July 3, 1928. 1,675,469

J. A. SCHREINER

DRILL OR CUTTER

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Fig. 1.

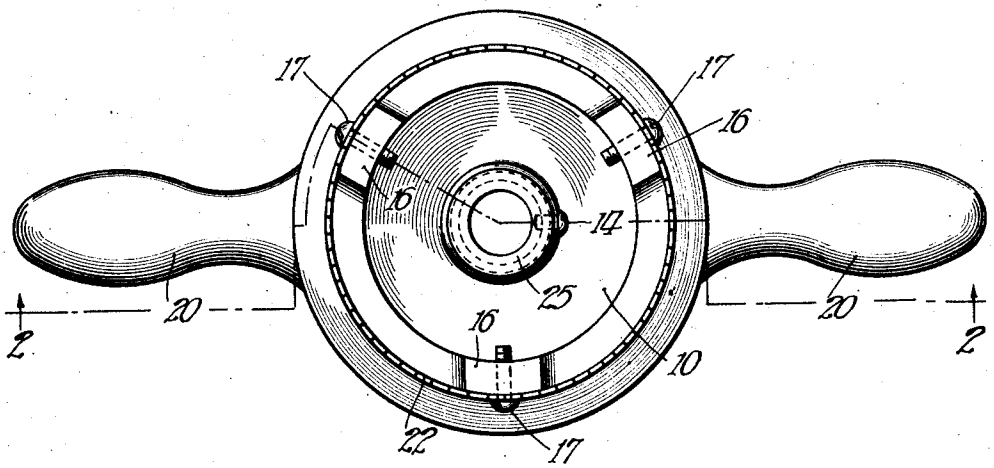
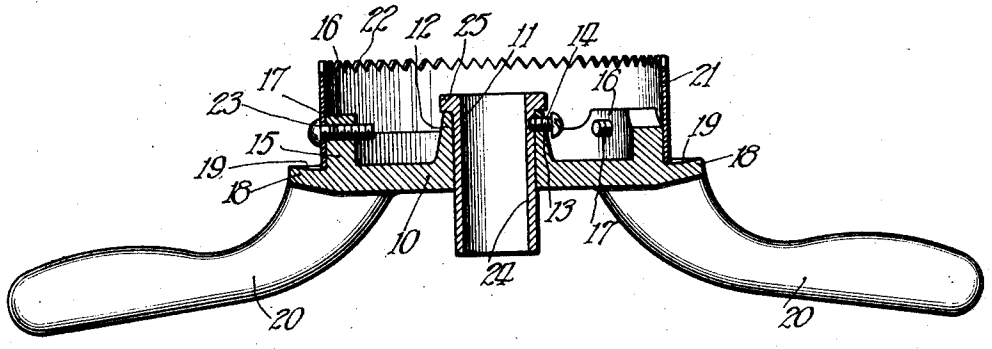


Fig. 2.



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Fig. 3.

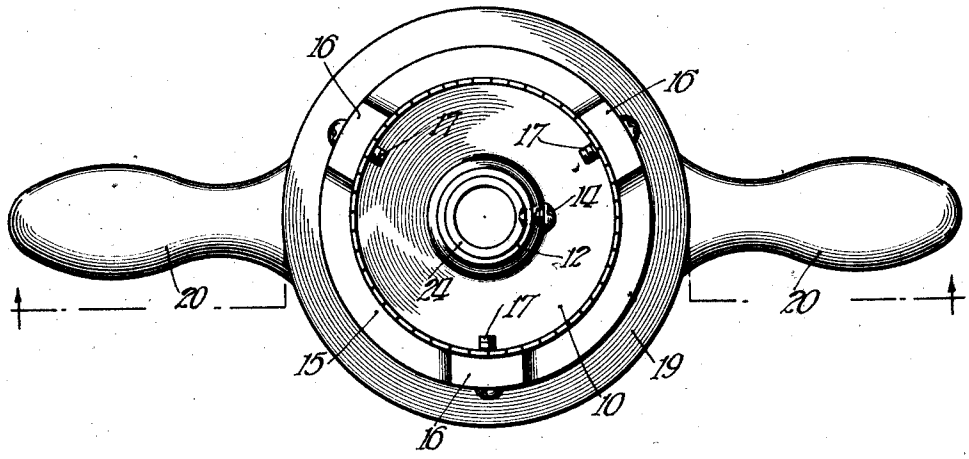
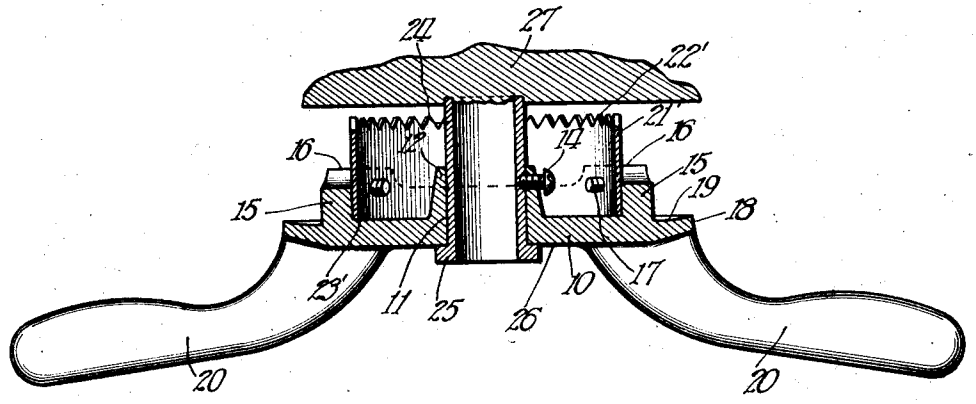


Fig. 4.



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Patented July 3, 1928. 1,675,469

UNITED STATES PATENT OFFICE.

JOHN A. SCHREINER, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO PAUL W. KOCH & COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

DRILL OR CUTTER.

Application filed July 20, 1925. Serial No. 44,861.

My invention relates to cutters and more particularly to a cutter or drill for making openings in plastered walls.

It is a purpose of my invention to provide a cutter of the above mentioned character comprising a body portion having handles or other gripping means projecting from one face thereof and having an annular cutter member projecting from the other face thereof. Said cutter member is provided with a toothed edge portion, the edge being preferably made similar to saw teeth so that the cutter will cut with a sawing action as the device is oscillated about a central axis.

It is another purpose of my invention to provide means for mounting a plurality of different size cutter blades for cutting different size openings on said body portion and also to provide means engageable with a conduit or pipe whereby said conduit or pipe acts as a bearing about which said device is turned and to provide means whereby said body portion is adapted to fit on pipes of different sizes.

It is another purpose of the invention to provide central guiding means on said device comprising a guiding member adapted to project beyond the cutter member so that the same can be forced into the plastering whereby the same will act as a guide turning in the hole thus formed in the plastering to guide the cutting movements of the cutter member.

It is another purpose of the invention to provide a ledge outwardly of the outermost position of the cutter member for catching the material cut out of the opening to prevent the same from dropping downwardly on to the operator of the tool when a hole is being cut in the ceiling. The device is particularly adapted for cutting the holes in ceilings that are provided for outlet boxes and similar electrical devices.

Other objects and advantages of the invention will appear as the description of the accompanying drawings proceeds. However, I desire to have it distinctly understood that I do not intend to limit myself to the exact details shown or described, but that I intend to include as part of my invention all such obvious changes and modifications of parts as would occur to a person skilled in this art and as would fall within the scope of the claim.

In the drawings:

Fig. 1 is a top plan view of my improved cutter member showing the largest size cutter in position thereon;

Fig. 2 is a section taken substantially on the line 2—2 thereof;

Fig 3 is a similar view showing the smaller cutter member in position; and

Fig. 4 is a sectional view of the tool taken on the line 4—4 of Fig. 3 and a fragmentary sectional view of a portion of a ceiling showing the teeth being forced into the same, the guide member being reversed so as to be in position for punching an opening in the plastering.

Referring in detail to the drawings, my improved cutter member comprises a body portion 10 which is provided with a central opening 11 and with an annular flange or boss 12 surrounding said opening having an opening 13 therein into which a set screw 14 is threaded. Said body portion is further provided with an annular cutter supporting member 15 having a plurality of spaced endwise extending lugs 16 thereon with which the bolts 17 are adapted to screw-threadedly engage. An annular ledge or flange 18 extends outwardly from the body portion beyond the supporting flange 15 and is provided with a dished or concave upper face 19 which is adapted to catch the material that drops down as the cutting operation proceeds. A pair of handles 20 extend outwardly and away from each other from the opposite face of the member 10 to that from which the boss 12 and the supporting member 15 extend.

In the arrangement shown in Figs. 1 and 2, an annular cutter member 21 made of steel similar to that used on saws is mounted externally of the supporting member 15 in engagement with the outer face thereof. Said member 21 is provided with a plurality of saw teeth 22 that are substantially V-shaped so as to cut in substantially the same manner in either direction. The screws or bolts 17 pass through openings 23 in the member 21 to secure the same in position on the member 15. In Figs. 1 and 2 a tubular guide member or sleeve 24 is mounted in the opening 11 and is provided with a flange 25 that engages with the outer end of the boss 12, the set screw 14 engaging with the member 24 to hold the same in position. The

member 24 is used in this position when a relatively small pipe or conduit is provided such as a ⅜″ pipe. If a ½″ pipe is provided, the member 24 is dispensed with, the pipe fitting directly in the opening 11. In either case, the pipe or conduit acts as a shaft around which the tool is adapted to be turned, the tool ordinarily being operated with an oscillating motion about the axis of the opening 11, it being obvious that in this way a circular opening will be cut as the cutter 21 and the support 15 are concentric with said axis.

In the arrangement shown in Figs. 3 and 4, a smaller cutter 21′ made in substantially the same manner as the cutter 21 and which has teeth 22′ is secured to the inner face of the member 15 by the screws or bolts 17 passing through openings 23′ therein. In these figures, the arrangement is also shown for the guide member or sleeve 24 when no pipe or conduit is provided to be used as a bearing member or central shaft about which the tool is oscillated. In this arrangement, the member 24 is reversed with the flange 25 resting against the outer face 26 of the member 10 and the set screw 14 engaged therewith to hold said member 24 rigidly in position. The tool is then placed in the position shown in Fig. 4. The member 24 is driven or pushed into the plastering or other ceiling material indicated by the numeral 27 to punch an opening therein, whereupon the tool is rotated, said member 24 again acting as an axis about which the device turns, the tool being guided in its movements by engagement of the member 24 with the opening thus provided in the ceiling 27.

Having thus described my invention, what I desire to claim and secure by United States Letters Patent is:

In a device of the character described, a body portion having guiding means centrally thereof, an annular cutter concentric with said guiding means extending from one face thereof and handles extending from the other face thereof, said body portion having an annular concave ledge outwardly of said cutter.

In witness whereof, I hereunto subscribe my name this 3rd day of July, A. D. 1925.

JOHN A. SCHREINER.