L. K. SNELL & W. E. WILBER.

BORING TOOL.

APPLICATION FILED SEPT. 19, 1908.

967,255.

Patented Aug. 16, 1910.

Fig. 1

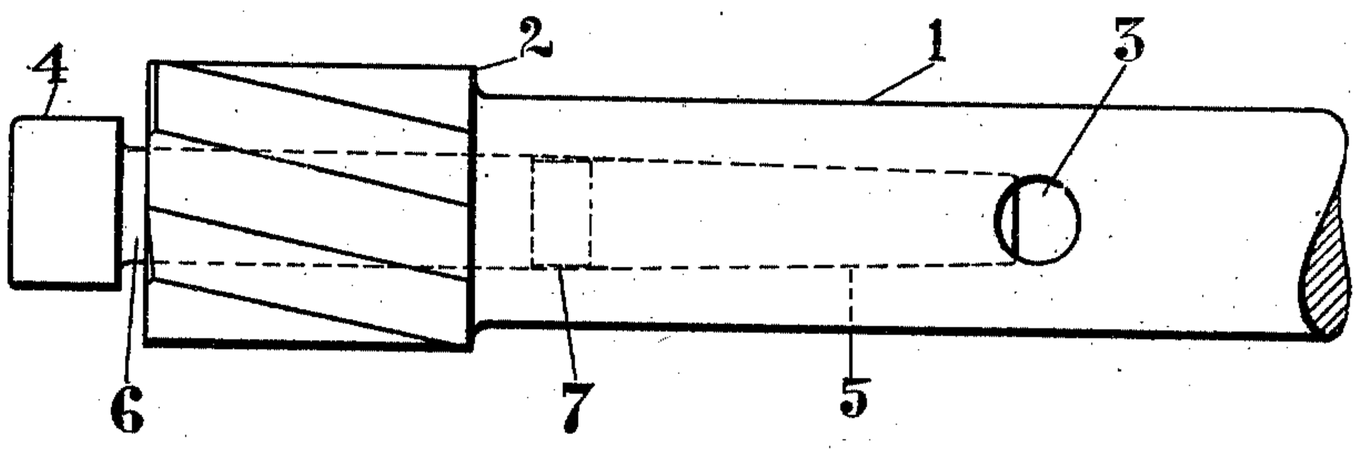


Fig. 2

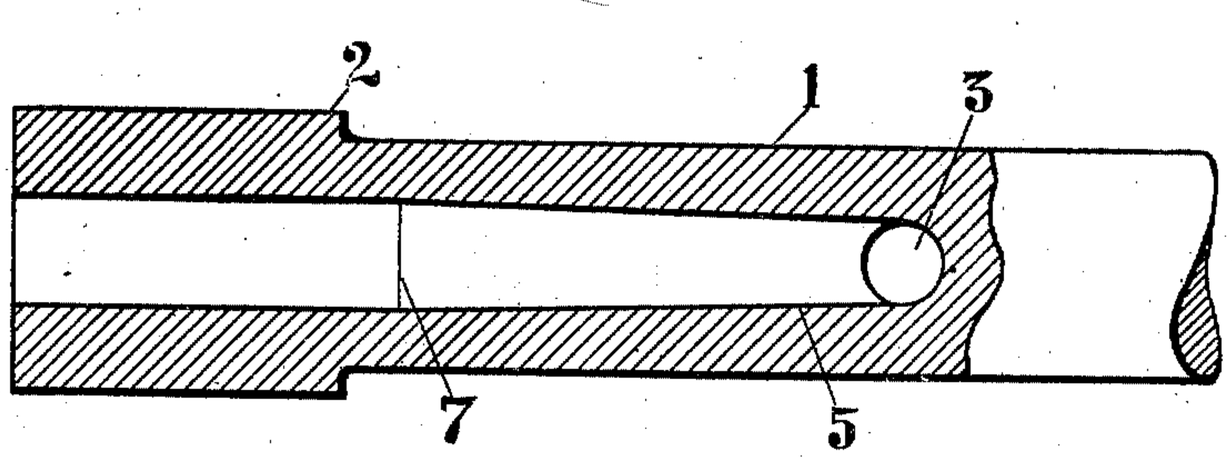
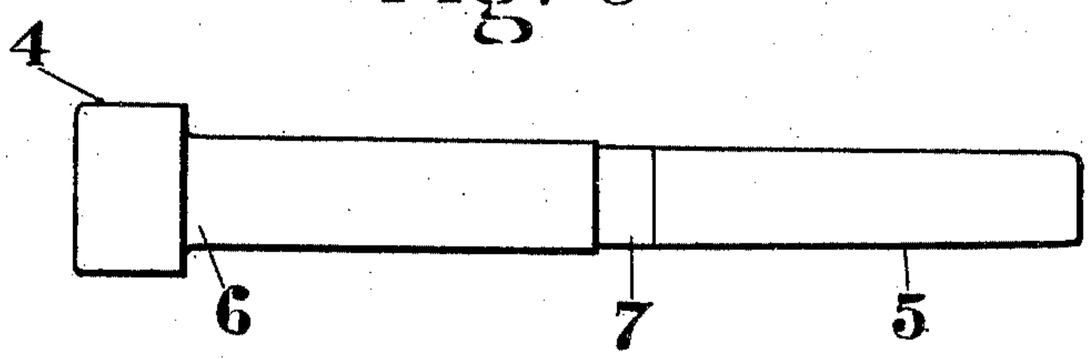


Fig. 3



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BORING-TOOL.

967,255. Specification of Letters Patent. Patented Aug. 16, 1910.

Application filed September 19, 1908. Serial No. 453,867.

To all whom it may concern:

Be it known that we, LYLE K. SNELL and WALLACE E. WILBER, citizens of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Boring-Tools, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to boring tools and more especially to the arrangement and disposition of the shank of a reamer or twist drill whereby the liability to fracture when the tool is being adjusted is greatly lessened.

As herein illustrated, the invention is embodied in the pilot of a reamer, although obviously it may be used for other tools of like nature.

The invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claim.

In the drawings, Figure 1 is a view in elevation of a reamer provided with a removable pilot embodying features of the invention. Fig. 2 is a view in longitudinal section of the reamer with the pilot removed. Fig. 3 is a view in detail of the pilot.

Referring to the drawings, 1 indicates the shank of a reamer and 2 the head thereof provided with the usual flutes and cutting edges and also hardened in the usual manner. An axial aperture extends from the head of the reamer well into the shank and is in communication at its inner end with a transverse aperture 3.

A pilot having a head 4 is furnished with a shank adapted to enter the axial socket of the reamer and has a tapered portion 5 corresponding to the similarly tapered socket. This tapered portion is so disposed when the tool is assembled, that it lies beyond the fluted and hardened head 2 of the reamer. The body 6 of the stem between the head of the pilot and the tapered portion 5 is cylindrical. There is a reduced cylindrical portion 7 between the body 6 and larger end of the tapered portion 5 disposed to leave an air space in the socket when the pilot is inserted whereby any dust or dirt that is forced in when the pilot is driven home may collect without causing the pilot to stick or preventing its being properly seated. The transverse aperture 3 is the usual expedient for ready removal of the pilot.

In machine shop practice it is customary for a mechanic in assembling a tool of this character or in placing a twist drill in a tool holder to clasp the outer member such as the reamer or the holder in a vise and seat the pilot by tapping it on the head with a soft hammer. As a consequence, if there is any wedging action due to the usual taper of the shank at the lip of the holder or the extreme outer end of the hardened head of the reamer, as in this case, the metal gives way or splits, thereby rendering the tool useless. By the arrangement of the parts herein shown there is no wedging action save well within the body of the tool and if it be a reamer as herein indicated such lateral strains take place only in a soft or non-hardened part. This prevents any injury to the tool and materially increases its life without increasing the cost of manufacture.

What we claim as our invention is:—

A boring tool comprising an outer substantially cylindrical member having a hardened head and unhardened body with an axial socket extending through the head into the body, the portion of the socket in the hardened head being cylindrical, and the portion of the socket in the unhardened body being tapered and a removable pilot member having a shank with a tapered portion fitting the tapered portion of the socket, and a cylindrical portion mating with the cylindrical part of the socket, and a reduced cylindrical portion between the main cylindrical portion and the tapered portion whereby end thrust is communicated to the unhardened portion only of the outer member.

In testimony whereof we affix our signatures in presence of two witnesses.

LYLE K. SNELL.
WALLACE E. WILBER.

Witnesses:
C. R. STICKNEY,
A. M. DORR.