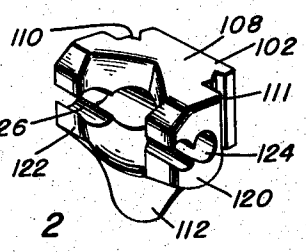
Oct. 20, 1959 B. E. FREDRICKSON 2,909,167

REPEATING SHOT ARCHERY BOW WITH DOUBLE SIGHT

Filed Oct. 19, 1956 3 Sheets-Sheet 1

Fig. 12



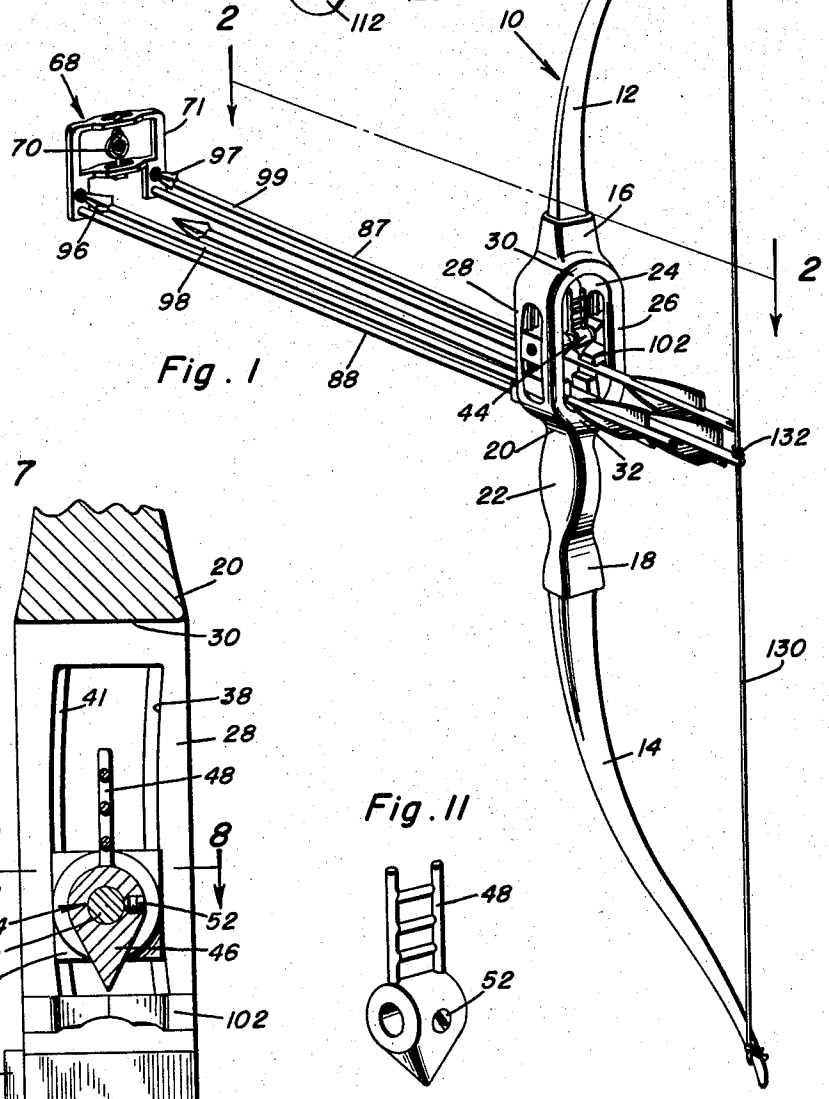


Fig. 1

Fig. 7

Fig. 11

Bert E. Fredrickson
INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

Oct. 20, 1959 B. E. FREDRICKSON 2,909,167

REPEATING SHOT ARCHERY BOW WITH DOUBLE SIGHT

Filed Oct. 19, 1956 3 Sheets-Sheet 2

Fig. 2

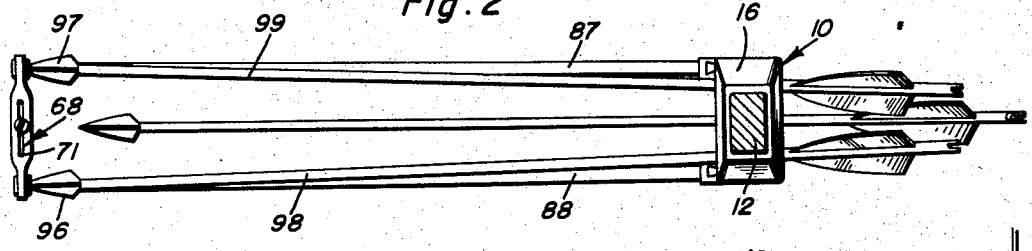


Fig. 3

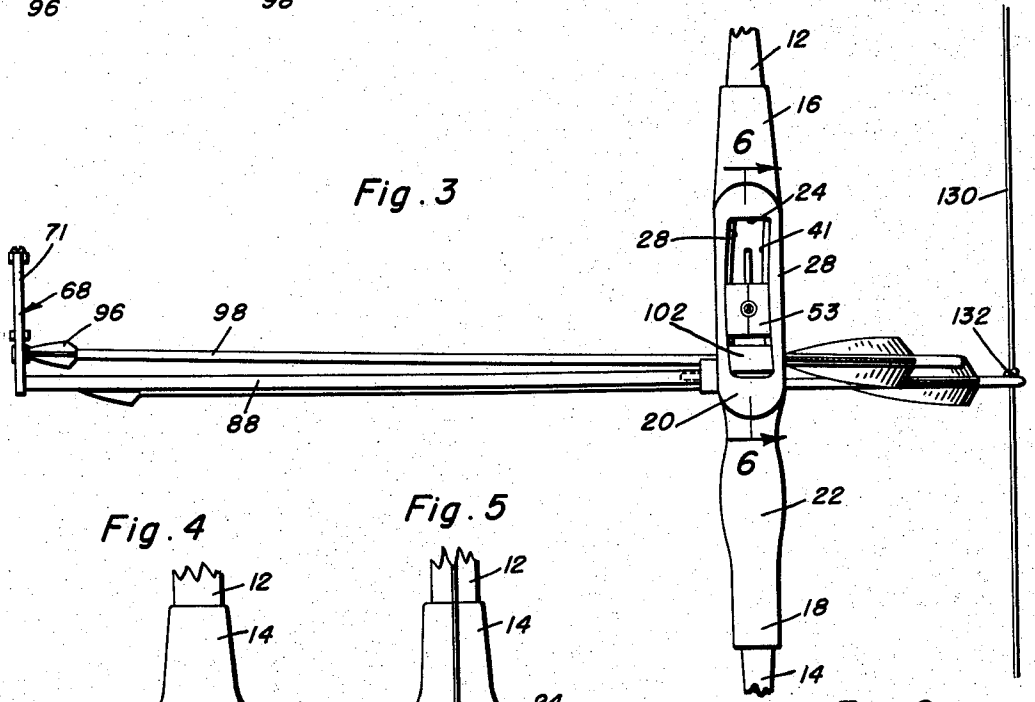


Fig. 4

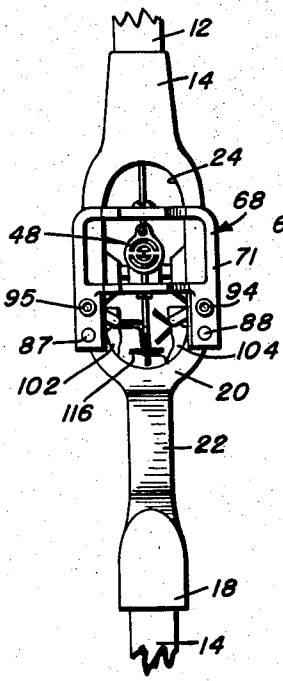


Fig. 5

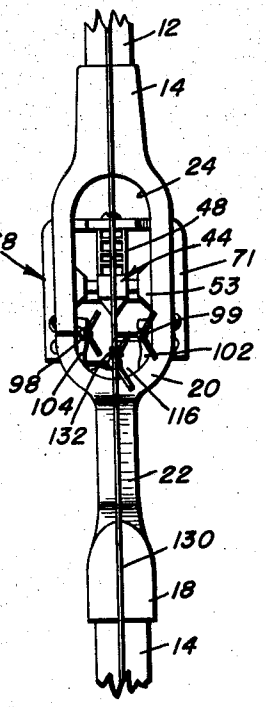
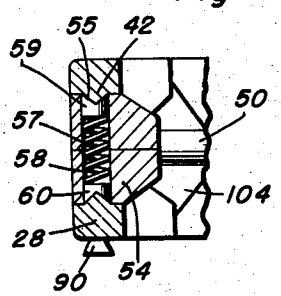


Fig. 8



Bert E. Fredrickson
INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

Oct. 20, 1959 B. E. FREDRICKSON 2,909,167

REPEATING SHOT ARCHERY BOW WITH DOUBLE SIGHT

Filed Oct. 19, 1956 3 Sheets-Sheet 3

Fig. 9

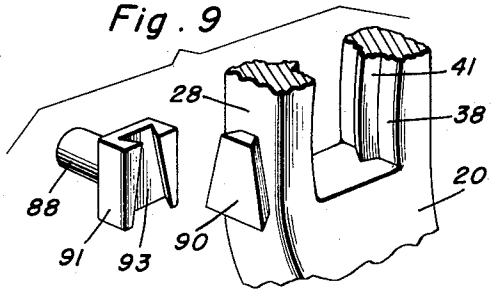


Fig. 13

Fig. 6

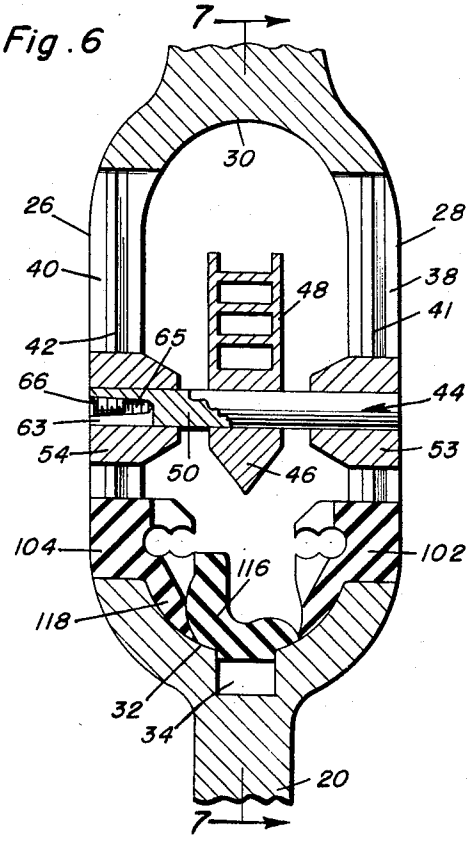
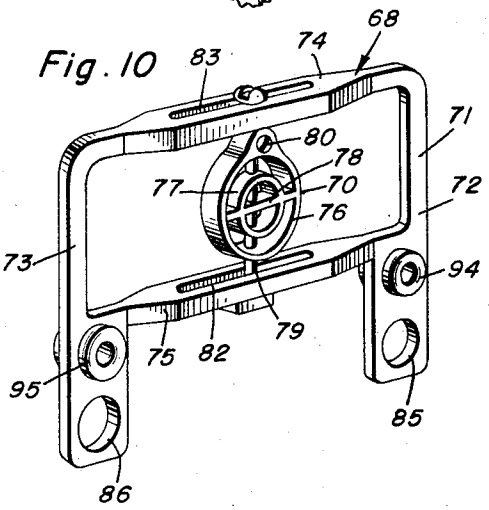


Fig. 10



Bert E. Fredrickson
INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

United States Patent Office 2,909,167
Patented Oct. 20, 1959

2,909,167

REPEATING SHOT ARCHERY BOW WITH DOUBLE SIGHT

Bert E. Fredrickson, Green Bay, Wis.

Application October 19, 1956, Serial No. 617,030

6 Claims. (Cl. 124—24)

This invention relates to archery equipment and more particularly to a novel archery bow.

An object of this invention is to provide an archery bow with a built-in magazine to hold additional arrows, the arrangement being such that the archery bow is truly a repeat shot bow in that it enables the bow to be used exceedingly rapidly. I am aware of prior attempts to make repeating bows of single shot bows. However, the efforts that were extended in this behalf were along the lines of adding a quiver in a supposedly more convenient place for the archer. Usually the quiver was attached directly to the bow with the theory that the archer would not have to swing his hand over his shoulder in order to receive a second arrow but rather, would have the quiver closer to his hand. My invention is embodied in a bow that has a central opening in which there is a bow rest together with means to support additional arrows on opposite sides of the rest so that after the first arrow is shot the second arrow is only a matter of an inch or so away from the shooting position and in the proper plane. This last feature is important since the use of bow attached quivers of which I am aware has always been with the quiver parallel or approximately parallel to the bow rather than perpendicular, this being the normal shooting position for the arrow.

A further object of the invention is to provide an archery bow with a sight of the type having front and rear sight members or assemblies wherein the front sight is held a considerable distance from the rear sight resulting in high accuracy.

Prior patentees, including myself, have applied sights to bows. It has been found that a more accurate, less expensive and very dependable sight is achieved by having the front sight a greater distance in advance of the bow than has been the case in the past. Moreover, when the sight is so constructed it is capable of intimately coacting with the repeating nature of the bow. Accordingly, a further object of the invention is to provide a sight for an archery bow wherein there are means to help in the support of additional arrows, the arrows being so held that they are in the shooting plane or approximately in the shooting plane and have their nocks supported a very small distance, for example, an inch or a fraction of an inch, from the bow string. Such quivers with the arrows mounted on the bow in a plane approximately vertical to the plane of flight of the released arrow are undesirable on a hunting bow since the bow must be moved from its shooting position after each shot to enable the archer to reach the rear end of the arrows mounted in the quiver. Such excessive movement of the bow and bow arm alerts and frightens wild game with the result that any successive shot is normally taken at game in flight where the bow and arrow is at extreme disadvantage. My invention enables the archer to reach and shoot successive arrows without moving the bow from its shooting position and with a minimum of motion of the arm drawing the string thereby increasing the rapidity with which repeated shots can be fired.

Previous archery bows were used either solely for the purpose of supplying the propelling force for the arrow in which instances the arrow itself is aimed, or in those instances in which the bow was aimed as well as supplying the propelling force by means of a sight mounted on the bow, no consideration has been given to fixing the rear end of the arrow in a given position on the string so that in actual use the line of sight on such sights does not bear a constant relationship to the line of flight of successive arrows. A fundamental difference between bows that are constructed in accordance with the invention and prior bows of which I am aware is that bows of the invention are aimed with no attention necessary to be given to the arrow inasmuch as the arrow is automatically located in a certain, predetermined position with relation to the bow in the manner analogous to a gun and its bullet. In the case of a rifle, it is the rifle that is aimed and when the trigger is pulled the hunter knows that the bullet will go in a direction that the rifle is aimed. Additional bullets are automatically fed into the breech of the gun for subsequent firing. The hunter gives no attention to the bullet and his full attention to aiming the rifle. This is because he knows that the bullet will go in the direction that the gun is aimed. Therefore, it is a further object of this invention to provide an archery bow whose use closely simulates the action and handling of a rifle whereby by merely aiming the bow and having a rest for the arrows in a fixed, immovable position with respect to the bow, the arrow automatically travels in the direction that the bow rather than the arrow is aimed. In addition to this, the supplying of second and third arrows to the shooting position is done in a manner analogous to the supplying of additional bullets to the breech of a gun. The analogy exists by having the arrows automatically approximately aimed due to their position within the same central opening in the bow that the arrow is shot from and in the same plane that the arrow is to be shot with the nocks of the secondary arrows being exceedingly close to the bow string so that upon release of the arrow or arrows from the magazine they practically fall into the shooting position.

A more particular object of the invention is to provide a bow having structural refinements in the make-up thereof, such refinements being the location of the magazines very close to the arrow rest and in the same central opening as the arrow rest, and the manner of supporting the arrow heads of the arrows in the magazines.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of an archery bow constructed in accordance with the invention:

Figure 2 is a sectional view taken approximately on the line 2—2 of Figure 1;

Figure 3 is a side view of the bow, the bow being fragmentarily illustrated;

Figure 4 is a fragmentary front view of the bow of Figure 1;

Figure 5 is a fragmentary rear view of the bow in Figure 1;

Figure 6 is an enlarged fragmentary sectional view taken approximately on the line 6—6 of Figure 3;

Figure 7 is a transverse sectional view taken approximately on the line 7—7 of Figure 6;

Figure 8 is a transverse sectional view taken on the line 8—8 of Figure 7 showing principally the means for holding the rear sight in the selected, adjusted position;

Figure 9 is an exploded fragmentary perspective view

showing one structural manner of attaching the front sight to the bow;

Figure 10 is a perspective view of the front sight;

Figure 11 is a perspective view of a part of the rear sight;

Figure 12 is a perspective view of the magazine adapted to hold one or more additional arrows; and

Figure 13 is a fragmentary perspective view showing the bow after the arrow has been shot and before one of the secondary arrows is removed from the magazine and placed into the shooting position, this view showing the proximity of the nocks of the arrows and the bow string and showing that the secondary arrows are in the shooting plane or very close to it.

Archery bow **10** is made of bow sections **12** and **14**, these sections being constructed of glass fiber, wood or other material having the necessary elasticity that is called for in a high quality archery bow. Section **12** is fitted in and secured to socket **16** while section **14** is fitted in and secured in socket **18**, these sockets being at opposite ends of the section **20** of the bow. Hand-grip **22** is located above socket **18** and below the opening **24** which is formed in the section **20**. Opening **24** is defined by an oval body having sides **26** and **28** as well as upper and lower walls **30** and **32**. The lower wall has an upwardly opening recess **34** (Figures 6 and 7) within which to accommodate an extra bow string. Sides **26** and **28** have slots **38** and **40** therein with the side surfaces provided with tracks **41** and **42**, respectively. Each track consists of a pair of inwardly extending V-shaped rails.

A rear sight **44** is located within opening **24**. The rear sight consists of a sight member **46** having an upstanding ladder **48** through which to sight. The sight member **46** has an opening through which spindle **50** is passed with sight member **46** being held firmly in place by means of setscrew **52** so that after being adjusted the sight member **46** may be held in a fixed position on the spindle **50**. The spindle **50** has its opposite ends mounted in slides **53** and **54** so that the sight **44** may be adjusted upwardly and downwardly within the volume enclosed within opening **24**. Slide **53** has a pair of outwardly opening ways within which the track **41** is nested. Slide **54** has a pair of outwardly opening ways **55** within which the rails of track **42** are nested (Figure 8). The ways **55** of slide **54** and the ways of slide **53** are constructed identically. For the ways **55** there is a compression spring **57** located in a bore **58** in slide **54**. The ends of the compression spring bear on members **59** and **60**, constantly pressing them outwardly of slide **54** and in frictional contact with the track **42**. An end of spindle **50** has a slot **63** (Figure 6) and there is a tapered threaded bore **65** adjacent to and in registry with slot **63**. Accordingly, by tightening tapered setscrew **66** in threaded bore **65**, the end of spindle **50** is spread in order to bind against the walls of the bore in slide **54** that accommodates that end of spindle **50**.

The front sight **68** on a bow which is constructed in accordance with the invention is located well in advance of the bow. The distance between the front sight member **70** and the rear sight member **46** is as great as possible from a practical handling and storage standpoint so as to increase the accuracy of the sight. Front sight **68** consists of a frame **71** having sides **72** and **73** and a top wall **74** located above the intermediate transverse frame member **75**. Sight member **70** consists of concentric rings **76** and **77** held assembled by a transverse plate **78** connected to each along a diameter thereof. Vertical sight post **79** passes through aligned openings in the concentric rings **77** and **76** and is fixed to one of them by means of a setscrew **80**. Sight post **79** extends through slots **82** and **83**, respectively, which are formed in the transverse frame member **75** and the top wall **74** of the front sight frame **71**. By having fasteners, for example, a head and nut, on opposite ends of the sight post it may be tightened in a selected lateral position thereby adjusting the sight member **70**. Rotationally, the adjustment is cared for by loosening and tightening setscrew **80**.

The lower ends of the sides **72** and **73** have holes **85** and **86** in which the front sight support arms **87** and **88** are fastened. The rear ends of these arms have means for mounting them in a detachable fashion on the section **20** of the bow. Suggested means are shown in Figure 9 and consist of a tapered clamp plate **90** fixed on side **28** of section **20** together with clamp **91** which is at the inner extremity of front sight mounting arm **88**. Clamp **91** has a tapered dovetail slot **93** which fits over the clamp plate **90** thereby holding the arm **88** detachably fixed on the intermediate bow section **20** and in such position as to project forwardly of the bow. For storage and transportation the front sight **68** is easily detached from the bow. Front sight frame has holes in sides **72** and **73** above holes **85** and **86**. The additional holes in the sides of the frame **71** have grommets **94** and **95** in them within which the arrow heads, for example, arrow heads **96** and **97**, are fitted. Accordingly, grommets **94** and **95** support the front ends of the auxiliary arrows **98** and **99** whose heads **96** and **97** were mentioned previously.

Frame **71** for the front sight **68**, then, constitutes means to support the heads of the auxiliary arrows while the arrow shafts, near the fletchings, are maintained in and are supported in mounts **102** and **104**, respectively, the mounts being of identical construction. Each mount is made of a resilient and flexible material, for example, a plastic elastomer or rubber. Mount **102** is typical (Figure 12), and includes a body **108** that has sides provided with ways **110** and **111** dimensioned to fit on the rails of track **41**. A downwardly extending tongue **112** fits on the rounded surface of the bottom wall **32** and bears against a side of the arrow rest **116**. The corresponding tongue **118** on mount **104** bears against the opposite side of the arrow rest **116**, the latter being made of a material similar to that used in the mounts **102** and **104**.

Mount **102** has a pair of forwardly extending walls **120** and **122**, each wall having a horizontal slot **124** and **126** whose upper and lower surfaces are semi-cylindrical so as to form arrow shaft receiving pockets. Yet, the arrows are easily slipped from the pockets and when they are so moved the arrows automatically fall on the top surface of the arrow rest **116** and in the shooting position. As seen best in Figure 6, there are two mounts **102** and **104** that are disposed at the lowermost part of opening **24** and that have the arrow shaft pockets confronting each other. Arrow rest **116** forms a closure for the compartment **34** with a stopper formed at its lower surface to fit in the open top of recess **34**. This is but one suggested way of firmly attaching the arrow rest **116** in place but yet allowing it to be moved for access to the extra bow string in the compartment **34**.

Bow string **130** is attached to the ends of the sections **12** and **14** of the bow in the customary manner. A knot **132** at a predetermined position on the string centers the rear end of the arrow in a fixed position on the string and together with the arrow rest **116** holds each successive arrow in the same fixed position with respect to the bow so that when the bow is aimed by means of the sight, the lines of flight of successive arrows bear a fixed relation to the point of aim. In using the archery bow **10**, the principal function, although not the exclusive function, is to hunt game. Most effective hunting of game, for example, deer, is at a range of about fifty feet. Most game slain by Indians with a bow was done at distances of only a few feet. The maximum range of my equipment is generally considered to be a hundred yards; actually a moving deer in the woods at ranges of over one hundred feet has an excellent chance of living. When hunted with a bow and arrow, deer have a good chance of survival at distances of 60 to 70 feet. One must be skillful or lucky at those distances, but at closer range, say 50 feet or less, the bow and arrow is quite lethal. At such short distances it is essential to be able to shoot the arrow and re-load with great rapidity, otherwise the

deer will obviously run away. By supporting the additional arrows in a quiver regardless of where it is mounted, too much time elapses between the first and second shot. Accordingly, with the sight described herein there is greater chance of being accurate with the first shot, but where a second shot is required, one of the secondary arrows will be found to be almost in the shooting position automatically upon completion of the first shot. The second arrow is pulled rearwardly very slightly and inwardly of opening **26** thereby separating the head from its mount and separating the shaft from the pocket in which it is accommodated in its mount whereby the arrow will tend to move down by gravity and directly on the arrow rest with the nock of the arrow in proper alignment with the bow string. All that is necessary now is to pull the bow string, aim the bow without regard for the arrow because the arrow will be automatically positioned correctly and then shoot the arrow.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. An archery bow comprising a bow having an opening through which arrows are adapted to be shot, an arrow rest in said opening, a sight assembly including a forward sight in advance of the arrow and a rearward sight located in alignment with said opening, said forward sight including a frame, a sight member carried by said frame, and means connected with said frame to support at least one auxiliary arrow, said auxilary arrow supporting means being adapted to accommodate the arrow head, and means in said opening adjacent to but laterally spaced from said arrow rest for releasably supporting the shank of the auxiliary arrow so that the nock thereof is slightly laterally offset from the bow string.

2. The archery bow of claim 1, wherein said rearward sight is provided with means for the support thereof in selected positions of adjustment above said means for supporting the shaft of the auxiliary arrow.

3. An archery bow comprising the combination of a plurality of bow sections, one of said bow sections having an opening, an arrow rest in said opening, said bow having a bow string located behind said opening, and means carried by said one of said sections and located in said opening for supporting secondary arrows perpendicular to said bow string whereby the auxiliary arrows are always in the general shooting plane, said auxiliary arrow supporting means including resilient mounts having inwardly opening confronting pockets on opposite sides of said arrow rest, said pockets being adapted to embrace the shafts of the auxiliary arrows and support said arrows in a fixed position independent of other supporting means, with a means secured to said bow and protruding forward thereof supporting a front sight assembly with pockets therein for detachably receiving the points of said auxiliary arrows while the shafts of the auxiliary arrows are in said confronting pockets in a stand-by position adjacent to and in the same general shooting plane as the arrow on the bow string.

4. The archery bow of claim 3, wherein said means for supporting the front sight assembly comprises a frame, at least one arm securing said frame detachably to said bow, said front sight assembly adjustably supported by said frame, a rearward sight carried by said bow and adapted to be utilized in connection with the front sight for aiming the bow.

5. The archery bow of claim 4 wherein said opening in which said arrow rest is disposed has a pair of sides in which there are slots, means adjustably supported in said slots and mounting said rear sight so as to be adjustable longitudinally in said slots.

6. The archery bow of claim 1, wherein said bow string is provided with a means in a selected position on the string with respect to the ends of the bow and bow string, for the purpose of positioning the rear end of the arrow at a predetermined angle with respect to an arrow rest mounted in an opening in the handle section of said bow, and in fixed relation to a front and rear sight when said sight is brought into alignment with the line of sight from the eye to the target.

References Cited in the file of this patent

UNITED STATES PATENTS

1,210,332	Kvistad	Dec. 26, 1916
1,847,593	Cameron	Mar. 1, 1932
2,092,361	Shirn	Sept. 7, 1937
2,464,068	Bear	Mar. 8, 1949
2,483,928	Ott	Oct. 4, 1949
2,574,599	Stieber	Nov. 13, 1951
2,642,661	Fredrickson	June 23, 1953
2,667,692	Leafstrand	Feb. 2, 1954
2,691,974	Nelson	Oct. 19, 1954
2,801,625	Vose	Aug. 6, 1957

FOREIGN PATENTS

172	Great Britain	1886