmly in fixed position in the bow handle section.

With reference to FIG. 4 internally threaded drive sleeve 34 has a lower portion 50 which is entered into and has a free rotational fit in the upper portion of the retaining sleeve 30. An intermediate collar 52 on drive sleeve 34 is received in a counterbore 56 in the nut 32, and the upper portion of drive sleeve 34 passes through a bore 58 in nut 32 and projects beyond the nut. An external groove 60 in drive sleeve 34 which is spaced upwardly from collar 52 by an amount just slightly greater than the length of the bore 58 in nut 32 receives a spring retaining ring 62, whereby the drive sleeve 34 is free to rotate in retaining sleeve 30 and nut 32 but is prevented from moving axially by the collar 52 and retaining ring 62.

The upper projecting end of drive sleeve 34 is externally splined and enters a similarly internally splined hub portion 64 of the knob 36. The periphery of knob 36 is fluted and a spring element 66 connected at one end to the nut 32 by a screw 68 and engaging at its other end the fluted periphery of knob 36 yieldably holds knob 36 against rotation and provides an audible click when the knob is rotated.

The internally threaded drive sleeve 34 receives the threaded end of transmission screw 38. Transmission screw 38 has an enlarged diameter end portion 70, the diametrically opposite sides of which are milled to provide flat sides 72, see FIGS. 6 and 7. The retaining sleeve 30 has a closing wall 74 at its flanged end in which there is a perforation 76 of the same configuration as that of a cross section of end portion 70 of the transmission screw, and the end portion 70 passes through perforation 76 in sliding fit relationship. It will be seen from the foregoing that when knob 36 and drive sleeve 34 are rotated, the threadedly engaged transmission screw 38 is prevented from rotating due to engagement of its flat-sided end portion 70 in the perforation 76 in the end wall of the fixed retaining sleeve 30 and it will therefore be moved axially.

The mounting plate 26 is attached to the enlarged end 70 of the transmission screw 38 by a flat head attaching screw 78. A pair of spaced prongs 80 projecting from the enlarged end of transmission screw 38 enter perforations 82 in mounting plate 26 and prevent rotation of the plate on the transmission screw.

I claim:

1. An arrow rest for an archery bow comprising a flat attaching portion having a rear surface adapted to lie flat against a vertical supporting surface, a horizontally flexible arrow spacing element and an arrow support leg, both being connected to and extending outwardly from the front surface of said attaching portion and said arrow support leg being arranged below said arrow spacing element and extending outwardly from the front surface of said attaching portion beyond the end of said arrow spacing element, said arrow spacing element consisting of a strip of thin flexible material arranged in a vertical plane, the arrangement being such that an arrow resting on said

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arrow support leg is resiliently spaced horizontally outward from the front surface of said attaching portion by said flexible arrow spacing element which cushions any inward lateral thrust of the arrow under shooting conditions.

2. In an adjustable arrow rest for an archery bow, a retaining sleeve adapted to be mounted in fixed position in a bore extending through a bow from its arrow side to its opposite side, said retaining sleeve having a closing wall with a noncircular perforation therein at the arrow side end thereof, an internally threaded drive sleeve mounted for rotation in said retaining sleeve and projecting therefrom at its opposite end, a knob fixed on the projecting end of said drive sleeve, means preventing axial movement of said drive sleeve in said retaining sleeve, a transmission screw threadedly engaged in said drive sleeve and having a non-circular end portion thereof of slidably fitting and passing through said noncircular end wall perforation of said retaining sleeve and projecting outwardly from said arrow side end of said retaining sleeve whereby said transmission screw is caused to move axially as said knob and drive sleeve are turned, and an arrow rest mounted on said projecting end of said transmission screw.

3. An adjustable arrow rest as set forth in claim 2 in which a flat mounting plate is fixed perpendicularly on said projecting end of said transmission screw and in which a replaceable arrow rest is attached to the surface of said mounting plate by an adhesive material.

4. An arrow rest as set forth in claim 1 in which said flat attaching portion is a thin sheet of synthetic material, and in which said arrow spacing element and arrow support leg are formed as integral portions thereof.

5. An arrow rest for an archery bow adapted to be mounted on a vertical supporting surface comprising an attaching portion, an arrow support leg connected to said attaching portion and extending horizontally and outwardly from said attaching portion, said arrow support leg consisting of a strip of thin flexible material arranged in a vertical plane so that it offers considerable resistance to the downward force of an arrow resting on its upper edge but flexes easily when a horizontal inward force is applied thereto, and a flexible arrow retaining element at the outer free end of said arrow support leg formed as a part of said arrow support leg, said arrow retaining element comprising a narrow strip formed at a right angle to the upper edge of said vertical plane of said support leg, said narrow strip having a connected portion lying along the upper edge of said support leg and a detached outer end portion extending beyond the free end of said support leg, and said detached outer end portion being curved upwardly to partially embrace an arrow resting on said support leg.

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RICHARD C. PINKHAM, *Primary Examiner*.
W. R. BROWNE, *Assistant Examiner*.