

Jan. 2, 1962

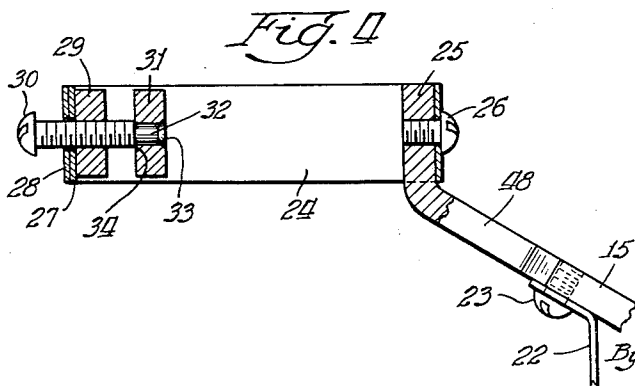
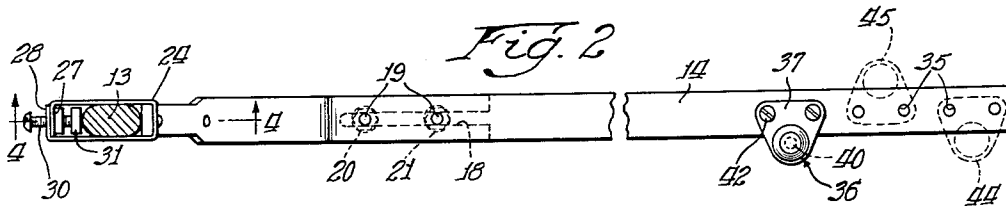
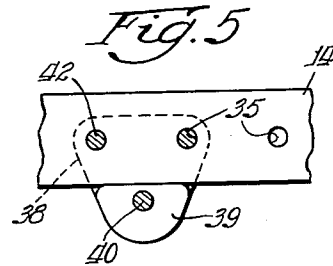
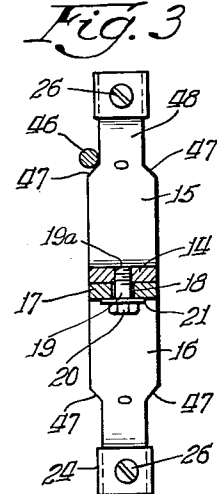
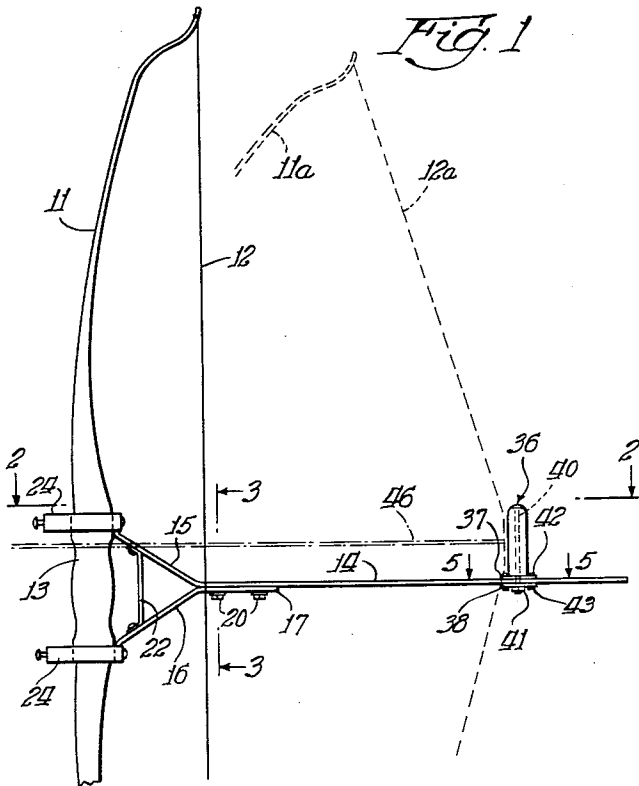
E. RYDER

3,015,328

AIM IMPROVER FOR BOW AND ARROW

Filed Jan. 26, 1959

2 Sheets-Sheet 1



Inventor:
Elmer Ryder
By: Vernon C. Berdine Att'y.

Jan. 2, 1962

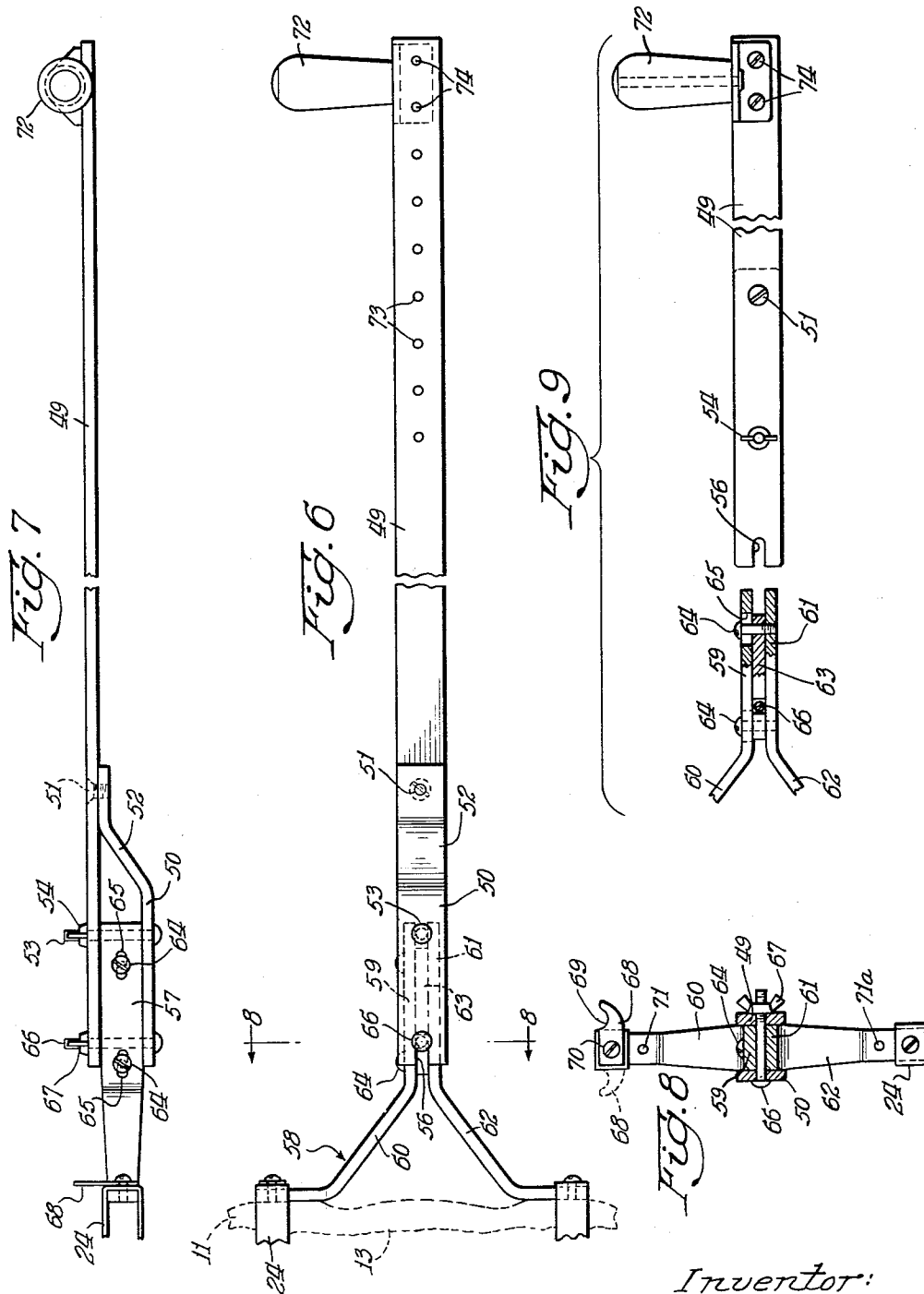
E. RYDER

3,015,328

AIM IMPROVER FOR BOW AND ARROW

Filed Jan. 26, 1959

2 Sheets-Sheet 2



Inventor:
Elmer Ryder
By: Vernon C. Berdine Att'y

1

3,015,328

AIM IMPROVER FOR BOW AND ARROW

Elmer Ryder, 212 Walnut St., Aurora, Ill.

Filed Jan. 26, 1959, Ser. No. 788,905

1 Claim. (Cl. 124—30)

This invention relates to an aim improver device for bow and arrow arrangements and an important object of the invention is the provision of such a device having enhanced simplicity and economy of construction and operation.

It is well known that, in long bows particularly, a considerable force is required to bend the bow and retract the bow string, and that the application of such force interferes with or at least tends to impair the accuracy of the aim.

Use of the present invention permits the archer to shoot more accurately with a heavier or longer bow and with a minimum strain or exertion, for which reason the invention facilitates the practice of archery by women or younger people either for target shooting or for hunting.

A further object of the invention is the provision of a device of the character described that is readily attachable to or detachable from an ordinary long bow, for example, and that has limited adjustability for the purpose without sacrificing rigidity and durability.

Other objects and advantages will be apparent from the following description, taken together with the accompanying drawings, showing an illustrative embodiment of the invention and in which drawings—

FIGURE 1 is a fragmentary view of a long bow or the like to which the device is applied, the latter being shown in elevation, broken lines indicating a position of the parts during use of the device;

FIGURE 2 is an enlarged plan view taken on the line 2—2 of FIG. 1;

FIGURE 3 is an enlarged vertical cross-section taken on the line 3—3 of FIG. 1;

FIGURE 4 is a further enlarged longitudinal section taken on the line 4—4 of FIG. 2 with the bow part omitted;

FIGURE 5 is a fragmentary plan section taken on the line 5—5 of FIG. 1;

FIGURE 6 shows a modification with a separable Y-piece;

FIGURE 7 is a plan view of FIG. 6;

FIGURE 8 is a vertical cross-section on the line 8—8 of FIG. 6; and

FIGURE 9 shows the bar and Y-piece separated and an alternative position of the hand grip.

Referring in detail to the illustrative construction shown in the drawings, and turning first to FIGS. 1 to 5 inclusive, the numeral 11 indicates a conventional long bow, for example, having the bow string 12 and central area such as 13 in the nature of a handle shaped for the usual hold by the hand, usually the left hand, of the archer, that supports the bow part, the archer's other or right hand being in such case employed to retract the bow string 12 and bend the bow 11 to a position somewhat as shown in broken lines at 12a and 11a respectively (FIG. 1).

Turning first to expedients of the present invention shown in FIGS. 1 to 5 inclusive, these include a bar 14, in this instance flat in a horizontal plane and having at its forward end an upwardly extending furcation 15 angular to the main part of the bar. Associated with the latter is a furcation piece 16 that extends angularly downwardly from the bar 14 in the opposite direction to the furcation 15. The furcation 16 has an extension 17 that is parallel to and laps the under-surface of the bar

2

14 adjacent its furcation 15. Extension 17 has the elongated slot 18 through which pass adjustment screw bolts 19 that also pass through suitable screw holes in the bar 14 threaded to receive the screws 19 that have heads 20 either kerfed or non-circular for the application of a tightening tool thereto. Washers 21 are shown interposed between the heads 20 and the furcation extension 17. Thus by first unloosening and then tightening the screws 19 a limited adjustability is possible between the furcations 15 and 16 which is further desirably limited by a tie strap 22 of somewhat flexible metal that is fastened to the furcations 15 and 16 respectively, as at 23.

The bar 14, thus bifurcated at its forward end, is rigidly attachable to the bow 11 by means here illustrated such as the metallic straps 24 that are secured to the vertical ends 25 of the furcations 15 and 16 respectively by screws 26. Each of the straps 24 has overlapping ends 27 that meet at the front of the bow part and receive between them a nut 29. Tightener screw 30 passes freely through the strap ends 27 and 28, then screw threadedly through the nut 29, and then rotatively into the force block 31. The nut 29 and force block 31 desirably are of a size so that they will be held by the strap 24 from turning when the screw 30 is rotated.

By temporarily removing the screw 30, nut 29 and force block 31, the straps 24 may be placed around the bow part central or handle portion 13, one above and the other below the latter, as best seen in FIG. 1. Thereupon nut 29 and force block 31 are located in front of the bow part and the screw 30 passed through the overlapping ends of the strap 27—28, and, the nut 29 and into abutment with the force block 31. The screw 30 desirably has reduced end 32 that enters a central aperture 33 in the force block thereby providing a shoulder 34 on the screw that abuts the forward face of the block. Upon tightening the screws 30 the blocks 31 are forced rearwardly against the handle part 13 of the bow and the latter is clamped between the force blocks and the vertical extensions 25 of the furcation, thus, rigidly affixing the aim improver device to the bow.

At its rear end, the bar 14 has a series of holes, in this instance six, spaced along the bar as at 35, the rear-most of the holes 35 being closely adjacent the rear end of the bar. For cooperation with the holes 35 is provided an upstanding grip member 36, in this instance shown somewhat cylindrical or barrel-like to accommodate the palm or fingers of the right hand of the archer, in one instance. The grip member 36 may be of metal or, as here indicated, of wood. The grip member 36 is adjustable rearwardly and forwardly of the bar 14 by being mounted on a pair of parallel jaws 37, 38 that receive the bar 14 between them. A spacer member or filler 39 of the thickness of the bar 14 maintains the jaws 37 and 38 parallel. Passed through the jaws 37 and 38 and through the filler 39, by suitable perforations therein, is the upstanding vertically elongated screw bolt 40 that passes through a central bore in the grip member 36, and, at its lower end, where it extends beyond the lower jaw 38, is screw threaded to receive thereon the nut 41 by which the grip member, jaws and filler are unitarily assembled. Screw bolts 42 carried by the jaw members pass through two adjacent holes 35 in the bar 14 and have screwed thereon nuts 43 by which the grip member 36 is rigidly secured to the bar. One adjustment of the grip member 36 with respect to the bar 14 is shown in full lines in FIG. 2, another adjustment on the same side of the bar at the extreme rear end thereof is shown in broken lines at 44, and still another adjustment, intermediate the first two mentioned adjustments, on the opposite side of the bar, as, for example, for a left-hand

archer, is indicated in broken lines at 45. An arrow is shown schematically at 46.

In operation of the device, as the bow string is retracted to the dotted line position at 12a (FIG. 1 for example) the arrow is retracted with the bow string and the hand of the archer which retracts the bow string and the arrow may be rested on the grip member 36 while aim is being taken. At this time, the forward end of the arrow desirably rests on a shoulder 47 provided on the furcation 15 by a reduction in cross-sectional area 48 of the latter, as best seen in FIG. 3. This shoulder 47 is conveniently at a location substantially corresponding with the index finger of the left hand of the archer as it grips the handle part 13 of the bow. In this instance there are four such shoulders 47, one on each side of each of the furcations 15 and 16 accommodating various positions of the arrow desired by the archer. Shoulder 47 also permits the arrow to lie, when aimed, substantially in the normal plane of the string.

It will be understood that a left-handed archer could grasp the bow with the right hand and retract the bow string and arrow with the left hand, using the grip member 36 when doing so for facilitating a careful aim.

In each case, no parts of the device move forward with the arrow and bow string when the latter are released to shoot the arrow.

Adjustability of the furcations 15 and 16 by reason of the slot 18 and bolts 20 permits the bar 14 to be positioned at right-angles to the bow or slightly off from a right angle if desired by the archer.

In the modification shown in FIG. 7 the bar 49 is shown flat in the plane of the bow and at its forward end is bifurcated by having furcation 50 secured thereto as at 51 and offset as at 52 so as to accommodate a bolt 53 passing through the bifurcations and on which is a thumb nut 54. The bar 49 and its parallel furcation 50 are each further bifurcated to provide in the end of each a bolt receiving notch 56. Thus, between the bar 49 and its furcation 50 may be slid the laminated shank 57 of a bifurcated Y-piece 58 that in this instance is separable from the bar 49. Shank 57 is laminated in the sense that it has one member 59 that is integral with the upper furcation 60 of the Y-piece 58 and another lamination 61 that is integral with the lower furcation 62. Between them is a filler piece 63 that in this instance is rigid with the shank element 61 by reason of the fact that screws 64 pass through round holes in the shank member 61 and in the filler piece 63. These screws 64 however pass through longitudinally elongated or oval holes 65 in the shank element 59 so that the shank elements 59 and 61 may be relatively shifted longitudinally to provide limited adjustability of the angle of the bar 49 with respect to the bow 11, by first loosening and then tightening the screws 64.

Shank elements 59 and 61 at their rear ends extend beyond the filler piece 63 so that when the Y-piece 58 is inserted between the bar 49 and its parallel furcation 50 the bolt 53 enters between the shank elements 59 and 61 and provides a fulcrum for the Y-piece on the bar. Adjacent the forward end of the Y-piece shank elements is a bolt 66 that enters the slots 56 in the ends of the bar 49 and its furcation 50. Thumb nut 54, and thumb nut 67 on bolt 66, may then be tightly screwed thus clamping the Y-piece to the bar. Conversely, the Y-

piece and bar may be separated by unloosening the thumb nuts and pulling the Y-piece away from the bar as shown in FIG. 9.

An arrow rest lug 68 having a rest notch 69 is screwed to the upper furcation 60 of the Y-piece 58, by screw 70, extending laterally in this instance to the right thereof. Screw 70 may also serve to fasten the clamping strap 24 to the Y-piece furcation. If it is desired to move the arrow rest lug 68 nearer to the bar 49 an additional screw may be employed to pass into the hole 71 in the furcation leaving the screw 70 to attach the clamp 24 to the furcation. As indicated in dotted lines in FIG. 8 the arrow rest lug 68 may be reversed to extend laterally in the opposite direction as for use for example by a right-handed shooter. Also, the entire arrangement may be inverted, other screw hole 71a being shown in the Y-piece furcation 62 (FIG. 8).

Assuming that the arrangement shown in FIGS. 6, 7 and 8 is for use by a left-handed archer, the lug piece would desirably be on the right-hand side of the bow looking forwardly and the hand grip member 72, for the left-hand of the shooter, would also be on the right-hand side of the bar 49 as shown in FIGS. 6 and 7. Longitudinally spaced apart holes 73 at the rear end of the bar 49 accommodate various selective positions of the upstanding hand grip member 72, screws 74 carried by the latter passing through a pair of adjacent holes 73.

In the use of the device by a right-hand person for example the arrow rest member 68 would have its position reversed to the left-hand side of the bow as shown in dotted lines in FIG. 8 and the hand grip member 72 would be reversed to the left-hand side of the bar 49 as shown in FIG. 9.

Separability of the bifurcated Y-piece 58 from the bar 49 as shown in FIGS. 6 to 9 inclusive facilitates transportation of the bow and the bar 49 when it is desired say to remove the bar for this purpose leaving only the Y-piece 58 more or less permanently attached to the bow.

Other changes and modification may be made, as will be apparent to those skilled in the art having the benefit of the present disclosure, and falling within the scope of the appended claim, without departing from the invention.

What is here claimed is:

45 An aim improver device for a bow and arrow arrangement, comprising a rigid bar, a Y-piece, said Y-piece being connected to the forward end of the bar and having bifurcations for securement to the bow respectively above and below the central hand-hold portion thereof, means carried by each bifurcation for releasable attachment to the bow, and an upstanding hand-grip member carried by the bar adjacent its rear end and adjustable longitudinally of the bar, whereby one hand of the user may grasp the bow by said hand-hold portion between said bifurcations, the bar being aligned with said hand, and the other hand may draw the bow string and arrow back along said bar and hold the arrow by aid of said upstanding hand-grip member spaced from the bar for aiming the arrow.

References Cited in the file of this patent

UNITED STATES PATENTS

2,642,661	Fredrickson	June 23, 1953
2,816,537	Irwin	Dec. 17, 1957