May 12, 1942. J. W. KERN 2,282,728

ATTACHMENT FOR ROTARY DRILLS OR THE LIKE

Filed Nov. 19, 1940

Fig. 1.

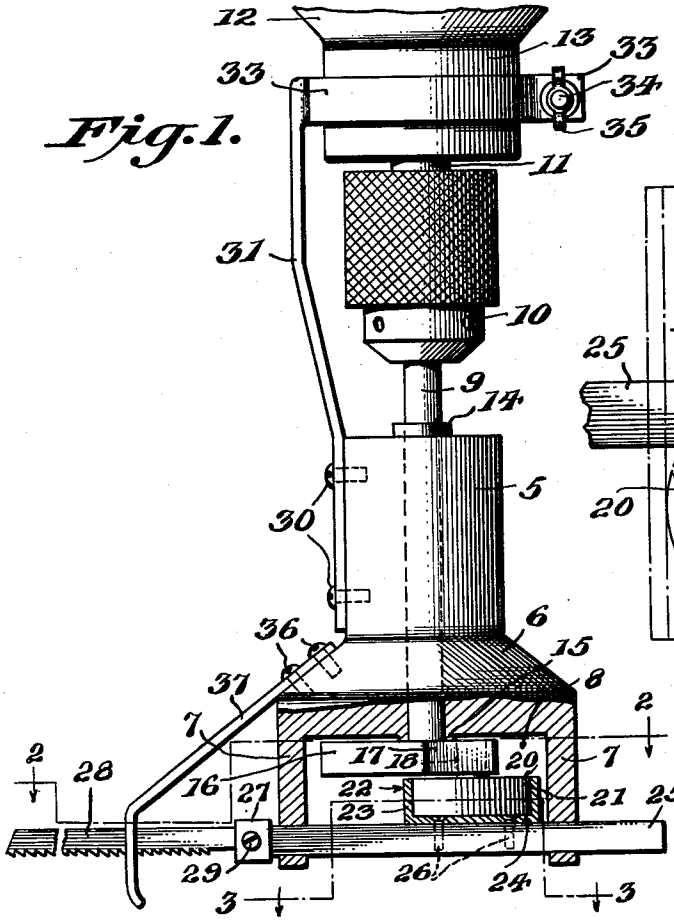
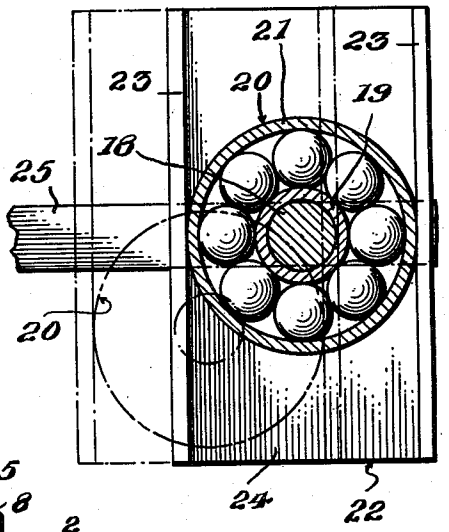


Fig. 3.



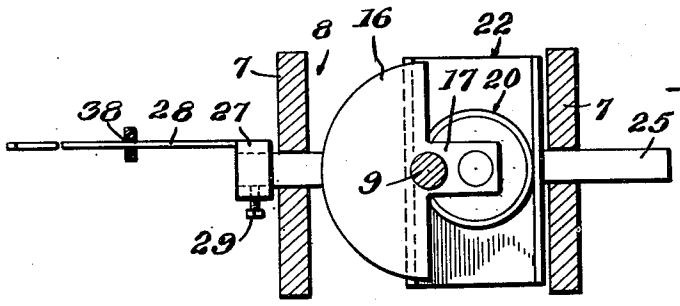


Fig. 2.

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ATTACHMENT FOR ROTARY DRILLS OR THE LIKE

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Application November 19, 1940, Serial No. 366,292

1 Claim. (Cl. 29—73)

My invention relates to attachments for rotary drills or the like and has as one of the principal objects thereof the provision of a device so constructed and arranged whereby the same may be readily attached to a rotary drill for converting rotary into reciprocating motion for reciprocately operating a tool carried by the device, for instance, a saw.

An important object of my invention is to provide a device of the character described which is simple in construction, durable in use, efficient in operation and economical in manufacture.

Other objects and advantages will be apparent from the following description, appended claim and annexed drawing.

Referring to the drawing wherein like reference characters designate like parts throughout the several views:

Figure 1 is a side elevation, partly in section, as applied to a conventional type of rotary drill.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a detail sectional view taken on the line 3—3 of Figure 1.

In practicing my invention, as illustrated in the drawing, I provide a housing 5 formed on its lower end section with a frustum-shaped portion 6, the latter being fashioned with a pair of vertical subjacent spaced arms 7 defining a betweenity 8 between said arms. The housing 5 has vertically journaled therethrough a shaft 9 for rotation relative to said housing. The upper end of the shaft 9 is detachably fixed within a collet 10 rotatably carried on the lower end of a rotary drill shaft 11 extending upwardly through the casing 12 of an electric drill and with the casing formed with a cylindrical portion 13 disposed superjacent said collet.

The shaft 9, is provided with a collar 14 having running engagement with the upper face of the housing 5, the latter being fashioned with a boss 15 on the under face of the section 6 and through which the shaft 9 extends. The lower end of the shaft 9 has fixed thereto a semi-arcuate-shaped member 16 fashioned with an arm 17 extending outwardly or away from the shaft 9 and with the outer end of said arm 17 having fixed therein the upper end of a stub shaft or eccentric pin 18. The lower end of the stub shaft 18 is provided with a sleeve 19 centrally disposed within a ball bearing assembly 20 and which assembly comprises a cylindrical shell 21 slidably mounted within an elongated slide 22.

The slide 22 is formed with a pair of spaced side walls 23 for engagement with the outer peripheral wall of the shell 21 and with a bottom wall 24. Horizontally and slidably mounted through the lower ends of the arms 7 is a bar 25, the latter having secured on its upper face the bottom wall 24 of the slide by means of screws 26. One end of the bar 25 has detachably mounted thereon a sleeve 27, the latter being connected to the heel end of a saw 28. The sleeve 27 is adjustable with respect to the bar and is maintained in fixed relation with the bar 25 by means of a set screw 29. The member 16 coacts with the collar 14 to preclude vertical shifting of the shaft 9 during rotation of the latter.

The upper section of the housing 5 has secured thereto, by means of screws 30, the lower end of an upwardly extending arm 31, the upper end of the latter being fixed to one side of a clamp 32 having arms embracing the portion 13 of the drill. The clamp arms, on the opposite side of the clamp, are formed with a pair of ears 33 through which extends a bolt 34 provided with a wing nut 35 for securing the clamp arms fixed about the portion 13.

One side of the section 6 has secured thereto, by means of screws 36, the upper end of a guide 37, the lower end of the latter being vertically disposed and formed with a slot 38 through which the saw 28 reciprocates, the lower end of the guide 37 serving to prevent lateral displacement of the saw during reciprocation of the latter.

Obviously, when rotary power is applied to the drill shaft 11, rotary motion will be imparted to the shaft 9 thereby causing reciprocation of the saw through the medium of the arm 17, pin 18, bearing assembly 21, slide 22 and bar 25. From the foregoing, it will be apparent that I have provided a simple and efficient device which may be readily attached to a rotary drill or the like for converting the rotary motion thereof into reciprocating motion for operating a saw or other reciprocal tool. While I have shown and described my invention as attached to a drill, it is to be understood that the same may be attached to any form of suitable power device and that any other form of suitable tool may be substituted for the saw.

Without further elaboration the foregoing will so fully explain the invention that others may, by applying current knowledge, readily adapt the same for use under various conditions of service. Moreover, it is not indispensable that all the features of the invention be used conjointly since they may be employed advantageously in various combinations and sub-combinations.

It is obvious that the invention is not confined

to the herein described use therefor as it may be utilized for any purpose to which it is adaptable. It is therefore to be understood that the invention is not limited to the specific construction as illustrated and described as the same is only illustrative of the principles of operation, which are capable of extended application in various forms, and that the invention comprehends all construction within the scope of the appended claim.

What I claim is:

In an attachment for rotary power drills, a vertically disposed short cylindrical shaped housing having a frusto conical end arranged subjacent to a rotary power drill, an arm secured to the housing and including a clamp extending at right angles thereto and embracing and gripping a fixed portion of the power drill, a shaft rotated by the power drill and journaled in the housing, spaced depending arms on the frusto conical end of said housing and having openings aligning with each other, a tool carrying bar slidable in the openings, an elongated inverted channel shaped member secured to the bar and extending at right angles thereto and movable therewith between the arms, a ball bearing unit engaging the channel member, a semi-arcuate shaped member fixed to the shaft between the arms and including an arm extending outwardly from the shaft, and a pin engaging in the ball bearing unit and fixed to the latter-named arm for reciprocating the tool bar by the rotation of said shaft.

JOSEPH W. KERN.