No. 608,061. Patented July 26, 1898.

W. H. MERRELL.

DRILL CHUCK.

(Application filed Dec. 10, 1897.)

(No Model.)

Fig. 1

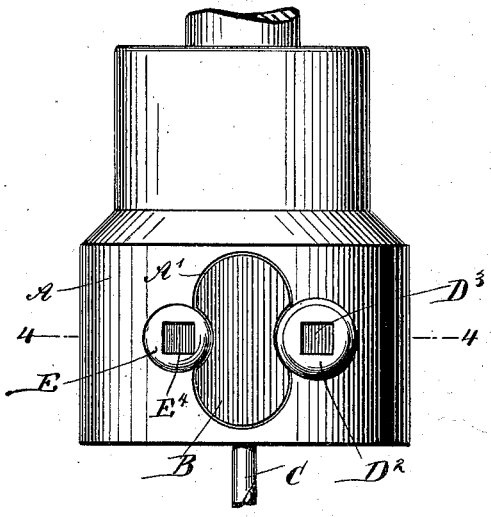


Fig. 2

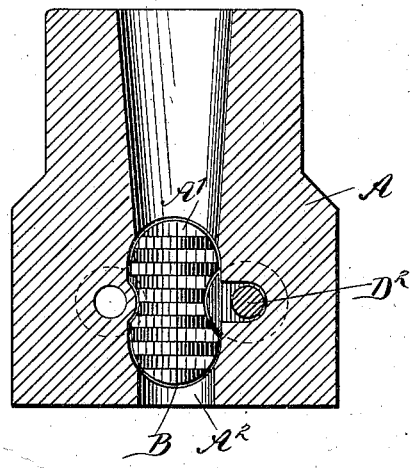


Fig. 3

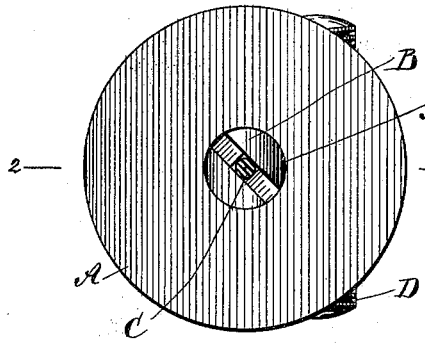


Fig. 4

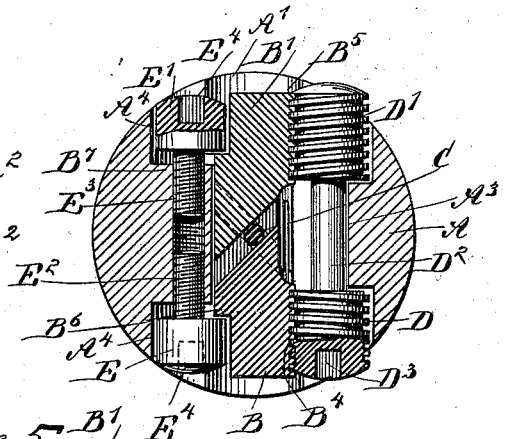
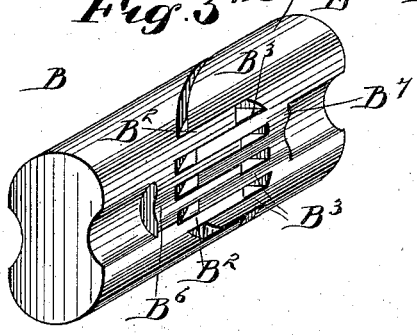


Fig. 5



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WILLARD H. MERRELL, OF ONEIDA, NEW YORK.

DRILL-CHUCK.

SPECIFICATION forming part of Letters Patent No. 608,061, dated July 26, 1898.

Application filed December 10, 1897. Serial No. 661,398. (No model.)

To all whom it may concern:

Be it known that I, WILLARD H. MERRELL, of Oneida, in the county of Madison and State of New York, have invented a new and Improved Drill-Chuck, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved drill-chuck arranged to securely hold a drill or like tool in place to prevent it from turning in the jaws, at the same time permitting a ready opening and closing of the jaws to hold the same in position against opening.

The invention consists of novel features and parts and combinations of the same, as will be hereinafter more fully described, and pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement. Fig. 2 is a sectional side elevation of the same on the line 2 2 of Fig. 3. Fig. 3 is an inverted plan view of the improvement. Fig. 4 is a sectional plan view of the same, and Fig. 5 is a perspective view of the jaws.

The improved drill-chuck is provided with a body A, adapted to be secured in the usual manner to the revoluble spindle of a drill, lathe, or other machine, and in the lower end of the body is formed a bore or seat A′, extending diametrically through the said body A from one side to the other to receive a pair of jaws B B′, elongated in cross-section to fit the correspondingly-shaped seat A′ to prevent the jaws from turning in the body.

The jaws B and B′ are formed on their inner or adjacent ends with interlocking fingers or teeth B^2 B^3, respectively, of which the successive fingers are beveled in opposite directions, so as to produce a V-shaped opening for engaging a drill C or other tool to securely hold the same in place in the fingers of the jaws.

The sides of the jaws B B′ are concave, as is plainly illustrated in Figs. 1, 2, and 5, one side of the jaws being formed with right and left hand threads B^4 B^5, respectively in mesh with right and left hand threads D D′ on a screw-rod having a reduced shank D^2 for connecting the heads carrying the threads with each other, the reduced shank and the heads being mounted to turn in a suitable bearing A^3, formed in the body A, the bearing opening into the bore A′, as is plainly indicated in Fig. 4. The inner ends of the heads of the screw-rod abut against shoulders to prevent lateral movement of the screw-rod, one of the heads being formed with an opening D^3 for applying a key or other tool for turning the screw-rod, so as to move the jaws B B′ toward or from each other.

The opposite side of the jaws B B′ is formed with shoulders B^6 B^7, adapted to be engaged by the heads E E′, respectively, of screws E^2 E^3, threaded in the body A, so that when the jaws B B′ are adjusted to engage and grip the tool C then the jaws can be locked in place by screwing the locking-screws E^2 E^3 until their heads E E′ firmly abut against the shoulders B^6 and B^7, so as to prevent the jaws from moving outwardly and releasing the tool C. The latter is passed through the usual opening A^2 in the lower end of the body A to pass into the gripping-fingers, as above explained.

It is evident that by the construction described the jaws B B′ can be made of considerable height to insure a large amount of gripping-surface by the fingers B^2 B^3 to securely hold the tool C in place, and at the same time considerable range can be given to the jaws for holding large or small drills.

In assembling the several parts the screw-rod is introduced through the bore A′ and then moved sidewise from the bore to place it in position in its bearing A^3, and then the jaws B B′ are placed from opposite sides into the bore A′ to engage the threads B^4 B^5 with the corresponding threads D D′. The locking-screws E^2 E^3 are then screwed into the body A, the heads of the screws being for this purpose provided with recesses E^4, adapted to be engaged by a key or other tool, said recesses being preferably of the same size as the recess D^3 to permit of using the same key for turning the screw-rod as well as the screws.

It is understood that by the arrangement described a double gripping is provided for the jaws to prevent the drill or other tool C from working loose between the fingers, especially as all backlash from the threads

D D′ is taken up by the heads E E′ of the screws E^2 E^3 when the latter are screwed up in the body and the heads abut against the shoulders B^6 B^7.

The round heads E E′ of the screws E^2 E^3 fit snugly into correspondingly-shaped recesses A^4, formed in the chuck-body A opposite the bearing A^3 for the screw-rod, the said recesses opening, like the bearing A^3, into the bore or seat A′ for the jaws, so that the sides of the heads E E′ fit close to the concave surfaces of the jaws, it being understood that the inner faces of the heads abut against the shoulders B^6 B^7 when the screws are screwed up after the jaws are closed by the screw-rod and after the drill is in place.

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

A drill-chuck having a body portion provided with a transverse seat, two jaws slidable toward and from each other in said seat and meeting at the center of the chuck, the jaws having interlocking fingers arranged to hold the drill and the jaws respectively having right and left hand threads at one side, the opposite sides of the jaws being provided with shoulders, a screw-rod having enlarged end portions bearing against shoulders on the body, such end portions being oppositely threaded and engaged respectively with the threads on the jaws, whereby the jaws are advanced and retracted, and two screws working in opposite sides of the body and having heads respectively engaged with the shoulders on the jaws.

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Witnesses:
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