

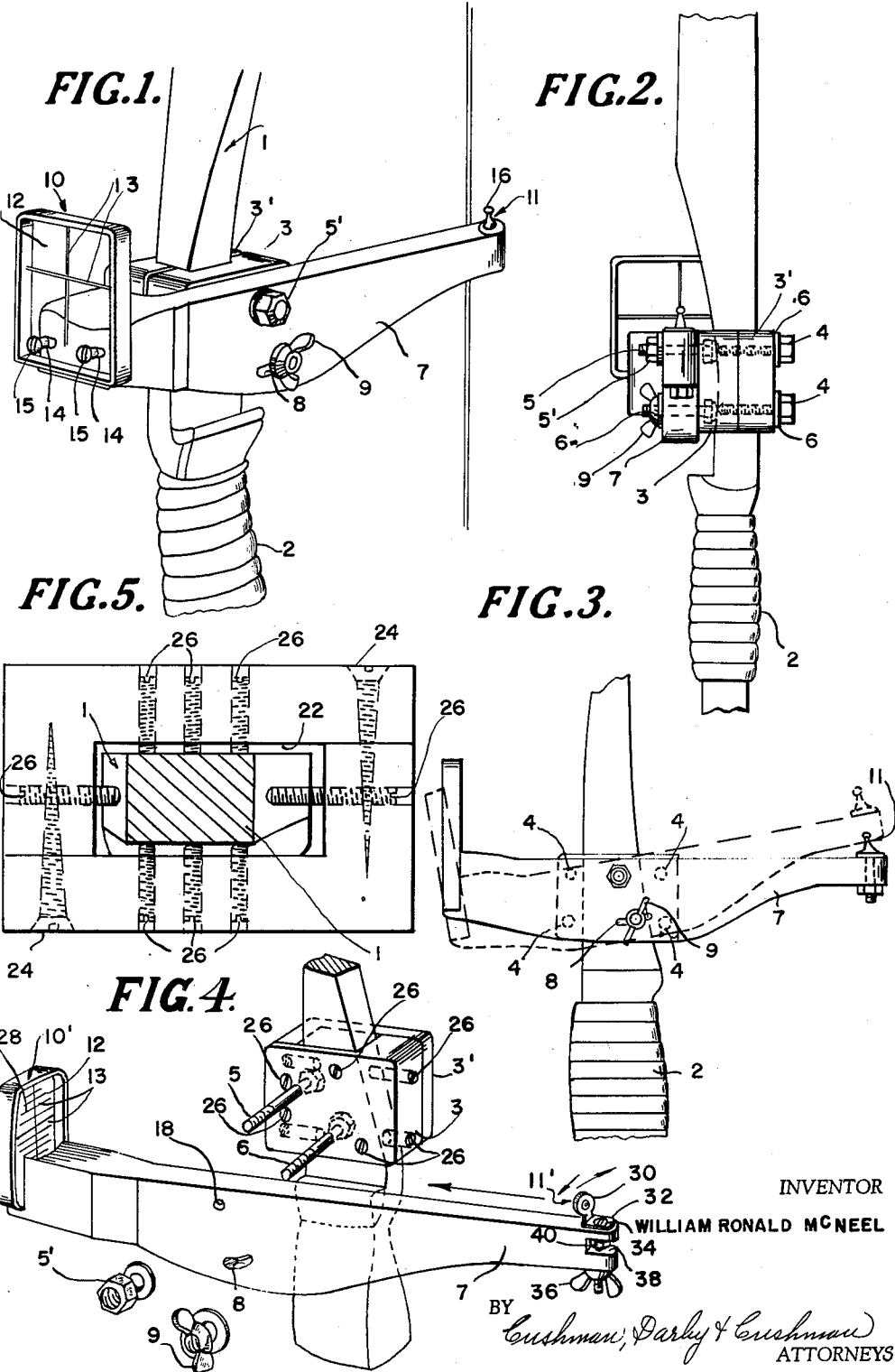
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ARCHERY BOW SIGHT

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ARCHERY BOW SIGHT
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This invention relates to sights and in particular an improved sight for an archery bow.

Archery bow sights are known in the art, many of the sights being of very elaborate construction. Present archery bow sights having predetermined distance calibrations thereon have quite limited practical merit, due to the necessity for adjusting the trajectory of the arrow for changing conditions. If an archer is shooting at an outside target at a distance of, say 150 yards, a practice arrow must be shot at the target to adjust for wind error. If a strong wind is blowing diagonally across the archery range, compensation must, of course, be made for both cross-range and down range components of the wind. The archer rarely knows the exact speed and direction of the wind, and is, therefore, unable to "set" his sight in advance of actual shooting. Further, different weight arrows, and modifications in the arrow tailfeather, and arrowhead design affect the trajectory of the arrow. Different archers use different sized bows for firing at a given target, by varying the trajectory. A large, strong man may use a relatively stiff bow to provide a relatively flat arrow trajectory, while a woman, for example, may use a less stiff bow and shoot a higher arrow trajectory, over a given archery range. This situation is also apparent when an archer is hunting wild game. Different types or sets of arrows are always used, different bows are often used, wind conditions change, and precalibrated sights thus fall short of their desired purpose. Thus, until the archer actually fires an arrow, he is unable to determine the necessary compensations to make.

This invention relates to an improved archery bow sight which obviates the shortcomings of the bow sights of the prior art, by providing a bow sight with means for permitting an archer to adjust the sight for the archer's particular shooting habits as well as the characteristics of a given archery bow. Additional means are provided to permit minor compensation of the sight for error arising from changing wind conditions, different arrow size and design, and the like.

The present bow sight requires absolutely no modification in the archery bow, and may be easily transferred from one bow to another.

Depending upon the design of the archery bow, the sight may be equally well adapted for right hand or left hand use, with no change in construction.

An object of this invention is to provide a bow sight that can be cast to fit any bow, or can be included in the manufacture of the bow. This bow sight can be constructed of wood, plastic, glass, aluminum, or any like structural material.

Another object of this invention is to provide a bow sight which is vertically adjustable by pivoting means relative to the vertical axis of the archer's bow, and horizontally adjustable independent of the bow.

Yet another object of my invention is to provide a sight mount which is adapted to be mounted on any conventional archery bow, regardless of minor design modifications by various manufacturers in the basic bow construction.

Still further objects of this invention are to provide an economical bow sight which requires a minimum of parts, is economical to construct, provides a large, unobstructed field of vision, and is far simpler to use than bow sights in the prior art.

Other objects and advantages of this bow sight will be-

come apparent in the following description thereof in connection with the accompanying drawing. Like numerals refer to similar parts in the various figures of the drawing.

FIGURE 1 is a perspective view of the segment of an archery bow embodying preferred features of my invention;

FIGURE 2 is a vertical rear elevation view of the sight shown in FIGURE 1;

FIGURE 3 is a side elevation view of the sight shown in FIGURE 1;

FIGURE 4 is an assembly view in perspective, showing a modified embodiment of my invention; and

FIGURE 5 is a partial plan view of the modification in FIGURE 4.

In FIGURE 1, an archer's bow 1 is shown with a handle 2 of conventional construction disposed thereon. Located above the handle 2 are mounting blocks 3 and 3', so formed with a passage to rigidity engage the upper portion of the bow. These mounting blocks 3 and 3' are joined together as by bolts 4 in appropriately threaded holes. In the alternative, where the mounting blocks are of wood construction, wood screws are equally well suitable, as well as other fasteners. Also the adjacent surfaces of the mounting blocks 3 and 3' may have disposed thereon any suitable adhesive, such as glue. Passing through two holes in the mounting block 3 are bolts 5 and 6. An elongated sight base 7 is pivotally affixed adjacent to mounting block 3 by bolt 5 and securable by a nut 5'. The bolt 6 passes through a countersunk arcuate slot 8 on the sight base 7, and wing nut 9 is engageable on bolt 6 to tighten the sight base 7 against the adjacent mounting block 3. As shown in the drawing, the sight base 7 is thereby operative for pivotal movement about the bolt 5, this pivot axis being substantially nearer the forward end of the sight base 7 than the rearward end thereof.

The sight base 7 has a front sight 10 and a rear sight 11 disposed thereon in spaced apart, aligned relationship. The front sight 10 is constructed of a transparent plate 12 and has sighting indicia disposed thereon, such as cross hairs 13, this front sight being adjustable in a horizontal direction by means of elongated slots 14 which receive front sight screws 15 therein. The rear sight 11 includes an upright eccentric pin terminating in a ball shaped dome 16 at the top thereof. This eccentric pin is preferably rotatable, to provide an additional horizontal adjusting means for the bow sight.

FIGURE 2 shows the front and rear sights in aligned relationship as viewed by the archer in handling the bow.

FIGURE 3 shows the manner of adjusting the sight base 7 vertically with respect to the mounting blocks 3 and 3' and archer's bow 1. It may be seen in FIGURE 3 that, upon loosening wing nut 9, the sight base 7 is pivotable about bolt 4 in arcuate slot 8, relative to mounting blocks 3 and 3' which are rigidly affixed to bow 1.

Referring, now, to FIGURES 4 and 5, a modified embodiment of my invention is shown, wherein the mounting blocks 3 and 3' are adapted for assembly on an archery bow of any size or shape. FIGURE 5 is a plan view of the mounting block assembly in FIGURE 4, wherein the bolts 5 and 6 which engage mounting block 3 in countersunk holes, are omitted for clarity.

The bolts 5 and 6 engage sight base hole and arcuate slot 8, respectively, in a manner similar to the embodiment shown in FIGURES 1-3.

Mounting blocks 3 and 3' have a passage 22 therein, which is somewhat larger in cross-sectional area than the archery bow styles in general manufacture. The mounting blocks 3 and 3' are secured together by conventional means, as by screws 24, clearly shown in FIGURE 5. Passing through a plurality of passages in the

mounting blocks 3 and 3' are set screws 26, which engage the archery bow 1 at a point above the handle 2.

Thus, regardless of the size of the archery bow 1 at the point where the mounting blocks 3 and 3' are disposed, the set-screws 26 provide the necessary rigid supporting means therefor.

Modifications in the sighting means are also shown in FIGURE 4. The sight base 7 is again shown, being of the same general structure as shown in FIGURE 1. The front sight 10' has disposed thereon a plurality of lines 28, substantially parallel to the horizontal line forming cross-hairs 13.

These lines 28 are disposed in a manner so that, by sighting with the vertical line 13, and a selected horizontal line 28, the archer may increase or decrease the arrow trajectory a given amount, based on his own experience in using the sight. For example, lines 28 may be so disposed, that each adjacent line 28 will result in change of 20 yards in the arrow shot, for a given size archery bow, as used by a particular archer.

The rear sight 11' has been modified to provide a modified sighting and horizontal adjusting means for the sight base 7.

A peep sight 30 is provided, which has a flange member 32 abutting the top of sight base 7. Passing through a hole in the flange member 32 is a conventional bolt 34, having a wing nut 36 at the opposite end thereof. The rear end of sight base 7 has a recess 38 therein, which receives an adjusting nut 40 on bolt 34. The adjusting nut 40 is normally braced against the top of recess 38, to hold the peep sight 30 tightly against the top of sight base 7. By loosening the adjusting nut 40, the peep sight 30 may then be rotated horizontally, to provide a means for adjusting the sighting axis for deflection error, such as caused by wind.

The operation of my sight is readily apparent from the foregoing description. To change the trajectory of the arrow as it leaves the bow, the archer loosens the wing nut 9, pivots the sight base 7 downwardly or upwardly as desired, and then tightens the wing nut. This affords a longer or shorter arrow trajectory, when the target is viewed along the sighting axis, and provides the archer with a predetermined range setting based upon his own sighting habits, for a particular archer bow. Thus, the sight may be set by the archer for shooting at an archery range target say 100 yards away; then, should the archer desire to change the range setting once the initial range is determined, he may either repeat the above step of pivoting the sight base 7 about bolt 5, or he may utilize the additional marks above and below the horizontal cross-hair of the front sight, as shown in FIGURE 4. Additionally, once the archer has determined his setting for a given range, a suitable calibration mark may be made on the surface of mounting block 3 adjacent to the sight base 7. Thus, the archer does not have to change his shooting habits to conform with a sight, but the sight is adjusted to conform with the archer's habits.

In a similar manner the front sight 10 is horizontally adjusted to conform with the sighting axis of the archer, by loosening of screws 15 to allow transverse movement of the front sight relative to the sight base 7, and thence secured. The eccentric rear sight is then rotatable to compensate for minor errors arising from such factors as cross-wind. Alternatively, the rear sight may be rotated by loosening the adjusting nut 40 disposed in a recess at the rear of sight base, as shown in FIGURE 4.

The accuracy of the sight may also be increased by increasing the length of the sight base, and the distance between the front and rear sights. Such increased accuracy will obviously result due to the increased distance the sight base may be moved for a given change in angular setting. A sight base of approximately 12-18 inches in length has given very satisfactory results.

It will be apparent from the description set forth that various modifications of this invention may be made without departing from the scope thereof. Suitable shim-

ming may be placed between the sight base and the mounting blocks to change the desired off-set of the sight base relative to the bow.

The sight mount may be of a unitary, molded, metal or plastic structure, slidable over the end of the archery bow, or otherwise suitably modified in construction without departing from the scope of this invention.

It is preferable that the bolts do not pass through the bow but merely pass through the mounting blocks or mounting member alongside the bow, to avoid structural weakening of the archery bow. This feature thus permits the bow sight to be easily detached from the bow, and permits the bow sight to be mounted without any change to the construction of the archery bow.

Different manufacturers of archery bows utilize various cross-sectional configurations of the bow where the mounting blocks would be affixed, some manufacturers utilizing a symmetrical bow adapted for both right-hand and left-hand archers. Thus, merely by adding to the mounting blocks 3', two countersunk holes identically parallel to those in mounting block 3, the sight base 7 may be mounted on either side of a given manufacturer's archery bow, by reversing the direction of the bolts 5 and 6, through block 3'. On this manner the bow sight may be used on either the right side or left side of a manufacturer's archery bow. Considering this with the universal mounting arrangement in FIGURES 4 and 5, it may be manufactured to be adjustably secured to any archery bow. Likewise, suitable substitutes for the set screw means to secure the mounting blocks to the archery bow will be apparent to one skilled in the art. For instance, the passage 22 may have suitable shimming disposed therein, to engaging the mounting blocks 3 and 3' with the archery bow. The number of set screws used is, of course, not an essential feature of this embodiment of my invention.

The construction of the front sight may be modified by engaging the sight by friction in a mating elongated slot disposed along the transverse axis of the sight base 7, as also with the rear sight 11.

It is further obvious that the various features described herein may be used interchangeably. Individual modifications in the bow sight shown in FIGURES 4 and 5, of course, may be incorporated into the bow sight in FIGURES 1-3.

After considering the foregoing description in conjunction with the annexed drawings, it is apparent that there is provided by this invention a device by which the various phases, objects, and advantages herein set forth, are successfully achieved.

Therefore, it is intended that the matter contained in the foregoing description and the accompanying drawings be interpreted as illustrative and not in a limiting sense, when consideration is given to the appended claims.

I claim:

1. An archery bowsight comprising an elongated sight base having a length of at least 12 inches, a rear sighting member on the rear end of said base providing a sighting point positioned adjacent to and in the line of vision of an operator of the bow, a forward sighting member on the forward end of said base providing a vertical reference line horizontally alignable with said sighting point to establish the proper direction of the trajectory of the arrow and a central indicia on said vertical line vertically alignable with said sighting point to establish a particular range for the trajectory of the arrow for a particular operator when the rear sighting point is aligned therewith, means mounting said sight base on a bow for pivotal movement about a horizontal axis extending transversely with respect to the bow and disposed intermediate the ends of said base substantially nearer the forward end thereof than the rearward end thereof permitting movement of said front and rear sighting members into an operative position for a particular operator wherein said particular range of trajectory of the arrow will be obtained when said rear sighting point and said central

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indicia are aligned, said forward sighting member also including a plurality of reference indicia spaced vertically above and below said central indicia along said vertical line for indicating various ranges greater than and less than said particular range in response to the alignment of the right sighting point by the particular operator with said vertical line at points above and below said central indicia.

2. Archery bowsight defined in claim 1 wherein said forward sighting member includes a transparent plate mounted on the front end of said sight base, and said indicia include horizontally extending hair lines intersecting said vertical line.

3. Archery bowsight defined in claim 1 including a bolt extending vertically through said rear sight base, said bolt having said rear sighting member mounted in eccentric relationship thereto and biased against the top surface of said sight base, and nut means carried by said bolt for selectively tightening said eccentrically mounted sighting member against said base top surface.

4. Archery bowsight defined in claim 3 wherein said sighting member is an upright pin.

5. Archery bowsight defined in claim 3 including a lateral recess through sight base intermediate the top and bottom thereof and communicating with said bolt; an adjusting nut threadably carried by said bolt in said recess for selectively tightening said sighting member against said top surface to provide rotatable adjustment thereof.

6. An archery bowsight comprising an elongated sight base having a length of at least 12 inches, a rear sighting member on the rear end of said base providing a sighting point positioned adjacent to and in the line of vision of an operator of the bow, a forward sighting member on the forward end of said base providing a vertical reference line horizontally alignable with said sighting point to establish the proper direction of the trajectory of the arrow and a central indicia on said vertical line vertically alignable with said sighting point to establish a particular range for the trajectory of the arrow for a particular operator when the rear sighting point is aligned therewith, means for removably mounting said sight base on a bow for pivotal movement about a horizontal axis extending transversely with respect to the bow and disposed intermediate the ends of said base substantially nearer the forward end thereof than the rearward end thereof permitting movement of said front and rear sighting members into an operative position for a particular operator wherein said particular range of trajectory of the arrow will be obtained when said rear sighting point and said central indicia are aligned, said forward sighting member also including a plurality of reference indicia spaced vertically above and below said central indicia along said vertical line for indicating various ranges greater than and less than said particular range in response to the alignment of the right sighting point by the particular operator with said vertical line at points above and below said central indicia.

7. Archery bowsight defined in claim 6 wherein said sight base mounting means includes a mounting block

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having a central passage for receiving the archery bow and a planar exterior side wall; means carried solely by said mounting block for removably securing the same to the bow; the portion of said mounting block between said side wall and said central passage also having two spaced apart passages in perpendicular relationship to said side wall and extending thereto; bolts carried in each of said passages and extending laterally beyond said wall, the bolts being carried solely by said mounting blocks when the latter is assembled to the archery bow; said sight base having an aperture for receiving one of said bolts and an apertured slot for receiving the other of said bolts; and means for selectively securing said sight base against said mounting block side wall to provide selective vertical adjustment thereof corresponding to the said arcuate slot.

8. Archery bowsight defined in claim 7 wherein said means for removably securing said mounting block to said archery bow includes interior walls defining said central passage spaced for frictional engagement with the archery bow, said mounting block being of two-piece construction to provide assembly of said mounting block directly to the desired position on said archery bow.

9. Archery bowsight defined in claim 7 wherein said removable securing means includes set screws carried by said mounting block in alignment with said central passage for selective engagement with an archery bow positioned in said central passage.

10. Archery bowsight defined in claim 7 wherein said passages have a countersunk portion adjacent said central passage for receiving the head ends of said bolts, said bolt head ends being carried wholly within said mounting block portion, whereby said central passage is uninterrupted by said bolt heads.

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