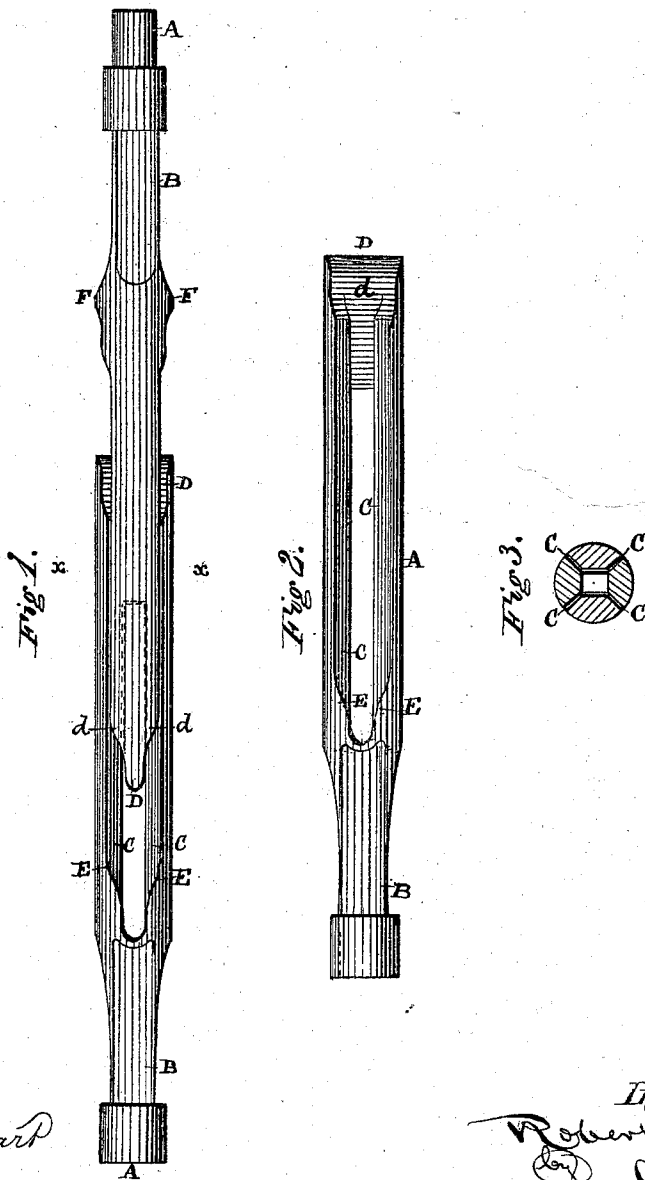


R. McMULLEN.
Drill-Jars.

No. 137,378.

Patented April 1, 1873.



Witnesses.
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ROBERT McMULLEN, OF TITUSVILLE, PENNSYLVANIA.

IMPROVEMENT IN DRILL-JARS.

Specification forming part of Letters Patent No. **137,378**, dated April 1, 1873; application filed October 19, 1872.

To all whom it may concern:

Be it known that I, ROBERT McMULLEN, of Titusville, in the county of Crawford and State of Pennsylvania, have invented certain new and useful Improvements in Jars for Boring Artesian Wells; and I do hereby declare that the following is a full, clear, and exact description thereof, that will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing and to the letters of reference marked thereon which form a part of this specification.

My invention relates to that class of tools used in the boring of Artesian wells for the purpose of increasing the force of the blow on the drill or boring-tool, and known in the art as "jars."

Heretofore these tools have been made of two bars of iron faced with steel, which are bent or doubled lengthwise and linked together, the free ends of each bar being then welded together so as to form solid ends for the tool, to one of which the drill is secured, and to the other the rope or cable which connects with the walking-beam of the engine. The ends of the links thus formed are square or angular, or slightly rounded, and the metal which composes the link is necessarily of even thickness, while the ends are twice as thick and strong as the links. Owing to this form and distribution of the metal, and the fact that the whole force of the blow has to be sustained at the junction of the link with the solid end, it has been found that the tool is liable to break at this point, leaving the drill detached at the bottom of the bore, and thereby causing great inconvenience and loss in its removal.

My invention is designed to obviate this defect in this description of tool; and the invention consists in constructing the links with tapering or wedge-shaped shoulders, coming to a point before reaching the ends, and with a re-enforce of metal at the junction of the link with the solid end, all as hereinafter more fully set forth.

In the accompanying drawing, Figure 1 is a view of my improved jar complete. Fig. 2 is a detached view of one of the links. Fig. 3 is a cross-section of Fig. 1 on the line *x x*.

A A represent the two links, which, united,

as shown in Fig. 1, form the complete tool. The ends B B are made solid, and are cut with male or female screw-threads, or provided with other means of attachment to the drill or other tools used in well-boring. The sides C of the links are cut with an inward bevel, so that when united the links slide the one within the other. The inner ends D D are made solid, and with tapering or wedge-shaped shoulders *d d*, coming to a point near the extremity, and the shoulders of the other ends, or termination of the open links are formed with a correspondingly wedge shape or taper, as shown at E E, so that the end of one link fits into the other, the tapering shoulders forming the bearing-surface which resists the blow when brought together. At this portion E, the termination of the open link or junction of the link with the solid portion B, a re-enforce or increased thickness of metal is placed, as shown at F F, Fig. 1, so as to increase the strength of the metal at that point, and enable it to resist the force of the blow without danger of breaking. The outer sides of the tool are made circular, so as to present the least resistance in rising and falling within the bore of the well.

To those skilled in the art, any further or detailed description of the operation of the class of tools to which this improved jar belongs is deemed superfluous; and it will be obvious that with the improved tool which I have herein shown and described, having the beveled sides, wedge-shaped shoulders, and the re-enforce of metal at the points of contact, the force of the blow is brought to bear on the drill by a more progressive contact, and without danger of breaking, as heretofore by the jars in common use.

What I claim as my invention is—

A jarring-tool having the links A formed with tapering or wedge-shaped shoulders *d* and E and re-enforce F, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 15th day of October, 1872.

ROBERT McMULLEN.

Witnesses:

JOHN DOHERTY,
GEO. W. BROAS.