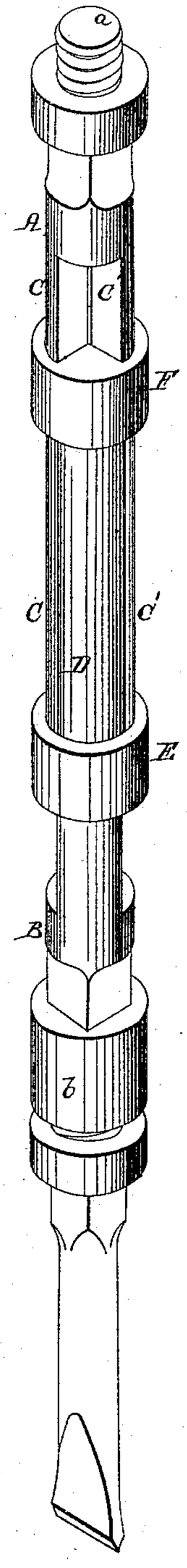
J. Slusser,

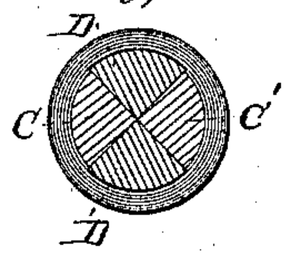
Drill Jar,

No. 47,993. Patented May 30, 1865.

Fig; 1.



Fig; 2.



Witnesses;
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UNITED STATES PATENT OFFICE.

JOSEPH SLUSSER, OF CINCINNATI, OHIO.

IMPROVED BORING-JAR.

Specification forming part of Letters Patent No. **47,993,** dated May 30, 1865.

To all whom it may concern:

Be it known that I, JOSEPH SLUSSER, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Well-Boring Machinery; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My invention relates to that part of Artesian-well-boring apparatus technically called the "jar," from its office of producing the jar or blow of the chisel or "drill." The said part consists, essentially, of a mandrel to contain or hold the drill, and which is secured to the lower end of the rod by a species of sliding joint of slightly greater range than the stroke of the rod in drilling, so that after the drill strikes the bottom of the boring the rod may be allowed to descend without opposition, it being requisite that the drilling should be accomplished wholly by the weight of the bit and mandrel, and that the sole stress upon the rod should be the merely tensional one of lifting the rod preparatory to the descending or effective stroke and of checking its descent from above.

The jars of various forms heretofore employed have been extremely liable to get out of order from the entrance of loose particles of earth, gravel, rock, &c., between the bars or other members composing the sliding joint, which, having thus been rendered inoperative, the whole violence of the concussion has been transferred to the rod, acting to bend and cripple the same, and often causing it to separate at some part of its length, so as to leave the lower portion hopelessly bound fast in the bottom of the boring.

I have remedied the above defects by so constructing my jar as to be self-cleaning at every stroke, and so that it is impossible for particles of rock or other extraneous matters to force open or spread the members of the joint.

In addition to the above advantages my jar is believed to be cheaper in construction and to possess greater strength within a given caliber than any other form.

Figure 1 is a perspective view of a jar constructed on my plan. Fig. 2 is a transverse section of the same, taken at a plane intermediate between the sleeves.

A represents the lowermost section of my rod, surmounted with a screw, *a*, adapted to enter a nut in the section above it.

B represents the mandrel or drill-holder, terminating in a nut, *b*, to receive and hold the screw-threaded shank of the drill.

The mutually-sliding portions of the bottom section, A, and of the mandrel B consist in each case of two opposite and exactly similar quarter-round bars, C C′ D D′, called by me "sectors." The sectors C C′ D D′, when put together in the sliding joint, form, collectively, a solid cylinder, each pair filling the sectoral intervals between the two complementary sectors, and, in the act of closing up after the descending stroke, operating to remove every particle of dirt from the joint. The sectors of each pair terminate, respectively, in circular sleeves E and F, which serve to effectually hold the sectors in line and to prevent the "spreading" of the other pair from the entrance of dirt or otherwise.

I claim herein as new and of my invention—

The mode of constructing a well-boring jar of two pairs of quarter-round bars or sectors confined to each other by sleeves and closing each other's interstices in the act of sliding together, substantially as set forth.

In testimony of which invention I hereunto set my hand.

JOSEPH SLUSSER.

Witnesses:

JAMES H. LAYMAN,

GEO. H. KNIGHT.