April 12, 1966 H. J. ROSE 3,245,393

COMBINATION STABILIZERS AND REAR SIGHTS FOR ARCHERY BOWS

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Fig. 1

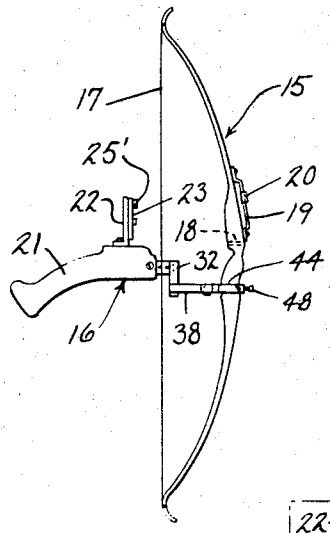


Fig. 4

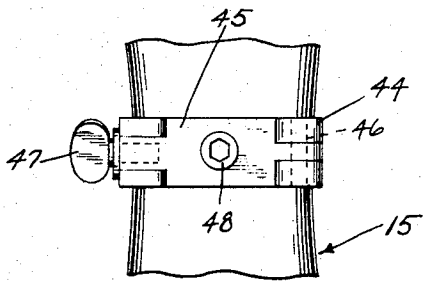


Fig. 2

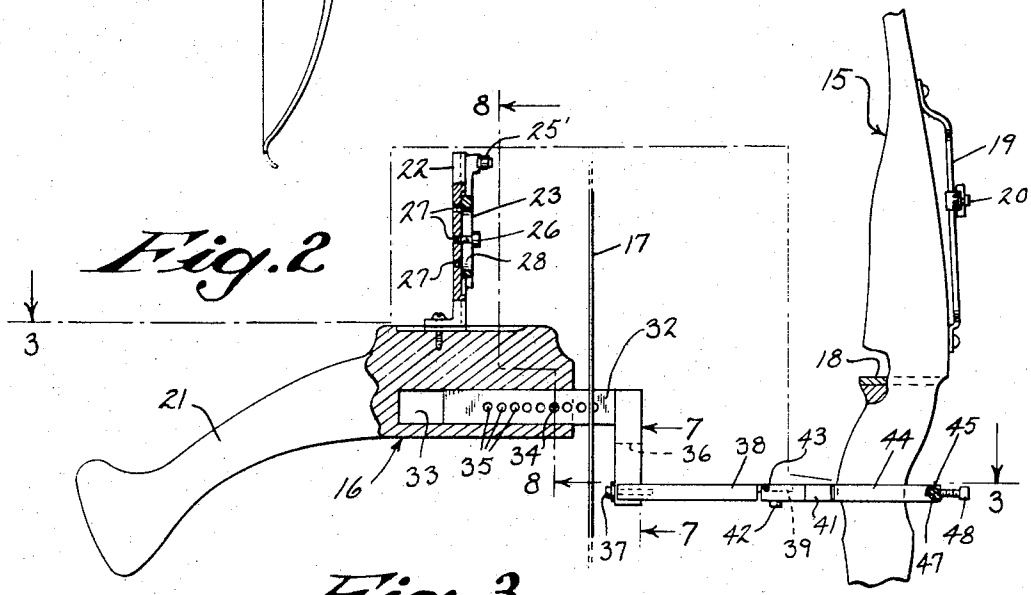
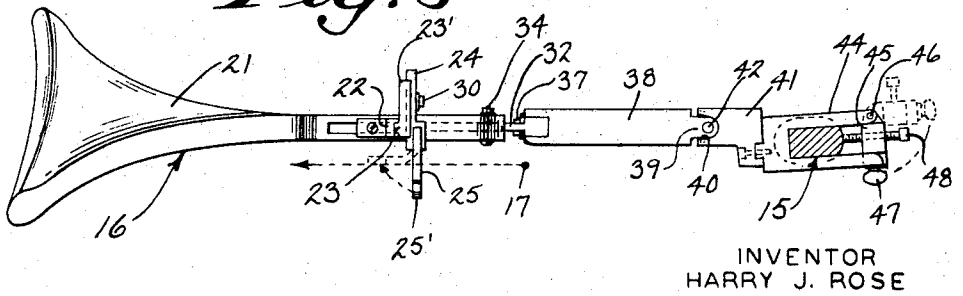


Fig. 3



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Fig. 5

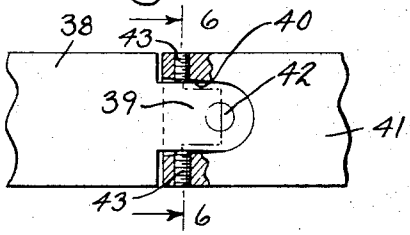


Fig. 6

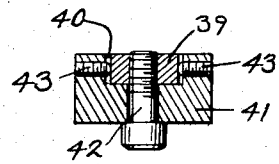


Fig. 8

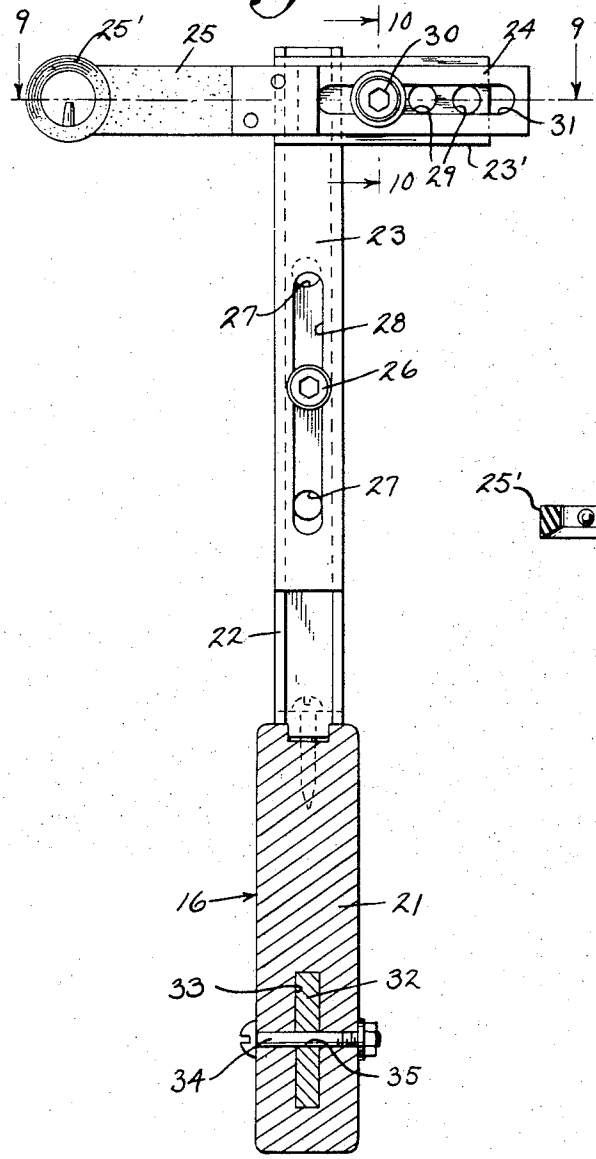


Fig. 7

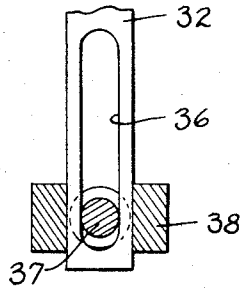


Fig. 9

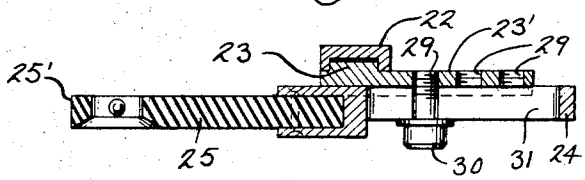
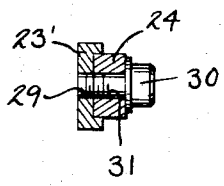


Fig. 10



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3,245,393

COMBINATION STABILIZERS AND REAR SIGHTS FOR ARCHERY BOWS

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Filed July 3, 1964, Ser. No. 380,155
8 Claims. (Cl. 124—24)

This invention relates to improvements in combination stabilizers and rear sights for archery bows.

Bow and arrow hunting has become quite popular among sportsmen, and archery equipment for this purpose requires a heavy pull on the bow string for impelling the arrow. For bow and arrow shooting of game at a considerable distance it has been found that accuracy can be greatly improved by providing for the stabilization of the bow during the shooting operations together with improved sight devices.

With the foregoing in mind, it is a primary object of the present invention to provide a combination stabilizer and rear sight for an archery bow which can be mounted on a standard archery bow and which includes a rigid, rearwardly-projecting stock member adapted to fit into the arm pit of the archer to thereby stabilize the bow during the rearward pull and release of the bow string and arrow, which stabilizing stock member also carries a rear sight which is alignable with a conventional front sight on the bow proper to improve the sighting accuracy of the archer.

A further object of the invention is to provide, in a combined stabilizer and rear sight for archery bows, a flexible or resilient rear sight mounted on the stabilizer in the path of movement of the bow string, and which will freely flex when engaged by the bow string to permit the rearward pull and forward release of the latter.

A further object of the invention is to provide a combination stabilizer and rear sight for archery bows adapted for detachable mounting on a standard archery bow and which permits the use of a standard bow and arrow held and operated in a conventional manner, the stabilizer with its attached rear sight being readily removable from the bow to permit the use of the bow in a conventional manner, when desired.

A further object of the invention is to provide, for an archery bow, a combination stabilizer and rear sight in which the arm pit-engaging or stock portion of the stabilizer is longitudinally adjustable relative to an angle bar portion of the stabilizer to permit elongation or contraction of the stabilizer assemblage to adapt it to the particular arm length of the archer.

A further object of the invention is to provide, in an archery bow mounted stabilizer and rear sight assemblage, means for adjusting the rear sight both laterally and vertically to adapt it to the eyesight of the particular user and to compensate for the particular elevation of the arrow to be propelled by the bow string, together with means for adjusting the stabilizer angularly horizontally.

A further object of the invention is to provide a combination stabilizer and rear sight for archery bows which greatly facilitates and improves the shooting accuracy and convenience of the archer, which is of very simple construction, is easy to use and manipulate, which is strong and durable and completely adjustable, and which is well adapted for the purposes described.

With the above and other objects in view, the invention consists of the improved combination stabilizer and rear sight for archery bows, and its parts and combinations, as set forth in the claims, and all equivalents thereof.

In the accompanying drawings, in which the same reference characters indicate the same parts in all of the views:

FIG. 1 is a side view, on a reduced scale, of an archery bow equipped with the improved combination stabilizer and rear sight;

FIG. 2 is an enlarged fragmentary side view of the archery bow and the attached stabilizer and rear sight, with parts being broken away and in section to show certain adjustable features;

FIG. 3 is a sectional view taken approximately along the line 3—3 of FIG. 2;

FIG. 4 is an enlarged fragmentary front view of the mid portion of an archery bow, showing the clamp arrangement for securing thereto the front clamping yoke portion of the stabilizer;

FIG. 5 is an enlarged fragmentary plan view of the jointed bar portion of the stabilizer bar, with a portion broken away and in section, to show the means for horizontally angularly adjusting the stabilizer;

FIG. 6 is a detail sectional view taken on the line 6—6 of FIG. 5;

FIG. 7 is a fragmentary detail sectional view taken on the line 7—7 of FIG. 2 to show a vertical adjustment for the stock-carrying upright bar of the stabilizer;

FIG. 8 is an enlarged detail sectional view taken on line 8—8 of FIG. 2 showing vertical and horizontal adjustment means for the stabilizer rear sight;

FIG. 9 is a detail sectional view taken on line 9—9 of FIG. 8; and

FIG. 10 is a detail sectional view taken on line 10—10 of FIG. 8.

Referring now more particularly to the drawings it will appear that the entire assemblage, which includes an archery bow designated generally by the numeral 15, and the combined stabilizer and rear sight, designated generally by the numeral 16, is shown in FIGS. 1 and 2. The archery bow, which in general may be of any type used by archers for game shooting, includes a taut bow string 17 secured at its opposite extremities to opposite ends of the bow and which, as is conventional, is adapted to be engaged by the nock end of an arrow which, with the bow string, is pulled rearwardly to flex the bow 15 and, when the bow string is released, the arrow is projected forwardly in the direction in which it is aimed with considerable force due to the resiliency of the bow. The forward end of the arrow may be supported on a horizontal arrow ledge 18 (see FIGS. 1 and 2) when it is being aimed and prior to the shooting operation. As is standard in many types of hunting bows, there is mounted on the bow above the arrow ledge 18 a bracket 19 forming a support for a front sight 20 which may be adjustable both vertically and horizontally.

The combined stabilizer and rear sight assemblage, designated generally by the numeral 16, includes a stock 21 shaped as most clearly shown in FIGS. 1, 2 and 3 and which is adapted to have its rear end fitted into an arm pit of the archer and to project horizontally forwardly therefrom. On a top face of the forward end of the stock 21 there is mounted an upwardly projecting bracket 22 which is vertically slidably engaged by a rear sight supporting bar 23, whose upper end carries an apertured integral horizontal extension 23' on which is horizontally or laterally adjustably mounted a rear sight mounting bar 24 which has attached thereto, projecting horizontally laterally from its inner end, a rear sight arm 25, whose outer end is formed as an apertured rear sight 25'. The combined rear sight and arm 25–25' is preferably formed of rubber, plastic or other resilient material. As this rear sight structure 25–25' is within the path of the bow string 17 when the latter is pulled rearwardly and released when shooting an arrow, the flexible or re-

silient nature of the rear sight assemblage 25–25′ permits the bow string 17 to pass by the rear sight assemblage by flexing the latter, as shown in dotted lines in FIG. 3.

As will best appear from FIGS. 8, 9 and 10, the rear sight vertical bar 23 is vertically adjustable on its bracket 22 by means of a pin 26 engageable in any of the spaced apertures 27 in the brackets 22, said pin permitting, when loosened, desired vertical adjustments of the bar 23 because of the elongated slot 28 in the latter. Similarly, as between the rear sight mounting bar 24 and the top angular bracket extension 23′ there are spaced apertures 29 and pin 30 and slot 31 adjusting means. Consequently, the rear sight assemblage 25–25′ is susceptible of being adjusted, both vertically and horizontally, so that the flexible or resilient rear sight 25′, when in its outwardly projecting normal position, can be properly aligned with the bow-carried front sight 20 to best adapt it to the convenience of the particular archer utilizing the bow assemblage.

The stock 21 is adjustably carried by an angle bar 32 which extends into a horizontal slot 33 therefor in the forward end of the stock 21, the stock being longitudinally adjustable on the elongated horizontal portion of the angle bar 32 by means of a transverse clamping bolt 34 and a series of apertures 35 in the horizontal portion of the angle bar 32, any selected one of which may receive the removable transverse clamping bolt 34 to hold the stock in a desired longitudinal position of adjustment. Attached to the depending lower end of the downturned portion of the angle bar 32 and adjustable vertically thereon, because of the slot 36 and clamping bolt 37 arrangement shown in FIG. 7, is the inner or rear end portion of an intermediate bar 38, horizontally directed, and whose forward end is formed as a reduced rounded tongue 39 projecting into a U-shaped recess 40 therefor, formed in the rear end of an angled connector bar 41. The forward tongue 39 of the intermediate bar 38 may pivot in a slight arc horizontally relative to the angled connector bar 41 on a screw-threaded pin 42, and can be maintained in a position of arcuate adjustment by manipulation of a pair of laterally projecting screws 43 which, when turned in, are adapted to have their inner ends impinge against side portions of the tongue 39. The slight clearance between sides of the U-shaped recess 40 and the sides of the tongue 39 permit horizontal adjustments of the intermediate bar and stock carried thereby up to approximately ten degrees, which adjustment is of value in adjusting the position of the stock-carried rear sight 25′ to the eye arrangement of the archer.

Rigidly carried by the forward end of the angled connector bar 41 is the inner end of a bifurcated clamp 44, whose shape is shown most clearly in FIG. 3, and which is adapted to embrace the bow 15 somewhat below the arrow ledge 18. The clamp 44 includes a front toggle bar 45 pivotally mounted at one end of an arm of the bifurcated clamp 44, as at 46, which, when the set screw 47 is released, permits the toggle bar 45 to be swung from the full line position of FIG. 3 to the dotted line position in said figure, which allows removal of the entire stabilizer and rear sight assemblage from the bow whereby the bow may be used, if desired, in a conventional manner without the attached stabilizer and rear sight assemblage. However, when the bow-engaging clamp 44 is mounted on the bow and the set screw 48 carried thereby is adjusted so as to have its inner end impinged against a surface portion of the bow 15, the entire stabilizer and rear sight assemblage becomes firmly affixed to the bow.

When an archery bow is to be used with the improved combination stabilizer and rear sight, the clamp 44 is affixed to an intermediate portion of the bow 15, as previously described and as best shown in FIGS. 1, 2 and 3, whereby the stock 21 and the elements of the assemblage interposed between the clamp and the stock project rearwardly of the bow substantially at right angles to the vertical plane of the bow, with the bow string 17, in its unflexed condition, occupying a position slightly laterally of a face of the stock and its appurtenances. Of course, the front sight 20 on the bow is suitably adjusted and then the various adjustments in respect to the stabilizer and rear sight assemblage may be made to best adapt the stabilized weapon to the convenience and proportions of the archer. As was previously mentioned, the stock 21 may be longitudinally adjusted relative to the angle bar 32 to suit the arm length of the archer, the assemblage may be slightly arcuately adjusted in a horizontal plane by virtue of the forward tongue 39 and its enlarged recess 40, and the rear sight 25—25′ may be adjusted both vertically and horizontally laterally to best adapt it to the eye arrangement of the archer for accurate alignment with the front sight 20. When the archer desires to shoot an arrow during game hunting, or for target practice, the forward shaft portion of the arrow is lodged on the arrow shaft ledge 18 on the bow with the arrow head pointing forwardly. The nock end of the arrow is engaged with the bow string 17 and the rear end of the stock portion 21 of the stabilizer is engaged in an arm pit of the archer with the adjustment such that the archer's hand on the arm extended from the stock-receiving arm pit can reach and firmly grasp the bow below the clamp 44. The archer, utilizing the hand on his other arm, engages the rear end of the arrow and the bow string and pulls the bow string and engaged arrow rearwardly against the force of the bow 15. The laterally-projecting rear sight 25′ carried by the stock 15 is in the path of movement of the bow string 17 which string, prior to the release of the arrow, is manually pulled rearwardly in the direction of the broken line showing in FIG. 3. This movement of the bow string is made possible by the flexible nature of the rear sight 25—25′ which, when contacted by the bow string in being pulled rearwardly, bends or flexes out of the way of the bow string, as shown in dotted lines in FIG. 3. The archer then sights his quarry or target by aligning the rear and front sights relative to the target, whereupon the arrow and bow string are released. Due to the pull exerted on the bow string by the flexing of the bow, the arrow will be forcefully propelled toward the quarry or target in the usual manner, but the arrow-shooting operation is much more accurate and effective than would result from the use of a conventional bow. With these hunting bows considerable pull is required on the bow string, and with the bow-mounted stabilizer assemblage which engages in the arm pit of the archer, the bow is held in a very steady position. Also, the incorporation of a rear sight on the stock, which rear sight can be aligned with the front sight, renders the arrow-shooting operation far more accurate than if the bow were operated with only a front sight or without sights of any nature. Of course, if it is desired to use the bow 15 for some purpose in a conventional manner, the entire stabilizer assemblage is removable from the bow by releasing the clamp 44 and opening the toggle bar portion 45 of the clamp.

The improved combination stabilizer and rear sight for archery bows greatly enhances the use and enjoyment of the bow and makes for greater stability, comfort and accuracy during arrow-shooting operations. As was before noted, the various components of the stabilizer assemblage, including the rear sight, are adjustable in several directions to readily adapt a bow so equipped to the special proportions and requirements of the particular archer. The combination stabilizer and rear sight is of relatively simple construction, may be mounted on or removed from a standard archery bow, and is well adapted for the purposes described.

What is claimed as the invention is:

1. In combination, an archery bow including an arrow impelling bow string for manual retraction, engagement and release, a stock, means attaching the stock to

an intermediate portion of the bow in a manner to project rearwardly from the bow, and a flexible rear sight carried by the stock in the path of movement of the bow string.

2. In combination, an archery bow including an arrow impelling movable bow string, an adjustable stock assemblage, means removably securing the stock to an intermediate portion of the bow in a manner to project rearwardly from the bow, and a flexible rear sight mounted on the stock assemblage in the path of movement of the bow string.

3. In combination, an archery bow including a front sight and an arrow impelling movable bow string, a stock, means interposed between the stock and the bow adjustably and detachably securing the stock to an intermediate portion of the bow to project rearwardly from the latter, and a flexible rear sight adjustably carried by the stock in the path of movement of the bow string and deflectable clear of the bow string during movements of the latter, the rear sight being visually alignable with said front sight.

4. In combination, an archery bow including an arrow impelling movable bow string, an articulated stock assemblage including a bow-engaging clamp, and a vertically and laterally adjustable rear sight carried by the stock assemblage in the path of movement of the bow string but deflectable clear of the latter.

5. In combination, an archery bow including an arrow impelling movable bow string, a stock assemblage including means clampingly engaging an intermediate portion of the bow in a manner to direct the stock assemblage rearwardly relative to the bow, and a flexible rear sight mounted on the stock assemblage in the path of the bow string.

6. In combination, an archery bow including a front sight and an arrow impelling movable bow string, a stock, means interposed between the stock and the bow adjustably and detachably securing the stock to an intermediate portion of the bow to project rearwardly from the latter, and a flexible rear sight vertically and horizontally adjustably carried by the stock to project laterally therefrom in the path of movement of the bow string, the rear sight being visually alignable with said front sight.

7. The combination with a standard archery bow having a bow string, of an attaching member removably engaging the bow intermediate its ends, an adjustable stabilizing stock assemblage carried by the attaching member and projecting rearwardly of the bow and laterally of the bow string, and a flexible rear sight mounted on said stabilizing stock assemblage and projecting laterally thereof into the path of movement of the bow string.

8. The combination with a standard archery bow having a front sight and a bow string, of an attaching member removably engaging the bow intermediate its ends, an adjustable stabilizing stock assemblage carried by the attaching member and projecting rearwardly of the bow and laterally of the bow string, and a flexible rear sight adjustably mounted on said stabilizing stock assemblage for visual alignment with the front sight and normally projecting laterally of said stock and into the path of movement of the bow string to be flexed by movements of the latter.

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