(No Model.)

C. E. STONE.

DRILL CHUCK.

No. 339,595. Patented Apr. 6, 1886.

Fig. 1.

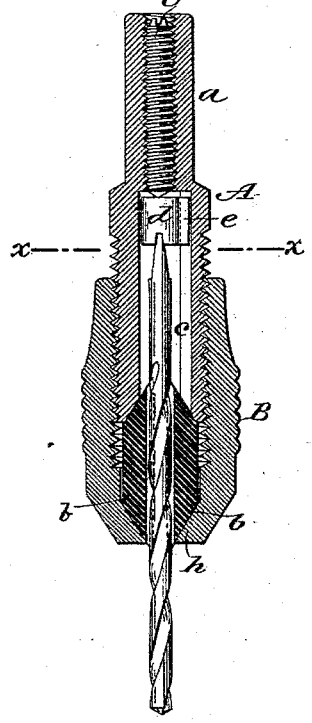


Fig. 2.

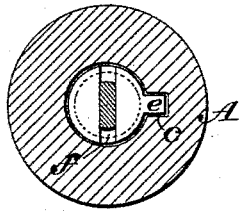


Fig. 3.

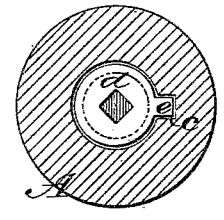
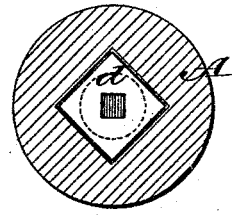


Fig. 4.



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DRILL-CHUCK.

SPECIFICATION forming part of Letters Patent No. 339,595, dated April 6, 1886.

Application filed January 9, 1886. Serial No. 188,094. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. STONE, of Amesbury, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Drill-Chucks, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a longitudinal section of my improved drill-chuck. Figs. 2, 3, and 4 are transverse sections taken on line *x x* in Fig. 1, showing different forms of socket for the shank of the drill.

Similar letters of reference indicate corresponding parts in the different figures of the drawings.

The object of my invention is to provide a simple and efficient chuck for holding drills and other implements in position for use; and it consists in the combination, with a hollow shank having a countersunk outer end, of a sleeve fitting over the hollow shank, and having a conically-bored end, and a pair of blocks having beveled ends, which are received between the conically-bored end of the sleeve and the countersunk end of the shank; and in the combination therewith of a sliding socket fitted to the hollow shank, and an adjusting-screw entering the rear end of the shank, and arranged to adjust the socket, as hereinafter more fully described. The shank A is bored axially, and is provided with a smooth end, *a*, to be fitted to the mandrel of the lathe or other machine in connection with which the drill-chuck is to be used. The opposite end of the shank A is threaded externally, and is countersunk to receive the beveled ends of the clamping-jaws *b*.

In one side of the bore of the threaded end of the shank A is formed a slot, *c*, and to the bore of this part of the shank is fitted a socket, *d*, provided with a feather, *e*, received in the slot *c*. The socket *d* has in its forward end a transverse slot, *f*, as shown in Fig. 2, or a rectangular mortise, as shown in Fig. 3, for receiving the shank of the drill, which is filed or otherwise fitted to the socket. The smooth part *a* of the shank A is threaded internally to receive the adjusting-screw *g*, which bears against the plane end of the socket *d*, and serves to adjust the socket in the shank A. The clamping-jaws *b* are formed of segments of a cylinder having conical ends. They are grooved longitudinally on their adjacent faces to embrace the sides of the drill.

To the threaded end of the shank A is fitted a sleeve, B, having the conically-bored end *h*, which engages the outer ends of the clamping-jaws *b*. The jaws *b* are loosened by unscrewing the sleeve B from the shank A, when the drill may be inserted, the extremity of the shank of the drill being received in the slot of the mortise of the socket *d*. By screwing the sleeve B upon the shank A the conically-bored end *h* of the sleeve is brought into engagement with the beveled ends of the jaws *b*, forcing the opposite ends of the jaws into the countersunk end of the shank A, thus causing the space between the jaws *b* to be contracted, and bringing the grooved inner surfaces of the jaws into contact with the drill. The socket *d* is prevented from turning by the engagement of the feather *e* with the slot *c* in the side of the shank, and the engagement of the socket *d* with the shank of the drill prevents the drill from turning, while the jaws *b* center the drill and prevent it from lateral movement. The socket *d* is made adjustable lengthwise in the shank A, to permit of clamping the drill as near the point thereof as possible, to avoid undue strain and breakage; and as the drill is ground away in the process of sharpening, the socket *d* is moved forward by turning the screw *g*.

Instead of making the socket *d* of cylindrical form and providing it with a feather, *e*, to prevent it from turning, I may make the bore of the shank rectangular, as shown in Fig. 4, when the socket *d* will also be made rectangular, and will be prevented from turning in the shank by its corners.

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

1. In a drill-chuck, the combination, with the axially-bored externally-threaded countersunk shank A, of the internally-threaded sleeve B, having a conically-bored end, the clamping-jaws *b*, formed of segments of a cylinder grooved longitudinally, and having beveled ends, and the socket *d*, substantially as herein shown and described.

2. The combination, with the axially-bored countersunk shaft A, having an external

thread at one end and an internal thread at the opposite end, of the internally-threaded sleeve B, having a conically-bored end, *h*, the jaws *b*, formed of segments of a cylinder, and having longitudinal grooves and beveled ends, the socket *d*, adapted to receive the shank of the drill and arranged to move longitudinally in the shank A without turning therein, and the adjusting-screw *g*, fitted to the internally-threaded part of the shank A and bearing against the socket *d*, substantially as herein described.

3. As an improved article of manufacture, a drill-chuck formed of a shank, A, threaded internally at one end and externally at the opposite end, countersunk and slotted internally, a socket, *d*, fitted to the bore of the shank and provided with a feather, *e*, received in the internal slot, the adjusting-screw *g*, received in the internally-threaded part of the shank and bearing against the back of the socket, the internally-threaded sleeve B, fitted to the externally-threaded part of the shank A, and having a conically-bored end, *h*, and jaws *b*, formed of segments of a cylinder grooved longitudinally on their adjacent faces, and having beveled ends, as herein specified.

CHARLES E. STONE.

Witnesses:
F. W. NELSON,
F. W. GEORGE.