

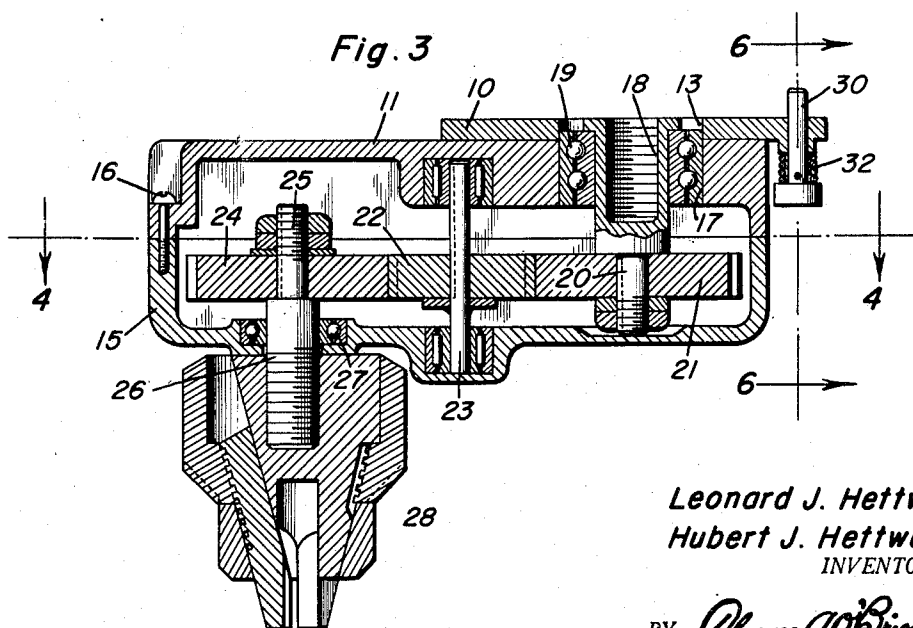
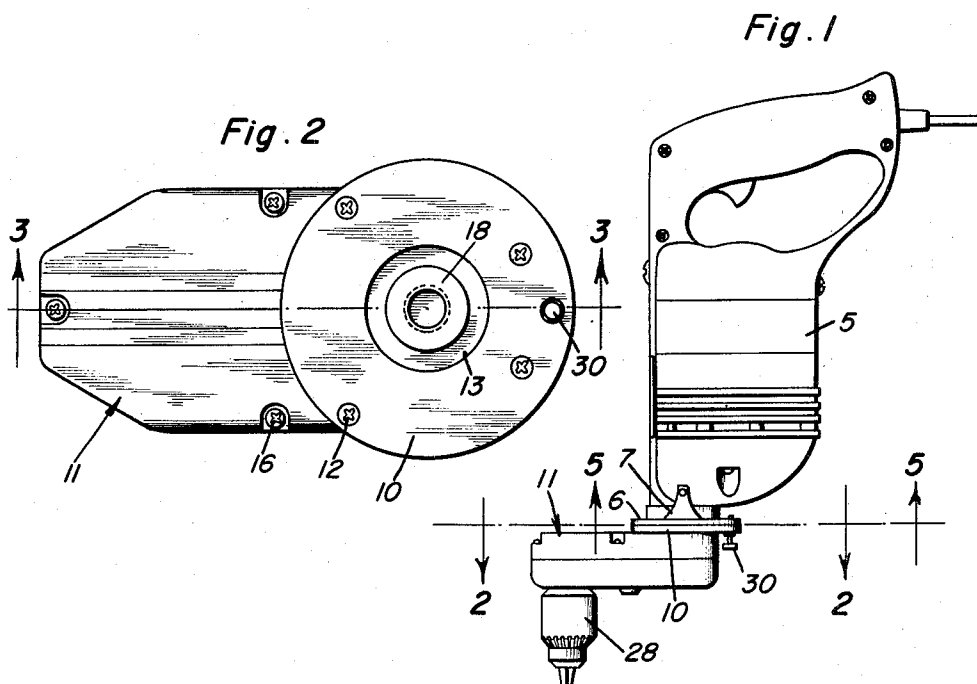
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L. J. HETTWER ET AL
OFFSET DRILLING ATTACHMENT

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2 Sheets-Sheet 1



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Fig. 4

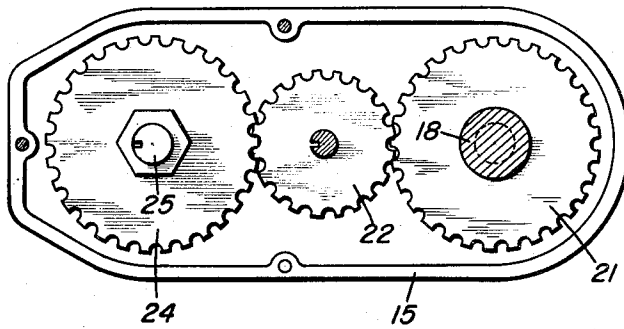


Fig. 5

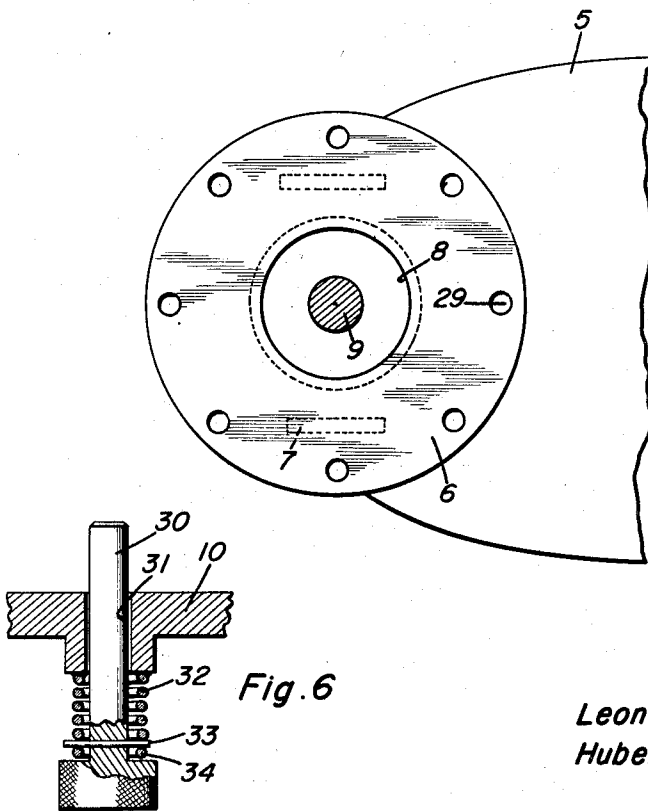
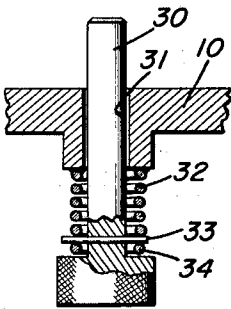


Fig. 6



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OFFSET DRILLING ATTACHMENT

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1 Claim. (Cl. 77—55)

The present invention relates to new and useful improvements in attachments for electric drills for supporting a drill bit in a position parallel to and offset with respect to the axis of the shaft or spindle of the motor of the drill.

An important object of the invention is to provide an offset drilling attachment which is swingably mounted about the axis of the spindle or shaft of the motor of the drill to operate the drill in normally inaccessible places.

Another object of the invention is to provide an elongated gear housing having means at one end portion thereof for attaching to the spindle of an electric drill to project radially with respect to the axis of the motor and with a chuck for a drill bit mounted at the outer end of the gear housing to position the bit offset with respect to the drill.

A still further object is to provide an attachment of this character of simple and practical construction, which may be easily and quickly attached in position to the electric drill, which is efficient and reliable in operation, relatively inexpensive to manufacture, and otherwise well adapted for the purpose for which the same is intended.

These, together with other objects and advantages which will become subsequently apparent, reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a side elevational view;

Figure 2 is an enlarged top plan view of the gear housing taken in a position along a section line 2—2 of Figure 1;

Figure 3 is a longitudinal sectional view of the gear housing taken on the line 3—3 of Figure 2;

Figure 4 is a sectional view taken on the line 4—4 of Figure 3;

Figure 5 is an enlarged bottom plan view of the stationary plate on which the gear housing is swingably supported and taken on a section line 5—5 of Figure 1; and

Figure 6 is an enlarged vertical sectional view of the locking pin for the gear housing taken on the line 6—6 of Figure 3.

Referring now to the drawings in detail, wherein, for the purpose of illustration, we have disclosed a preferred embodiment of the invention, the numeral 5 designates an electric drill of a conventional type and to the front or outer end portion of which a circular plate 6 is secured in a stationary position by brackets 7 secured to the housing of the drill. The plate 6 is formed with a central opening 8 to receive the usual spindle 9 which is driven by the motor (not shown) of the drill.

A second circular plate 10 of an area coextensive with plate 6 is secured on top and adjacent one end portion of an elongated gear housing 11 by screws or the like 12 and the plate 10 is also formed with a central opening 13 aligned with the opening 8 of plate 6.

The gear housing 11 is composed of upper and lower

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housing sections 14 and 15 secured in assembled relation to each other by screws or the like 16. One end portion of upper section 14 of the housing is formed with an opening 17 in which an internally threaded socket 18 is rotatably supported in ball bearing assemblies 19 and the open end portion of the socket 18 is exposed in the opening 13 of the plate 10 for connecting the socket to the spindle 9 of the drill.

The inner end of the socket 18 is formed with a stub shaft 20 to which a spur gear 21 is secured for driving an idler gear 22 supported in the housing by a shaft 23. The idler gear 22 in turn drives a spur gear 24 which is secured to a stub shaft 25 formed at the inner end of a spindle 26 which is rotatably supported in a ball bearing assembly 27 in the lower section 15 of the gear housing. A chuck 28 is threadedly connected to the lower end of spindle 26 and is adapted for attaching a drill bit (not shown) thereto.

The stationary plate 6 is formed with a concentric row of openings 29 adapted for selective engagement by a locking pin 30 which is slidable in an opening 31 in the plate 10.

A retractable coil spring 32 is mounted on the outer end of pin 30 and is welded at one end to the outer surface of plate 10 and a pin 33 is secured in a transverse position to pin 30 to project transversely of pin 33 for engaging the outermost convolution 34 of the spring to pull the locking pin 30 inwardly in locking engagement in one of the openings 29.

The socket 18 at the inner end of the gear housing is secured to the usual drive spindle 9 of the electric drill 5 which thus secures the gear housing 11 at the front end of the drill and the motor of the drill will drive the spindle 26 at the outer end of the housing and to which the chuck 28 for the drill bit is attached.

By retracting or releasing locking pin 30, the gear housing is free to swing on socket 18 about the axis of the spindle 9 to a desired position for drilling in normally inaccessible places and the housing may then be locked by engaging the locking pin in an appropriate opening 29.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

In combination with an electric drill having a drive spindle, a drive socket threaded onto said spindle, an elongated housing into one end of which said socket extends and on which said housing is rotatably mounted for swinging adjustment about the axis of said spindle, a driven shaft journaled in and extending out of the other end of said housing parallel with said spindle, gearing in said housing operatively connecting said socket to said shaft, a drill bit chuck on said shaft, and means for locking said housing in adjusted position to the drill comprising a pair of annular plates fixed to said drill and housing respectively, in surrounding concentric relation to said socket and spindle and relatively rotatable in engaging relation, one of said plates having a concentric series of spaced openings therein and the other having a spring pressed pin slidable therein into said openings selectively and offset to one side of said housing.

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