

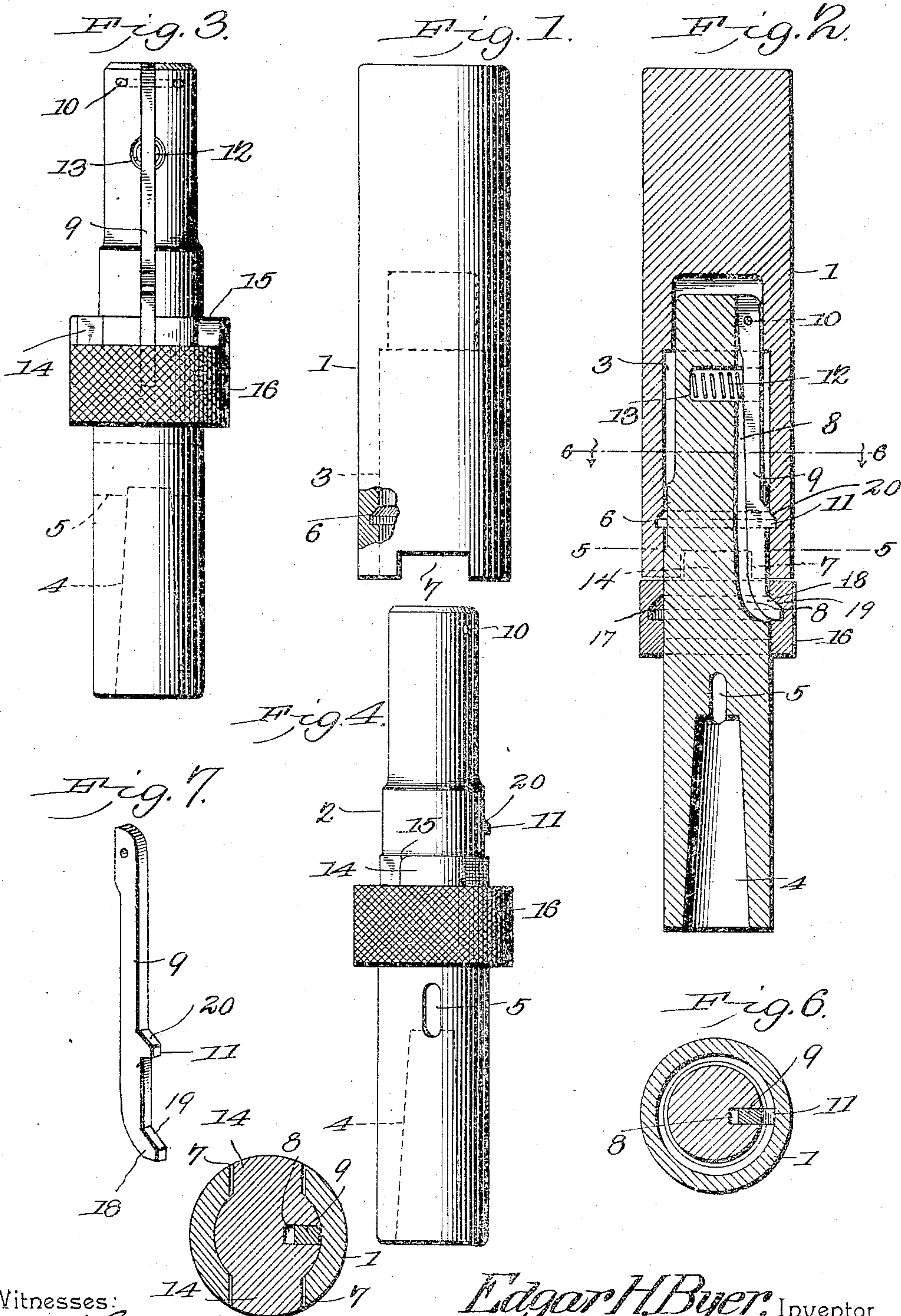
No. 767,261.

PATENTED AUG. 9, 1904.

E. H. BYER.
DRILL CHUCK.

APPLICATION FILED APR. 9, 1904.

NO MODEL.



Witnesses:

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Fig. 5. by

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UNITED STATES PATENT OFFICE.

EDGAR H. BYER, OF WAYNESBORO, PENNSYLVANIA.

DRILL-CHUCK.

SPECIFICATION forming part of Letters Patent No. 767,261, dated August 9, 1904.

Application filed April 9, 1904. Serial No. 202,415. (No model.)

To all whom it may concern:

Be it known that I, EDGAR H. BYER, a citizen of the United States, residing at Waynesboro, in the county of Franklin and State of Pennsylvania, have invented a new and useful Drill-Chuck, of which the following is a specification.

This invention relates to drill-chucks.

The object of the invention is to facilitate the combining of the drill with the chuck and its separation therefrom and, further, to obviate the necessity of stopping the drill-press when a drill is to be changed.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a drill-chuck, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, there is illustrated one form of embodiment of the invention capable of carrying the same into practical operation, it being understood that the elements therein exhibited may be varied or changed as to shape, proportion, and exact manner of assemblage without departing from the spirit thereof.

In the drawings, Figure 1 is a view in elevation of a drill-chuck constructed in accordance with the present invention, the parts being separated. Fig. 2 is a view in vertical section; taken a little to one side of the center of the chuck. Fig. 3 is a detached detail view of the drill-holder. Fig. 4 is a similar view of the drill-holder, taken at right angles to Fig. 3. Fig. 5 is a transverse sectional view taken on the line 5 5, Fig. 2, and looking in the direction of the arrow. Fig. 6 is a similar view taken on the line 6 6, Fig. 2, and looking in the direction of the arrow. Fig. 7 is a perspective detail view of the latch.

The chuck comprises a stock 1 and a drill-holder 2, the former being provided with a bore 3 to receive the holder and the latter being provided with the usual tapered socket 4 to receive the drill-shank and with a drift-slot 5 to facilitate removal of the drill. The stock may be either cylindrical, as shown, or

tapered, as preferred, and is provided near the terminal of the bore with a circumferential groove 6 and in its lower face with two oppositely-disposed alined recesses 7, the function of which will presently appear.

The drill-holder is provided with a longitudinal slot 8, in which is disposed a latch 9, the outer face of which lies flush with the holder, the latch being pivoted in the slot by a pin 10, disposed near its upper end. The latch is provided with a lug 11 to engage the groove 6 in the stock, and thus hold the stock and holder locked together, and to hold the lug 11 in operative engagement with the groove a coiled spring 12 is employed, which is seated in a socket 13, extending transversely of the drill-holder, and bears at its free end against the inner face of the latch.

The means for holding the holder from rotation in the stock consists of two laterally-projecting lugs 14, that are integral with the holder and are designed to engage the recesses 7 of the stock, these lugs being of less width than the recesses in order to permit a small amount of play, thus to facilitate the assembling of the stock and drill-holder. As it is designed that the holder may be combined with the stock while the latter is rotating, it is essential that there shall be no interference between the lugs and the vertical walls of the recesses, which would tend to prevent the ready assembling of the parts, and to effect this one of the upper corners 15 of each of the lugs is rounded, as clearly shown in Fig. 4.

The lug 11 is moved out of engagement with the groove 6 when the drill-holder is to be detached from the stock through the medium of a knurled collar 16, carried by the upper end of the drill-holder and having an internal circumferential groove 17 to be engaged by an angular toe 18 on the latch, as clearly shown in Fig. 2, the depth of the slot 8 at the point where the toe is disposed being such that it will limit the inward movement of the latch, and thus cause the toe positively to prevent separation of the collar from the holder in one direction, the lugs serving a like purpose in the opposite direction. It will be seen that by pulling down upon the collar the inclined

upper wall of the groove 17 will engage with the upper inclined face 20 of the toe 18, and thus force the latch back into the slot, whereupon the lug 11 will be moved out of engagement with the recess 6, and thus release the holder from locked engagement with the stock.

By preference there will be a drill-holder for each size drill, and the drill will be held within the holder either by frictional contact with the walls of the socket 4 or otherwise.

In the operation of the chuck when a drill-holder has to be inserted within the stock it is merely pushed inward or upward, and when the inclined upper face 20 of the lug 11 contacts with the lower edge of the inner wall of the bore 3 the latch will be forced into the slot, and thus permit insertion of the holder and the engagement of the lug with the groove 6, this latter taking place when the lugs 14 are seated within the recesses 7. To separate the holder from the stock, it will only be necessary to draw down upon the collar 14, as before described.

The chuck of this invention is exceedingly simple of construction and will be found of the highest efficiency in use, and owing to the simplicity of the parts constituting it danger of derangement or breakage is reduced to a minimum.

Having thus fully described my invention, what I claim is—

1. A drill-chuck comprising a stock and a drill-holder, the stock having an internal circumferential groove and terminal recesses, and the drill-holder having a latch provided with a lug to interlock with the groove and with lugs to interlock with the recesses.

2. A drill-chuck comprising a stock and a drill-holder, the stock being provided with an internal circumferential groove and with terminal recesses, and the holder being provided

with a spring-pressed latch having a lug to engage the groove and with lateral lugs to interlock with the recesses.

3. A drill-chuck comprising a stock provided with an internal circumferential groove and with terminal recesses, a drill-holder carrying a spring-pressed latch provided with a lug to interlock with the groove and with a terminal toe, and a collar loosely mounted upon the holder and operating by engagement with the toe to move the lug out of engagement with the groove of the stock.

4. A drill-chuck comprising a stock provided with a circumferential groove and with terminal recesses, a drill-holder having a longitudinal slot, a spring-pressed latch pivoted within the slot and provided with a lateral lug to engage the said groove and with a terminal toe, lugs carried by the holder to interlock with the recesses of the stock, and a collar loosely mounted upon the holder and provided with an internal circumferential groove to be engaged by the toe.

5. A drill-chuck comprising a stock provided with an internal circumferential groove, a drill-holder provided with a longitudinal slot, a spring-pressed locking-latch pivoted within the holder, said latch being provided with means to interlock with the groove and with a terminal toe, and being limited in its inward movement by the end wall of the slot, and a collar mounted upon the holder and having an internal circumferential groove to be engaged by the toe.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

EDGAR H. BYER.

Witnesses:

T. T. CRISWELL,
ALF. N. RUSSELL.