Nov. 11, 1941. H. L. BENDA 2,262,706

DRILL ATTACHMENT

Filed Dec. 19, 1940

Fig. 1.

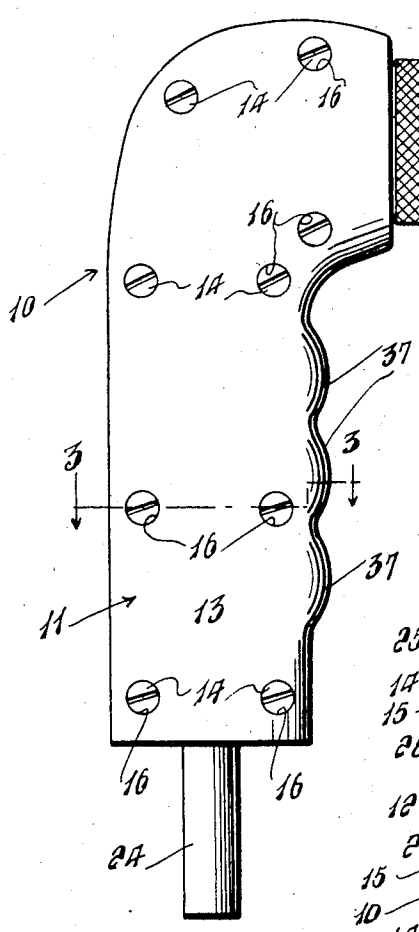


Fig. 2.

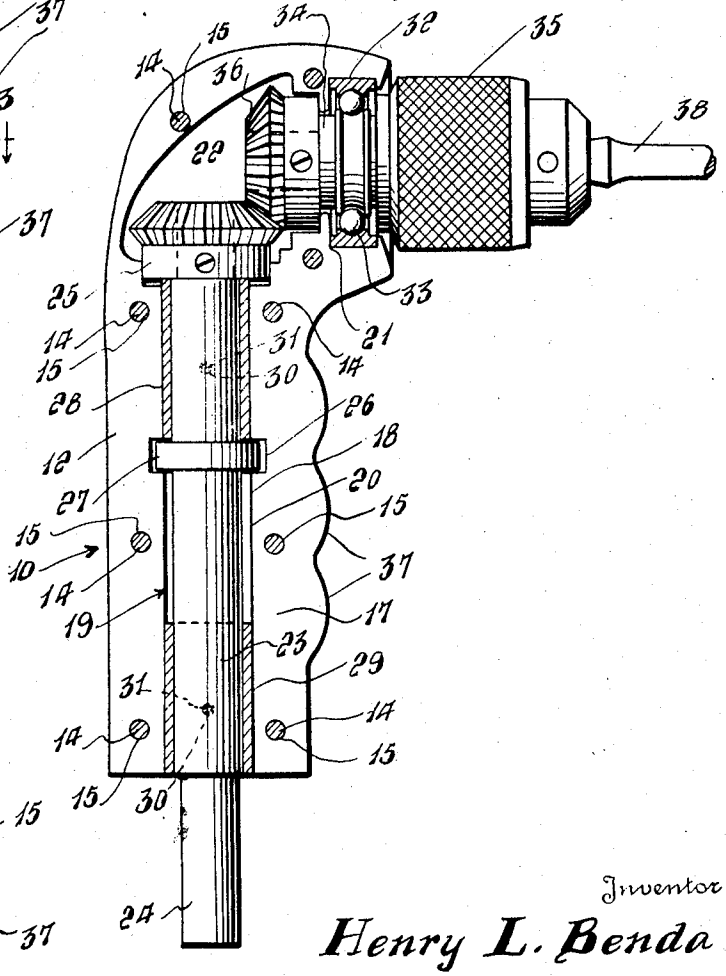
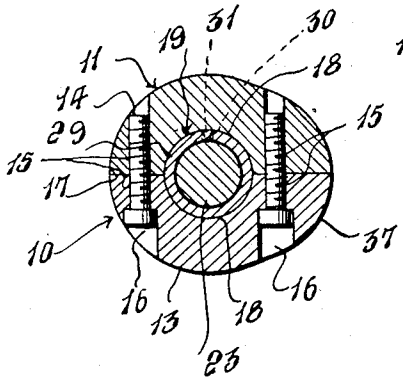


Fig. 3.



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DRILL ATTACHMENT

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3 Claims. (Cl. 77—7)

This invention relates to an attachment for use with electric drills and which may be readily attached to an electric drill for use in inaccessible places where an ordinary drill could not be employed.

More particularly, it is an aim of the invention to provide a drill attachment including an L-shaped handle portion having a bore in which is journaled angularly disposed shafts connected by intermeshed gears, with one end of one of the shafts provided with a chuck for receiving a conventional bit and the corresponding end of the other shaft being adapted to be connected to the chuck of an electric drill to thereby position the bit at an angle to the driven shaft of the electric drill and thus provide means whereby the drill may be used in conjunction with the attachment in confined, inaccessible places where it could not otherwise be operated.

Other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawing, which illustrates a preferred embodiment thereof, and wherein:

Figure 1 is a plan view of the attachment,

Figure 2 is a plan view, partly in section, showing one section of the housing or handle member removed, and

Figure 3 is a transverse sectional view taken substantially along the plane of the line 3—3 of Figure 1.

Referring more particularly to the drawing, wherein like reference characters designate like or corresponding parts throughout the different views, 10 designates generally the attachment comprising the invention and including a housing or handle member 11 formed of corresponding sections 12 and 13 which are detachably connected and held assembled by means of screws 14 which engage alined threaded openings 15 in the sections 12 and 13 when said sections are correctly positioned relatively to one another. The heads of the screws 14 are countersunk in recesses 16 in the section 13.

The abutting faces 17 of the sections 12 and 13 are provided with corresponding recessed portions 18 which combine, when the sections 12 and 13 are assembled, to form a bore 19. The housing or handle member 11 is curved adjacent one end thereof so that the opposite ends of the housing 11 are disposed substantially at right angles to one another. The bore 19 includes the arms 20 and 21 which are disposed at a right angle to one another and which open outwardly of the angularly disposed ends of the housing 11. The bore 19 is enlarged at 22 at the junction or apex of the arms 20 and 21 thereof, as seen in Figure 2.

A shaft 23 is disposed in the arm 20 of the bore 19 and has one end projecting from the longer end of the housing 11 and said end, designated 24, is adapted to be connected to a convention chuck of an electric drill, not shown. A beveled gear 25 is keyed to the opposite end of the shaft 23 and is disposed in the enlargement 22. The arm 20 of the bore 19 is provided with an enlarged portion 26 in which is disposed a collar 27 which is fixed to the shaft 24. A bushing 28 is mounted on the shaft 23 between the collar 27 and the beveled gear 25. A bushing 29 is mounted on the shaft 23 and is disposed in the arm 20 of the bore 19 adjacent the outer end thereof. The bushings 28 and 29 are each provided with an opening 30 and the section 12 is provided with studs or pins 31 which project into the arm 20 of the bore 19 and into the openings 30 for keying the bushings 28 and 29 to the housing 11 so that the shaft 23 will be journaled in said bushings. As seen in Figure 2, the collar 27 and the recess 26 combine to restrict the sliding movement of the shaft 23 relatively to the housing 11 and one end of the bushing 28 engages against the beveled gear 25 to prevent said shaft 23 from moving outwardly of the housing 11 to prevent the beveled gear 25 from changing its position within the cavity 22.

The arm 21 of the bore 19 is provided with an annular inwardly opening channel portion 32 to receive ball bearing means 33 which is mounted therein and in which is journaled a shaft 34, one end of which projects from the shorter end of the housing 11 and is provided with a conventional chuck 35. A beveled gear 36 is keyed to the opposite end of the shaft 34 and is disposed in the enlarged portion 22 and in mesh with the beveled gear 25. The ball bearing means 33 prevent the shaft 34 from sliding relatively to the bore portion 21 and thus combines with the bushing 28 to hold the beveled gears 25 and 36 in positions for correct meshing engagement.

The longer arm of the housing 11, on the exterior thereof, is provided with arcuately shaped enlargements 37 on its inner side forming a grip portion for the fingers. As seen in Figure 1, the handle member or housing 11 conforms generally to the shape of a pistol grip and the longer end thereof forms the handle portion which is adapted to be grasped in either hand for holding the attachment.

From the foregoing it will be obvious that the end 24 of shaft 23 can be readily connected to a chuck of an electric drill and a bit 38, a portion of which is shown in Figures 1 and 2, can be attached in a conventional manner to the chuck 35 to thereby position the bit 38 at substantially a right angle to the driven shaft, not shown, of the electric drill. The driven shaft of the electric drill will drive the shaft 23 which will rotate freely in the bushings 28 and 29 to in turn drive shaft 34 through the intermeshed beveled gears 25 and 36. The shaft 34 is mounted to rotate freely in the bearing means 33 and the chuck 35 is mounted adjacent to the shorter end of the housing member 11 so that the attachment 10 with the drill bit 38 applied thereto may be used for drilling in confined, inaccessible spaces where an electric drill could not otherwise be used.

Various modifications and changes are contemplated and may obviously be resorted to as only a preferred embodiment of the invention has been disclosed.

I claim as my invention:

1. A drill attachment comprising a housing having end portions angularly disposed relatively to one another, said housing being provided with an L-shaped bore opening outwardly of said housing at the ends thereof and provided with an enlarged portion at its apex, a shaft journaled in the longer arm of said bore and having one end projecting from the housing, a shaft journaled in the shorter arm of said bore and having one end extending therefrom and provided with a drill chuck, beveled gears keyed to the adjacent ends of said shafts and disposed in the enlarged portion of the bore and enmeshed with one another, means to prevent sliding movement of said shafts relatively to the housing for retaining said beveled gears in correct meshing engagement, said means including bushings disposed in and keyed to the longer arm of said bore and in which said first mentioned shaft is journaled, a collar connected to said first mentioned shaft so as to be held against sliding movement relatively thereto, and one of said bushings being disposed between said collar and the beveled gear of said shaft and constructed and arranged to restrict the sliding movement of said first mentioned shaft relatively to the housing.

2. A drill attachment comprising a housing having end portions angularly disposed relatively to one another, said housing being provided with an L-shaped bore opening outwardly of said housing at the ends thereof and provided with an enlarged portion at its apex, a shaft journaled in the longer arm of said bore and having one end projecting from the housing, a shaft journaled in the shorter arm of said bore and having one end extending therefrom and provided with a drill chuck, beveled gears keyed to the adjacent ends of said shafts and disposed in the enlarged portion of the bore and enmeshed with one another, means to prevent sliding movement of said shafts relatively to the housing for retaining said beveled gears in correct meshing engagement, said housing being L-shaped, and the longer arm of said housing forming a handle and being provided with arcuately shaped enlarged portions forming a finger grip.

3. A drill attachment comprising a housing having end portions angularly disposed relatively to one another, said housing being provided with an L-shaped bore opening outwardly of said housing at the ends thereof and provided with an enlarged portion at its apex, a shaft journaled in the longer arm of said bore and having one end projecting from the housing, a shaft journaled in the shorter arm of said bore and having one end extending therefrom and provided with a drill chuck, beveled gears keyed to the adjacent ends of said shafts and disposed in the enlarged portion of the bore and enmeshed with one another, means to prevent sliding movement of said shafts relatively to the housing for retaining said beveled gears in correct meshing engagement, said means including a ball bearing mounting disposed in the last mentioned end of said bore and in which said last mentioned shaft is rotatably mounted and held against sliding movement relatively to the housing.

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