

No. 837,322.

PATENTED DEC. 4, 1906.

A. A. MILLER.  
TAPER SHANK FOR DRILLS AND LIKE TOOLS.  
APPLICATION FILED MAR. 18, 1905.

Fig 1.

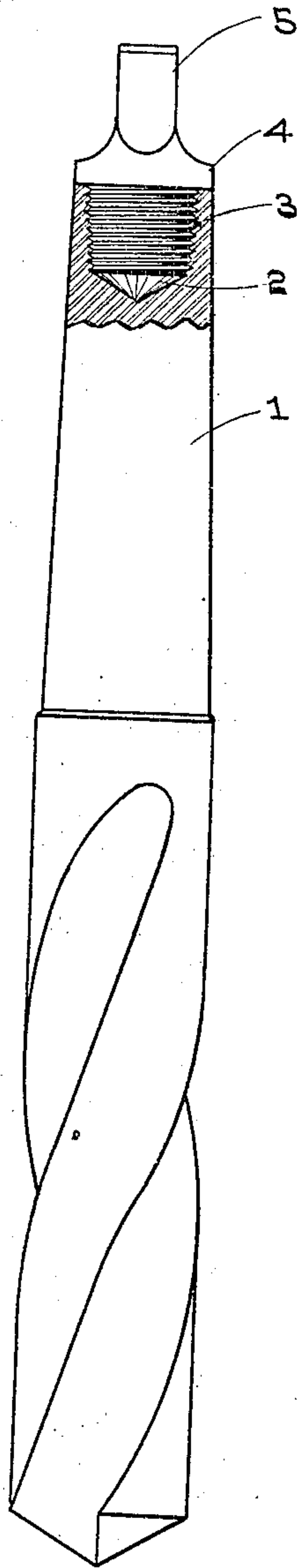
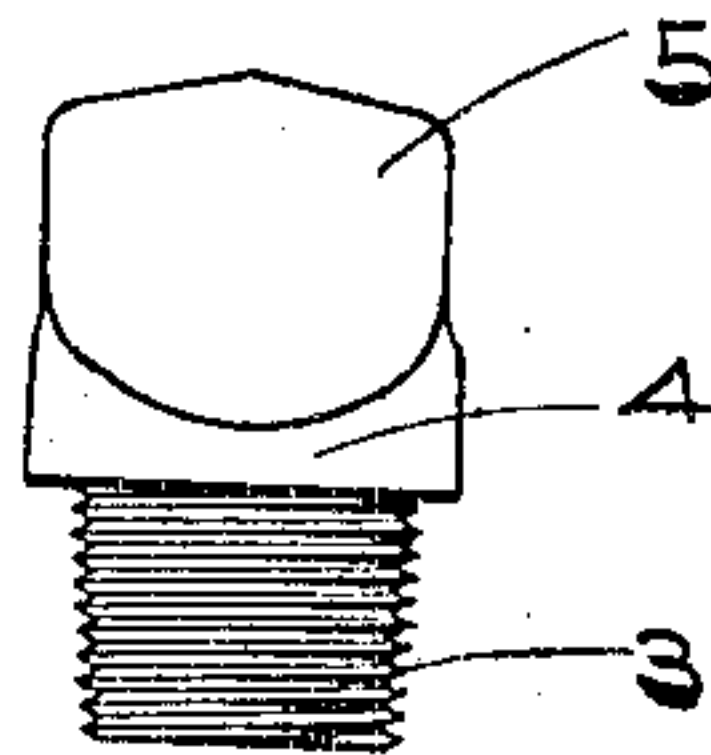


Fig 2.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## TAPER SHANK FOR DRILLS AND LIKE TOOLS.

No. 837,322.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed March 18, 1905. Serial No. 250,874.

*To all whom it may concern:*

Be it known that I, ABEL A. MILLER, a citizen of the United States, residing at Franklin, in the county of Venango and State of Pennsylvania, have invented certain new and useful Improvements in Taper Shanks for Drills and Like Tools, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in taper shanks for drills, reamers, and like tools, the construction and operation of which are fully set forth in the following specification, reference being had to the accompanying drawings, which form a part hereof.

In the drawings, Figure 1 is an elevation of a twist-drill having a taper shank embodying my invention. Fig. 2 is a side view of my improved removable tongue, which is shown in position in the drill-shank in Fig. 1.

The object of my invention is to provide the shank of drills of the class mentioned with a removable tongue which may be readily replaced when the same becomes battered, worn, or broken, which is often the case.

My construction is substantially as follows: In the upper end of a taper shank 1 is formed a slightly-tapered screw-threaded socket 2, as will be readily seen from an inspection of Fig. 1. I also provide a tongue, Fig. 2, having the tapered screw-threaded plug 3, adapted to screw into the socket 2. Above the plug 3 is formed a shoulder 4 of substantially the same diameter as the upper end of the drill-shank, against which said shoulder firmly seats when the plug is screwed in the socket. Above the shoulder is formed the tongue 5, which conforms to the construction usually employed in drills of this class.

As is well known to those skilled in the art to which my invention pertains, drills are made of "tool-steel" throughout, and thus it

is not advisable to temper or harden the tongue, as it would then be so brittle that the strain to which it is necessarily subjected would break it off, and when it is untempered it is usually too soft, and the tongue becomes damaged and useless, while the drill is otherwise still in good condition, and it then becomes necessary to re-turn the shank and form a new tongue upon it.

It is the object of my invention to supply a tongue of a different grade of steel from the rest of the tool and which will contain such a percentage of carbon as will admit of its being case-hardened or brought to such temper as will adapt it to withstand the service required of it, and to attain this object the construction here shown has been devised.

It will be readily understood that my improved tongue may be applied to the shank of any drill from which the tongue has been broken without the necessity of re-turning the shank, as is the case with the present form of shank.

While my invention is here termed an "improvement in taper-shank drills," it will be apparent to any one skilled in the art to which my invention appertains that my improved tongue may be applied to straight as well as taper shanks and to arbors and mandrels of almost any form.

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

The combination with a drill-shank having an internally-screw-threaded socket at the upper end thereof, of a tongue-section having an externally-screw-threaded plug and a shoulder surrounding said plug.

In testimony whereof I affix my signature in presence of two witnesses.

ABEL A. MILLER.

Witnesses:

P. EMMICKE,  
R. J. McVAY.