

(No Model.)

A. SCHWARTZENHAUER.  
STONE BORER.

No. 575,738.

Patented Jan. 26, 1897.

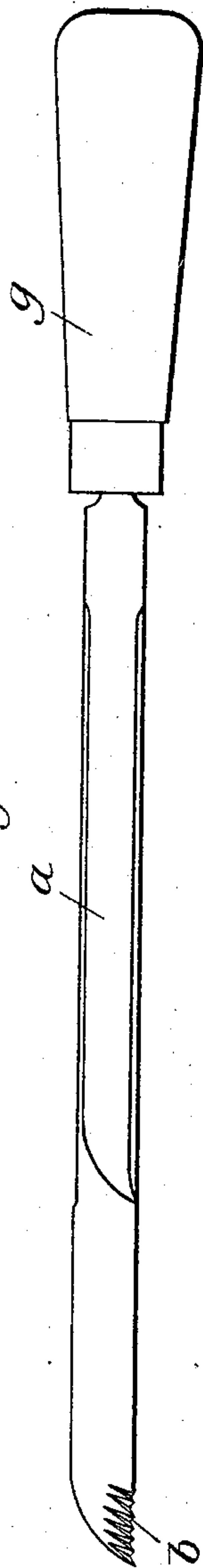


Fig. 2.

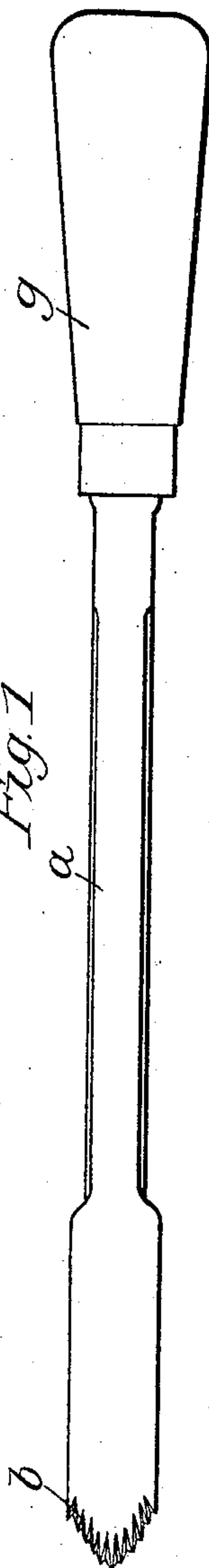


Fig. 1.

Fig. 3.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## STONE-BORER.

SPECIFICATION forming part of Letters Patent No. 575,738, dated January 26, 1897.

Application filed March 11, 1896. Serial No. 582,758. (No model.)

*To all whom it may concern:*

Be it known that I, HERMANN SCHWARTZENHAUER, a subject of the King of Prussia, Emperor of Germany, residing at Berlin, Kingdom of Prussia, and German Empire, have invented certain new and useful Improvements in Stone-Borers, of which the following is a specification.

The subject of this invention is a rock-drill which can be used so that its cutting edge performs a forward and backward rotating motion, while most of the rock-drills so far in use allow only a rotating motion of the cutting edge in one direction. This advantage of the new rock-drill is especially of great importance for the drilling of rock by hand, as the required forward and backward rotating motion necessitates much less exertion of force by the hand than a complete rotating motion in the same direction. The reason of this is that the hand by that forward and backward rotating motion need not release the drill, but can exert more force in pressing the drill upon the rock.

In the accompanying drawings, Figure 1 represents the rock-drill in a front view. Fig. 2 is a side view. Fig. 3 is a cross-section.

In order to accomplish an effective drilling by a forward and backward rotating motion, the cutting edge *b* of the drill *a* is provided with teeth, the form of which is readily seen in Figs. 1 and 2. The body of the drill itself, as shown in Fig. 3, has a half-circular form and is in a like manner fluted, so that both sides form sharp edges which can be kept in that condition by grinding. The purpose of the flute is to receive the drillings and so to avoid any obstruction to the proper and permanent working of the drill.

This new drill can be used with great advantage for drilling of holes in brickwork, which can be done with greater neatness without necessitating the troublesome reaming out of the drillings. The drill can be used for any other kind of stone, according to the grade of steel the drill is made of and its hardness.

The drill shown in the accompanying drawings is intended for hand use and for that purpose provided with a handle or stock *g*, but the drill can also be used with any machine which enables a forward and backward rotating motion in the sense above specified.

Another advantage of the new drill is that by its forward and backward rotating motion the wear and tear of the drill is not as great as with a common drill that rotates only in one direction, for by this new construction, constituting the subject of this invention, only one-half of the cutting edge is in operation, while drills with complete rotating motion always have the active cutting edge in operation.

What I claim, and desire to secure by Letters Patent, is—

A rock-drill, having a longitudinal flute in its half-round body, closed at the end and having teeth on the outside edge of its extremity by which drilling may be accomplished by a forward and backward rotating motion as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

HERMANN SCHWARTZENHAUER.

Witnesses:

W. HAUPT,  
EDWARD BELL.