Feb. 12, 1946. C. H. BOWMAN 2,394,839

GRINDING ATTACHMENT FOR TWIST DRILLS

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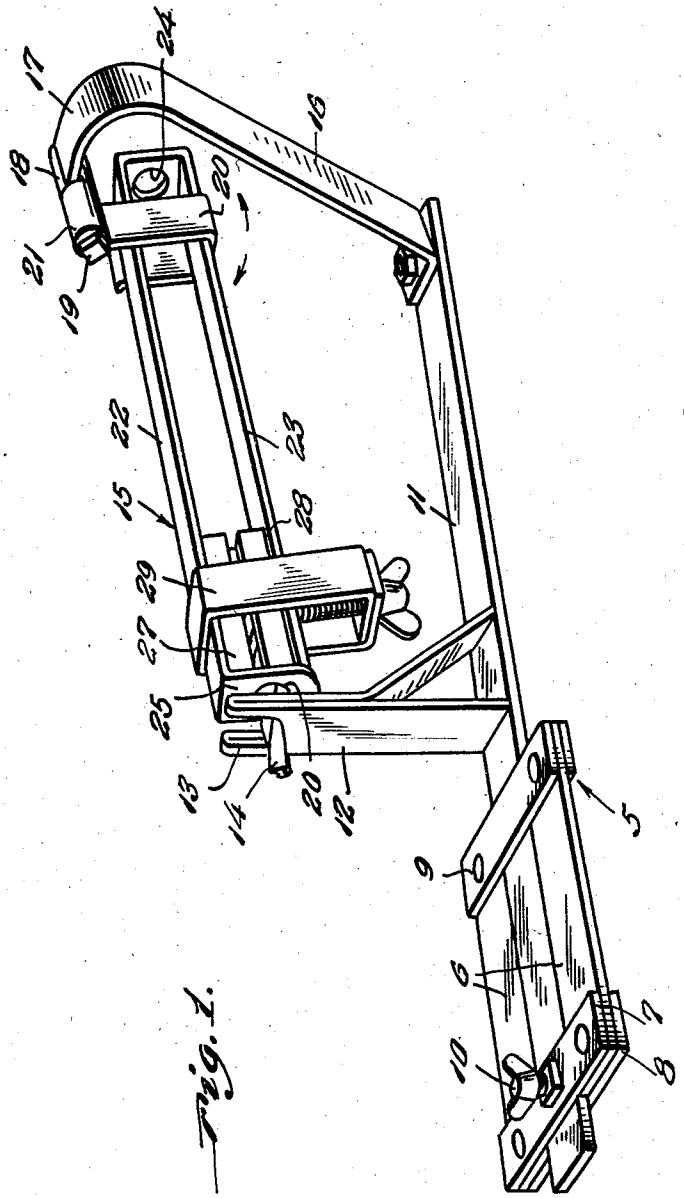


Fig. 1.

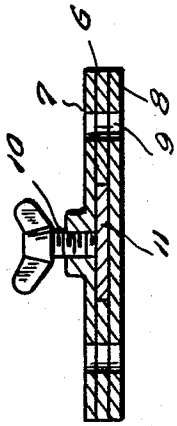


Fig. 2.

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Fig. 5.

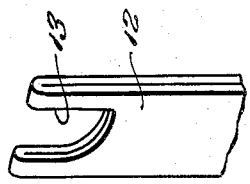


Fig. 6.

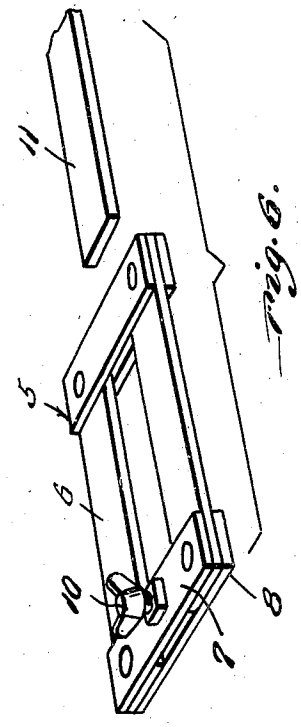


Fig. 4.

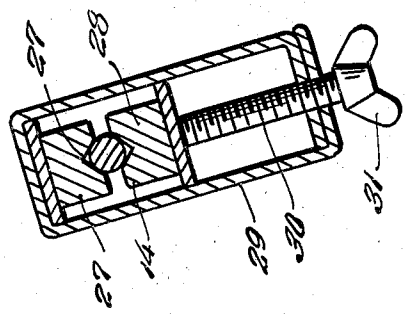
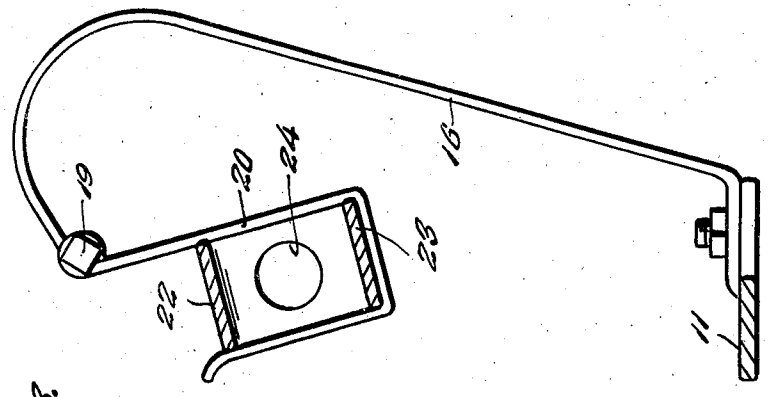


Fig. 3.



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UNITED STATES PATENT OFFICE

2,394,839

GRINDING ATTACHMENT FOR TWIST DRILLS

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Application July 21, 1944, Serial No. 545,964

2 Claims. (Cl. 51—219)

The present invention relates to new and useful improvements in devices for holding twist drills in position while the same is being sharpened by means of a grinding or abrasive wheel.

An important object of the present invention is to provide a holder for the drill adapted for attaching to a work bench and embodying means for clamping and holding the drill in a manner to permit the partial rotation thereof while the cutting end of the drill is held against the grinding wheel.

A further important object is to provide a rockably mounted support for the drill holder by means of which the drill may be partially rotated during the grinding or sharpening thereof and in which the drill holder may be removed from its support and placed in a reversed position therein so that the entire cutting end of the drill may be sharpened without removing the drill from the holder.

A still further object is to provide a device of this character of simple and practical construction, which is efficient and reliable in performance, relatively inexpensive to manufacture and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view.

Figure 2 is a transverse sectional view through the attaching plate.

Figure 3 is a vertical sectional view through the bit holder and showing the rocking support therefor.

Figure 4 is a transverse sectional view through the clamping member for the bit.

Figure 5 is a fragmentary perspective view of the upper end of the front support for the bit, and

Figure 6 is a fragmentary group perspective view of the attaching plate and base of the support.

Referring now to the drawings wherein for the purpose of illustration I have disclosed a preferred embodiment of the invention the numeral 5 designates an attaching plate generally which is preferably composed of a pair of spaced parallel elongated plates 6 connected at their end portions by upper and lower cross plates 7 and 8 having openings 9 therein adapted for receiving bolts or screws for attaching the plate to a work bench.

The cross plates 7 and 8 at one end of the attaching plate are provided with a wing bolt 10 for securing the base 11 in adjusted position between the cross plates 7 and 8 and in longitudinally adjusted position between the plates 6. The base is formed of strap metal and is provided intermediate its ends with an upstanding support 12 also formed of strap metal bent upon itself and having its ends welded or otherwise secured to the upper surface of the base. The upper end of the support 12 is formed with a notch 13 constituting a saddle in which a twist drill 14 is seated, the drill projecting from one end of a drill holder shown generally at 15.

Rising from the rear end of the base 11 is a support 16 having its upper end curved horizontally as shown at 17 and terminating in a bearing 18 having a pin 19 secured therein.

A U-shaped hanger 20 also has a bearing 21 formed at one end rockably mounted on the pin 19.

The drill holder is formed of strap metal and bent intermediate its ends to form a pair of spaced parallel members 22 and 23 connected to each other at one end and having an opening 24 at said connected end while the free end of the member 22 is formed with a transversely extending flange 25 which closes the other end of the holder 15. The flange 25 is also formed with an opening 26 through which the drill 14 projects.

The drill is secured in position in the holder 15 by means of a pair of clamping blocks 27 and 28 having V-shaped channels 29 in their opposed faces for receiving the shank of the drill, the blocks being positioned between the members 22 and 23 of the holder and secured in position therein by means of a clamping member 29 of open frame construction slidably mounted on the holder 15 and having a bolt 30 threaded through one end by means of a wing head 31 for forcing the members 22 and 23 against the opposite sides of the clamping blocks 27 and 28.

One end of the holder 15 is supported in the U-shaped hanger 20 while the bit 14 is supported in the saddle 13 of the front support 12 whereby the holder 15 may be rocked in an oscillating movement as indicated by the arrows in Figure 1 of the drawings.

The hanger 20 is supported in a horizontal plane above the saddle 13 whereby the holder 15 will have a tendency to slide forwardly for contacting the end of the drill 14 with a grinding or

abrasive wheel (not shown) in a manner for grinding or sharpening the drill.

The holder 15 with the drill clamped in position therein may be lifted bodily from the hanger 20 and the front support 12 so that the position of the drill and holder may be reversed, when desired.

It is believed that the details of construction and manner of use of the device will be readily understood from the foreging without further detailed explanation.

Having described the invention, what is claimed as new is:

1. A drill bit sharpener comprising an attaching plate, a base secured to said plate, a pair of supports rising from said base, one being provided with a saddle at its upper end for receiving a drill bit therein and the other having a laterally extending upper end, a drill bit holder comprising elongated side members spaced apart laterally and connected at one end for flexing toward each other into clamping relation, one of said side members having a right angled flange at its other end apertured for the extension of the drill bit therethrough into said saddle, a pair of opposed clamping blocks between said side members adapted to receive the drill bit therebetween and be moved into clamping relation by such flexing of said side members, means to flex said side members toward each other, and suspension means for swingably connecting said holder to the laterally extending end of said other support in underslung position relative thereto.

2. A drill bit sharpener comprising an attaching plate, a base secured to said plate, a pair of supports rising from said base, one being provided with a saddle at its upper end for receiving a drill bit therein and the other having a laterally extending upper end, a drill bit holder comprising elongated side members spaced apart laterally and connected at one end for flexing toward each other into clamping relation, one of said side members having a right angled flange at its other end apertured for the extension of the drill bit therethrough into said saddle, a pair of opposed clamping blocks between said side members adapted to receive the drill bit therebetween and be moved into clamping relation by such flexing of said side members, means to flex said side members toward each other, and suspension means for swingably connecting said holder to the laterally extending end of said other support in underslung position relative thereto comprising a U-shaped hanger straddling said holder.

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