Feb. 12, 1963 A. C. CARLES 3,077,129

ELECTRIC HAND DRILL ACCESSORY

Filed March 30, 1960

Fig. 1.

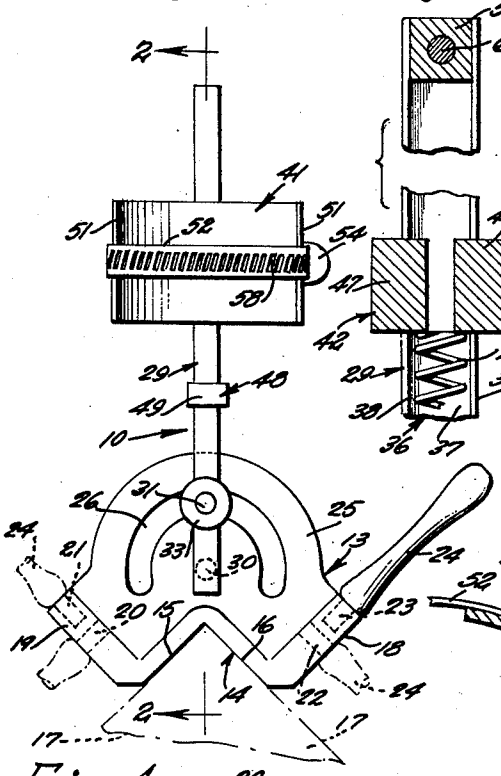


Fig. 3.

Fig. 2.

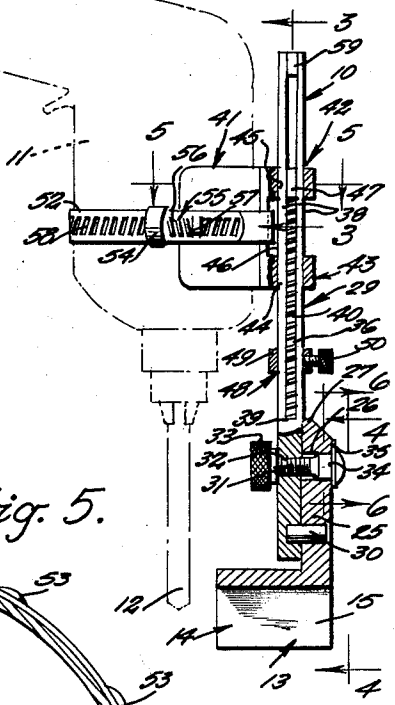


Fig. 5.

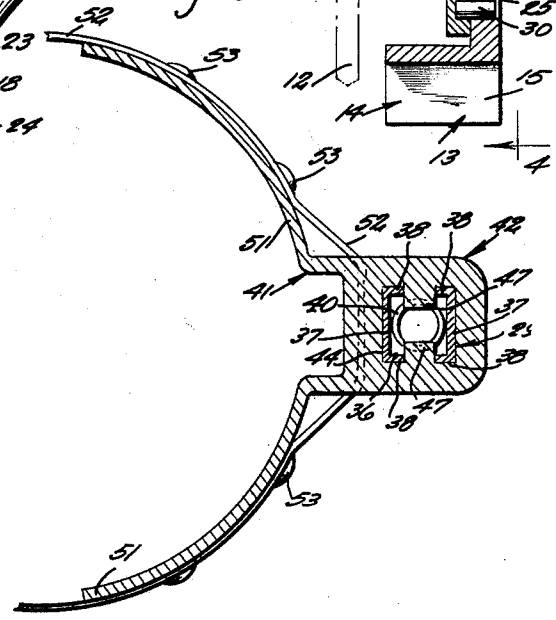


Fig. 4.

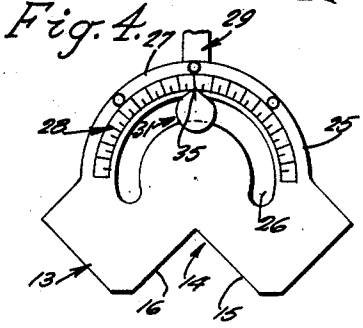
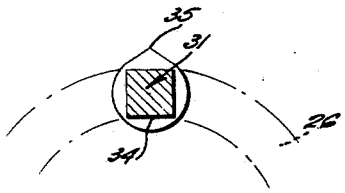


Fig. 6.



ALONZO C. CARLES,
INVENTOR.

BY

Victor J. Evans & Co.
ATTORNEYS

United States Patent Office

3,077,129
Patented Feb. 12, 1963

1

3,077,129

ELECTRIC HAND DRILL ACCESSORY

Alonza C. Carles, Fort Bliss, Tex., assignor of thirty percent to Ferdinand J. Barrie, El Paso, Tex.

Filed Mar. 30, 1960, Ser. No. 18,621
3 Claims. (Cl. 77—7)

The present invention relates to an electric hand drill, and more particularly to an accessory which is in the nature of a guide for such a drill.

This invention is an improvement over the drill guide shown and described in my prior patent application Serial No. 800,025 filed March 7, 1959, now Patent No. 2,953,045.

An object of this invention is to provide an electric hand drill accessory which includes an improved means for fastening or strapping the drill in place, and wherein there is also provided an improved mounting for connecting the drill in an adjustable fashion to the base which is adapted to engage the work piece.

A still further object of the present invention is to provide an electric hand drill accessory which includes a base that can be used in a plurality of different positions, and wherein there is further provided an adjustable depth gauge and an adjustable strap, the present invention serving to accommodate electric hand drills of different sizes or shapes.

To this and other ends the invention consists of certain improvements and combination of parts all as will be hereinafter fully described, the novel features being pointed out in the claims at the end of this specification.

In the drawings:

FIGURE 1 is an elevational view of the electric hand drill accessory of the present invention.

FIGURE 2 is a sectional view taken on the line 2—2 of FIGURE 1, and showing in broken lines the position of the drill which is being supported.

FIGURE 3 is a sectional view taken on the line 3—3 of FIGURE 2.

FIGURE 4 is a view taken generally on the line 4—4 of FIGURE 2.

FIGURE 5 is a sectional view taken on the line 5—5 of FIGURE 2.

FIGURE 6 is a sectional view taken on the line 6—6 of FIGURE 2.

Referring in detail to the drawings, the numeral 10 indicates the electric hand drill accessory of the present invention which is adapted to be used for supporting a conventional electric hand drill such as the drill 11, FIGURE 2, and the drill 11 is provided with the usual rotary bit 12. The accessory 10 comprises a base which is indicated generally by the numeral 13, and the base 13 includes a V shaped portion 14 which is defined by angularly arranged portions 15 and 16 which may straddle or engage a corner of a work piece 17, FIGURE 1, as for example when the work piece 17 is to be drilled by the bit 12. The base 13 further includes angularly arranged sections or portions 18 and 19 which may be arranged in engagement with a work surface, and the provision of these plurality of different portions on the base permits the base to be used against different work pieces in different angular positions or relations. The base 13 is provided with a plurality of spaced apart threaded apertures or openings 20, 21, 22, and 23, whereby the threaded end portion of a handle 24 can be arranged in engagement with any of these openings whereby the handle 24 can be used as a convenient grip in order to steady the device when the drill is being used on a work piece. The base 13 further includes a vertically disposed upstanding wall portion 25 which is provided with an arcuate or curved slot 26, FIGURE 1, and the upper edge of the wall portion 25 is beveled or tapered as at 27, and the numeral 28 indicates scale markings or indicia which is arranged contiguous to the beveled surface 27.

2

There is further provided a movable or adjustable standard 29 which has its lower end pivotally connected to the wall portion 25 by means of a pivot pin 30. The numeral 31 indicates a securing element or bolt which extends through the lower portion of the standard 29, and the securing element 31 also extends through the slot 26 in the wall portion 25, the standard 31 including a threaded section 32, and the numeral 33 indicates a knurled bushing or nut which is arranged in threaded engagement with the section 32. The securing element 31 also includes a portion 34 which is rectangular or square in cross section, FIGURE 6, and formed integral with the end of the securing element 31 or secured thereto is pointer 35 which is adapted to coact with the scale markings 28 on the tapered surface 27.

The upper inner portion of the standard 29 is recessed or hollowed out as at 36, FIGURE 3, so as to define in the upper portion of the standard a pair of spaced parallel legs 37 which are each provided with inwardly directed opposed flanges 38, and the recess 36 terminates at the point 39 so as to provide there below a solid section in the standard. The numeral 40 indicates a coil spring which is positioned in the recessed area 36, and the lower end of the coil spring 40 abuts the section 39.

The numeral 41 indicates a support member which includes a pair of spaced apart superimposed shoulders 42 and 43, and these shoulders are provided with vertically aligned openings 45 and 44 through which extends the standard 29. The space between the spaced apart shoulders 42 and 43 is indicated by the numeral 46. The upper shoulder 42 is provided with inwardly disposed ears or lugs 47 which engage the top of the coil spring 40.

The numeral 48 indicates an adjustable stop mechanism which is mounted on the standard 29 for limiting downward movement of the support member 41, and this stop mechanism 48 includes a fitting 49 which is provided with an opening for the projection therethrough of the standard 29, and a screw member or set screw 50 extends through the fitting 48 and engages the standard 29. Thus, by loosening the securing element 50 the fitting 49 can be moved up or down on the standard 29, and after the fitting has been moved to the desired location, the securing element 50 is tightened in order to maintain the mechanism 48 immobile in its desired adjusted position. The support member 41 is further provided with spaced apart curved sections 51, and the numeral 52 indicates a strap or adjustable band which has portions thereof secured to the sections 51, as for example by means of securing elements 53, FIGURE 5. A portion of the strap 52 extends through the space 46 between the shoulders 42 and 43. The strap 52 is adapted to surround or straddle a portion of the drill

11 which is being used, and for adjusting the strap 52, a bushing 54 is provided on the strap, and the bushing 54 is adapted to be engaged by a screw member 55 which has threads 56, and the screw member 55 also includes an outer head 57, the threads 56 of the screw member 55 adapted to coact with or engage inclined slots 58 in the band 52 in order to loosen or tighten the band.

As shown in FIGURE 3 for example a block or plug 59 is mounted between the upper ends of the legs 37 as for example by means of a pin or securing element 60.

Thus, it will be seen that there has been provided an electric hand drill accessory which is an improvement over the drill guide shown and described in my prior patent application Serial No. 800,025 filed March 17, 1959, issued as Patent No. 2,953,045, September 20, 1960. According to the present invention, the base 13 is provided with a plurality of different angular surfaces such as the surfaces 15, 16, 19, and 18 whereby the base can be arranged in different positions in order to engage different work surfaces. As shown in FIGURE 4, the V shaped portion 14 can engage a corner of a work piece 17, as for example when such a work piece is to be drilled. The handle 24 can have its threaded portion engage any of the threaded apertures such as the apertures 20, 21, 22, and 23 and this handle 24 can be used for steadying the device during the drilling. The drill 11 is held in place by means of the strap 52 and by rotating the screw member 55, the strap can be suitably tightened or loosened. Thus, a suitable tool such as a pair of pliers or a wrench may engage the neck or head 57 whereby the screw member 55 can be rotated so that the threads 56 will coact with the bushing 54 as well as with the slots 58 in order to tighten or loosen the band 52 whereby the drill 11 can be selectively strapped on to the support member 41. As shown in FIGURE 2 for example a portion of the band 52 extended through the space 46 which is defined between the upper and lower shoulders 42 and 43. With the drill 11 strapped in place, as shown in FIGURE 2, manual pressure can be applied to the handle portion of the drill 11 and this will cause the support member 41 to slide downwardly on the standard 29, and when this occurs, the spring 40 will be compressed. When the lower edge of the support member 41 contacts the stop mechanism 48, downward movement of the drill will be stopped or limited. When manual pressure is released on the drill, the tension of the coil spring 40 will return the drill to a raised position. The upper end of the spring 40 engages the ears 47 which are formed on the shoulder 42, while the lower end of the spring engages the section 39 of the bar 29. By loosening the securing element 50, the stop mechanism 48 can be set at the desired position.

Furthermore, an improved means is provided for adjusting the angular position of the standard 29 and its associated parts so that for example the drill can be used for drilling at different angles as desired. This adjustment of the standard 29 with respect to the base 13 is possible due to the provision of the pivot pin 30 and the securing element 31. Thus, to adjust or pivot the standard 29, it is only necessary to loosen the knurled bushing 33 and due to the fact that the securing element 31 extends to the lower end of the standard 29 and also extends through the slot 26, it will be seen that with the bushing 33 loosened, the standard 29 can swing to the left or right and after the standard has been moved to the desired new location, the bushing 33 is tightened in order to maintain the parts stationary in the desired position. The pointer 35 is formed on one end of the securing element 31, and it will be seen that as the standard 29 is moved, the securing element 31 will likewise move through the slot 26 and as the securing elements 31 moves it carries the pointer 35 therewith so that the pointer 35 will coact with the indicia 28 to

provide an accurate means of setting or locating the tool.

Different materials and different shapes or sizes can be utilized as required or desired.

The square shaped portion 34 of the securing element 31 is arranged in the slot 26 so as to maintain the parts such as the securing element 31 and the pointer 35 in their proper aligned positions during movement of the standard from place to place.

Drills of different sizes such as from ⅛ to ⅜ of an inch may be accommodated due to the provision of the adjustable strap 52. A depth guage or stop mechanism 48 is adjustable, and the scale 28 is adapted to be marked in degrees. The bracket or support member 41 serves to hold the drill in place. The member 59 is anchored in place so as to limit upward movement of the support member 41 whereby the support member 41 will not become accidentally disconnected from the standard. With the present invention the drill can be used in a highly accurate fashion and different angles can be drilled, as for example a 45° angle or a 90° angle or any intermediate angle position can be provided for. With the present invention the drill can be conveniently moved towards or away from the work which is being drilled and as stated previously a hole or opening can be drilled at any desired angular position. The handle 24 can be used in a plurality of different positions, as for example as shown in solid and dotted lines in FIGURE 1.

Minor changes in shape, size and rearrangement of details coming within the field of invention claimed may be resorted to in actual practice, if desired.

What is claimed is:

1. In an electric hand drill accessory, a base including a V shaped portion, angularly arranged portions and said base also including an upstanding wall portion which is provided with an arcuate slot, there being a plurality of threaded openings in said base for selectively receiving a threaded portion of a handle, the upper edge of the wall portion being provided with a tapered surface which has scale markings thereon, a movable standard having its lower end pivotally connected to said wall portion, a securing element extending through the slot in said wall portion and also extending through said standard and said securing element having a pointer on one end for coaction with said scale markings, a knurled bushing on the other end of said securing element, there being a recessed area in said standard which defines a pair of legs having opposed inwardly directed flanges thereon, a support member including spaced parallel superimposed shoulders which are provided with vertically aligned openings for the projection therethrough of said standard, ears on the upper shoulder, a coil spring positioned in the recessed area of said standard and abutting said ears, an adjustable stop mechanism on said standard which comprises a fitting slidably connected to said standard, a securing member extending through said fitting and engaging said standard, said support member further including spaced apart curved sections, and an adjustable strap fastened to said curved sections, a portion of said strap extending through the space between the shoulders of said support member.

2. In an electric hand drill accessory, a base including a V shaped portion, angularly arranged portions and said base also including an upstanding wall portion which is provided with an arcuate slot, there being a plurality of threaded openings in said base for selectively receiving a threaded portion of a handle, the upper edge of the wall portion being provided with a tapered surface which has scale markings thereon, a movable standard having its lower end pivotally connected to said wall portion, a securing element extending through the slot in said wall portion and also extending through said standard and said securing element having a pointer on one end for coaction with said scale markings, a knurled bushing on the other end of said securing element, there being a re-

cessed area in said standard which defines a pair of legs having opposed inwardly directed flanges thereon, a support member including spaced parallel superimposed shoulders which are provided with vertically aligned openings for the projection therethrough of said standard, ears on the upper shoulder, a coil spring positioned in the recessed area of said standard and abutting said ears, an adjustable stop mechanism on said standard which comprises a fitting slidably connected to said standard, a securing member extending through said fitting and engaging said standard, said support member further including spaced apart curved sections, an adjustable strap fastened to said curved sections, a portion of said strap extending through the space between the shoulders of said support member, a block on the upper end of said standard, and a pin connecting said block to said standard.

3. The structure as defined in claim 2 wherein said strap is adapted to surround a portion of an electric drill.

References Cited in the file of this patent

UNITED STATES PATENTS

2,670,638	Roy	Mar. 2, 1954
2,831,376	Daniels	Apr. 22, 1958
2,953,045	Carles	Sept. 20, 1960

FOREIGN PATENTS

907,236	Germany	Mar. 22, 1954
R14716X11/38a	Germany	Sept. 22, 1955