Aug. 31, 1943. G. C. DEAKINS 2,328,200

TOOL CONSTRUCTION

Filed Jan. 30, 1943

Fig. 1.

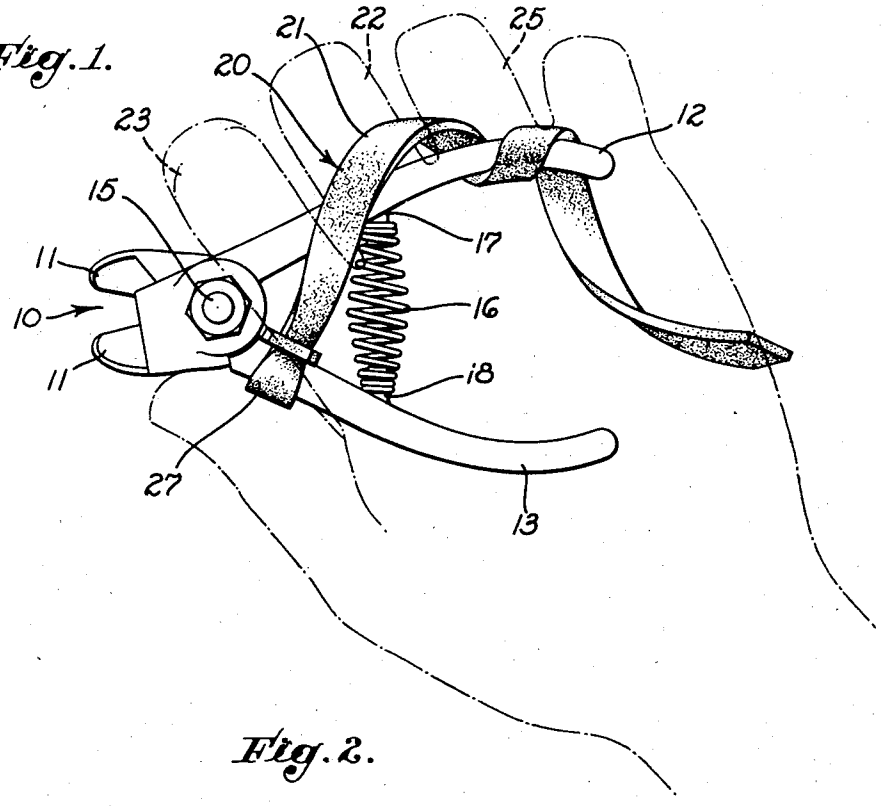


Fig. 2.

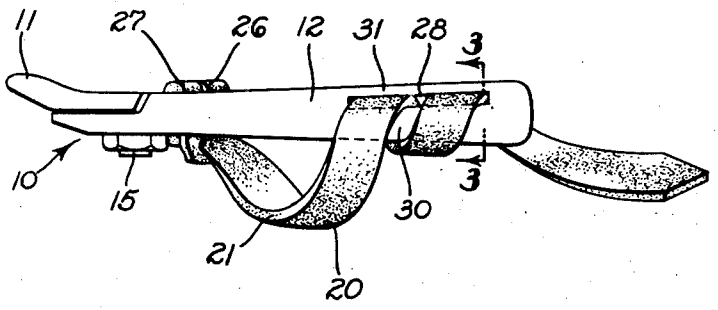
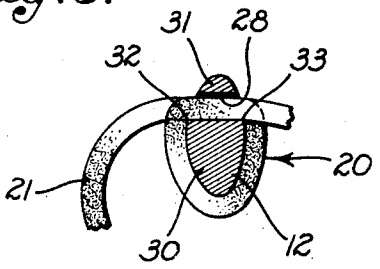


Fig. 3.



INVENTOR
GROVER C. DEAKINS
BY
HARRIS, KIECH, FOSTER & HARRIS
Fred W. Harris
FOR THE FIRM

ATTORNEYS.

Patented Aug. 31, 1943 2,328,200

UNITED STATES PATENT OFFICE

2,328,200

TOOL CONSTRUCTION

Grover C. Deakins, Orange, Calif.

Application January 30, 1943, Serial No. 474,165.

6 Claims. (Cl. 30—291)

My invention relates to tools adapted to be grasped by the user's hand, with particular reference to tools having means for engagement by the user's hand to hold the tool in grasping position. While the invention is applicable to various types of hand tools, it has outstanding advantages for what may be termed a plier-type tool, i. e., a tool having two pivotally connected members forming a pair of jaws and a pair of handles for manipulating the jaws.

Initially the invention is being embodied in the construction of a fruit-picking tool, and for the purpose of the present disclosure will be so described. The description of the particular form of the invention will be sufficient guidance for those skilled in the art who may have occasion to apply the invention to other tools and devices.

A fruit-picking clipper of the type here in mind has a pair of cutting jaws for severing a fruit stem, and a spring means acting between the two handles of the clipper to urge the jaws apart. It is a common practice to connect a strap or similar elongated flexible member across the tool forming a loop for engagement by the user's hand whereby the tool may be maintained in a grasping position while the user opens his hand. Such a holding loop, usually passing over the second finger, permits the user to momentarily release the tool for the purpose of grasping a fruit to be picked. While holding the fruit with the ends of his fingers, the user manipulates the tool with his hand or with the base portions of his fingers to clip the fruit stem.

Users' hands vary in size and each user has his own idea of an optimum fit for the holding loop. In time, furthermore, the flexible material usually stretches to increase the size of the loop. There is, then, a pressing need for convenient adjustment of the size of the holding loop, but heretofore the flexible member has been fixedly connected to the tool with no provision for convenient adjustment. It is a common practice, for example, to secure the flexible member or strap to at least one of the two handles by adhesive tape, so that adjustment can be achieved only with difficulty and inconvenience.

The general object of my invention is to provide such a combination of tool and flexible member in which the size of the holding loop may be quickly and conveniently varied at the will of the user. More specifically, it is an object of my invention to provide an efficient connection between the flexible member or strap and at least one of the tool handles such that lengthwise adjustment of the strap may be made at the connection without loss of time. I propose to provide frictional engagement of the strap with the tool handle involving wrapping the strap around the handle. A further object of the invention is to provide an adjustable non-slip wrapped connection in which retaining means is employed in such manner as to prevent unwrapping of the strap and yet permit lengthwise shifting of the strap around the wrap turns to vary the dimensions of the holding loop.

The above and other objects and advantages of my invention will be apparent in the following description, taken with the accompanying drawing.

In the drawing, which is to be regarded as merely illustrative,

Fig. 1 is a plan view of the tool with the user's hand shown in phantom;

Fig. 2 is a side elevation of the tool; and

Fig. 3 is a transverse section through a handle of the tool taken as indicated by the line 3—3 of Fig. 2.

The drawing shows a tool in the form of a fruit clipper generally designated 10 comprising a pair of cutting jaws 11 and two handles 12 and 13 relatively movable about the axis of the usual pivot bolt 15. To urge the two cutting jaws 11 to normal open position suitable resilient means may be incorporated in the tool construction such as a coiled spring 16 embracing at its ends lugs 17 and 18 on the two handles 12 and 13 respectively.

A strap generally designated 20 is connected across the two handles 12 and 13 to form a holding loop 21 dimensioned for engagement by the user's second finger 22. As indicated in Fig. 1, when the tool is in use the strap 20 passes under the user's first finger 23, over the second finger 22, and under the third finger 25. By virtue of such an arrangement, the tool will be held in substantially the position shown in Fig. 1 even when the user completely opens his hand.

In the practice of my invention the strap 20 is connected to at least one of the handles 12 and 13 by wrapping, and, if desired, wrapping may be employed for making connections to both of the handles. In the preferred practice of my invention, however, the strap is connected to one of the handles in a conventional manner. Thus, the strap may be cut longitudinally near one end to provide a slit 26 so that the other end of the strap may be passed through the slit to form a slip loop 27 embracing the handle 13 near the tool pivot.

For the purpose of connecting the strap to the

handle 12 in the manner of my invention, I arrange for wrapping the strap around a portion of the handle and arrange for some suitable retaining means to keep the strap from unwrapping. In my preferred practice, the handle 12 is adapted for the required cooperation with the strap 20 by the simple expedient of cutting a longitudinal slot 28 in the handle, as best shown in Fig. 2.

Such a slot divides the handle into one longitudinal portion 30 about which the strap may be wrapped and a second longitudinal portion 31 serving to keep the strap from unwrapping. The retaining portion 31 of the handle is sufficiently close to the wrapped portion 30 to keep the strap from unwrapping and normally to maintain positive engagement with the handle on the part of the strap, but it is to be noted that the retaining portion 31 of the handle is sufficiently spaced from the wrapped portion 30 to permit the user to readily work or slide the strap lengthwise through the slot for the purpose of tightening or loosening the holding loop 21. Preferably the slot is cut in such manner as to provide at least one relatively sharp handle edge over which the strap passes. Thus, Fig. 3 shows two relatively sharp edges 32 and 33 that normally effectively discourage slippage of the wrapped portion of the strap.

As indicated in Figs. 1 and 2, the strap is preferably passed twice through the slot 28 so that the strap makes approximately one and one-half turns about the wrapped portion 30 of the handle 12. Since this wrapped portion of the handle is within the grasp of the user's hand, Fig. 1 showing the wrapped portion at the base of the user's third finger 25, the user's hand presses the wrapped portion of the strap against the handle thereby further tending to prevent the strap from slipping. In any event any stressing of the strap results in drawing the wrap turns of the strap into increasingly effective frictional grip with the handle portion 30.

The preferred practice of my invention described in detail herein will suggest to those skilled in the art various changes and substitutions under my inventive concept, and I reserve the right to all such departures from my description that properly lie within the scope of my appended claims.

I claim as my invention:

1. In a device of the character described, the combination of: a tool having two handles to be grasped by the user's hand; an elongated flexible holding member attached to one of said handles and having a portion wrapped around a portion of the other handle for frictional engagement therewith, thereby forming a holding loop between the two handles for engagement by the user's hand; and means on the tool retaining said wrapped portion of the flexible member against said handle portion but permitting lengthwise adjustment of the wrapped portion of the flexible member for varying the dimension of said holding loop.

2. A combination as set forth in claim 1 in which said flexible member is wrapped approximately one and one-half times around said handle portion.

3. In a device of the character described, the combination of: a tool having two handles to be grasped by the user's hand; an elongated flexible holding member attached to one of said handles and having a portion wrapped around a portion of the other handle for frictional engagement therewith, thereby forming a holding loop for engagement by the user's hand, said wrapped portion of the handle lying within the region of grasp by the user's hand so that the user's hand presses the wrapped portion of the flexible member against said handle portion; and means unitary with the tool for retaining said wrapped portion of the holding member against unwrapping, said retaining member permitting lengthwise adjustment of the wrapped portion of the flexible member for varying the dimension of said holding loop.

4. In a device of the character described, the combination of: a tool having a first handle and a second handle with a relatively sharp longitudinal edge on said second handle; an elongated flexible holding member connected to said first handle and wrapped around a portion of said second handle across said edge for adjustable frictional engagement with the second handle, thereby forming an adjustable loop for engagement by the user's hand; and means on said second handle normally effective to prevent said wrapped portion of the flexible member from unwrapping or slipping.

5. In a device of the character described, the combination of: a tool having two handles with a slot dividing one of said handles into two longitudinal portions; and an elongated flexible holding member passed through said slot and wrapped around one of said longitudinal portions for adjustable frictional engagement with said one handle, said flexible member being connected with the other of said handles, thereby forming an adjustable loop for engagement by the user's hand.

6. A combination as set forth in claim 4 in which said slot forms a relatively sharp longitudinal edge under the strap to prevent lengthwise slipping of the strap.

GROVER C. DEAKINS.