Aug. 16, 1966 L. Y. POWELL 3,266,149

BOW SCOPE MOUNT

Filed May 13, 1963 2 Sheets-Sheet 1

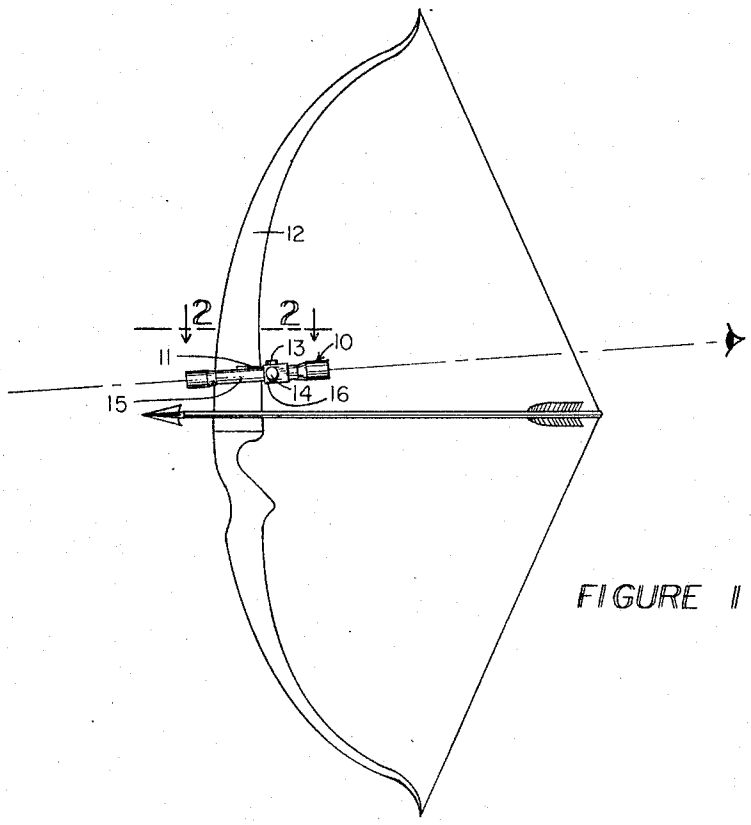


FIGURE 1

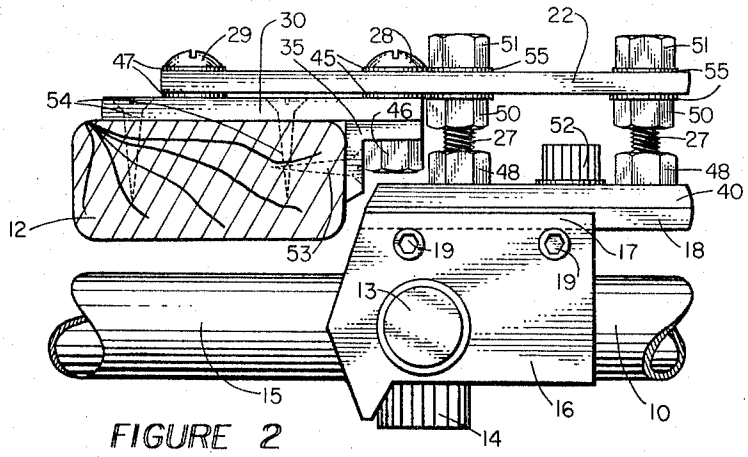


FIGURE 2

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BOW SCOPE MOUNT

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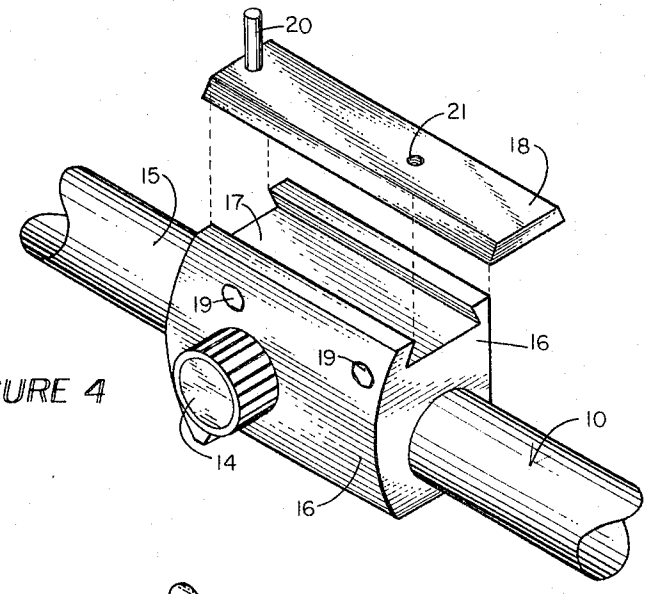


FIGURE 4

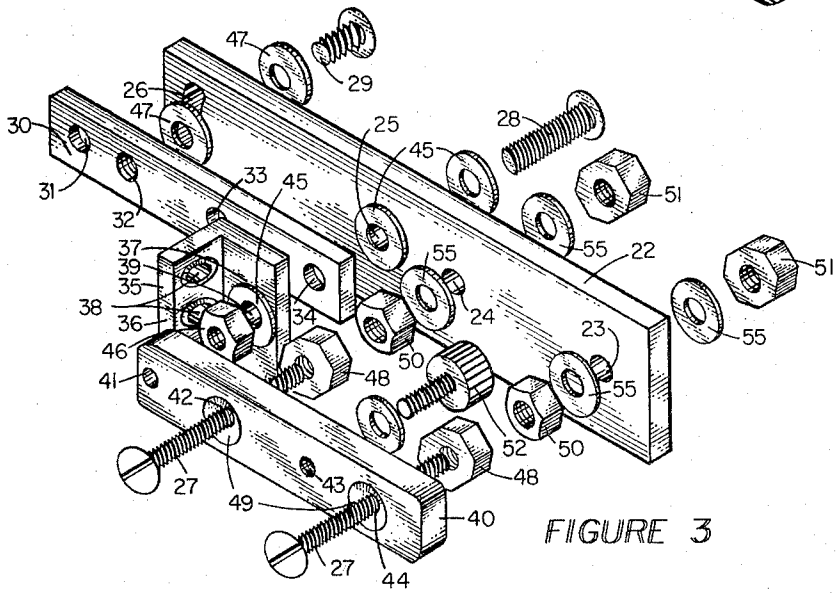


FIGURE 3

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BY

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3,266,149

BOW SCOPE MOUNT

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2 Claims. (Cl. 33—46)

This invention relates generally to a mounting for telescopic sight for archery that is attachable to an ordinary bow, and more particularly to a mounting mechanism fastened to an ordinary archery bow adapted to hold a pistol-type telescopic sight so that it may be readily adjusted for both large and small variations in vertical and horizontal directions.

Heretofore archery bow-sights of various sorts have been known in the art. Many of such sights have been of complex, cumbersome construction, have obscured a portion of the target, and have not provided the complete and extensive adjustability required for such sights.

A bow sight, to function properly, requires that the bow should firstly be properly positioned by a particular archer for his particular style and mannerisms of shooting and his head then comforatably and normally positioned; the sight then will have to be coarsely positioned in relation to this bow position so that the line of sight passes directly from the archer's eye to the intended target. Initially the sight must have sufficient adjustment to provide for this aforesaid positioning. Obviously if the positioning of either the bow or the archer's head relative to his body stance be changed the line of sight and consequently the flight of the arrow and its point of impact will be changed.

Previously known sights have generally provided a forward and rearward part that may be aligned with each other and a proposed target to indicate the arrow's line of impact at a given distance. In using such sights, a part of the proposed target is obscured and it is very easy to move the position of the archer's head and eyes in relation to normal shooting position; this would consequently change the point of arrow impact. With this alignment type sight, it is also very difficult, if not impossible, to determine from the physical factors involved whether the shooting position is erroneous, particularly as to improper bow-hand torque, release finger torque, heeling of the bow, slipping of the nocking point or fistmele error. With these problems in mind the proposed invention seeks to provide a telescopic sighting device which lessens and alleviates the problems previously experienced with other bow sighting devices.

In doing so:

It is a principal object of my invention to provide a telescopic archery bow sight adjustably mounted upon a bow by a device that is both coarsely and finely adjustable for correction of line of sight in both vertical and horizontal planes.

It is a further object of my invention to provide a device of the nature aforesaid having a telescopic sight of long eye relief and narrow objective cone of vision, of the type commonly known as a "pistol scope."

It is a further object of my invention to provide a telescopic sight as aforesaid that is internally adjustable to move the line of sight in a vertical plane to allow for trajectory of an arrow.

It is a further object of my invention to provide a device of the nature aforesaid with a bow mount that releasably holds and uniquely positions a scope of commerce in an adjustable fashion so that a line of sight through it, relative to the bow, may be changed a predetermined amount in either a vertical or horizontal plane.

It is still a further object of my invention to provide a device of the nature aforesaid that is of new and novel

design, of rugged and durable nature and of simple and economic manufacture.

Other advantages and objects of my present invention will be apparent from consideration of the following detailed description and specific embodiment thereof and claims therefor.

In the acompanying drawings which form a part of the specification, and in which like numbers of reference refer to similar parts throughout:

FIGURE 1 is an orthographic side view of a center-shot bow of commerce with arrow fletched therein, showing my invention attached to the bow and the line of sight through the sight.

FIGURE 2 is an enlarged detailed orthographic view taken on a horizontal plane looking downward at the top of the scope-mount of my invention, on the plane 2—2 of FIGURE 1 in the direction indicated by the arrows, showing the details thereof.

FIGURE 3 is an exploded isometric view of the various parts of the mount of my invention showing the details in relationship to each other and manner of assemblage.

FIGURE 4 is a partial exploded isometric view of the scope collar and dovetailed mounting plate of my invention that releasably attaches to the mount shown in FIGURE 3.

The terms right and left, upper and lower, horizontal and vertical are convenient in describing the invention and are used herein to indicate normal positions if the bow in question be held in a normal shooting position by a right-handed archer.

Referring now to the drawings in greater detail and particularly to that of FIGURE 1, my invention will there be seen mounted on an ordinary center shot bow **12**. The invention comprises the pistol type telescopic sight **10** carried by the scope mount **11** which is in turn carried by the bow **12**. The device is adapted equally well for use with any of the common bows of commerce notwithstanding that it is illustrated on the center shot type.

The telescopic sight **10** is of an ordinary variety of commerce heretofore well known. We prefer to use the type commonly distributed by the D.P. Bushnell & Co., Inc., Bushnell Building, 2828 East Foothill Blvd., Pasadena, California. This particular telescope has a relatively narrow objective cone of vision of some 12 degrees or so and presents an objective image in focus at the distance of about 24 inches behind the eyepiece lens. This amount of relief is, of course, necessary by reason of the way in which the scope will be used. The telescope has internal means, preferably prismatic, of slightly moving the optical axis of the device with reference to the horizontal to compensate for the necessary added height of trajectory for distant targets, and for variation from vertical for windage. The knob **13** positions for vertical adjustment and the knob **14** for horizontal adjustment. The telescope tube **15** is carried in the tube mount **16**, having the radially outwardly projecting female dovetail joint **17** adapted to releasably carry the mating scope plate **18**.

The scope plate **18** is a flat rectangular piece, as illustrated best in FIGURE 4. It has its sides machined to the corresponding male part to fit within the dovetail joint **17** of the tube mount **16**. It is held in position in the tube mount **16** by means of the Allen screws **19** threadly engaged through the tube mount **16** to exert pressure on the sides of the scope plate **18** and hold it rigidly in predetermined position. The scope plate **18** has the centrally aligned perpendicularly projecting guide pin **20** and the internally threaded thumbscrew hole **21**, both adapted to uniquely position the tube mount **16** upon the telescope mounting table **40** of the scope mount **11**.

The scope mount **11** itself comprises the elongate rectangular plate like body member **22** having aligned along

its longer central axis the rearward hole **23** and forward hole **24** adapted to receive the two horizontal alignment screws **27**. Immediately forward of the hole **24** is a similar centrally positioned hole **25** adapted to receive the bow bracket bolt **28**. Forward of this is the elongate vertical adjustment slot **26** adapted to moveably receive the vertical adjustment screw **29** and yet allow the body member **22** to rotate in a vertical plane about the center of the hole **25**; to accomplish this, obviously, the center of the adjustment slot **26** must be a part of the radius of a circle having the center of the hole **25** for its center, and the width of the slot must be approximately the diameter of the vertical adjustment screw **29**.

The lateral bow bracket **30** is a flat rectangular member, of the shape illustrated, preferably with rounded corners. It has aligned along its longer axis the forward wood screw hole **31**, the immediately rearward threaded vertical adjustment screw hole **32** adapted to receive the vertical adjustment screw **29**, to the rearward of this a second wood screw hole **33** and in the rearmost portion the bow bracket bolt hole **34** sized to receive the bow bracket bolt **28**.

The rearward bow bracket **35** is an angular member having the bow leg **36** at substantially right angles to the fastening leg **37**; its width along the line of meeting of the two legs is substantially the same as the shorter rectangular dimension of the body member **22** in a vertical plane. The bow leg **36** carries the two similar spaced wood screw holes **38** and the bow bracket bolt hole **39** sized to receive the bow bracket bolt **28**.

The scope mounting table **40** is a rectangular plate-like member as illustrated, preferably with rounded corners. It carries, along its longer axis in its forward portion the pin hole **41** adapted to receive the guide pin **20** of the scope plate **18**; to the rearward the forward horizontal alignment screw hole **42**, to the rearward of this the unthreaded thumbscrew hole **43** and in the rearward-most portion a rearward horizontal adjustment screw hole **44**.

The scope mount is assembled as illustrated in FIGURE 3. The body member **22** is first positioned with the lateral bow bracket **30** immediately laterally adjacent to the bow **12** and the rearward bow bracket **35** immediately laterally adjacent to member **30** so that the respective holes **25, 34, 39** are all in a line to receive the bow bracket bolt **28**; this bolt **28** is then put into place with the washers **45** on each side of the body member **22** and between the rear body bracket **35** and the nut **46**. The nut **46** is then positioned on the bolt **28** to secure said members **22, 30, 35**. The vertical adjustment screw **29** is then placed through the adjustment slot **26** and threadedly engaged in the threaded vertical adjustment screw hole **32** of the lateral bow bracket **30**, with washers **47** disposed between the screwhead and the body member **22** and between the body member **22** and the lateral bow bracket **30**.

The horizontal alignment screws **27** are nextly positioned in the holes **42, 44** of the scope mounting table **40** and held in position therein by the nuts **48**. The horizontal alignment screws **27** should be of the bevel-headed variety and an appropriate recess **49** provided therefor in the surface of the scope mounting table **40** so that the heads of the screws **27** will not project above the lateral surface of the member **40** and interfere with the mounting of the scope plate **18** thereon. A second nut **50** is then placed on each of the horizontal alignment screws **27** and the screws then positioned within the holes **23, 24** of the body member **22**. They are held in this position by means of the lock-nuts **51**. The scope mount **11** is then completely assembled ready to receive the scope plate **18** carrying the telescope **10**. To attach the two members, the pin **20** is positioned in the pin hole **41** of the scope mounting table **40** and the thumbscrew **52** is engaged with the threaded thumbscrew hole **21** of the member **18** until a rigid unique connection is established.

The various parts of my scope mount must obviously be sized as illustrated in the drawings, to accomplish the aforesaid results and to allow sufficient clearance between the various members for the operation described.

To install my scope mount **11** upon a bow **12**, the telescopic sight **10** must first be removed. The scope mounting table **40** is then removed from the body **22**. The remaining scope mount **11** is approximately positioned against the right side rearward portion of a bow **12** as shown in FIGURE 1. Wood screws **53** are positioned within the holes **38** of the rearward bow bracket **35** and this member is thusly attached to the rearward portion of the bow **12** as illustrated in FIGURE 2. Nextly the position of the screw hole **31** in the lateral bow bracket **30** is marked on the right side of the bow. The body member **22** is then removed from the bow brackets **30, 35**. Then additional wood screws **54** are inserted through the holes **31, 33** to fasten the lateral bow bracket **30** rigidly to the bow. The body member **22** is then replaced and the scope mounting table **40** is also replaced. The device is now ready for rough alignment and use.

The mount is roughly aligned vertically by loosening the vertical adjustment screw **29** and moving the body member **22** appropriately until the desired adjustment is reached, whereupon the adjustment screw **29** is again tightened to maintain this member **22** in the desired position. Horizontal adjustment of the device is attained by differential movement of the horizontal alignment screws **27**; the forward screw may be shortened and the rearward screw lengthened or vice versa to move the scope mounting table **40** for change of direction in a horizontal plane. Obviously the horizontal adjustment screw holes **23, 24** in the body member **22** must be of a bore slightly larger than the external diameter of the horizontal alignment screws **27** to permit this skew positioning of the screws without damage to their threads, but this difference in diameter should not be too great or too much unwanted movement may be allowed between the members **40** and **22**.

When the device is aligned initially for any particular archer, the alignment must be accomplished by trial and error or field tests. This is necessary because each particular archer has his own peculiar shooting position and to originally align the sight it is necessary to determine this particular positioning in each case. The initial adjustments are taken up as aforesaid in the scope mount itself. Thereafter, if adjustments be desired for windage, elevation, distance or the like, these may be provided for most conveniently by using the internal structure of the telescope **10** as aforedescribed.

While a specific embodiment of my invention has been disclosed in the foregoing specification, it should be understood that the specific terminology and structure are not intended to be restrictive or confining, and that various re-arrangements of parts, modifications of detail, and substitutions of materials may be resorted to without departing from the essence, scope or spirit of the invention herein disclosed and hereinafter claimed.

Having thusly described my invention, what I desire to protect by Letters Patent, and,

What I claim is:

1. A mounting device for mounting a telescopic sight upon an archery bow of the nature aforesaid, comprising in combination, a planar lateral bow bracket having means for attaching it to the lateral face of a bow of commerce, a rearward bow bracket having means for attaching to the rearward face of the bow and substantially perpendicularly to said planar bow bracket a rectangular plate-like body member rotatably connecting in its central portion with, and lying parallel to said planar lateral bow bracket and said substantially perpendicular rearward bow bracket; means of securing the adjusted angle between the longer axis of said body member and said lateral bow bracket member; and a plate-like scope mounting table and two horizontal alignment screws connecting it with the rearward portion of said body member, said screws adapted to adjustably position said scope mounting table at a pre-

determined angle measured on a horizontal plane with reference to said body member.

2. The device of claim 1 having means associated with said scope mounting table to mount a telescopic sight of commerce, comprising a mounting plate having a forward projecting pin adapted to mate within a corresponding hole of said mounting table and a centrally positioned threaded thumbscrew hole adapted to receive a thumbscrew passing through said scope mounting table and into said mounting plate, and means of attaching said scope plate rigidly to a telescope of commerce.

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