May 12, 1970 C. A. SAUNDERS 3,511,221

ARM-BRACED SLINGSHOT

Filed July 3, 1968 2 Sheets-Sheet 1

FIG - 1

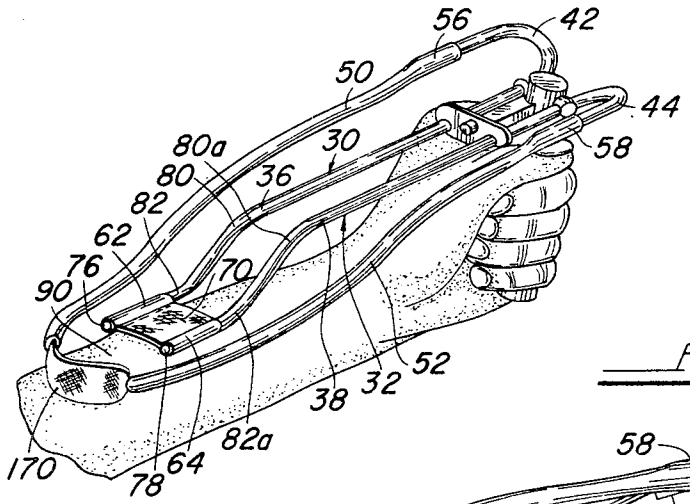

FIG - 2

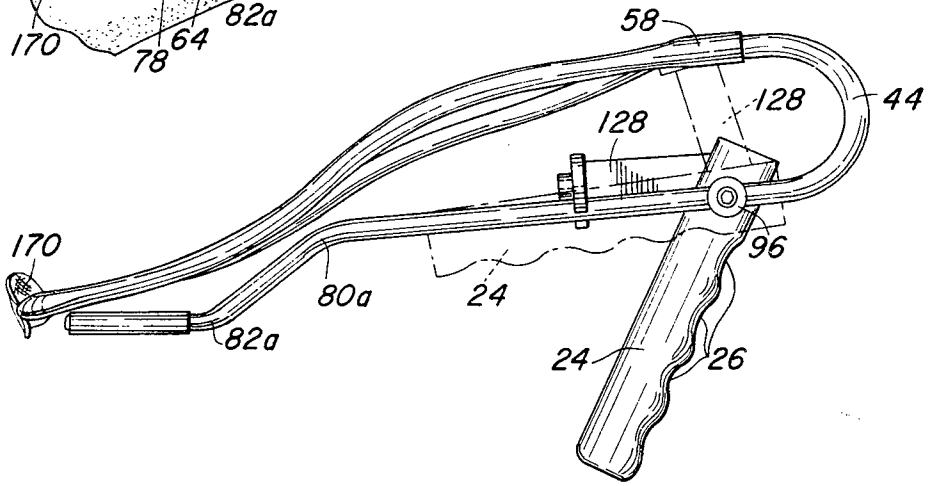

FIG - 3

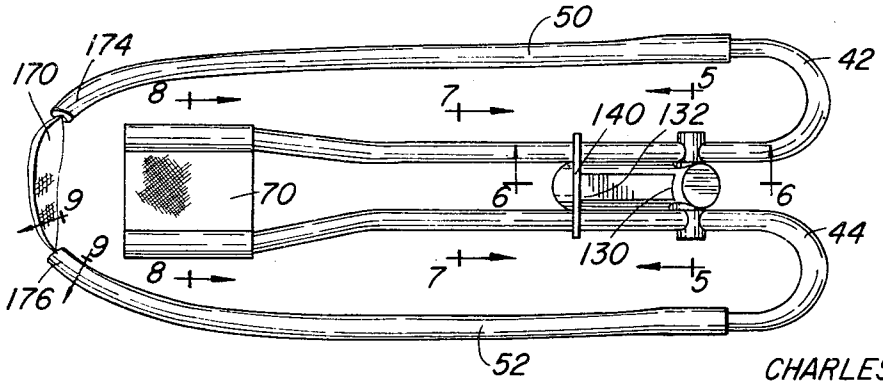

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FIG - 4

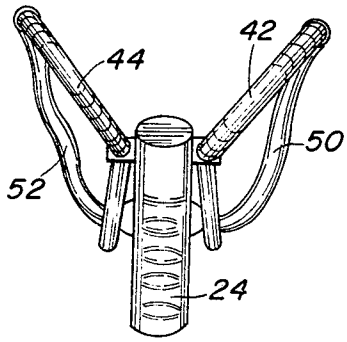


FIG - 5

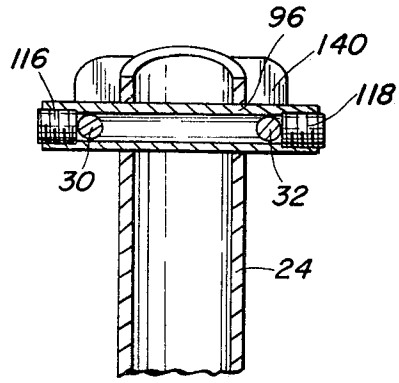


FIG - 6

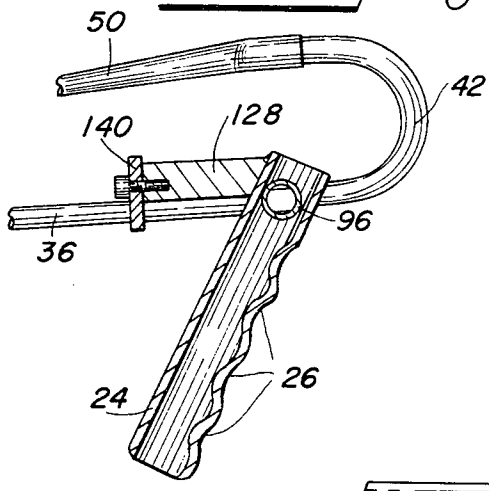


FIG - 7

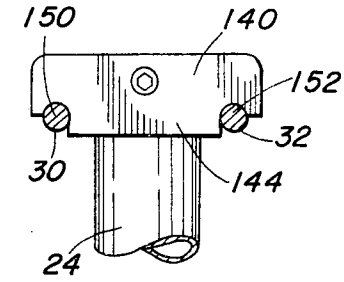


FIG - 8

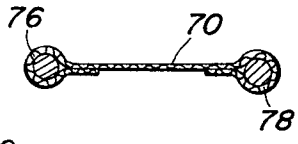


FIG - 9

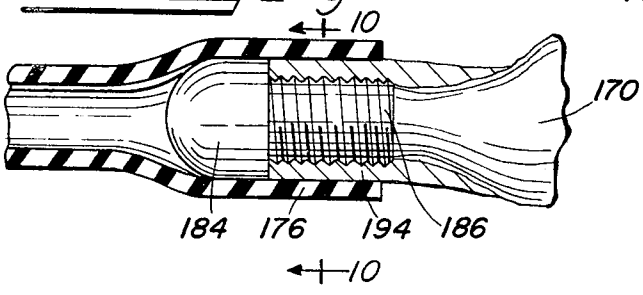
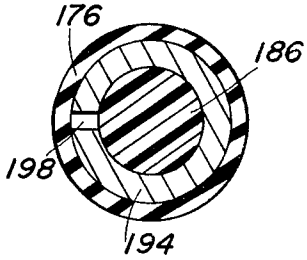


FIG - 10



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ARM-BRACED SLINGSHOT

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Int. Cl. F41f 7/00
U.S. Cl. 124—20 8 Claims

ABSTRACT OF THE DISCLOSURE

A foldable, arm-braced slingshot in which each band-carrying bar or rod is independently adjustable both axially and laterally to establish a true balance of draw forces applied through the bands, the slingshot having improved means for attachment of the missile-holding sling or pouch to the resilient bands.

This invention relates to a slingshot. More particularly, the invention is directed to an improved arm-braced or arm-supported slingshot of simple construction, of increased effective range and accuracy, and finding utility both as a target weapon and as a hunting weapon.

Many types of slingshots are known in the prior art. These devices have taken numerous and varied physical forms and structural arrangements, and many different manufacturing materials, fabrication techniques, and assembly procedures have been used. Some of these prior art devices have utilized no auxiliary bracing; in others the bracing has been invoked in varying degrees and in various ways. Notwithstanding long established interest in slingshots and the many forms this weapon has taken, no entirely satisfactory structure has heretofore been produced. In each, one or more undesirable or objectionable features may be recognized, and no physical structure has proven completely suited for the intended purposes. It is, therefore, the aim of the present invention to provide an improved slingshot which obviates the shortcomings and deficiencies of prior art devices.

It is a principal object of the invention to provide an improved slingshot which is arm-braced for enhanced steadiness, greater accuracy, and increased effective range.

Another object of the invention is to provide an arm-braced slingshot in which the separate band-carrying members are individually adjustable to compensate for differential stress forces applied thereto in use.

Still another object of the invention is to provide a slingshot which is readily and conveniently collapsible from a functional disposition to a carrying configuration, in which latter state it occupies a minimum of space.

A related important object of the invention is to provide improved attachment means by which the missile-receiving pouch or sling of the weapon is secured to respective resilient bands.

Yet another object of the invention is to provide simple, convenient and adjustable means by which lateral separation of the forward securement positions of the band to the fork components of the slingshot may be effected.

Other and further objects, advantages, and features of the invention will become apparent from a reading of the following specification taken in conjunction with the drawings in which:

FIG. 1 is a perspective view of a slingshot incorporating the features of the invention, the weapon being illustrated as gripped for use, and in an arm-braced position;

FIG. 2 is a side elevational view of the slingshot of FIG. 1, the dotted lines indicating the position of the handle assembly when the slingshot is in a collapsed or carrying condition;

FIG. 3 is a top plan view of the slingshot;

FIG. 4 is a view of the slingshot as seen from the front;

FIG. 5 is a cross-sectional view taken on the line **5—5** of FIG. 3;

FIG. 6 is a side view, partly in section, taken on the line **6—6** of FIG. 3 and showing details of the handle mounting and yoke assembly of the slingshot;

FIG. 7 is a cross-sectional view taken on the line **7—7** of FIG. 3 and showing the yoke positioned in engagement with the rods of the slingshot;

FIG. 8 is a cross-sectional view taken on the line **8—8** of FIG. 3 and showing the arm-engaging web at the rearward end of the slingshot;

FIG. 9 is a cross-sectional view taken on the line **9—9** of FIG. 3 and showing the novel manner of attachment of the pouch to the resilient tube element or band of the slingshot; and

FIG. 10 is a cross-sectional view taken on the line **10—10** of FIG. 9.

The aims and objects of the invention are achieved by providing in an arm-braced slingshot a pivotal handle which facilitates folding and compaction of the slingshot when not in use, and fork-like prongs or band carriers which are adjustable and individually extensible for equalization of draw forces applied to each. The structure also includes means for adjusting the width, separation, or spread of the prongs, and an improved connector assembly by means of which the pouch or missile-receiving web of the slingshot is more securely attached to the elastic bands and through which an improved cupping action is realized.

Referring now to the drawings, and particularly to FIGS. 1 through 4, for purposes of disclosure, the arm-braced slingshot **20** of the invention is shown as including a generally upright handle **24**, preferably contoured **26** to ensure and comfortable gripping. Secured to an laterally spaced on opposite sides of the handle **24** is a pair of substantially symmetrically disposed, high-strength rods **30** and **32**, each rod being of one-piece construction and including a rearwardly extending leg **36** and **38** and an integral forwardly projecting, reversely curved hook **42** and **44**. High-strength, resilient bands **50** and **52**, which in a preferred embodiment of the invention take the form of elastomeric tubing, include end sleeve portions which overlay and are firmly secured to the rearwardly directed ends **56** and **58** of respective hooks **42** and **44**.

The rearward extremities **62** and **64** of the rods **30** and **32**, which are spaced laterally, carry an arm-engaging, web-like strap or band **70** fastened to and bridging the rods, as seen most clearly in FIGS. 1 and 3. The strap or web **70** is preferably of an extensible and elastic material such as rubberized fabric. Securement of the web **70** to the rod ends **62** and **64** is through insertion of the rod ends **62** and **64** into frictionally embracing sleeves **76** and **78** provided at opposed lateral margins of the band **70**. Each rod leg **36** and **38** is contoured to establish a pair

of inflection curves **80** and **82** and **80***a* and **82***a* whereby the web-carrying ends **62** and **64** of the rods are offset downwardly to facilitate unobstructed positioning of the web on or in engagement with the user's forearm **90**.

The manner in which the handle **24** is secured to the rods **30** and **32** is indicated in FIGS. 2 and 3, and details of the structure are illustrated in FIGS. 5 and 6. As shown, the handle **24** is pivotally supported at its upper end on a transverse shaft **96**, the latter projecting through a suitably sized passage **98** extending diametrically through the handle **24**. The shaft **96** has formed therein at opposed sides of the handle **24** a pair of transversely extending through slots **102** and **104** through which the rods **30** and **32** are slidably received. Opposed lateral ends **110** and **112** of the shaft **96** are provided with axial sockets tapped to provide threads, the sockets communicating with the rods **30** and **32**. Locking screws **116** and **118**, which may be Allen screws or the like, are threadedly engaged in the threaded respective ends **110** and **112** of the shaft to abut and bear forcibly against the rods **30** and **32** to hold the rods in independently selectable positions, both axial and spread, and to preclude sliding rotation, or shifting movement of the rods relative to the handle assembly.

Secured to and pivotal with the handle **24** is a yoke assembly **124** which includes a post or bar **128** fastened at its upper end **130** to the handle **24** and carrying at its lower end **132** a transversely extending plate, flange, or yoke **140** symmetrically disposed to extend to either side of the bar **128** and to overlay the rods **30** and **32**, as illustrated in FIG. 3. Formed to extend upwardly into the lower edge **144** of the abutment plate or yoke **140** and in vertical correspondence with the rods **30** and **32** therebelow are arcuate recesses **150** and **152** sized to receive the rods **30** and **32** in nesting engagement. In the preferred embodiment of the invention illustrated, and as best seen in FIG. 7, entrance of the rods **30** and **32** upwardly into the recesses **150** and **152** is partially restricted, and, during such entrance the rods bear laterally against camming surfaces **160** and **162** of the yoke **140** so that, in their final positions, the rods seat, secured against inadvertent pivotal displacement. Through the arrangement illustrated and described, the arm-braced slingshot assumes, in use, the configuration depicted in FIGS. 1 and 2. When it is desired to fold or "collapse" the slingshot, it is necessary only to force the handle **24** upwardly, to pivot clockwise as viewed in FIG. 2, whereby the handle **24** and handle-carried yoke assembly assume the position indicated in dotted lines in FIG. 2.

An important feature of the invention is the connector assembly by means of which the leather-like sling or pouch **170** is secured to the rearwardly extending extremities **174** and **176** of the resilient bands or tubes **50** and **52**. The novel and highly effective mode of attachment will be best understood with reference to the cross-sectional view shown in FIG. 9. A locking wedge **180** generally round in transverse section and including an enlarged head **184** is joined to a depending shaft **186** of reduced diameter. The shaft **186** is shaped at its annular periphery to provide a plurality of ring-like ribs **190** projecting radially from the shaft **186** and spaced along an axially extending expanse thereof. In the structure as assembled, the head **184** of the wedge is forcibly inserted into the open end of the tubing resiliently to distend the tubing radially and to effect a positive frictional engagement between the wedge **180** and the tubing **52**. The end **194** of the pouch **170** is secured in an annular open ended slot **198** between the tubing **52** and the shaft **186** of the wedge **180** so that the resilient properties of the tubing urge the pouch end **194** into stressed and locked engagement against the ribs **190** of the wedge **180** to restrain the pouch against endwise withdrawal.

While the invention has been described and illustrated by way of preferred embodiments thereof, it will be apparent to those skilled in the art that variations and modifications may be made without departing from the scope

of the present invention as defined by the appended claims.

What is claimed is:

1. An arm-braced slingshot comprising

a generally upright handle,

a pair of laterally spaced high-strength rods disposed symmetrically one at each side of said handle, each said rods including a rearwardly extending leg and an integral forwardly pjrojecting reversely-curved hook,

said hook adapted for attachment of an elastic band thereto at an end thereof,

clamping means engaging said rods intermediate opposed ends thereof and pivotally securing said rods to said handle,

handle-supported rod-engaging yoke means overlying said rods,

said yoke means releasably engaging said rods and constituting a mechanical stop to limit pivotal upward displacement of said rods relative to said handle during use of said slingshot, and

arm-engaging, web-like strap means extending laterally between and interconnecting rearwardly extending free ends of said legs of said rods and resting upon and bearing against the forearm proximate the wrist of the slingshot user.

2. The mechanism as recited in claim **1** and further comprising elastic band means secured to hooks of said slingshot at ends of said hooks.

3. The mechanism as set forth in claim **2** wherein said clamping means securing said rods to said handle include rod-gripping means facilitating independent selective axial positioning of said rods in both forward and rearward positions to accommodate each particular user and to balance draw forces applied to said band means.

4. The mechanism as set forth in claim **2** wherein said clamping means include means for securing each of said rods in independently selectable positions to ensure equalization of draw forces applied to said elastic band means of said slingshot during use thereof.

5. The mechanism as set forth in claim **2** wherein said clamping means securing said rods to said handle include means for securing said hooks of said rods in independently selectable relative lateral, spread positions to equalize draw forces applied to said elastic band means of said slingshot.

6. The mechanism as recited in claim **1** wherein said clamping means includes means pivotally securing said rods to said handle to permit pivotal shifting of said rods between a yoke-engaging functional position of said rods and a yoke-disengaged collapsed and compacted position, said compacted position facilitating storage and transportation of said slingshot when not in use.

7. The mechanism as recited in claim **2** and further comprising:

a sling-like pouch for cradling a missle to be discharged from said slingshot,

means securing said pouch to said band means at ends of said band means opposed to ends thereof fastened to said hooks,

said elastic band means consisting essentially of tubing fabricated of a high tensile strength, resilient, elastomeric material,

said means securing said pouch to said band means comprising an assembly-locking wedge generally T-shaped in cross section and including an enlarged head and a depending shaft of reduced diameter as compared with said head,

said head adapted for forced insertion axially into an open end of said tubing to constitute said tubing a distended resilient sleeve encircling and gripping said head and overlying said shaft of said wedge,

said shaft and said sleeve defining therebetween an annular open-ended slot receiving axially therewithin an end portion of said pouch,

said sleeve being in stressing engagement with said pouch and urging said pouch into firm and interlocking abutment with said shaft of said wedge, to lock said end of said pouch within and to secure said pouch against withdrawal from said slot.

8. The structure as set forth in claim 7 and further comprising a plurality of spaced ring-like ribs disposed annularly about and projecting radially from said shaft of said wedge along an axially extending section thereof, said ribs mechanically engaging with mating grooves formed in said sleeve to effect a keying of said shaft with said end portion of said pouch to obviate relative axial shifting therebetween even upon application

of excessive draw forces through said elastic bands of said slingshot.

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W. R. BROWNE, Assistant Examiner