

J. E. MORROW.
 DRILL SOCKET.
 APPLICATION FILED APR. 1, 1912.

1,054,439.

Patented Feb. 25, 1913.

Fig. 1

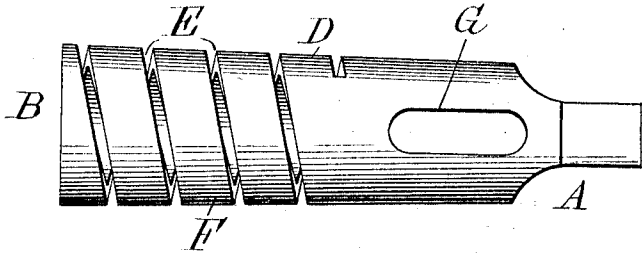


Fig. 2

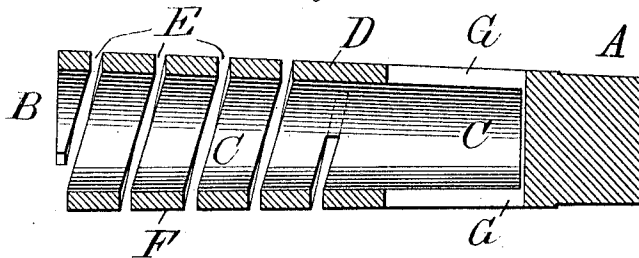


Fig. 3

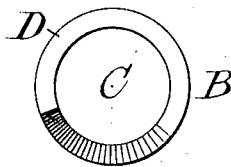
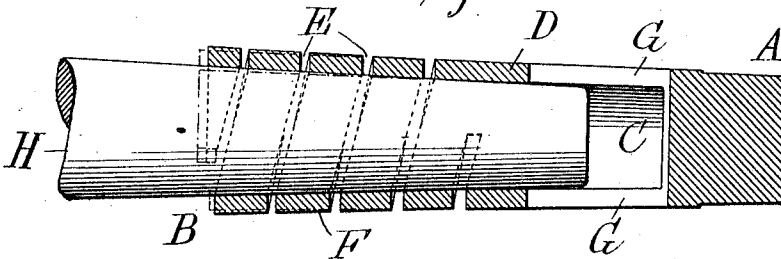


Fig. 4



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES EDWIN MORROW, OF ELMIRA, NEW YORK.

DRILL-SOCKET.

1,054,439.

Specification of Letters Patent.

Patented Feb. 25, 1913.

Application filed April 1, 1912. Serial No. 687,733.

To all whom it may concern:

Be it known that I, JAMES E. MORROW, a citizen of the United States, residing at Elmira, in the county of Chemung and State of New York, have invented certain new and useful Improvements in Drill-Sockets, of which the following is a specification.

My invention relates to improvements in drill sockets and has for its object to provide a device of this kind which is greatly simplified in construction and may be made at comparatively slight expense, preferably of a single piece capable of withstanding hard usage and adapted in operation to securely grip a drill shank without the necessity of hammering the same into place, whereby the expense and annoyance due to loss or breakage of small parts, as in other prior constructions, are entirely eliminated.

Further objects and advantages of my invention will become apparent from the following description.

The invention consists of a spring socket embodying certain features of construction hereinafter described and specifically defined in the claims concluding this specification.

In the accompanying drawings: Figure 1 is a side elevation of one form of drill socket made in accordance with my invention; Fig. 2 is a central longitudinal section of the same; Fig. 3 is an end view looking at its open end, and Fig. 4 is a sectional view similar to Fig. 2, but showing a drill shank inserted in the socket and the laterally expanded and longitudinally contracted position of the slotted end portion when it grips said shank, the normal position of said slotted end portion being indicated with dot and dash lines.

As previously stated, I preferably make my drill socket of an integral piece of steel or other suitable metal which may be tapered externally from its smaller closed end A, to its larger open end B. The tapered socket or longitudinal opening C, for receiving the drill shank, leaves a wall D, which is spirally slitted, as at E, forming a helical resilient or yielding portion F, extending to the open end of the drill socket.

Said wall D is preferably of uniform thickness whereby all parts of the helical gripping portion are equally able to withstand the strains to which it is subjected when engaging a drill in operation. Inward of said slitted and yielding portion, there are placed one or more longitudinal slots G, preferably two arranged opposite one another and registering with the inner portion of the socket or opening C. These slots are adapted to receive any suitable tool for dislodging the drill shank, the inner end of which normally overlaps them when engaged in the socket, as illustrated in Fig. 4.

In operation, when a drill shank H is inserted into the socket, as in Fig. 4, the slitted or helical portion F of said socket is expanded radially to some extent as well as contracted longitudinally to very firmly grip or clamp about said shank. It has been found that the shank has a better opportunity to become securely wedged into the socket when the latter is capable of expanding radially as it contracts longitudinally than when the clamping portion contracts simultaneously in both directions. This is due, in part, to the fact that by expanding the gripping portion radially beyond its normal position, as in applicant's socket when the drill is wedged therein, the resiliency of the metal is brought into play for securing the desired clamping action. Furthermore, the construction of my drill socket in an integral piece is a matter of great convenience especially in usage, as will be readily appreciated. At the same time, the device is very strong and consequently adapted to stoutly withstand wear and tear to which in operation it is necessarily subjected.

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

1. A drill socket having its open end portion spirally slitted whereby it may yield for gripping a drill.

2. A drill socket having a helical gripping portion adapted to expand radially for clamping around a drill.

3. A drill socket having a helical gripping portion adapted to expand radially and con-

tract longitudinally for clamping around a drill.

4. A drill socket having its open end portion slitted transversely, adapting it to contract longitudinally for clamping around a drill.

5. A drill socket having its open end portion slitted whereby it may expand radially

and contract longitudinally for clamping around a drill.

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

JAMES EDWIN MORROW.

Witnesses:

F. EUGENE SMITH,

JOSEPH W. HAMILTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."