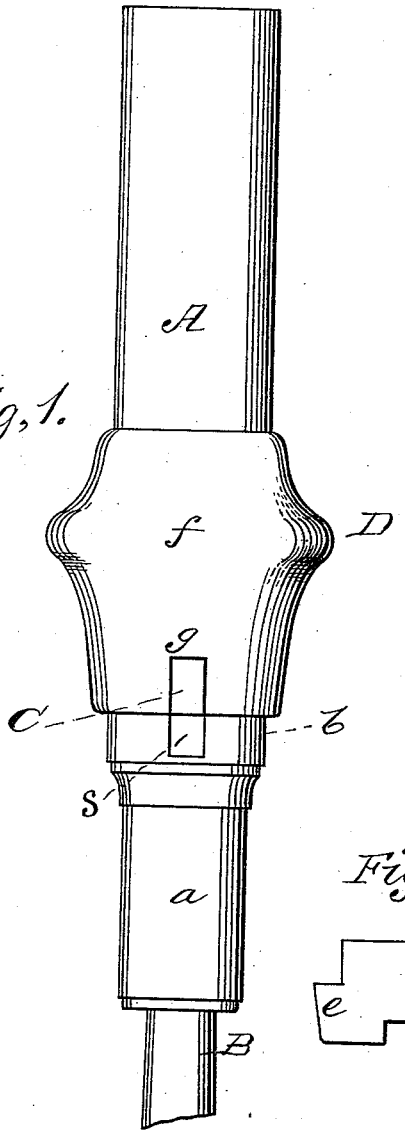
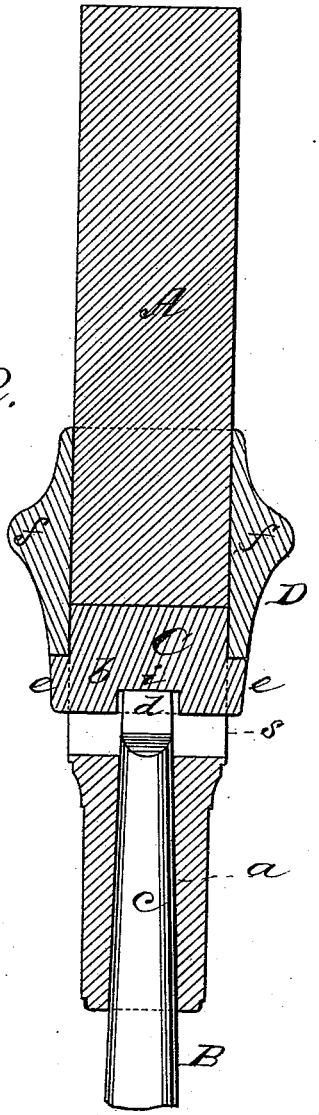
H. S. PRUYN.
Drill-Chuck.

No. 212,980. Patented Mar. 4, 1879.

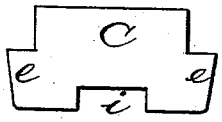
Fig, 1.

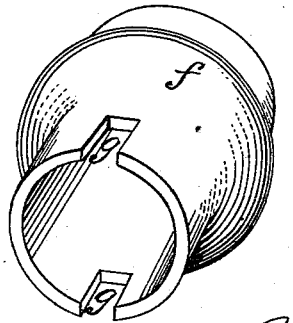


Fig, 2.



Fig, 3.





Fig, 4.

WITNESSES
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HENRY S. PRUYN, OF WHITE CREEK, NEW YORK.

IMPROVEMENT IN DRILL-CHUCKS.

Specification forming part of Letters Patent No. **212,980**, dated March 4, 1879; application filed January 25, 1879.

To all whom it may concern:

Be it known that I, HENRY S. PRUYN, of White Creek, in the county of Washington and State of New York, have invented a new and valuable Improvement in Sockets for Holding Drills; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side view of my improved socket. Fig. 2 is a longitudinal central section thereof; and Figs. 3 and 4 are details, respectively, of the key and collar.

This invention has relation to improvements in sockets for holding drills, taps, and other analogous purposes.

The object of the invention is to provide means for removing the tool from the socket and reapplying others without stopping the spindle of the machine.

The nature of the invention consists in a novel combination of a tapering socket having a transverse slot cut through it, a key extending through said slot and engaged by the end of the shank of the tool, and a collar sliding on the socket and slotted to engage the ends of the key, all as hereinafter fully shown and described.

In the annexed drawings, the letter A designates the spindle of a drilling or boring machine, having in its end a tapering socket, *a*, and having at the inner end of said socket a transverse slot, *s*, formed through an enlarged or swelled portion, *b*, of the spindle. B indicates the drill-tool, the shank *c* of which is tapered to correspond to the taper of the socket, and has at its extremity a rabbet, *d*. C indicates a metallic key fitting snugly in slot *s*, but readily removable therefrom, and provided at each end with an arm, *e*, projecting out beyond the outside face of the socket, as shown in Fig. 2.

The rabbet upon the end of the drill-tool enters a notch, *i*, in the adjacent edge of the key, for a purpose hereinafter explained.

D indicates a strong collar, having a swell, *f*, and provided upon one of its edges with rectangular open slots *g*. This collar is passed over the spindle, and slides freely thereon.

The key hereinbefore described has a certain degree of play from end to end of slot *s*, being less in width than the said slot in length.

When ready for use the parts above described are in the position shown in Fig. 1, the key being at the end of slot *s* farthest from the socket, the collar being engaged by its notches with the arms *e* of the key, and the shank of the tool engaged with the notch in the said key. The tool is, owing to the tapering form of its shank and of the socket, firmly wedged into the latter, so that it requires no fastening device, and its end being engaged with the notch of the key, the latter is held against flying out of the slot *s*.

To remove the tool, strike collar D a smart blow with a hammer. This blow, acting upon the tool through the medium of the key, forces it out of the socket without stopping the machine.

In like manner another tool may be inserted without stopping the spindle.

As shown in Fig. 1, the collar is carried up considerably above its bulge or swell, in order to prevent the spindle from being battered by the blows of the hammer.

It is clear that this device is applicable to holding taps, reamers, broaches, and many other similar tools.

It is also evident that the devices above described may be assembled independently and socketed into a mandrel or other holder, if I so elect.

The shifting sleeve or collar is adapted for use in connection with well-known holding-drill sockets, as well as that one which I have described.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a spindle, A, having a tapering socket, *a*, and a transverse

slot, *s*, and a tapering tool fitting in said socket, of a key extending through said slot, and movable from end to end thereof, and a sliding collar on the spindle, bearing on the ends of the key, as set forth.

2. The shifting sleeve or collar D, for drill or boring tool sockets or holders, having the swell *f* near its middle portion, and the opposite rectangular notches *g* in its lower edge, designed to engage a key projecting through a slot in said holder or socket, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

HENRY SAMULE PRUYN.

Witnesses.
JOS. D. WHITE,
E. L. LONG.