June 21, 1960 C. J. GRANDT 2,941,296

ARCHERY SIGHT

Filed May 13, 1957

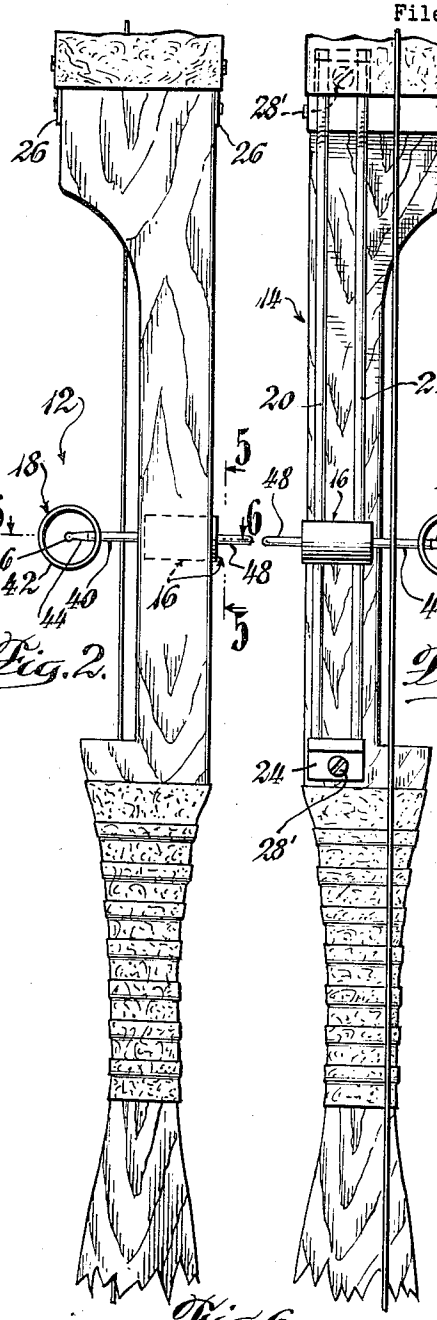


Fig. 2.

Fig. 3.

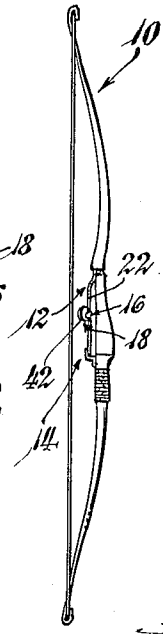


Fig. 1.

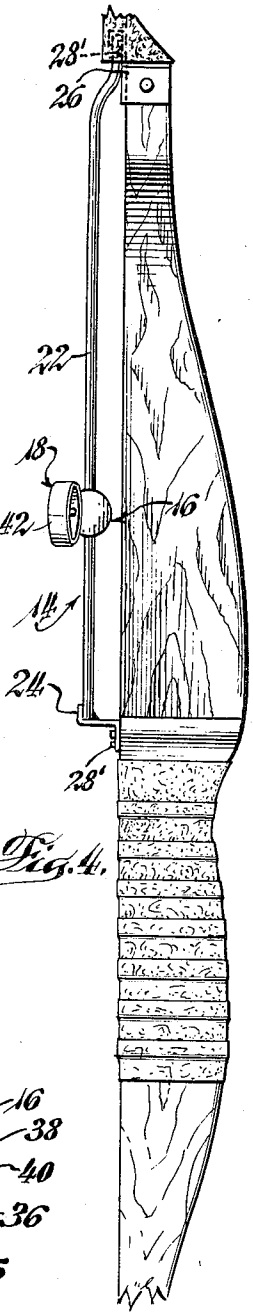


Fig. 4.

Fig. 5.

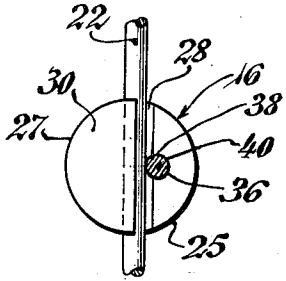
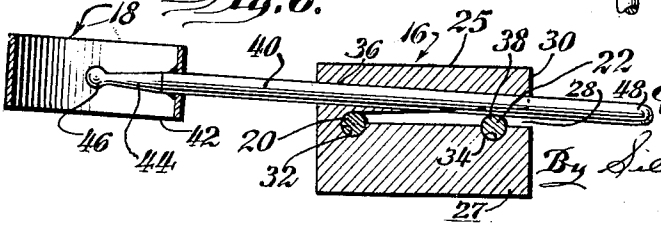


Fig. 6.



INVENTOR:

Clarence J. Grandt

By Silverman & Mullin

Attorney

United States Patent Office

2,941,296

Patented June 21, 1960

2,941,296

ARCHERY SIGHT

Clarence J. Grandt, Chicago, Ill.
(1214 Decorah, Long Lake, Ingleside, Ill.)

Filed May 13, 1957, Ser. No. 658,557

4 Claims. (Cl. 33—46)

This invention relates to a sighting device and more particularly to a sight adapted to be mounted on a bow.

Archery sights must be capable of controlled vertical and lateral adjustments. To provide this, sighting devices previously constructed involved a rather large number of interconnected parts such as screw clamps and precision cut racks which were constructed at considerable expense with comparatively close tolerances. Since bows are subject to generally rough treatment, these parts were frequently damaged, changing the fit of the parts, and making close and careful adjustment of the sight impossible.

An added difficulty resulting from the close tolerances required arose from the fact that since bows are frequently used out doors, the sights are subjected to the corrosive effect of the elements. What is needed therefore and is the chief object of this invention, is an archery sight formed from simple easily constructed parts which can withstand rough treatment, and whose operation is not affected by variations in the tolerances of the parts.

A further object of this invention is to devise an archery sight involving only a minimum number of simple parts.

Still another object of this invention is to devise a support for an instrument, such as a bow sight, involving only a minimum number of unitary parts, which permit adjustment of the instrument in two perpendicular directions.

Yet another object of this invention is to devise means for movably mounting an instrument such as a bow sight, on a carrier which is itself movably mounted on a support, which means simultaneously and frictionally secures the instrument to the carrier and the carrier to the support.

Yet a further object of this invention is to construct a bow sight from simple parts which is inexpensive to make, durable, and attractive in appearance.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel features of construction, arrangement and a combination of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportion, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

For the purpose of facilitating an understanding of my invention, I have illustrated in the accompanying drawings a preferred embodiment thereof, from an inspection of which, when considered in connection with the following description, my invention, its mode of construction, assembly and operation, and many of its advantages should be readily understood and appreciated.

Referring to the drawings in which the same characters of reference are employed to indicate corresponding or similar parts throughout the several figures of the drawings:

Fig. 1 is a side elevational view of the bow with the bow sight attached;

Fig. 2 is a rear elevational view of a portion of the bow, showing the bow sight in greater detail;

Fig. 3 is a front elevational view of a portion of the bow showing in detail the cooperating parts of the bow sight;

Fig. 4 is a side elevational view of a portion of the bow disclosing the brackets holding the track to the bow and end portions of the parts of the bow sight in greater detail;

Fig. 5 is a sectional view taken on the plane of line 5—5 of Fig. 2;

Fig. 6 is a sectional view taken on the line 6—6 of Fig. 2.

Referring now to Figs. 1 and 2 of the drawings, reference numeral **10** indicates generally a bow having mounted thereon an archery sight indicated generally by reference numeral **12**. As seen more clearly in Fig. 3, the archery sight includes a track **14**, a carrier **16**, and a sighting element **18**. The track **14** may comprise spaced parallel guide rods **20** and **22** which are in spaced parallel relationship to the bow. These rods are secured at their opposite ends to brackets **24** and **26** which may be mounted on the central portion of the bow by any convenient means as for example screws **28'** (see Fig. 4).

The carrier **16**, in the embodiment shown, may comprise a clothes-pin-like clamp formed of resilient spring-like material and may be cyindrical in shape. The carrier is split into a pair of legs **25** and **27** by a cut **28** beginning on a chord on end **30** and extending into the body of the carrier along a plane substantially parallel to its axis (see Fig. 5). The cut terminates at a point adjacent the opposite end of the carrier. A pair of spaced parallel track-receiving-guideways **32** and **34** extend through the cylinder in a direction substantially transverse to the axis of the cylinder (see Fig. 6). These track-receiving-guideways communicate with the cut **28** as shown. The parallel guide rods **20** and **22** comprising the track **14** extend through these track-receiving-guideways in the carrier **16** whereby the carrier is movably mounted on the track in interlocking engagement.

A sight-rod-receiving-guideway **36** extends through the opposite ends of the carrier at a slight angle to the plane of the cut. Guideway **36** communicates with cut **28** but because of the inclined plane of said guideway it communicates with only one of the track-receiving-guideways, i.e. **34** as shown in Figs. 5 and 6. A portion **38** of guide rod **22** partially obstructs guideway **36** for purposes described below.

The sighting element **18** as seen in the drawings comprises a sight rod **40** and an attached sight ring **42**. As seen in Fig. 6 the sight rod is rigidly secured to the sight ring **42** and one end **44** penetrates the ring and terminates in a sight knob **46** at its center.

In operation, when the free end **48** of the sight rod **40** is inserted in the sight-rod-receiving-guideway **36**, in carrier **16**, it encounters the obstructing portion **38** of guide rod **22**. Since the carrier is formed from resilient material, increased pressure on the sight rod tends to further spread apart the legs **25** and **27** of the split cylindrical carrier **16** thereby permitting the free end **48** to pass over the obstructing portion **38** and completely through the carrier. As seen in Fig. 6, a portion of the surface of the sight rod **40** is in engagement with the obstructing portion **38** of guided rod **22**. Since the legs **25** and **27** are spread apart against the resilience of the carrier material, the tendency of the legs to return to their natural position tends to exert a force on the sight rod forcing it into frictional engagement with portion **38** of the guide rod **22**. This holds the sighting element **18** in position on the carrier with enough force to insure against its being shifted by minor accidental jars. Simultaneously the force exerted by the legs of the carrier forces portion **38** of

guide rod 22 against the inner surface of guideway 34 increasing the frictional engagement of the carrier with the track, so that the carrier also resists being shifted by minor accidental jars. This arrangement permits a controlled horizontal and vertical adjustment of the sight but without complicated mechanical clamping devices.

It is believed that my invention, its mode of construction and assembly, and many of its advantages should be readily understood from the foregoing without further description, and it should also be manifest that while a preferred embodiment of the invention has been shown and described for illustrative purposes, the structural details are nevertheless capable of wide variation within the purview of my invention as defined in the appended claims.

What I claim and desire to secure by Letters Patent of the United States is:

1. In combination with an archery bow, a bow sight apparatus comprising a track mounted on a portion of said bow, a carrier, said carrier comprising a partially split cylinder having a pair of legs separated by a cut beginning on a chord at one end and extending along a plane substantially parallel to the axis of the cylinder to a point spaced from the othe rend, at least one track-receiving-guideway extending through said cylinder in a direction substantially transverse to the axis of the cylinder, said track-receiving-guideway communicating with said cut in the cylinder, said track penetrating said track-receiving-guideway whereby said carrier is movably mounted on said track, a rod-receiving-guideway extending through the opposed ends of the carrier and communicating with said cut and said track-receiving-guideway, the portion of the track in said track-receiving-guideway partially obstructing said rod-receiving-guideway, an instrument, said instrument having a rod rigidly secured thereto, said rod forced through said rod-receiving-guideway and past said obstructing track portion whereby the legs of said cylinder are spread apart thereby forcing said rod into frictional engagement with said carrier and further increasing the frictional engagement between the carrier and the track.

2. An archery sight including a track, said track including a pair of spaced parallel guide rods adapted to be rigidly mounted on a bow, a carrier, said carrier comprising a partially split cylinder having a cut beginning on a chord at one end and extending along a plane substantially parallel to the axis of the cylinder to a point in spaced relationship with the other end, a pair of spaced parallel track-receiving-guideways extending through said cylindrical carrier in a direction substantially transverse to the axis, said track-receiving-guideways communicating with said cut in the cylinder, said guide rods penetrating said track-receiving-guideways whereby said carrier is movably mounted on said track, a sight-rod-receiving-guideway extending through the opposed ends of the carrier in a plane slightly inclined to the plane of the cut, said sight-rod-receiving-guideway having a section communicating with said cut and one of said track-receiving-guideways, said track having a rod portion in said one track-receiving-guideway partially obstructing said section of said sight-rod-receiving-guideway, a sight, said sight having sight rod rigidly secured thereto, said sight rod forced through said sight-rod-receiving-guideway and past said obstructing rod portion by expanding said split cylinder, whereby said sight rod is frictionally secured to said carrier, and the frictional engagement between said carrier and said track is increased, permitting controlled lateral and vertical adjustment of the sight.

3. The apparatus set forth in claim 2 wherein said sight includes a ring, said sight rod having an end penetrating said ring and terminating in a knob at the center of the ring.

4. An archery device comprising a bow, a track mounted on said bow, a resilient deformable carrier, said carrier comprising a split cylinder having a track-receiving guideway extending therethrough, said track penetrating said track-receiving guideway whereby said carrier is movably mounted on said track, said carrier having a second guideway extending therethrough, said second guideway communicating with said track-receiving guideway and said track, said track having a portion partially obstructing said second guideway, a sight, said sight having guideway-penetrating means rigidly secured thereto, said guideway-penetrating means forced through said second guideway and past said obstructing track portion by deforming said carrier, whereby said sight is frictionally secured to said carrier and the frictional engagement between said carrier and said track is increased.

References Cited in the file of this patent

UNITED STATES PATENTS

Re. 11,758	Chandlee	July 11, 1899
506,259	Riter	Oct. 10, 1893
564,187	Eakright	July 21, 1896
1,295,932	Schulze	Mar. 4, 1919
2,060,373	Holtz	Nov. 10, 1936
2,351,103	Brown	June 13, 1944
2,600,250	Lake et al.	June 10, 1952
2,667,692	Leafstrand	Feb. 2, 1954
2,767,472	Kocur	Oct. 23, 1956

FOREIGN PATENTS

22,779	Great Britain	1913
330,267	Germany	Dec. 10, 1920

OTHER REFERENCES

Beam Compass For Rough Lay-Out Work, on page 979 of Machinery, August 1926.