(No Model.)

S. B. McLANE.

TOOL FOR GRASPING AND HOLDING.

No. 275,341. Patented Apr. 3, 1883.

Fig. 1.

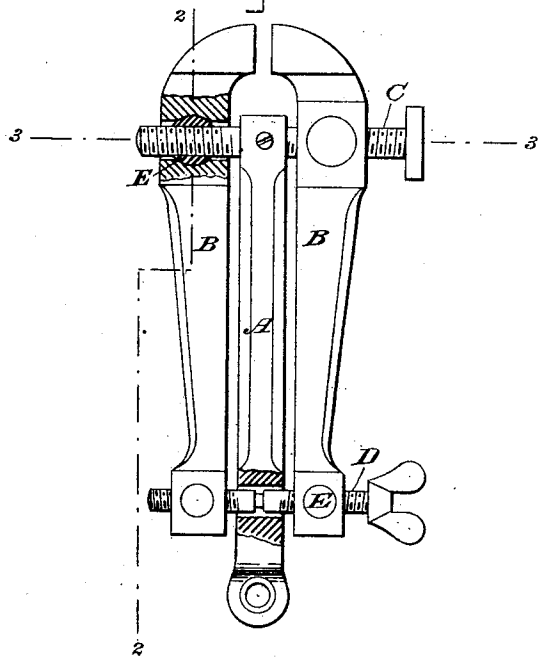


Fig. 2.

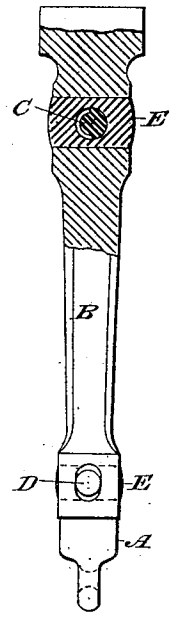


Fig. 4.

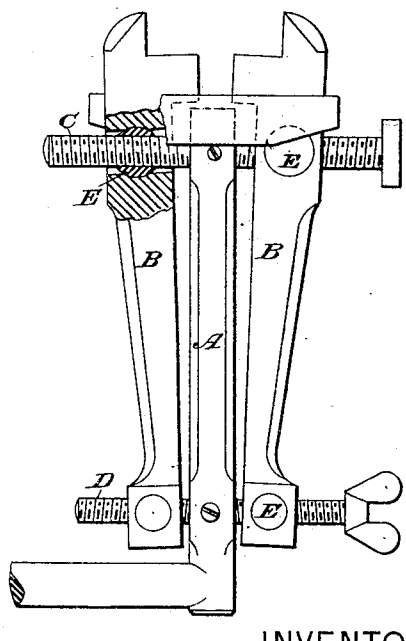


Fig. 3.

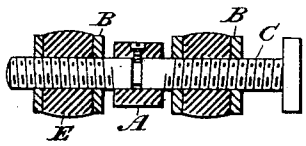


Fig. 6.

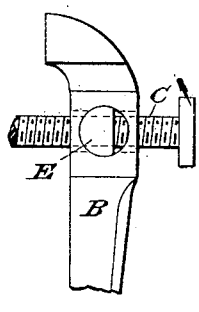
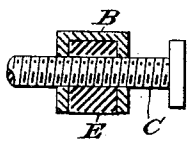


Fig. 5.



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UNITED STATES PATENT OFFICE.

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TOOL FOR GRASPING AND HOLDING.

SPECIFICATION forming part of Letters Patent No. 275,341, dated April 3, 1883.

Application filed November 29, 1882. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL B. McLANE, a citizen of the United States, residing at Yonkers, in the county of Westchester and State of New York, have invented certain Improvements in Tools for Grasping and Holding, of which the following is a specification.

My invention relates to nuts employed in connection with the screws for operating the jaws of such tools as vises and bit and wrench braces, where it is desirable that the jaws be adjusted or set at an angle to each other, while the operating-screws remain parallel with each other. My nut is especially well adapted to that class of grasping and clamping tools wherein two right-and-left screws are employed—one to set the jaws upon the article to be clamped and the other, or tail-screw, to close the jaws forcibly upon the article. A tool of this character is illustrated in the patent of Joseph Goodrich, No. 227,686, of May 18, 1880, in which rocking-nuts are employed. My herein-described nut is an improvement on the nut shown in said patent; and in order to better illustrate the advantages of my improvement, I will briefly describe the nuts shown in said patent, and point out what I believe to be their disadvantages. Two forms of nut are shown in said patent, both of which are held in place by means of extraneous fastenings requiring a peculiar construction of the jaw and considerable expense in the manufacture. One form of nut has a rectangular outline and convex faces. This nut rests in a recess sunk in the outer face of the jaw, and is held in place by clips formed on the jaw and bent down over the nut. The nut is capable of a slight rocking movement in its socket. The clips that retain the nut are difficult to form on the jaw and are easily broken off. The other form of nut is in the form of a half-disk, which fits in a correspondingly-shaped socket in the outer face of the jaw, where it is held by pins which pass through the sides of the jaw and enter sockets in the axis of the disk. The screw passes through the nut radially of the disk from the flat side to the convex side. In this case it is a difficult and costly operation to properly recess the jaw and to fit in the retaining-pins. Moreover the construction is not sufficiently strong and durable. My construction seeks to overcome these difficulties by avoiding all extraneous fastenings and reducing the recess in the jaw to a simple cylindrical hole, which may be bored with a drill. The nut itself is a simple cylinder, which may be turned in an ordinary metal-lathe. The nut is strong and durable and is not in the least likely to get out of order. Thus I produce a better result than has before been attained, and effect, besides, an important economy in the manufacture.

In order that my invention may be the better understood, reference may be had to the drawings annexed, wherein—

Figure 1 is a side elevation; Fig. 2, a sectional elevation taken on line 2 2 in Fig. 1, and Fig. 3 a horizontal section on line 3 3 in Fig. 1. These views show the application of my nut to a hand-vise. Fig. 4 is a side elevation, illustrating its application to a brace-wrench. Fig. 5 and 6 illustrate modifications, which will be hereinafter described. These views illustrate a tool having a central bar, A, two jaws, B B, a principal or fulcrum screw, C, having right and left screw-threads formed on it, and a tail-screw, D, which also has right and left screw-threads. This tool is operated by setting up the jaws to the article to be grasped, and then bringing the jaws up forcibly onto the article by spreading the tail of the jaws by means of the tail-screw. It is very desirable in such a tool that, while the screws remain parallel with each other, the jaws may be capable of standing at an angle with each other. To accomplish this result, the screws are provided with rocking or oscillating nuts.

E E are the nuts, which are simply cylinders of steel or other metal, arranged to fit nicely in holes bored through or partly through the jaws B B. These nuts are bored diametrically for the passage of the screws, and these bores or holes are provided with the usual female screws to engage the screw-threads on the screws C and D. Holes are also bored in the jaws so as to cross the holes or sockets in which the nuts are placed, in order that the screws may pass through the same, and these holes are elongated or flared above and below, as indicated where the jaw is broken away in

Figs. 1 and 4, and also in Fig. 2, in order to allow the jaw to oscillate properly on the screws.

No extraneous fastenings for the nuts are required, and in putting the tool together it is only necessary to slip the nut into its bore or socket, adjust the screw-threaded bore in it to receive the screw, and then insert the screw. As the screw passes through the nut diametrically, and also through the hole in the jaw, it is obvious that the nut cannot escape, nor can it play in any direction except rotatively on its axis, and in this respect it is limited, as before described.

The ends of the cylindrical nut may be made flat and arranged flush with the jaw, or they may be made convex, as shown in Figs. 2 and 3.

It is not necessary that the nut shall extend entirely through the jaw. It may only extend part of the way through, as shown in Fig. 5; but it should extend beyond the hole in the jaw, through which the screw passes, in order to give the nut a firm bearing in the jaw on both sides of the screw. Nor is it absolutely essential that the nut shall be a complete cylinder. It might be cut away on one side, as in Fig. 6, or even on both sides. There is no advantage in this construction, however, and it leaves a recess in the jaw to collect dirt.

My invention may be applied to a vise having only one screw at its head and having the tails of the jaws pivoted together. Indeed it is particularly well adapted to this form of vise because of the fact that the jaws of such vises are never parallel except when closed.

Having thus described my invention, I wish it understood that I do not claim a vise of the general character of that shown; but

What I do claim is—

1. The combination, with the jaw of a vise or similar tool, provided with hole for the passage of the screw and a hole extending across the screw-hole to receive the nut, of the said screw, and a nut, E, all constructed and arranged substantially as shown, whereby the nut is maintained in place without the aid of extraneous devices, as set forth.

2. The combination, with the jaw of a vise or similar tool, provided with a hole for the screw and a cylindrical hole extending across the screw-hole to receive and fit a cylindrical nut, of the cylindrical nut E, provided with a diametrical screw-threaded hole to receive the screw, and the said screw, all combined and arranged to operate substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

SAMUEL B. McLANE.

Witnesses:
HENRY CONNETT,
ARTHUR C. FRASER.