J. B. SHAW & S. H. LUCAS.

Drill for Drilling Metal.

No. 162,315. Patented April 20, 1875.

Fig. 1

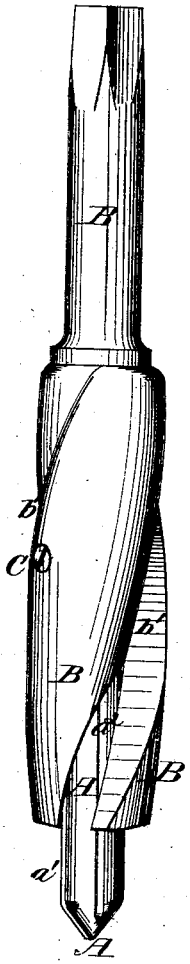


Fig. 3

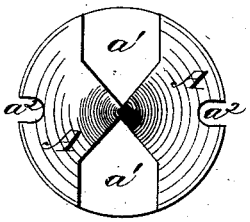
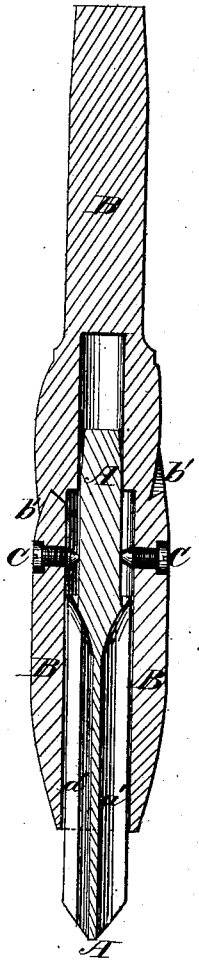


Fig. 2



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UNITED STATES PATENT OFFICE.

JOHN B. SHAW AND SIMEON H. LUCAS, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN DRILLS FOR DRILLING METAL.

Specification forming part of Letters Patent No. **162,315**, dated April 20, 1875; application filed February 5, 1875.

To all whom it may concern:

Be it known that we, JOHN B. SHAW and SIMEON H. LUCAS, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Metal Drill, of which the following is a specification:

Figure 1 is a side view of our improved drill. Fig. 2 is a longitudinal section of the same. Fig. 3 is an end view of the inner drill.

Similar letters of reference indicate corresponding parts.

Our invention has for its object to furnish an improved drill for drilling holes in metals, which shall be so constructed that it may be used for forming a small and a large hole, that it will not clog, and that will enable oil to be introduced to the point of the drill without being wasted upon the chips.

The invention will first be fully described, and then pointed out in the claims.

A is the inner part of the drill, in the opposite sides of the lower part of which are formed two grooves, a^1, the outer parts of the sides of which for about half the depth of said grooves are parallel with each other, and with the diameter that passes through their centers. The inner parts of the sides of the grooves a^1 incline toward each other, and meet at an angle of about eighty degrees. This form of the grooves a^1 causes the chips to break in pieces, and thus prevents the drill from becoming choked. The width of each of the grooves a^1 is about one-eighth of the circumference of the drill A. In the opposite sides of the lower part of the drill A, and midway between the grooves a^1, are formed two small grooves, a^2, each being of a width of about one twenty-eighth of the circumference of said drill A, and which are designed to conduct oil to the point of the drill. B is the outer part or case of the drill, in the center of which, leading in from its lower end, is formed a hole to receive the inner drill A, which is secured in place adjustably by two set-screws, C, passing in through the sides of the said case B. Upon the outer side of the case B are formed two spiral shoulders, b', the lower parts of which are deepened, so as to cut through the shell of the said case B, and form spiral notches in the lower end of the case, as shown in Fig. 1. The forked lower end of the case B acts as cutters to cut a large hole. The shank of the case B may be formed to fit into any desired chuck. The shank of the inner drill A may also be so formed as to fit into a chuck. When a small hole is to be formed the inner drill A may be used alone, or it may be adjusted to project to a proper distance from the end of case B. With this construction, oil poured upon the shank of the case B will flow down along the spiral shoulders b', enter the small grooves a^2, and flow through said grooves to the point of the drill, thus saving about half the oil by avoiding the necessity of wetting all the chips with the oil in introducing it into the hole.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The drill A, provided with the peculiar grooves a^1, formed in its opposite sides, substantially as herein shown and described.

2. An improved drill formed by the combination of the inner part or drill A, provided with the grooves a^1 and a^2, and the outer part or case B, provided with spiral shoulders b', substantially as herein shown and described.

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Witnesses:
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