A. WIRSCHING.

Watchmaker's Drill.

No. 81,450. Patented Aug. 25, 1868.

Fig. 1.

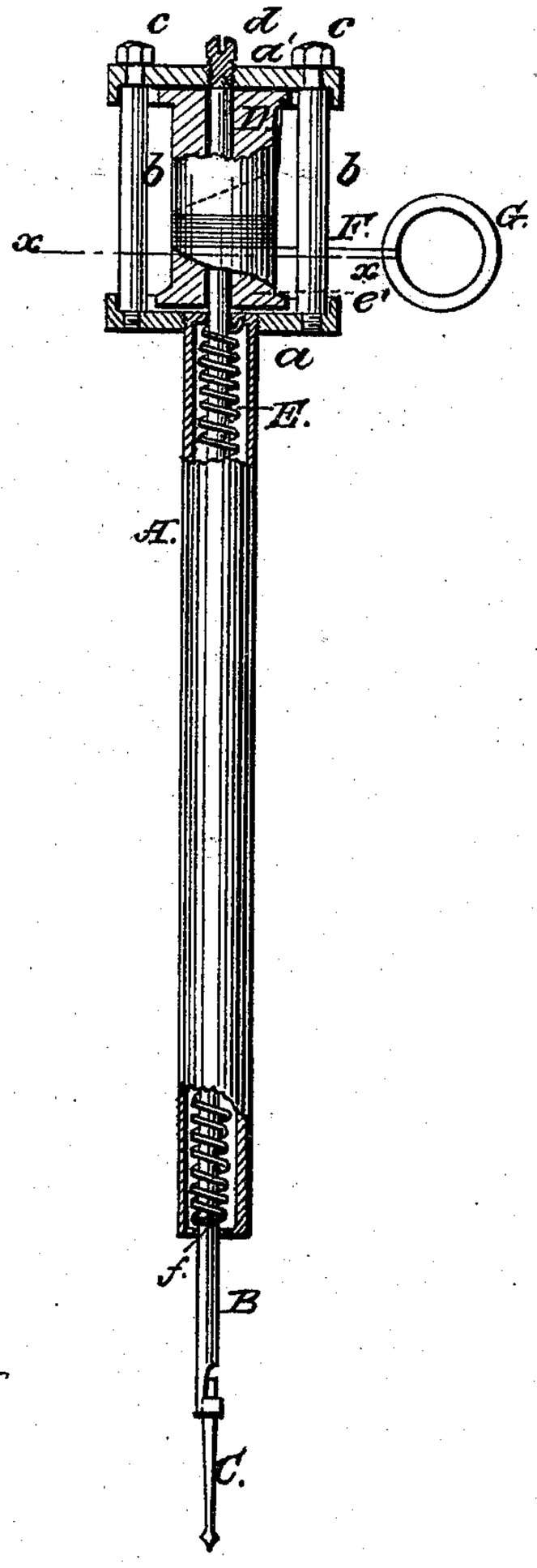
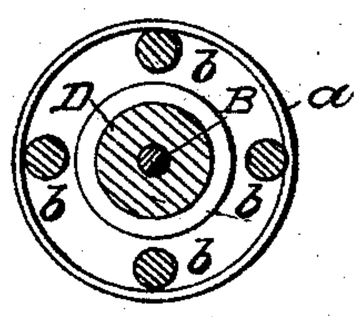


Fig. 2.



Witnesses
Wm a Morgan
G. C. Colton

Inventor
A. Wirsching
per Munn & Co
Attorneys

United States Patent Office.

ALOIS WIRSCHING, OF BROOKLYN, NEW YORK, ASSIGNOR TO HIMSELF AND ALBERT WILD, OF THE SAME PLACE.

Letters Patent No. 81,450, *dated August* 25, 1868.

IMPROVEMENT IN WATCHMAKERS' DRILLS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ALOIS WIRSCHING, of Brooklyn, E. D., in the county of Kings, and State of New York, have invented a new and improved Hand-Drill; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a new and improved hand-drill, which is designed to supersede the ordinary bow-drill now generally used for fine or small work by watchmakers, &c.

The bow-drill derives its name from the means which is employed for giving it motion, a bow, of a light piece of steel or other elastic metal, or wood, having a string or piece of catgut attached to its ends, the string or catgut being fitted with one or more convolutions, around a pulley on the drill-shaft, motion to which is given by operating the bow, moving it back and forth.

My invention consists in operating the drill by applying a spring to the drill-shaft, substantially as hereinafter shown and described, the drill-shaft being fitted within a tube, and a string attached to a pulley on said shaft, whereby a much more convenient device is obtained for the purpose specified than the one in general use.

In the accompanying sheet of drawings—

Figure 1 is a side view of my invention, partly in section.

Figure 2, a transverse section of the same, taken in the line *x x*, fig. 1.

Similar letters of reference indicate corresponding parts.

A represents a tube, constructed of metal, and of proper dimensions to suit the size of drill-shaft B required.

This drill-shaft B is fitted within the tube A, and extends some distance beyond both ends of the same, the drill C being secured in one end of the shaft, and a pulley or drum, D, keyed on its opposite end.

The part of the drill-shaft on which the pulley or drum D is keyed, is fitted within a frame, composed of two circular disks *a a'*, connected by pillars or rods *b*, the disk *a* being screwed on one end of the tube A, and the disk *a'* secured to the pillars or rods *b* by nuts *c*.

Through the centre of the disk *a'*, a screw, *d*, passes, which serves as a bearing for one end of the drill-shaft B, the other bearing, *e e'*, being in the end of the tube A, as shown clearly in fig. 1.

The drill-shaft B is sufficiently less in diameter than the interior of the tube A, to admit of a spiral spring, E, being fitted upon it, between it and the tube, as shown in fig. 1.

One end of this spring E is attached to the drill-shaft B, near one end of tube A, as shown at *f*, and the opposite end is attached to the opposite end of the tube.

F is a string, one end of which is secured to the pulley or drum D.

The opposite end may have a metallic ring, G, attached, for the operator to pass his finger through, as a convenience in pulling the string.

From the above description it will be seen that the drill is operated (turned) in one direction by pulling on the string F, the latter rotating the pulley or drum D, and consequently the drill-shaft, and at the same time winding up the string E, which, when the string F is relieved of the pull upon it, turns the drill in the opposite direction, and winds the string upon the pulley or drum, so that it may be pulled again, to turn the drill, as in the first instance.

By this arrangement it will be seen that the drill may be operated with a reciprocating rotating movement, with the greatest facility; far more so than with the bow.

The device, moreover, is always ready for use, there being no detached parts to be applied, and which are liable to get lost or mislaid.

I claim as new, and desire to secure by Letters Patent—

The drill-shaft B, fitted within the tube A, in connection with the spring E, arranged or applied, as shown, or in an equivalent way, and the string F attached to a drum or pulley on the drill-shaft, all constructed to operate in the manner substantially as and for the purpose set forth.

A. WIRSCHING.

Witnesses:

FRANK BLOCKLEY,

ALEX. F. ROBERTS.