

June 29, 1926.

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A. NEUWELT

GUIDE FOR PORTABLE DRILLS

Filed Nov. 21, 1923

Fig. 1.

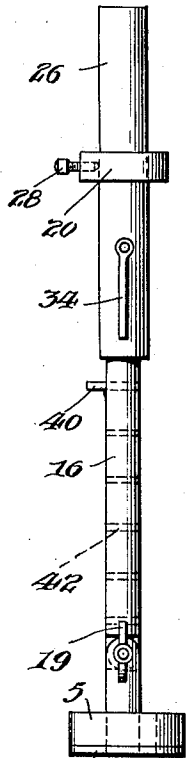
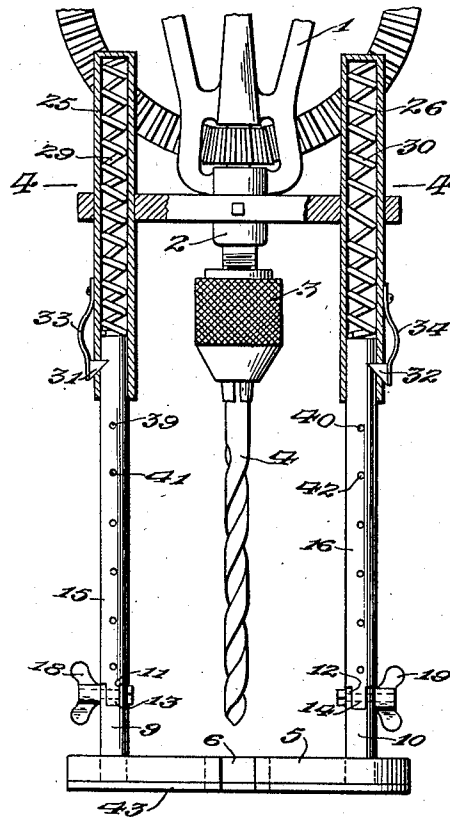


Fig. 3.

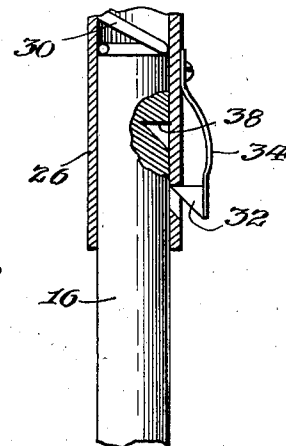


Fig. 5.



Fig. 2.

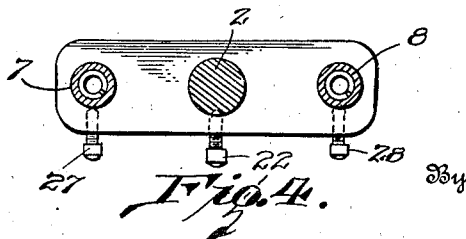


Fig. 4.

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UNITED STATES PATENT OFFICE.

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GUIDE FOR PORTABLE DRILLS.

Application filed November 21, 1923. Serial No. 675,982.

This invention relates to a guide for a portable drill and is adapted for use in connection with any drilling implement, such as a brace and bit, a hand drill, a power drill or the like.

Another object of the invention is to provide a guide for a portable drill of the above mentioned character, which will enable the operator to bore a hole at right angle with the surface of the object in which the hole is being bored.

A still further object of the invention is to provide a guide for a portable drill of the above mentioned character, which will automatically return the drill to its inoperative position after the hole has been bored in the object.

Another equally important object of the invention is to provide a guide for a portable drill which can be readily and easily attached thereto which is simple in construction, inexpensive, strong and durable and is furthermore well adapted for which it is designated.

Other objects and advantages of this invention will become apparent during the course of the following description.

In the accompanying drawings forming a part of this specification, and in which like numerals designate like parts throughout the same:—

Figure 1 is a side elevation of the invention showing the guiding means partly in section.

Figure 2 is a plan view of the base plate.

Figure 3 is a side elevation.

Figure 4 is a section taken on line 4—4 of Fig. 1.

Figure 5 is a detail view of a portion of the guide rod and spring member.

In the drawings wherein for the purpose of illustration is shown the preferred embodiment of my invention, the numeral 1 designates the frame of the usual construction of a hand drill and upon which my guide is mounted. The hand drill is provided with the usual stock portion 2 which is adapted to receive the chuck 3 at its lower end and this chuck 3 securely holds the drilling auger 4 therein.

A base plate 5 is associated with the hand drill and this base plate 5 is provided with the central opening 6 therein for the purpose of permitting the auger or bit 4 to pass therethrough while in the process of drilling. The base plate 5 is provided with

apertures 7 and 8 adjacent its outer side as more clearly shown in Fig. 4 of the drawings and adapted to be received in these apertures 7 and 8 formed in the base plate 5 are the upstanding short rod sections 9 and 10 respectively. These rod sections 9 and 10 are provided in their upper ends with centrally disposed grooves 11 and 12 for the purpose of receiving the tongues 13 and 14 respectively of a pair of elongated guide rods 15 and 16 respectively. These guide rods 15 and 16 are of similar construction as the short rod sections 9 and 10 and adapted to pass through a transverse slot 17 formed in each of the upper ends of the rod sections 9 and 10 and through a registering aperture formed in the tongues 13 and 14 of the guide rods 15 and 16 respectively are the locking elements 18 and 19. The purpose of which will hereinafter be more fully described.

A tool supporting plate 20 as shown more clearly in Fig. 2 of the drawings is adapted to receive the stock 2 of the frame of the drill in a central aperture 21 formed therein. This tool supporting plate is detachably held on the stock 2 of the drill by any suitable fastening means as indicated at 22 in the drawings. The tool supporting plate 20 is of an elongated structure and is provided with apertures 23 and 24 adjacent its outer side. The apertures 23 and 24 formed in the tool supporting plate 20 when in place upon the stock 2 of the frame 1 of the drill will register or be in alinement with the apertures 7 and 8 formed in the base plate 5.

In each of these apertures 23 and 24 formed in the tool supporting plate 20 is an elongated casing 25 and 26 respectively and these casings 25 and 26 are held in position in the apertures 23 and 24 by means of suitable set screws 27 and 28. The open ends of the casings or cylinders 25 and 26 are adapted to respectively receive the free ends of the guide rods 15 and 16. Disposed within the cylinders 25 and 26 are suitable spring elements 29 and 30 respectively the ends of which engage the ends of the guide rods 15 and 16 slidably associated within the casings 25 and 26 and the opposite ends of the springs 29 and 30 bear against the bottom of the cylinders.

The cylinders 25 and 26 are provided with latches 31 and 32 respectively adjacent their open ends and these latches 31 and 32 are resiliently supported upon the cylinders 25 and 26 by means of suitable spring elements

33 and 34. These latches 31 and 32 are adapted to pass through openings 35 and 36 formed in the casings 25 and 26 respectively and the latch members 31 and 32 have their ends fitting in notches 37 and 38 formed respectively in the guide rods 15 and 16 for the purpose of preventing the springs 29 and 30 within the cylinders or casings 25 and 26 when not tensioned to force the casings 26 and 25 off of the free ends of the guide rods 15 and 16.

In use, when it is desired to bore a hole at right angles with the surface of the object in which the hole is being bored the guide rods 15 and 16 are alined with the short rod sections 9 and 10 and the locking nuts 18 and 19 are then tightened so as to hold the guide rods 15 and 16 in alinement with the shorter rod sections 9 and 10 so that the base plate 5 will lie flush against the surface of the object in which the hole is being bored and by operating the drill in the usual manner the bit 4 will be caused to pass through the central opening 6 formed in the base plate 5 and into the object where the hole is to be made. The depth of boring this hole may be regulated by placing the pins 39 and 40 in the desired apertures 41 and 42 respectively which are formed in the elongated guide rods 15 and 16. In this manner the free ends of the casings or cylinders 25 and 26 will slidably move downwardly upon the guide rods 15 and 16 and when the same have reached the pins 39 and 40 which are placed in any of the suitable apertures 41 and 42 the depth of boring the hole may be regulated. After the hole has been bored by releasing the hands from the drill the springs 29 and 30 in the casings 25 and 26 which have become tensioned in the process of drilling will be caused to expand and thus cause the upward movement of the tool supporting frame 2 and the casings 25 and 26 carried thereby so as to withdraw the boring tool from the object wherein the hole has been bored.

When it is desired to bore a hole at various angles other than at a right angle to the surface in which the hole is being bored the locking elements 18 and 19 are released and the guide rods 15 and 16 are then adjusted so as to accommodate the angle the operator desires to bore the hole at and the locking elements 18 and 19 are again then tightened. The operation of the drilling is then repeat-

ed and after the drilling has been completed the springs again function in the same manner above described.

To prevent the base plate 5 from defacing the surface of the object in which the hole is being bored, I provide a felt pad 43 to the underside of the base plate 5 whereby the base plate 5 may rest upon the surface of the object in which the hole is being bored without defacing the same.

It will thus be seen from the foregoing description that a guide has been provided for a portable drill or the like whereby the boring of a hole at right angles to the surface will at all times be assured and furthermore the depth of the hole being bored can be regulated without the necessity of the operator having to keep a constant watch on the drill while in the process of drilling a hole.

From the foregoing description of the construction of my improved apparatus, it will be seen that I have provided a simple, inexpensive and efficient means for carrying out the objects of the invention, and while I have particularly described the elements best adapted to perform the functions set forth, it is obvious that various changes in form, proportion, and in the minor details of construction may be resorted to, without departing from the spirit or sacrificing any of the principles of the invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

A device of the class described including a base, tool supporting means, a pair of spaced guide rods adjustably mounted on the said base, a pair of spaced cylinders carried by the said tool supporting means for receiving the free ends of the said guide rods, lock nuts on said guide rods, and springs in the said cylinders, spring elements positioned on said cylinder, latches on said spring elements, openings formed in the aforesaid cylinders, means for limiting the downward movement of the cylinders on the said guide rods, and means for limiting the upward movement of the side cylinders on the said guide rods, substantially as described.

In testimony whereof I affix my signature.

ALEXANDRE NEUWELT.