Sept. 25, 1962

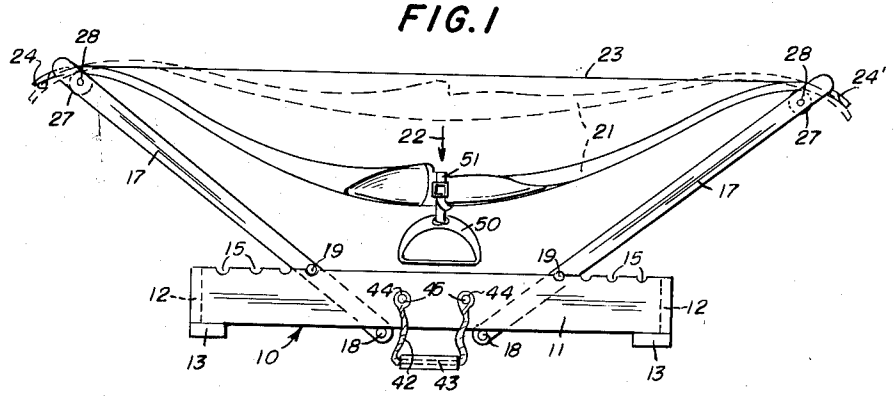
C. C. CHELF

3,055,655

DEVICE FOR STRINGING ARCHERY BOWS

Filed April 4, 1960

FIG. 1



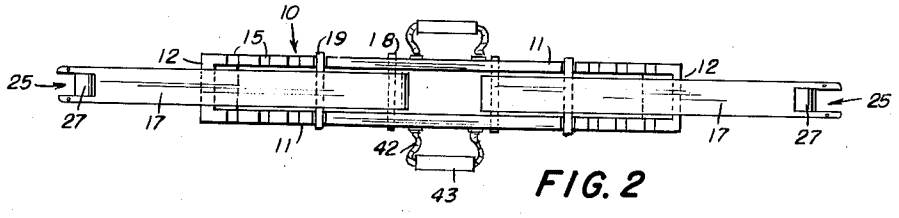
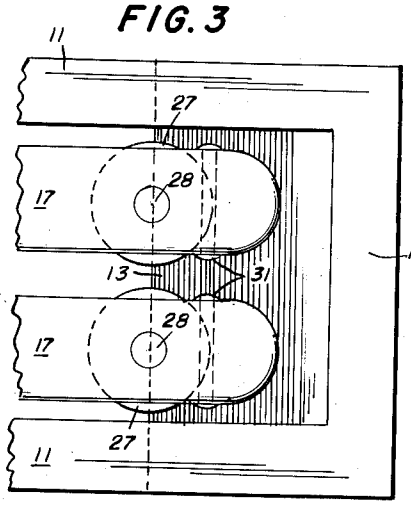




FIG. 2

FIG. 3



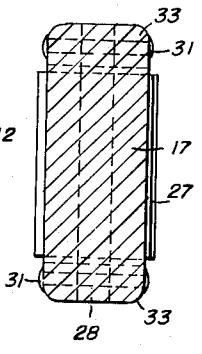
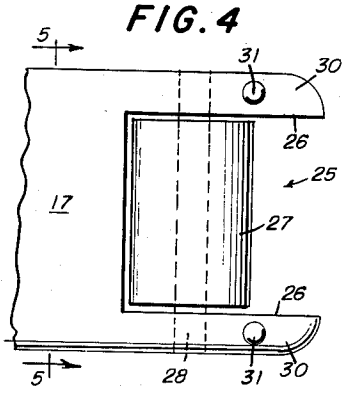




FIG. 5

FIG. 4



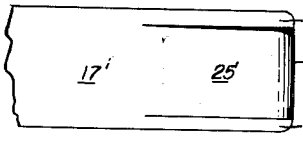




FIG. 6

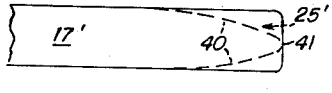



FIG. 7

INVENTOR

C. C. CHELF

BY Fred L. Witherspoon, Jr. &
Fred E. Shoemaker

ATTORNEYS

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# DEVICE FOR STRINGING ARCHERY BOWS

Clarence C. Chelf, Box 545, Lebanon, Ky.

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8 Claims. (Cl. 269—321)

This invention relates to archery and more particularly to a device for facilitating the stringing of archery bows.

It is a general object of the present invention to provide a novel and effective device for aiding archers in stringing bows of the type commonly used for hunting, for target and tournament shooting, and the like.

More particularly it is an object of this invention to provide a bow-stringer comprising a base supporting a pair of oppositely directed, upwardly and outwardly disposed support arms, notched at their outer ends to receive the limbs of an archer's bow inwardly of their outer ends to hold them supported while the grip portion of the bow is depressed whereby the nock ends are sufficiently drawn together to permit easy accurate stringing.

The most important object of this invention is to provide means for accurately stringing an archer's bow, whereby it is practically impossible to mis-align the string with the true lateral axis of the bow, i.e. the two nocks and the grip, thus eliminating twisted limbs due to improper stringing.

An important object of the invention consists in the provision of a box-like base for mounting the support arms, the parts being sized to house the arms in the base when not in use.

Another important object of the invention consists in the means for mounting the arms in a splayed position on the base while permitting adjustment of their spacing to accommodate various lengths of bows.

A further important object of the invention consists in the provision of friction reducing and bow surface protecting means in the notches at the ends of the arms.

Other and further features of novelty and objects of the invention will be more aparent to those skilled in the art upon a consideration of the accompanying drawing and following specification wherein are disclosed two exemplary embodiments of the invention with the understanding that such changes and modifications may be made therein as fall within the scope of the appended claims without departing from the spirit of the invention.

In said drawings:

FIGURE 1 is a side elevation of the bow stringer of the present invention showing in dotted lines a relaxed bow positioned thereon and in solid lines the bow bent for stringing;

FIGURE 2 is a top plan view without the bow;

FIGURE 3 is a top plan view of a fragment of the base with the arms stored therein;

FIGURE 4 is a showing on an enlarged scale of the preferred arrangement of the end of an arm to accommodate a bow limb;

FIGURE 5 is a transverse section through one of the arms taken on line 5—5 of FIGURE 4;

FIGURE 6 is a view similar to FIGURE 4 showing a modification; and

FIGURE 7 is a side elevation of FIGURE 6.

Archery bows, no matter what their material of construction, are preferably stored and carried unstrung or relaxed until ready for use, primarily in order to prevent them from taking a permanent set or bend from being held by means of the bow string in a relatively sharp curve as distinguished from their more nearly straight natural position. The problem is stringing the bow, i.e. bending it sufficiently so that the string which is already nocked at one end can have the loop at its free end dropped into the nock at the other end of the bow to hold the latter in



a partially bowed position. Archers with considerable strength and skill can effect stringing without the need of any assisting devices, by stepping between the string and the bow with the right foot when the bow is held vertical with the string facing inward, or to the left for right-handers, placing the lower limb of the bow against the instep, bringing the center or handle section of the bow behind and beside the knee of the right leg and pressing the upper limb of the bow inwardly with the right hand, bending the same about the knee and dropping the loop at the upper end of the string into the upper nock. This, however, requires considerable skill and if the archer is a bit over-exuberant and has a bow of excessive pull for his strength, the stringing is sometimes very difficult for him. The problem of stringing the bow is particularly trying to women who do not have the strength to push the upper limb inwardly in the method described above although they are fully capable of drawing the bow to its desired maximum extent for shooting purposes. The present invention, therefore, provides a simple piece of apparatus which facilitates bending the bow without the requirement for the exertion of such strength whereby the string may be readily positioned in the nock from which it was originally freed. Of course, the hand stringing procedure must be gone through in the opposite sense when it is no longer desired to use the bow and after a lengthy period of shooting the operation seems more difficult than before.

Referring now to the drawings for a better understanding of the invention and first to FIGURES 1 and 2, there is illustrated at **10** a hollow rectangular wooden base or box forming the foundation for the bow stringer and being sized to receive the other components for packing and storage. It is preferably formed from hard wood and suitably finished for appearance. The two parallel, vertically disposed, side members **11** of appropriate thickness are spaced apart laterally by end pieces **12** secured thereto by suitable fastening means of adhesive, and the transverse end portions or feet **13** are secured beneath the end blocks and extend inwardly a short distance towards the box center thus forming what may be termed a "partial bottom" for the box-like structure comprising the sides **11**, ends **12** and feet **13**. These parts **13** also act to support the lower edges of sides **11** above the supporting surface for purposes which will later appear.

The upper edges **14** of the side members **11** are each provided with a series of longitudinally spaced transverse notches **15**, each preferably semi-cylindrical in form. The notches extend from the ends of the sides a distance approximately half-way to the center of each. The notches of the two sides are in transverse alignment for a purpose which will appear shortly.

In order to support the bow well above the surface on which the base **10** rests and to provide space for depressing the center or handle section thereof a pair of arms **17** are provided, adapted to be arranged in the splayed position illustrated in FIGURE 1 where each inclines upwardly and outwardly from the base with an included angle of the order of 60° between the undersurface of each arm and the upper edges of the base. This angle may be varied to suit conditions.

This is achieved by providing an arm with a pair of cross pins or dowels **18** and **19**, respectively, the former being extended transversely through the arm near its lower end and having the ends each projecting beyond the edges of the arm a distance slightly greater than the thickness of the side members **11** of the base. The second dowel is positioned parallel to the first and spaced therefrom along the length of the arm a distance to have its ends received in one pair of the notches in the walls **11** when the extensions of dowel **18** engage beneath the lower edges of the side members to produce the desired angle

between parts **17** and **11**. The purpose of the plurality of notches **15** is to permit adjustment of the arms lengthwise of the base to adapt the arm ends to receive between them various lengths of bow within the customary range. Such a bow is illustrated at **21** in dotted lines in the relaxed condition and in solid lines in the deflected or bent position and with its limbs, near their outer ends, resting in notches in the ends of the arms. In the case of sharply or extremely recurved bows, instead of placing the upper transverse pins **19** in the notches **15**, adjust the arms so as to place the said upper transverse pins on top of the sides **11** and between notches **15**, which sets the arms **17** in a more perpendicular position relative to the horizontal edges of the sides **11**, providing an included angle more nearly of an order of forty (40°) degrees.

Under the circumstances defined above if pressure is put on the handle or central portion of the bow, as indicated by the arrow **22**, by pressing down with one hand or with one hand and knee or one foot, the string **23** which has one eye or loop in a nock **24** at one end of the bow can have the loop on the other end slipped over the other end of the bow and into the second nock **24¹** at the opposite end of the bow. With the pressure relaxed the bow will straighten until stopped by the action of the string as desired. It will be appreciated that when the bow is bent downwardly from the dotted line to the solid line position that the nocked ends of the limbs will be moved inwardly toward each other, as shown, to reduce the distance between them to permit easy accurate stringing.

Two forms of notched ends of arms **17** to accept the limbs of the bow are illustrated, the first and preferred in FIGURES 4 and 5, and the second and simpler form in FIGURES 6 and 7.

FIGURES 4 and 5 illustrate the deep notch **25** formed in the outer end of each arm **17** having parallel inner walls **26** spaced apart a sufficient distance to receive the limb of the widest bow expected to be used and accommodating between them the roller **27** journalled on transverse pin **28** received in appropriate holes in the arms **30** at the two sides of the notch. The journal pin is metal and each arm **30** is reinforced against splitting by rivet **31** extending therethrough, as shown.

The roller **27** has its outer surface covered or coated with a suitable soft material such as leather, felt, or the like to prevent injury or scratching of the bow and if it is deemed desirable the inner faces **26** of arms **30** may be protected for the same purpose. Arms **30** extend, as shown, beyond the distance necessary to support journal pin **28** so as to engage the sides of the bow limb and prevent it from slipping laterally off of the roller during the stringing operation.

FIGURE 5 illustrates at **33** the rounding of the corners or edges of arm **17** whereby it may be introduced between the box sides so as to first clear the ends of dowel **18** and subsequently rotated about 90° to bring the arm to the proper position so that these dowel ends engage under the lower edges of the side members and the ends of dowel **19** are properly received in the oppositely disposed notches. Removal is by a reversal of this process.

In FIGURES 6 and 7 the modified arm **17¹** is shown as having a notch **25¹** in one wide face starting at zero depth the distance of an inch or two inwardly from the end of the arm and increasing in depth along the curved surface **40** until it reaches its maximum depth at the end **41** of the arm. This notch thus provides the side walls **42** which prevent the limb of the bow from slipping laterally and these are of gradually increasing height from the beginning of the notch to its end. The notch may be duplicated on the other side, as shown, and could be of lesser depth, as indicated, if desired. Its bottom surfaces and, if necessary, the edges may be covered with some protective material to prevent scratching of the bow as in the case of the preferred embodiment.



For convenience in packing, carrying, storing, etc., each arm **17** is made slightly less in length than the distance between the end members **12** of the base or box so that both arms may be stored therein for carrying purposes. To facilitate this operation the height of the side members **11** between their upper and lower edges is at least the same as the width of an arm **17** so that the two arms may be stored inside the box, see FIGURE 3. The foot members **13**, as will be seen in FIGURE 3, extend sufficiently inwardly to permit the ends of the arms **17** to rest thereon so that they will not fall through the open portion of the box.

For convenience in carrying, each of the side members of the box at its center may be provided with a handle formed by slipping a rope loop **42** through a suitable tube **43** and fastening the loops or eyes in the ends of the rope, as seen at **44**, to the sides of the box by screws **45**, or the like. This provides a pair of oppositely disposed handles which may be dropped down out of the way as illustrated in FIGURE 1 for removing the arms **17** from the box and assembling them into use position. When the arms are packed in the box the handles may be brought together above the box for carrying the same, preventing the arms from jouncing out.

As shown in FIGURE 1, the operation of bending the bow, particularly if it is one of heavy draw, may be facilitated by strapping a stirrup-like part **50** to the center portion of the bow by means of a strap and buckle **51** so that a foot may be used to depress the bow center for stringing. This is sometimes preferred to using the foot on top of the handle which may soil or scratch it. In most cases, however, the knee and one hand can provide adequate depression for stringing the average bow.

The form of bow illustrated in the drawings is what is known as a "re-curved type" where the end of each limb is reversely curved, but obviously other more or less standard forms of bows can be strung with equal facility although if the recurving is not present the arms **30** may be required to extend a little greater distance beyond the roller than that indicated in FIGURE 4 to ensure against lateral movement of the ends of the limbs which might cause them to slip off of the arms.

Whatever the type of bow it is desirable to shape the bottoms of the notches in the arm ends, either fixed or roller type, to conform trasversely to the shape of the forward faces of the limbs where they engage in the notches to ensure against limb twisting during bending for stringing, thus ensuring against having one side of the string loop shorter than the other which would hold the bow twisted during use. Moreover, the ease with which the bow is held bent allows the archer to more accurately place the string loops to ensure the string aligning with the true lateral axis of the bow, i.e. the axis between the nocks and the grip.

The whole piece of apparatus is obviously quite light in weight, small in size and can be manufactured at a reasonable cost, whereas the results of using the same will be appreciated by even the most skillful bowman.

I claim:

1. A device for stringing archery bows comprising in combination; an elongated base, a pair of arms, means to mount said arms on said base with each extending upwardly and outwardly over a different one of the base ends, the central outer end portion of each arm having a longitudinal groove therein between side members spaced to receive and hold against lateral movement the limb of a bow resting on the bottom of the groove whereby the bow may be bent by downward pressure on the center thereof to reduce the distance between the ends to permit stringing.

2. A device for stringing archery bows comprising in combination; an elongated hollow base open at the top, a pair of rigid arms, means to mount said arms on said base extending upwardly and outwardly over the ends thereof, the upper end of each arm being shaped to receive a portion of the limb of a bow to support the latter for down-

ward bending to draw the limb ends inwardly for stringing ease, each said upper end having means to prevent lateral movement of the bow limb from engagement therewith, and means to adjust the mounting position of one of the arms to engage the bow limbs inwardly of the ends thereof to effect said limb end inward movement when bent.

3. The device of claim 2 in which each arm is of a length to be housed in said base, the thickness of the arms being such that two can be housed in said base.

4. A device for stringing archery bows comprising in combination; an elongated hollow base comprising vertically disposed parallel sides, end members spacing said sides, a pair of arms of a width to fit between said sides and of a length to fit within the base, feet at the ends of said base elevating the edges of the sides and forming bottom closure means for only the end portions thereof, at least one arm having a rod extending transversely therethrough with projecting ends to engage under the bottom edges of the sides, a second rod transversely extending through said arm with projecting ends to engage the upper edge of the said sides, the rod spacing on said arm being such as to incline the arm to the upper edges of the sides at an included angle of the order of 60°, means to support the other arm at a comparable angle, the free end of each arm being grooved to receive the limb of a bow near its outer end whereby the bow is supported for bending by pressure on its handle area to thereby move the bow ends closer together for stringing.

5. The bow stringing device of claim 4 in which the outer end of each arm is fitted with a roller in said groove over which rollers the bow limbs may move when the bow is flexed.

6. The bow stringing device of claim 4 in which a flexible loop handle is secured to the outer face of each base side member near its center whereby the two handles may be brought together over the open upper side of the box for carrying the same and for holding the arms in position therein.



7. The bow stringing device of claim 4 in which one edge of each side member of the base is provided with a series of transverse notches spaced therealong to receive and position projecting ends of one of the transverse rods on one arm to fix the arms in a spaced position on the base to accommodate various length bows.

8. A device for supporting archery bows for accurate stringing with minimum exertion comprising in combination, a base, a pair of arms mounted on said base and extending oppositely upwardly and outwardly, means for adjustment of one arm so that the ends of said arms are spaced apart a distance to receive the limbs of a bow inwardly of the nocks thereof a distance of the order of five inches whereby downward pressure at the bow center will bend it and reduce the internock distance sufficiently for stringing, each arm being grooved longitudinally to receive and hold said limbs against lateral movement and means in said groove bottoms complementary to the transverse configuration to the front faces of the engaged portions of the limbs to prevent limb twisting and to ensure string alignment with the true lateral axis of the bow.

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