May 10, 1938. F. J. ZIMA 2,116,650

ARCHER'S BOW

Filed June 24, 1936

Fig. 1.

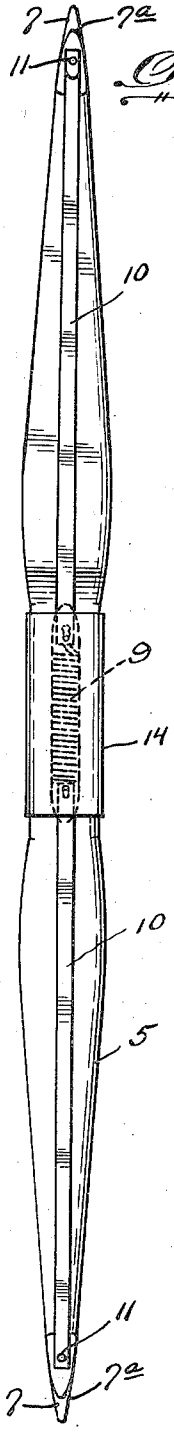


Fig. 2.

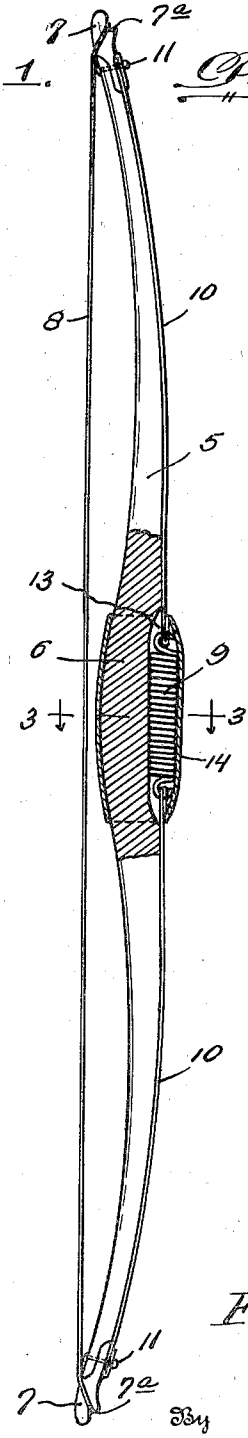


Fig. 3.

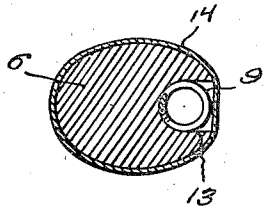
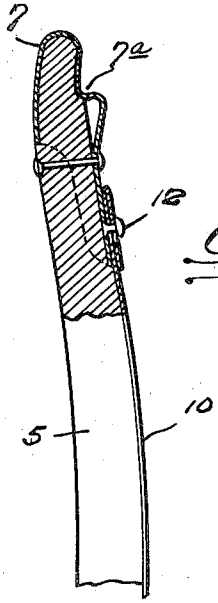


Fig. 4.



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ARCHER'S BOW

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Application June 24, 1936, Serial No. 87,071

4 Claims. (Cl. 124—23)

This invention relates to archers' bows, and the primary object of the present invention is to provide an improved bow of the type referred to.

More particularly, an object of the present invention is to provide an archer's bow including a primary bow-leaf of wood, and novel means of a simple and efficient nature applied to said primary bow-leaf for reinforcing and increasing the spring tension of said primary bow-leaf.

A further object of the present invention is to provide an archer's bow of the above character, wherein the means for reinforcing and increasing the spring tension of the primary bow-leaf is detachable from the latter, whereby the primary bow-leaf may be used with or without such reinforcing and spring tension increasing means, according to the requirements or strength of the user.

Other objects and features of the present invention will become apparent from the following description when considered in connection with the accompanying drawing, in which:

Figure 1 is a front elevational view of an archer's bow constructed in accordance with the present invention.

Figure 2 is a view thereof, partly in side elevation and partly broken away and in section.

Figure 3 is an enlarged transverse section on line 3—3 of Figure 2; and

Figure 4 is an enlarged detail view of one end of the bow, partly in side elevation and partly in section, and showing a modification of the invention.

Referring in detail to the drawing, 5 indicates a primary bow-leaf of wood having an intermediate portion 6 of reduced width and increased thickness to provide a hand grip and to afford side depressions to receive and guide the arrow. The end portions of the primary bow-leaf 5 are tapered narrower from the intermediate portion 6 to the outer ends of said leaf, such outer ends having suitable tips 7 fitted and secured thereon and suitably formed as indicated at 7a to facilitate attachment of the ends of the bow string 8 thereto.

The present invention embodies an attachment for the primary leaf 5 for the purpose of reinforcing and increasing the tension of said primary bow-leaf. This attachment consists of a helical tension spring 9 having similar strips of flexible spring metal 10 attached to the opposite ends thereof, the combined lengths of the spring 9 and strips 10 being nearly equal to the over-all length of the primary bow-leaf 5, and the strips 10 having suitable provision, such as openings in their outer ends receiving rivets 11, to permanently secure the tips in place and to effect permanent connection of such outer ends of the strips 10 with the tips 7. It will thus be seen that when the attachment is applied to the forward or front surface of the primary bow-leaf 5 as shown in Figures 1 and 2, such attachment will reinforce the leaf 5 and provide means for increasing the spring tension of the latter. In other words, when the primary bow-leaf 5 is flexed by pulling on the bow string 8, a longitudinal pull is exerted on the strips 10 in addition to flexing the latter with the ends of the primary bow-leaf 5, thereby expanding the spring 9 whose strength is added to the strength or tension of the primary bow-leaf 5.

In practice, the intermediate or grip portion 6 of the leaf 5 is preferably provided in its front surface with a longitudinal recess or groove 13 adapted for snug reception of the spring 9 whereby the same is hidden or substantially hidden from view as well as held against lateral displacement relative to the primary bow-leaf 5.

As shown in Figure 4, suitable means may be provided for detachably connecting the outer ends of the strips 10 to the tips 7 of the primary bow-leaf 5, whereby the attachment may be readily removed when its reinforcing and tension increasing action is not desired. While this means may take any one of many different forms, I have illustrated the same as including a projecting headed pin 12 on each tip 7 with which the apertured outer end of the associated strip 10 is detachably engaged. It will be seen that when the attachment is applied to the primary bow-leaf 5, the strips 10 will extend longitudinally of said leaf 5 and will lie flat against the front surface of the end portions of the leaf 5, flexing with the latter as well as shifting longitudinally thereon to place the spring 9 under tension when the leaf 5 is flexed, and to relieve the tension of spring 9 when the leaf 5 is allowed to return to normal condition. The grip portion 6 and spring 9 may be encased by a leather or other suitable sleeve 14.

It will be appreciated that by means of the present invention, a thirty pound bow, or one having a pull poundage of thirty pounds, for use by ladies, may have its pull poundage increased to the desired extent by means of the present attachment, thereby adapting the same bow for use by men. The attachment may be permanently attached, or capable of being readily applied or removed, and will remain in operative position when applied, under ordinary condi-

tions of use. Also, when the attachment is applied, the bow presents a neat and sightly appearance, and in no way interferes with the use of the bow. The inner ends of the strips 10 may have apertures to facilitate connection thereof with the ends of the spring 9, said ends of spring 9 being provided with hooks engageable in the apertures 16 as illustrated in Figure 2.

From the foregoing description, it is believed that the construction and manner of use, as well as the advantages of the present invention, will be understood and appreciated by those skilled in the art. Minor changes in the details of construction illustrated and described are contemplated within the spirit and scope of the invention as claimed.

What I claim as new is:

1. In an archer's bow, the combination with a primary wooden bow-leaf, of means for reinforcing and increasing the spring tension of said primary bow-leaf including a tension spring and similar flexible metal strips attached to the opposite ends of said spring, said tension spring being disposed in front of the intermediate portion of the primary wooden leaf, and said metal strips extending and being freely movable longitudinally of and along the front surface of the end portions of the primary leaf and having their outer ends attached to the tips of said primary leaf.

2. In an archer's bow, the combination with a primary wooden bow-leaf, of means for reinforcing and increasing the spring tension of said primary bow-leaf including a tension spring and similar flexible metal strips attached to the opposite ends of said spring, said metal strips extending longitudinally of the end portions of the primary leaf along the front surface thereof and having their outer ends attached to the tips of said primary leaf, said primary leaf having an intermediate grip portion, and said intermediate grip portion having said tension spring embedded therein.

3. In an archer's bow, the combination with a primary wooden bow-leaf, of means for reinforcing and increasing the spring tension of said primary bow-leaf including a tension spring and similar flexible metal strips attached to the opposite ends of said spring, said metal strips extending longitudinally of the end portions of the primary leaf along the front surface thereof and having their outer ends attached to the tips of said primary leaf, said primary bow-leaf having an intermediate grip portion provided in its front surface with a longitudinal recess in which said tension spring is seated.

4. In an archer's bow, the combination with a primary wooden bow-leaf, of means for reinforcing and increasing the spring tension of said primary bow-leaf including a tension spring and similar flexible metal strips attached to the opposite ends of said spring, said tension spring being disposed in front of the intermediate portion of the primary wooden leaf, and said metal strips extending and being freely movable longitudinally of and along the front surface of the end portions of the primary leaf and having their outer ends terminating at the tips of said primary leaf, and means detachably connecting the outer ends of said metal strips to the tips of said primary leaf.

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