W. S. HOW.

TOOL-HOLDER.

No. 184,210. Patented Nov. 7, 1876.

Fig 1.

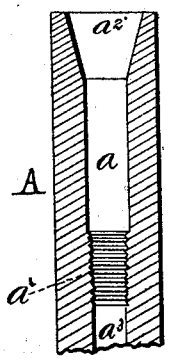


Fig 2.

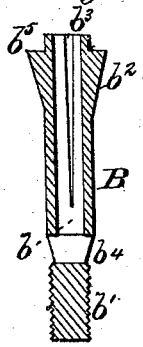


Fig 3.

Fig 4.

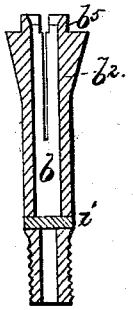


Fig 5.

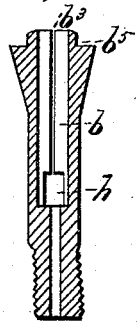
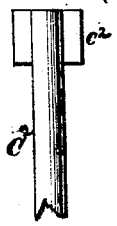


Fig 6.

Fig 7



WITNESSES

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UNITED STATES PATENT OFFICE.

WOODBURY S. HOW, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-FOURTH HIS RIGHT TO WILLIAM J. BREED, OF SAME PLACE.

IMPROVEMENT IN TOOL-HOLDERS.

Specification forming part of Letters Patent No. **184,210**, dated November 7, 1876; application filed March 2, 1876.

To all whom it may concern:

Be it known that I, WOODBURY S. HOW, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Tool-Holders, of which the following is a specification:

My invention relates to that class of tool-holders in which the shank of the tool is inserted in a split tubular holder, and this holder screwed in a stock or handle, whereby the holder is compressed to fasten the tool; and consists in the construction of the holder and the end of the tool-shank, whereby the tool, having a round shank, is prevented from turning in the holder, and more firmly secured in place, as will be hereinafter more fully set forth.

In the annexed drawings, Figure 1 is a longitudinal section of the stock or handle. Fig. 2 is a longitudinal section of the holder. Fig. 3 is a side view of the tool-shank. Figs. 4, 5, 6, and 7 show modifications of my invention, all involving the same principle.

A represents the stock or handle, having a central bore, *a*, female screw-threads a^1, and enlarged end a^2, with inclined sides, the bore *a* being optionally continued at a^3. B represents the sleeve or holder, fitting loosely in the bore *a*, and formed with inclined sides b^2, which fit in, but are larger than, the inclined enlargement a^2. The holder B is threaded at b^1, to fit the female threads a^1, and has a central bore, *b*, which is slit longitudinally, as shown at b^3. This construction of the parts A and B is the same as in other tool-holders of this class, and to the same I lay no claim.

At the bottom of the bore *b* the sleeve or holder B is scarfed, as shown at b^4, so as to open half the bore through the side of the holder, to form a seat or stay for the tang on the end of the tool-shank. The upper end of the holder is squared, as shown at b^5, for the application of a wrench to turn the holder in the stock or handle A, to fasten or loosen the same, as required.

C represents the shank of the tool, to be inserted and fastened in the holder B. This shank is scarfed at its end to form a tang, *c*, on one side. When the tool is inserted in the holder, this tang enters the scarf b^4 and rests in the same, thereby preventing the tool from turning in the holder. The holder is, of course, secured in the handle or stock A in the usual way, and held by the pressure of the split sleeve against the tool-seat; but the tang and scarf form an additional and positive safeguard against the turning of the tool in the handle.

In place of the scarf b^4, formed in the holder B, a pin, *i*, may be driven through the lower end of the bore *b* in the holder, upon which the tang *c* will bear when the tool is inserted in the holder. This modification is shown in Fig. 4.

In Fig. 5 I have shown a slot, *h*, made through the holder at the bottom of the bore *b*, in place of the scarf b^4. When this slot is used the tang at the end of the tool-shank is formed in the center thereof, instead of at one side, as shown at c^1, Fig. 6.

In adapting my said invention to use I avail myself of the well-known expedients for centering the tool in the handle—as, for instance, this slot may run at an angle with the slit b^3, or it may be a continuation thereof. In this case the bottom of the bore *b* is contracted or coned, said incline being for the purpose of centering smaller shanks, when such shanks are provided with bushings to produce or rectify eccentricity.

In Fig. 7 I show a tang, C^2, inserted or formed in the end of the shank C^1, and projecting on both sides thereof, to be used with a slotted or split holder.

It will readily be seen that in all these modifications there is one underlying main principle common to all, which is the essential feature of my invention—viz., the holding of the inner end of a round straight tool-shank independent of, yet in conjunction with, the compressure of the end split holder by means of a suitable tang on the end of the shank, and a slot, scarf, pin, or other equivalent device on the holder.

This invention applies equally as well to that class of tool-holders in which a collar is screwed or otherwise adjusted on the outside of the split holder to clamp the tool-shank therein.

Having thus described my invention, what

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

In combination with the shank-griping tool-holder, as herein shown, provided with a seat or stay, as described, a straight round tool-shank suitably scarfed, substantially as and for the purposes set forth.

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

WOODBURY S. HOW.

Witnesses:
J. L. WARTMANN,
P. G. WEATHERBY.