Aug. 29, 1967 N. L. McWHERTER 3,338,772

NOCKING JIG

Filed March 25, 1964 2 Sheets-Sheet 1

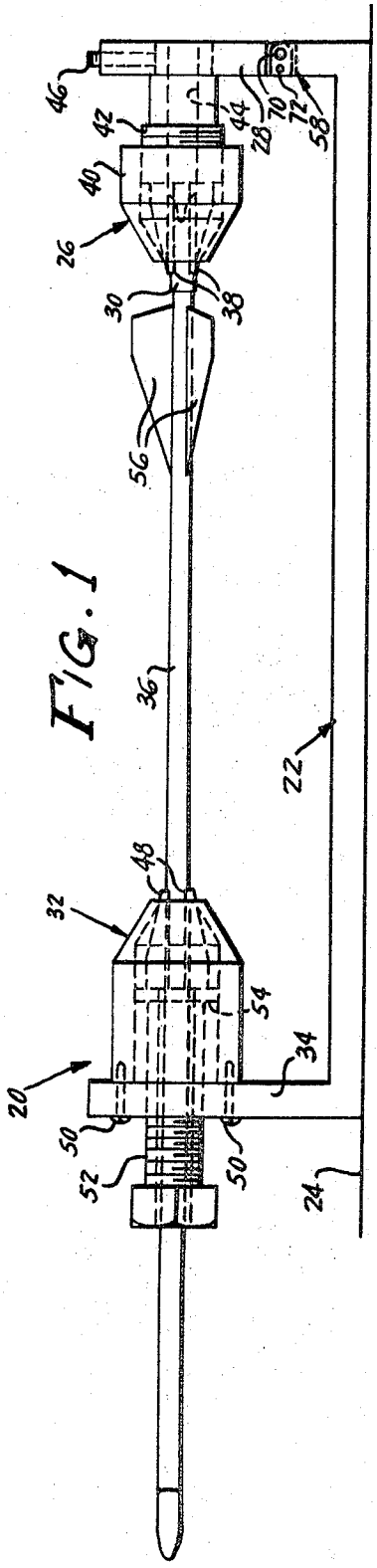


FIG. 1

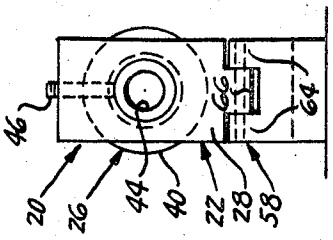


FIG. 3

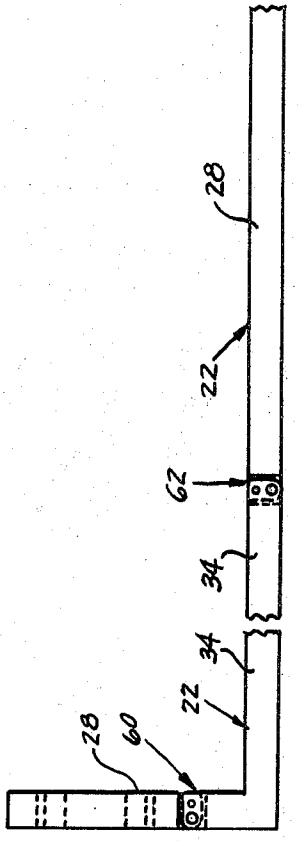


FIG. 5

FIG. 4

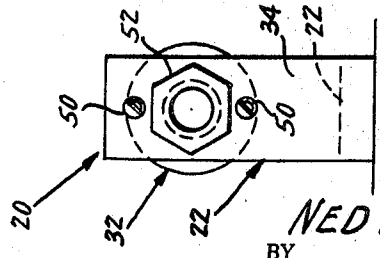


FIG. 2

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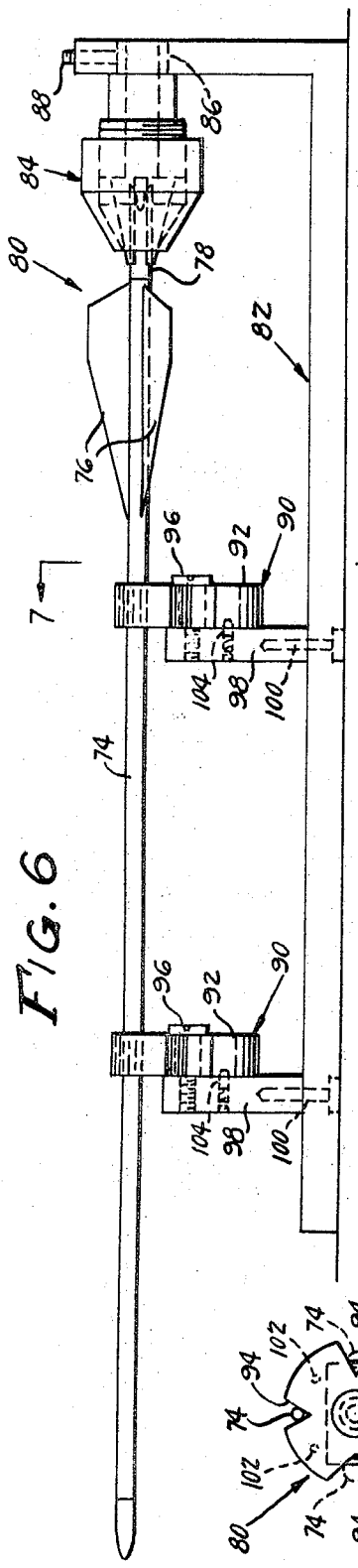


FIG. 6

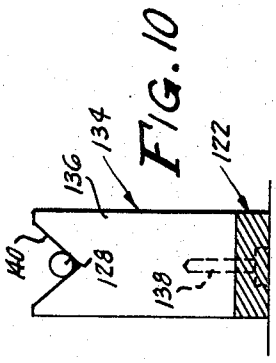


FIG. 10

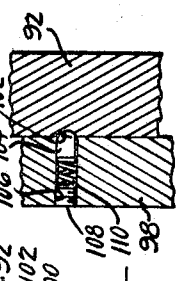


FIG. 8

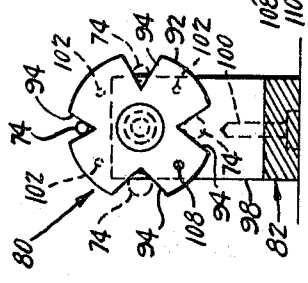


FIG. 7

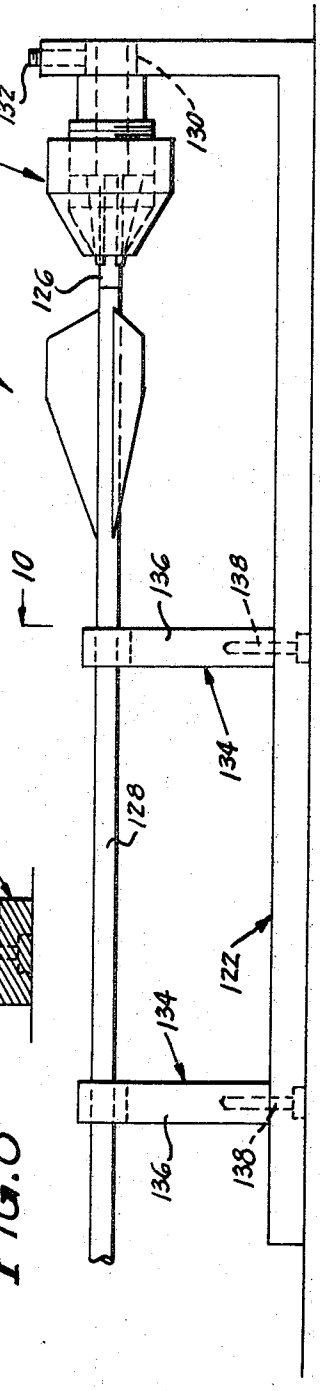


FIG. 9

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NOCKING JIG

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4 Claims. (Cl. 156—423)

ABSTRACT OF THE DISCLOSURE

Support apparatus for an arrow to receive a nock, the support apparatus including chuck means to releasably receive and hold a nock to be adhesively connected to the nock end of an arrow as the adhesive sets, and said support means including means engageable with the arrow intermediate its ends to support the same in alignment with the applied nock, all of the support means being adjustable to accommodate arrows whose diameters may vary from one to another.

This invention relates to a nocking jig and more particularly to a jig for securing a nock to an arrow which holds the arrow and nock in true alignment while these elements are being secured to each other.

A primary object of this invention is the provision of a nocking jig which is sturdy and durable in construction, reliable and efficient in operation, and relatively simple and inexpensive to manufacture, utilize, and maintain.

Another object of the instant invention is the provision of a jig which will hold a nock and an arrow shaft in true alignment while the rearward portion of the shaft is being adhesively secured to the nock.

A further object of this invention is the provision of a jig which is capable of nocking both fletched and unfletched arrow shafts.

A still further object of this invention is to provide a jig of the type described which will selectively hold arrows of different diameters in true alignment with a nock of the selected diameter during the gluing of the nock to the arrow shaft.

Other and further objects reside in the combination of elements, arrangement of parts, and features of construction.

Still other objects will in part be obvious and in part be pointed out as the description of the invention proceeds and as shown in the drawings wherein:

FIGURE 1 is a side elevational view of one form of nocking jig in accordance with the instant inventive concept operatively carrying a fletched arrow, certain hidden parts being shown in dotted lines;

FIGURE 2 is a left end elevational view of the device as shown in FIGURE 1 with the arrow removed;

FIGURE 3 is a right end elevational view thereof;

FIGURE 4 is a fragmentary side elevational view of a portion of the frame means showing an alternate hinge position;

FIGURE 5 is a fragmentary side elevational view of a different portion of the frame means showing still another alternate hinge position;

FIGURE 6 is a side elevational view of a modified form of nocking jig in accordance with the instant inventive concept, a fletched arrow being operatively carried thereby, with certain hidden parts being shown in dotted lines; and

FIGURE 7 is a transverse cross-sectional view taken substantially on line 7—7 of FIGURE 6 with various diameter arrow shafts being shown in dotted lines;

FIGURE 8 is an enlarged fragmentary cross-sectional view of a detail portion of the means for selectively aligning one of the notches in the plate members with the portions of the chuck means holding the nock;

FIGURE 9 is a side elevational view of a simplified nocking jig similar to the embodiment shown in FIGURES 6 to 8; and

FIGURE 10 is a transverse cross-sectional view taken substantially on line 10—10 of FIGURE 9.

Similar reference characters refer to similar parts throughout the several views of the drawings.

Referring now to the drawings in general, and more particularly to FIGURES 1 to 5, one form of nocking jig in accordance with the instant inventive concept is designated generally by the reference numeral **20** and comprises basically a light weight frame means **22** fixedly or removably secured in any conventional manner to a supporting surface **24** such as a work table or the like, a chuck means **26** secured to a first part **28** of the frame means **22**, portions of the chuck means **26** removably holding a nock **30**, and a support means **32** secured to a second part **34** of the frame means **22** in spaced relationship to the chuck means **26**, portions of the support means **32** removably holding an arrow **36** intermediate the ends of the same, the portions of the support means **32** holding the arrow **36** being aligned with the portions of the chuck means **26** holding the nock **30** whereby the arrow is held in a true position with respect to the nock while the nock is being secured to the arrow.

The chuck means **26** is either a commercial type tap wrench with its handle removed or a commercial collet chuck having jaw means **38** operatively carried thereby and actuated in any conventional manner by rotation of the outer sleeve **40** on the threaded carrier **42** to securely hold the nock **30** in position. The chuck means **26** is preferably rotatably carried in the part **28** of the frame means **22** by a bearing means **44** or the like to allow rotation of the same after the nock **30** has been secured therein so that the conventional nock index may be aligned with the cock feather on the arrow **36**. A standard set screw or the like **46** is utilized to secure the chuck means **26** in selected position as to the nock index and cock feather have been aligned.

In this embodiment, the support means **32** is comprised of an additional chuck means such as a commercial type drill chuck which has been modified by providing an opening therethrough so that the arrow **36** may be passed completely through the same without actuating the jaw means **48** which are operatively carried thereby in any conventional manner. The additional chuck means **32** is fixedly secured by screws or the like **50** to the second part **34** of the frame means **22** and a modified actuating means in the form of a tubular member **52** or hollowed bolt has been threadably secured in the opening with an apertured disc **54** engaged by the tubular member **52** and abutting the jaw means **48** whereby rotation of the tubular member **52** presses the disc **54** against the jaw means **48** to actuate the same for holding the arrow **36** which passes through the opening in the additional chuck means **32**, the aperture in the disc **54** and the tubular member **52** as clearly shown in FIGURE 1.

The use and operation of the embodiment described hereinabove will now be apparent. A nock **30** is placed in the chuck means **26** and the outer sleeve **40** is rotated on the threaded shaft **42** to tighten the jaw means **38** for holding the nock in position. An arrow **36** is passed through the additional chuck means **32** and the rearward end of the same is treated with any conventional adhesive material and engaged in an opening in the nock **30**. The chuck means **26** is rotated in the bearing means **44** until the nock index is aligned with the cock feather and the set screw **46** is then tightened to secure the adjusted relation. The tubular member **52** is rotated to tighten the jaw means **48** of the additional chuck means **32** for secur-

ing the arrow **36** in true alignment with the nock **30** while the adhesive means is allowed to set or dry.

If a fletched arrow, or one having its feathers **56** previously secured thereto, is to be nocked by the jig of the instant invention, it is necessary to provide relative movement between the two parts **28**, **34** of the frame means **22** so that the portions of the chuck means **26** holding the nock **30** and the portions of the additional chuck means **32** holding the arrow **36** may be unaligned for reception and subsequent removal of the arrow. This is accomplished by providing a hinge means pivotally securing one of the parts of the frame means **22** to the other of the parts. A preferred position of the hinge means is shown at **58** in FIGURES 1 and 3. Alternate positions of the hinge means are shown at **60** and **62** in FIGURES 4 and 5, respectively. The hinge means may be formed in any conventional manner, a preferred construction being shown in FIGURES 1 and 3 wherein one of the parts of the frame means **22** is bifurcated as at **64** for receiving therebetween a tongue **66** of the other part. A hinge pin **70** pivotally secures the two parts to each other and a tapered dowel or the like **72** locks the two parts in a true position after the arrow **36** has been received by the additional chuck means **32**.

It will be seen that an integral or unhinged frame means will be satisfactory for unfletched arrows, but that it is necessary to provide for pivotal movement of some portion of the frame means if a fletched arrow is to be nocked by the embodiment of FIGURES 1 to 5.

FIGURES 6 to 8 show a modified form of the device of the instant invention which will receive a fletched arrow such as shown at **74** carrying feathers **76** for securing the same to a nock **78** without the necessity of breaking down the frame means during the nocking operation. This embodiment designated generally by the reference numeral **80**, includes a frame means **82** carrying a chuck means **84** substantially the same as the chuck means **26** in the embodiment of FIGURES 1 to 5 and rotatably secured in a similar manner by a bearing means **86** with a set screw **88** to secure the same in adjusted relation after the index of the nock **78** has been aligned with the cock feather. The support means of this embodiment is designated generally by the reference numeral **90** and comprises at least one plate member **92**, a pair of spaced plate members being shown as preferred, with the periphery of the plate members **92** defining a plurality of spaced notch means **94** varied in size for holding arrows having different diameters shown in dotted lines at **74** in FIGURE 7 in aligned relationship with the portions of the chuck means **84** holding the nock **78**. The plurality of notch means **94** are defined about a circle on their respective plate member **92** with an axle means in the form of a bolt **96** rotatably securing the plate member **92** at the center of the aforementioned circle to a support member **98** fixed to the frame means **82** by screws or the like **100** in spaced relationship to the chuck means **84**. A plurality of recesses **102** are defined in the rear of each plate member **92** for reception of a detent **104** secured in an aperture **106** in the support member **98** by a threaded plug **108** with a spring means **110** normally biasing the detent **104** toward the associated plate member **92**. The recesses **102** are so arranged as to selectively align one of the notch means **94** with the portions of the chuck means **84** holding the nock **78**.

The use and operation of the embodiment of FIGURES 6 to 8 will now be apparent. A nock **78** is secured in the chuck means **84** in an obvious manner. The plate members **92** are rotated about their respective axles **96** to selectively align a particular notch means **94** with the chuck means **84**. The arrow **74** is then rested on the selected notch means **94** with its rearward end engaged in the nock **78**, conventional adhesive or other means securing these elements to each other.

A simplified nocking jig is shown in FIGURES 9 and 10 at **120** and includes a frame means **122** carrying a chuck means **124** similar to chuck means **84** and **26** of the embodiments described hereinbefore, the chuck means **124** being adapted to hold a nock **126** and to align the index of the same with the cock feather of an arrow **128** by rotation in a bearing means **130**, the set screw **132** locking the chuck means **124** in position. The frame means **122** carries a support means **134** in the form of plate members **136** secured by screws or the like **138** and having a single notch means **140** defined by their periphery for holding the arrow **128**. The basic distinction between this embodiment and the embodiment of FIGURES 6 to 8 is that the construction in FIGURES 9 and 10 is adapted for nocking a plurality of arrows each having shafts of the same diameter. The plate members or blocks **136** may be removed and replaced by other members having a different size notch means for nocking arrows of a different diameter.

In each of the last two described embodiments the notch means of the plate members may be marked to indicate the particular diameter arrow shaft they are designed to accommodate.

It will now be seen that there is herein provided an improved nocking jig which will function to accurately align an arrow shaft with the nock. The nocking operation has been performed heretofore by hand, resulting in poor final products which were inaccurate in flight. Thus, the devices shown in the instant application will be seen to have great practical utility and commercial importance.

Since many embodiments may be made of the instant inventive concept, and since many modifications may be made of the embodiments hereinbefore shown and described, it will be understood that all matter herein is to be interpreted merely as illustrative and not in a limiting sense.

I claim:

1. A jig for securing a nock to an arrow comprising a frame means, a first chuck means secured to a first part of said frame means, portions of said chuck means removably holding a nock, a support means secured to a second part of said frame means in spaced relationship to said first chuck means, said support means including an additional chuck means fixedly connected on the second part of said frame means, an opening defined through said additional chuck means for receiving the arrow therethrough, said opening being aligned with said portions of said first chuck means holding the nock whereby said arrow is held in true position with respect to the nock while the nock is being secured to the arrow, jaw means operatively carried by said additional chuck means and defining said portions of said support means holding the arrow, means to actuate said jaw means, said actuating means including a tubular member threadably carried in said opening of said additional chuck means, a disc engaged by said tubular member having portions abutting said jaw means and having an aperture defined therein, the arrow passing through said opening in said additional chuck means, said aperture in said disc and said tubular member, rotation of said tubular member forcing said disc against the jaw means to actuate said jaw means, and hinge means pivotally securing one of said parts of said frame means to the other of said part of said frame means whereby said one part may be selectively moved with respect to the other part to unalign said portions of said chuck means and the portions of said additional chuck means for reception and subsequent removal of a fletched arrow.

2. A jig for securing a nock to an arrow comprising a frame means, a chuck means secured to a first part of said frame means, portions of said chuck means removably holding a nock, a support means secured to a second part of said frame means in spaced relationship to said chuck means, said support means including at least one plate member having a plurality of circumferentially spaced notch means at the periphery thereof and defining

said portions of said support means holding the arrow, said spaced notch means being defined about a circle having its center on said plate member, said spaced notch means being varied in size to hold arrows having different diameters in alignment with said portions of said chuck means holding said nock, and means to position a selected notch means in alignment with said portions of said chuck means including an axle means rotatably supporting each plate member at its respective center.

3. The structure of claim 1 wherein said means to align a selected notch means with said portions of said chuck means further includes a plurality of recesses defined in said plate member and a spring-pressed detent selectively engaged in one of said recesses.

4. A jig for securing a nock to an arrow comprising a frame means, a first chuck means secured to a first part of said frame means, portions of said chuck means removably holding a nock, a support means secured to a second part of said frame means in spaced relationship to said first chuck means, said support means including an additional chuck means fixedly connected on the second part of said frame means, an opening defined through said additional chuck means for receiving the arrow therethrough, said opening being aligned with said portions of said first chuck means holding the nock whereby said arrow is held in true position with respect to the nock while the nock is being secured to the arrow, jaw means operatively carried by said additional chuck means and defining said portions of said support means holding the arrow, means to actuate said jaw means, said actuating means including an elongated hollow tubular member disposed in said opening of said additional chuck means and axially adjustable relative thereto, said arrow passing through said opening in said additional chuck means, said hollow tubular member and said aperture formed in said disc, said hollow tubular member having an end disposed in juxtaposition relative to said jaw means and being movable in one direction relative to said opening to an adjusted position to engage said jaw means to activate the same, means releasably securing said hollow tubular member in its said adjusted position, and hinge means pivotally securing one of said parts of said frame means to the other of said parts of said frame means whereby said one part may be selectively moved with respect to the other part to unalign said portions of said chuck means and said portions of said additional chuck means for reception and subsequent removal of a fletched arrow.

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