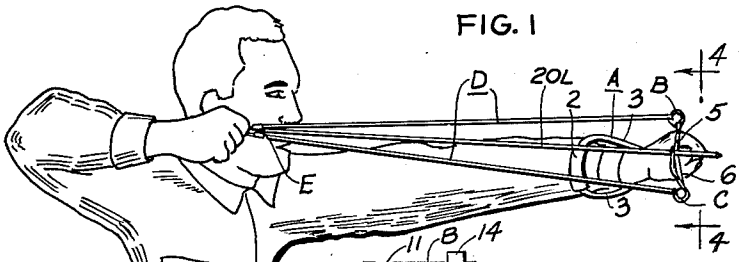
Jan. 30, 1962 C. A. SAUNDERS 3,018,770

SLING BOW

Filed May 15, 1958

FIG. 1



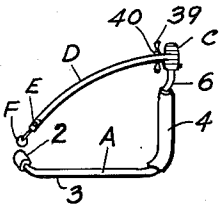


FIG. 2

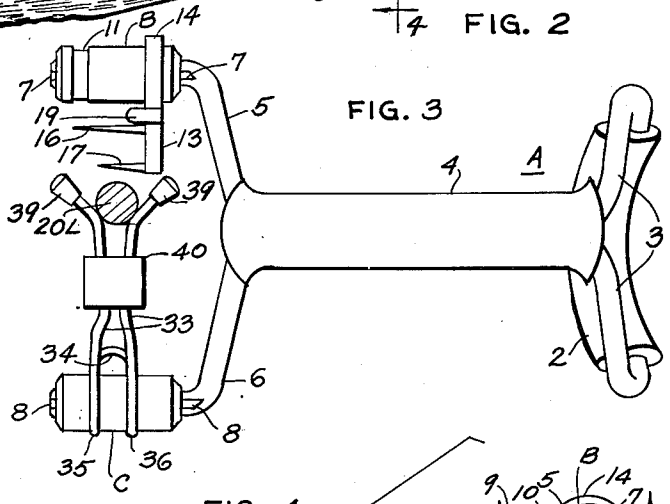


FIG. 3

FIG. 5

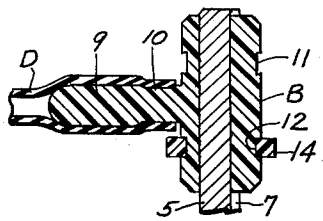


FIG. 4

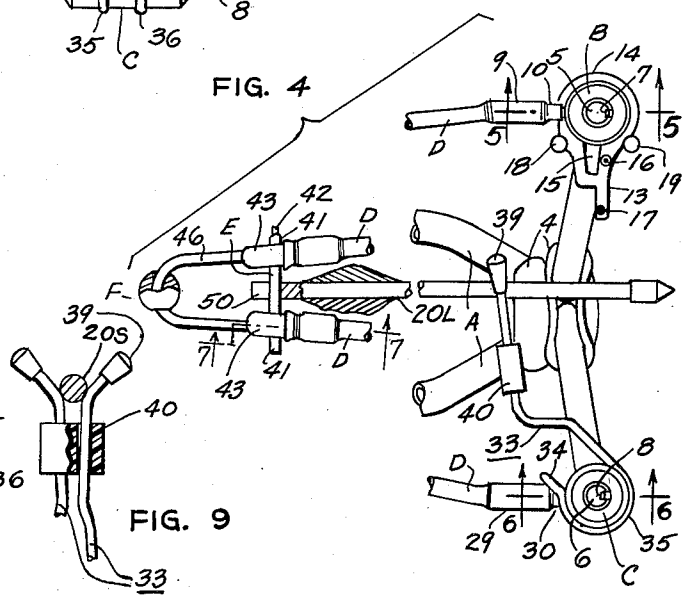


FIG. 6

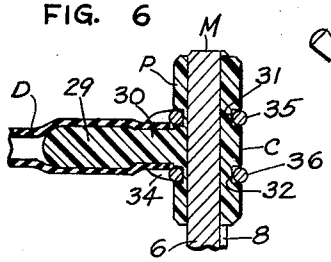


FIG. 9

FIG. 7

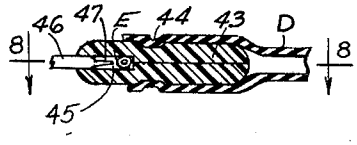
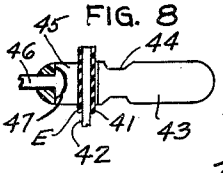


FIG. 8



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SLING BOW

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4 Claims. (Cl. 124—20)

This invention relates to a sling bow, being a device similar to a sling shot, but arranged and adapted for the shooting of arrows, as distinct from pebbles, pellets, or the like. The principal object of the invention is to provide a new and improved sling bow with which arrows may be shot with force and accuracy, and which has a long useful life and is well adapted to economical mass production.

An additional object is to provide an arrow rest which is readily thrust out of position by the follow-through motion of the sling, and thus minimizing injury to the sling and arrow rest.

A further object is to provide a pivoted sight structure which is readily rotated out of position when struck by the sling on the follow-through movement thereof.

Another feature relates to the provision of a cross tie at the rear end of the elastic power links of the sling, located forward of the connecting pull portion and arranged to receive the notch in the nock of the arrow, enhancing the accuracy of the device and greatly facilitating its use.

Other features relate to an improved arrangement for securing the ends of the elastic power links to the sling frame and to the pull and cross-tie structure.

The foregoing and other features and objects of the invention and the manner of attaining them will become more apparent, and the invention itself will be best understood, by reference to the following description of an embodiment of the invention taken in conjunction with the accompanying drawing, wherein:

FIGURE 1 shows the device assembled for use by a right-handed user and in distended and sighted position in readiness for an arrow to be shot toward a target;

FIGURE 2 shows the structure in upright position with the sling relaxed;

FIGURE 3 is an enlarged view of the device taken along line 4—4 of FIGURE 1, showing the device as seen from the target side;

FIGURE 4 is an enlarged view of the device as seen in FIGURE 1 with the intermediate portion of the elastic links and the arrow broken away;

FIGURES 5 to 7 are sectional views taken along section lines 5—5 to 7—7 of FIGURE 4;

FIGURE 8 is a sectional view taken along line 8—8 of FIGURE 7; and

FIGURE 9 shows the arrow rest adjusted to accommodate a smaller arrow.

As shown in FIGURES 1 to 4, the device comprises a metal frame A made of a single piece of formed rod, sight fitting B, arrow-rest fitting C, power links D in the form of tubes of live rubber, cross tie E for propelling an arrow, and pull bead F which terminates the pull loop 46.

Rod 3 of which frame A is composed is in the form of a loop having symmetrical side arms ending at support posts or prongs 5 and 6. Cushioning arm rest 2, which may comprise a tube of sponge rubber, surrounds the looped end of the frame rod. Both side arms of the frame rod are surrounded and held firmly together by hand grip 4, which may comprise a tube of live plastic material which is forced onto the outer ends of the side arms of the frame before these arms are offset outwardly to provide the finished prongs 5 and 6.

As illustrated in FIGURE 1, the preferred manner of use is to thrust the hand through the end loop and to

grasp the hand grip 4, with the hand grip 4 held horizontally. The nocked arrow 20 may then rest between the outwardly spread prongs of arrow-rest 33 by gravity. At that time the spurs 16 and 17 of the sight member 13 form horizontal sight lines at successive levels above the arrow.

Fittings B and C may be formed of tough plastic of medium hardness. Each such fitting has an opening accommodating the straight end portion of either prong 5 or prong 6, and each has an internal key for cooperating with keyway 7 or keyway 8 in the prongs, preventing turning of the fitting.

Each of the fittings B and C carries a pull stud indicated at 9 for fitting B and at 29 for fitting C. These studs are necked at 10 and 30 to assist in retaining the forward end of the stretched power-link pull tubes D from pulling off.

Sight fitting B has a pair of annular grooves 11 and 12, either of which may be used to retain the sight 13 in place when its loop or band 14 is within the groove. Sight 13 may be molded of tough plastic having substantial flexibility. It carries sight spurs 16 and 17, and also carries stop studs 18 and 19, either of which (depending upon whether the sight is assembled in groove 11 or in groove 12) is positioned to stop the sight in operated position upon engagement with pull stud 9 of fitting B. Elongated slot 15 provides flexibility which permits loop 14 to yield for installation and removal of the sight and to permit it to seat rather snugly in a groove 11 or 12.

Arrow-rest 33 has the form of a single piece of looped and formed wire extending doubly and symmetrically from a looped end 34 to the outwardly flared knob ends 39. Parts 35 and 36 partly encircle fitting C, being retained in grooves 31 and 32. The arrow rest may thus rotate about the axis of fitting C, being held in any desired position by friction between itself and the grooves 31, 32. In the position of the arrow rest shown in FIGURE 4, looped end 34 engages stud 29 as a rear stop which leaves the arrow rest in operative position, from which it is free to be moved forward when struck by the sling on the follow-through motion thereof when an arrow is discharged.

The support prongs of arrow-rest 33 are maintained at a desired distance apart by adjustable slide 40, of a suitable tough plastic material through which the side arms of the arrow rest extend. The side arms of arrow-rest 33 which pass through slide 40 are curved or angled outwardly as shown in FIGURES 3 and 9. Consequently, with slide 40 in its lowermost position as shown in FIGURES 3 and 4, the open prongs of the arrow rest are farther apart to accommodate a larger arrow 20–L. When a smaller arrow (indicated in cross section at 20–S in FIGURE 9) is to be accommodated and maintained at substantially the same level as the larger arrow, slide 40 may be raised to the position shown in FIGURE 9 to bring the support prongs of the arrow rest 33 somewhat closer together for that purpose. Moreover, even when using a single size of arrow, some users prefer to adjust slider 40 up or down according to the pitch desired.

At the rear of the sling, power-link tubes D are secured to tie studs 43, each of which has a necked portion 44 having the same grip-assisting function as noted in connection with necked portions 10 and 30 of pull studs 9 and 29 of fittings B and C. Tie studs 43 are of bifurcate construction as shown best in FIGURES 7 and 8, and a cross slot 45 is provided in each stud for grippingly receiving the ends of cross tie member E. Cross slots 45 also receive the knotted ends 47 of pull cord 46, which enters the space 45 in either tie stud 43 through a hole in the end of the stud.

Pull cord 43 and cross tie E are assembled with tie studs 43 before the power links D are applied to the

studs. In the preferred illustrated construction, the pull cord **46** is of tough stranded thermoplastic material, and the ends of the assembled pull cord are heated and flattened to provide knots **47** (FIGURES 7 and 8) which are too wide to be retracted through their openings of insertion in studs **43**.

Cross tie E is preferably composed of a cord **42** which is covered by a tube **41** of live rubber to provide good gripping action and a total thickness substantially in excess of the width of cross slots **45**. For assembly of the cross tie E, the two portions of the bifurcate studs **43** are spread apart to receive the cross tie within cross slots **45**. Then, the two parts of the bifurcate studs **43** are brought together and are inserted within the open ends of the tubular power links D, which are stretched diametrically by the operation. The cross tie is thereby gripped and compressed, and firmly held in position.

Since live rubber, of which tubular power links D are composed, has relatively low friction when in contact with a wet surface, pull studs **43** are preferably wetted before the tubular links D are pushed thereover into their illustrated position, in which position they shortly set firmly upon drying. A similar wetting procedure may be employed in applying the tubular power links D in their illustrated position on studs **9** and **29** of fittings B and C.

If the sling bow is to be assembled for use by a left-handed person, it suffices to remove parts B and C by sliding them off the ends of the posts or prongs, whereupon parts B and C may be turned over and each applied to the opposite prong. Sight **13** may be allowed to remain in groove **12** or may be transferred to groove **11**.

When an arrow **20** is discharged from the tensioned-sling position of the device illustrated in FIGURE 1, the rear portion of the sling follows as the arrow **20** is propelled forwardly, and thus makes contact with arrow rest **33** and sight structure **13** with considerable force. Structures **13** and **33** are only frictionally held in operative position. Accordingly, when struck, arrow rest **33** rotates forwardly around fitting C, and sight structure **13** rotates around fitting B, thus greatly minimizing the percussive force and adding greatly to the life of the sling parts and of the sight and arrow-rest structures.

Before the next shooting operation, structures **33** and **13** may be rotated back to their respective desired operative positions.

If the disclosed structure is to be employed as a sling shot, as to shoot pebbles, pellets, and the like, it suffices to remove cross tie E and pull cord **46** and to substitute a suitable strap or pouch. The arrow-rest **33** is unneeded for sling-shot use, and may be maintained rotated forwardly out of the line of missile discharge, but the sight structure **13** may be retained in operative position and employed for the same sighting purposes as when arrows are being aimed and shot.

While I have described above the principles of my invention in connection with specific apparatus, it is to be clearly understood that this description is made only by way of example and not as a limitation to the scope of my invention.

I claim:

1. A sling bow comprising a frame having a hand-grip portion from which similar opposed prongs extend, tubular elastic power links attached at one end respectively to the prongs, a cross tie connecting the other end of the power links and adapted to operatively engage the nock of an arrow to be shot from the sling bow, a pull-cord also connecting said other end of the power links rearwardly of the cross tie, a pair of bifurcated pull studs, each tubular link having an end portion remote from said prongs and receiving the diverging arms of the pull stud and compressing them together, said cross tie being gripped between the compressed arms of each pull stud, said pull-cord extending rearwardly from the non-bifurcated end of each pull stud.

2. A sling bow according to claim 1, wherein each pull stud includes an elongated widened retaining portion between the diverging arms thereof near their base, each pull stud including a central opening extending through its non-bifurcate end portion into the said retaining portion, the associated end portion of said pull cord extending into said retaining portion and having an attached enlargement which prevents its withdrawal from the opening, said cross tie being grippingly held within the forward section of said widened retaining portions of each pull stud.

3. A sling bow according to claim 2, wherein said pull cord is composed of thermoplastic strands and each end section thereof terminates in a blade-like enlargement of the type which may be formed thereon by heat and pressure.

4. A sling bow according to claim 2, wherein the cross tie comprises a cord core closely surrounded by a soft rubber tube to avoid fraying of the cord and to enhance the desired gripping action within the said retaining portion of the said tie studs and within the nock notch of an arrow.

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