Jan. 28, 1964 W. G. FORMAN ETAL 3,119,286

PORTABLE POWER TOOL ATTACHMENT

Filed Jan. 12, 1962 2 Sheets-Sheet 1

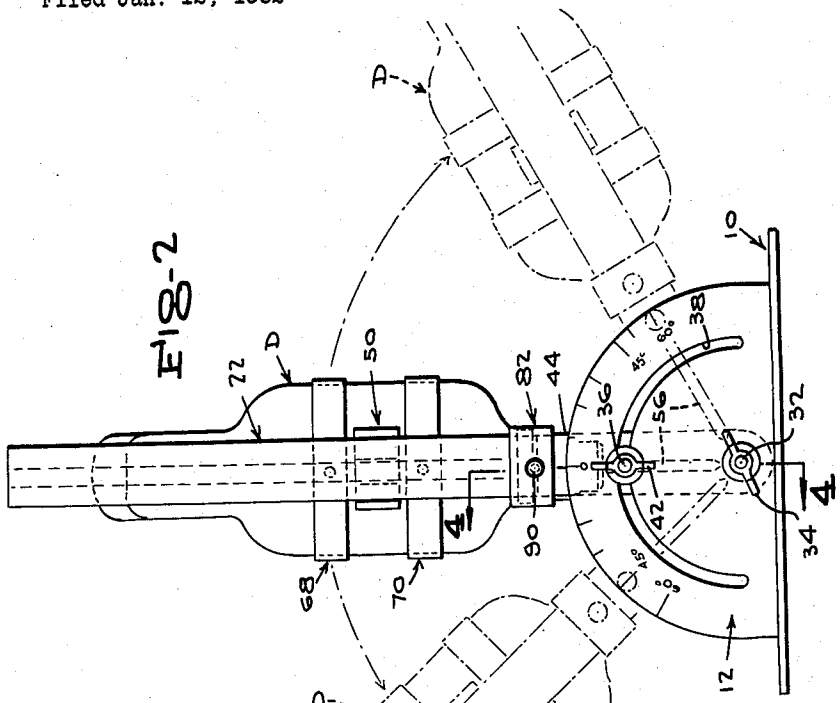


FIG. 2

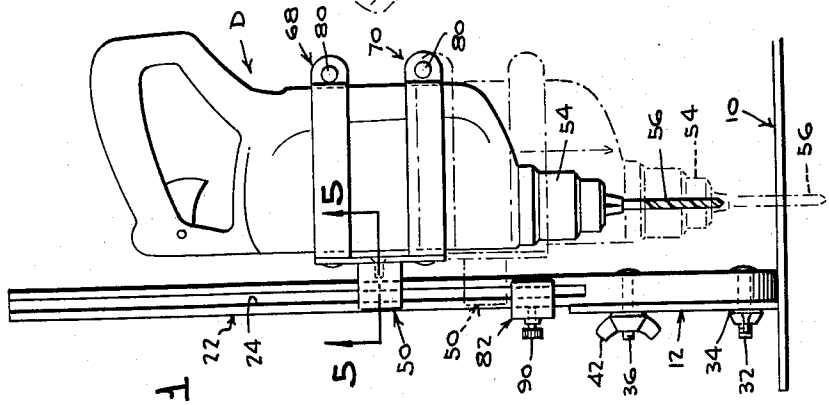


FIG. 1

INVENTORS
WILLEY G. FORMAN,
RAYMOND A. FORMAN
BY
McMorrow, Berman & Davidson
ATTORNEYS

Jan. 28, 1964 W. G. FORMAN ETAL 3,119,286

PORTABLE POWER TOOL ATTACHMENT

Filed Jan. 12, 1962 2 Sheets-Sheet 2

FIG-5

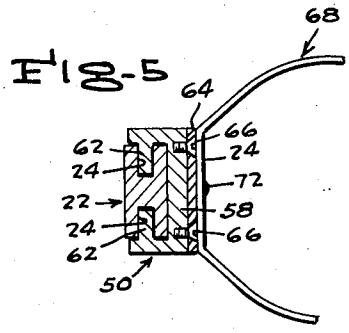


FIG-4

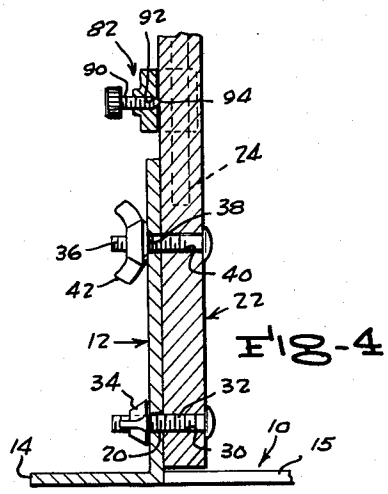


FIG-3

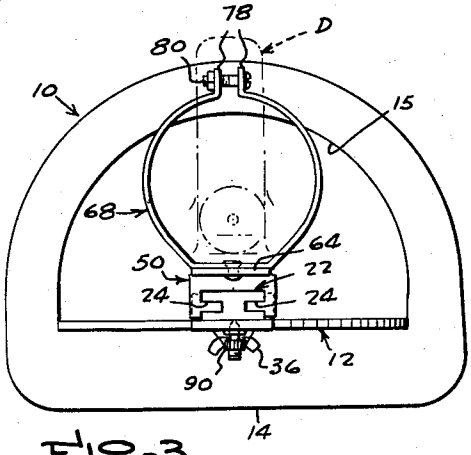
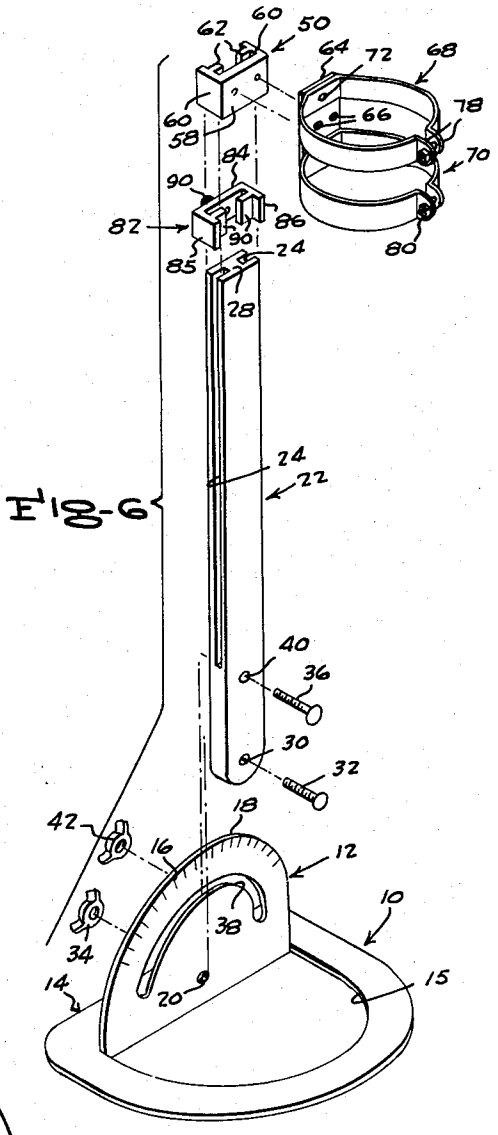


FIG-6



INVENTORS
WILLEY G. FORMAN, &
RAYMOND A. FORMAN
BY

McMorrow, Berman & Davidson
ATTORNEYS

United States Patent Office 3,119,286 Patented Jan. 28, 1964

3,119,286

PORTABLE POWER TOOL ATTACHMENT

Willey G. Forman and Raymond A. Forman, both of Lawn Lane, Upper Brookville, Oyster Bay, N.Y.

Filed Jan. 12, 1962, Ser. No. 165,752
1 Claim. (Cl. 77—55)

This invention relates to a novel portable and adjustable attachment for portable power tools, such as drills, and the like, the attachment being usable as a stand supported upon a horizontal surface and as a guide for drilling or cutting at selected angles in vertical and other surfaces.

The primary object of the invention is the provision of a more practical and efficient device of the kind indicated, which is lighter in weight, is uncomplex in construction, is composed of a small number of simple and easily assembled parts, and can be manufactured in rugged and serviceable forms at relatively low cost.

Other important objects and advantageous features of the invention will be apparent from the following description and the accompanying drawings, wherein, for purposes of illustration only, a specific form of the invention is set forth in detail.

In the drawings:

FIGURE 1 is a side elevation of a device of the present invention, showing a portable electric drill installed thereon, the drill being shown in elevated position in full lines, and in depressed position in phantom lines;

FIGURE 2 is a rear elevation showing the drill in perpendicular position, in full lines, and in oppositely angled positions in phantom lines;

FIGURE 3 is a top plan view of FIGURE 1, the drill being shown in phantom lines;

FIGURE 4 is a fragmentary vertical transverse section taken on the line 4—4 of FIGURE 2;

FIGURE 5 is a fragmentary horizontal section taken on the line 5—5 of FIGURE 1; and

FIGURE 6 is an exploded perspective view of the device.

Referring in detail to the drawings, wherein like numerals designate like parts throughout the several views, the illustrated device comprises a base plate 10, preferably substantially semi-circular, as shown, out of which is centrally cut a semi-circular bracket plate 12, which is bent up at right angle to the base plate, parallel with the rear longitudinal edge 14 thereof, leaving a semi-circular opening 15, which exposes the work to be drilled or cut. A protractor scale 16 extends along the arcuate upper edge 18 of the bracket plate 12, and the bracket plate is provided with a bolt hole 20, which is concentric with the edge 18. The base plate 10 is adapted to be supported upon a horizontal surface, such as that of a work bench, when the device is to be used as a stand for drilling, routing, and other cutting operations, in material supported on such a surface. For drilling and cutting operations in vertical surfaces, the base plate 10 is held thereagainst, so that the device serves as a guide for drilling or cutting at desired angles thereto.

The device further comprises a vertically elongated H-cross section standard 22 which is preferably a rigid solid flat bar having longitudinal grooves 24, in its opposite side edges, which reach from points 26, near to and spaced from the arcuate lower end of the standard, to the squared upper end 28 thereof. A transverse bore 30 extends through the lower part of the standard 22, concentric with the arcuate lower end 26. The lower part of the standard is slidably and rotatably engaged with the front surface of the bracket plate 10, and is mounted in place by means of a bolt 32 extended rearwardly through the bore 30 and through the bracket plate hole 20, and provided, in its rear end, with a wing clamping

nut 34, which bears against the rear surface of the bracket plate. The bolt 32 serves as a pivot for angular adjustment of the standard 22, to either side of perpendicular relationship to the base plate 10, and as clamping means. Clamping of the standard 22 in adjusted relationship to the base plate 10 is augmented by the provision of a clamping bolt 36 which extends rearwardly through an arcuate concentric slot provided in the bracket plate 12 and through a bore 40 in the standard 22 above the bolt 32, and is provided at the rear side of the bracket plate with a wing clamping nut 42.

A slide 50 is engaged on the standard 22 for vertical adjustment thereof and to carry a power tool, such as electric drill D having a case 52, a chuck 54, and a drill bit 56. The slide 50 comprises a substantially U-shaped solid block having a front cross member 58, which bears slidably against the front surface of the standard, and rearwardly extending arms 60, which bear against the opposite side edges of the standard, the arms 60 having, intermediate their ends, laterally inwardly extending vertical tongues 62, which are slidably and conformably engaged in the standard grooves 24.

Means for rigidly mounting the drill D on the slide 50, comprises a rigid vertically elongated plate 64, removably fixed to the front surface of the slide cross member 58, as by means of screws 66, extending through the plate 64 and threaded into the cross member 58. Upper and lower vertically spaced flexible split band clamps 68 and 70 are fixed, as by means of rivets 72, to the portions of the plate 64, above and below the cross member 58, respectively, have flat intermediate portions 74, which bear against the plate 64. The band clamps have parallel spaced ears 78, on their free ends, through which clamping bolts 80 extend, for clamping the band clamps 68 and 70 around upper and lower portions of the drill case 52, with the chuck 54 and the drill bit 56 extending downwardly, within the boundaries of the base plate opening 15.

For supporting the slide 50, in vertically adjusted positions on the standard 22, a vertically adjustable stop bracket 82 is provided, for limiting downward travel of the slide 50, and hence the depth of cut of the drill bit 56, which is identical in shape to the slide 50 but is reversed on the standard, relative to the slide 50. The stop bracket 82 has a cross member 84, which bears against the rear surface of the standard, forwardly extending arms 86 which bear against the side edges of the standard, and have inwardly extending vertical tongues 88 which enageg conformably and slidably in the grooves 24 of the standard. A locking screw 90, similar to the slide locking screw 36, is threaded forwardly through a centered threaded bore 92 in the stop bracket cross member 84, and has a pointed end 94 adapted to bite into the rear surface of the standard 22, at locations above the clamping bracket 44.

It will be seen from the foregoing that the interengagement of the heavy solid slide 50, with the heavy solid standard 22, provides unusually rigid support for a power tool, such as the drill D, and assures accurate drilling or cutting, at selected angles to the work, as well as nonbinding adjustment of the slide on the standard. Further, the drill D, along with the slide 50 and the band clamps 68 and 70, can be lifted off the upper end of the standard 22 and the drill used separately from the standard, without substantial interference from the presence of the slide and the clamps on the drill; and when the drill is to be used again on the device, the slide 50 is simply reengaged on the standard 22, over its upper end 28, so that realignment of the components is not necessary for the resumption of drilling or cutting operations which were initiated with the drill mounted on the device.

Although there has been shown and described a pre-

ferred form of the invention, it is to be understood that the invention is not necessarily confined thereto, and that any change or changes in the structure of and in the relative arrangements of components thereof are contemplated as being within the scope of the invention as defined by the claim apended hereto.

What is claimed is:

A device of the character described, comprising a base plate, a perpendicular bracket plate rising from the base plate, an elongated standard having its lower end engaged with one side of the bracket plate and pivoted thereto, clamping means for clamping the standard to the bracket plate, a vertically adjustable stop bracket mounted on the standard above the bracket plate and having a free upper end, a vertically adjustable slide mounted on the standard above and adapted to rest freely upon the stop bracket, and power tool clamping means on the slide over the base plate, said standard comprising a solid flat bar having vertical grooves in its side edges opening to the upper end of the standard, said stop bracket and said slide being U-shaped and having cross members engaged with opposite surfaces of the standard and arms bearing against the side edge of the standard, the arms having tongues engaged in the grooves of the standard, and a set screw threaded through the cross member of the stop bracket and engaged with the surface of the standard remote from that engaged by the cross member of the slide, said tool clamping means being mounted on the cross member of the slide.

References Cited in the file of this patent

UNITED STATES PATENTS

588,712	Broadbrooks	Aug. 24, 1897
966,217	King	Aug. 2, 1910
2,953,045	Carles	Sept. 20, 1960