M. D. WHIPPLE.

Making Files.

No. 15,867. Patented Oct. 7, 1856.

Fig. 1.

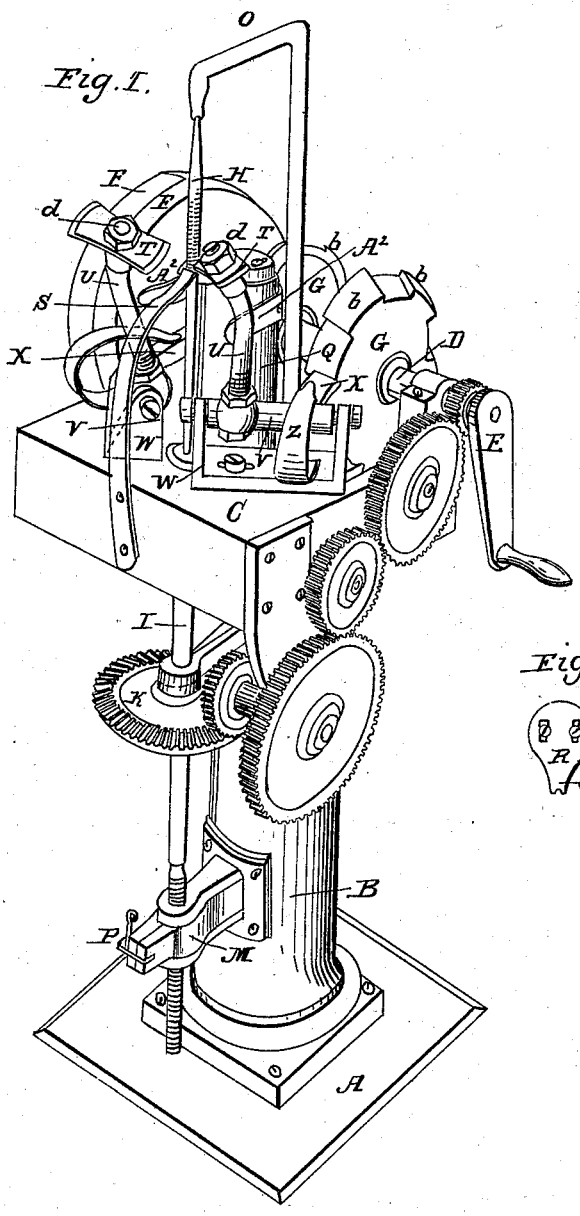

Fig. 2.

UNITED STATES PATENT OFFICE.

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CUTTING ROUND FILES.

Specification of Letters Patent No. 15,867, dated October 7, 1856.

To all whom it may concern:

Be it known that I, MILTON D. WHIPPLE, of Charlestown, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Cutting Round Files, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, in which—

Figure 1 is a perspective view of the machine; Fig. 2, a plan of the bed or rest which sustains the blank while it is cut.

Round files as heretofore cut have their teeth formed in rows parallel with the axis of the file, and in order to finish up a round hole it becomes necessary to turn the file constantly as it is operated.

My invention has for its object to produce a file with teeth formed in rows running spirally around it; and consists in turning the file upon its axis, and at the same time feeding it forward, as it is cut, whereby spiral rows of teeth are formed around the file, as will be hereafter more fully described.

My invention also consists in supporting the file upon a bed, immediately beneath the point where the cut is made, whereby the tread of the finished portion of the file is protected from the injury which would result from allowing it to bear directly against the bed, and my invention furthermore consists in certain details which will be more fully set forth hereafter.

In the accompanying drawings A is the foundation or base, from which rises the vertical post B, near the top of which is secured the table C that sustains the operating parts of the machine. The driving shaft D is actuated by power applied to the crank E or to the pulleys F. To this shaft are secured the wiper wheels G which actuate the cutting chisels.

The file blank H, to be cut is sustained at its lower end in the vertical shaft I that is caused to revolve by the bevel wheel K, through which it slides with a spline, the screw L working in the nut M, by which means the shaft, together with the blank which it carries, is gradually raised as it is revolved. The nut M is made in two parts which are secured together by the latch and pin P and may be separated whenever it is necessary to drop the shaft preparatory to beginning with a new file blank. The upper end of the blank is steadied by the bent rod D that slides freely up and down in the post B. During the operation of cutting, the blank is sustained in an angular or semicircular bearing *a* (Fig. 2) in the bed R which is secured to the top of the post Q, rising from the table C. The blank while being cut is held against the bed by the spring S.

The cutters T are carried by helves U secured to the vibrating axles V. These axles are sustained in the standards W rising from the table C, and have each a projecting arm X that rests upon the periphery of the wheel G, and down upon which it is pressed by the spring Z. As the wheels G revolve, their wipers *b* raise the arms X and as the latter escape from off the wipers the cutters are thrown against the file blank by the spring Z and a cut is made.

A^2 are springs secured to the post Q, which receive the cutter helves as they are projected and throw them off from the file as soon as the cut is completed.

It is evident that a lighter blow will be required upon the small portion of the file than upon the larger, as a smaller cut is to be made, and this is effected by means of the spring A^2. The cutter having a longer distance to travel to reach the small portion of the file will be more resisted by the spring and a lighter blow will be transmitted to the blank.

Were the file permitted to rest against a solid bed directly opposite to the point where the cut is made, it would be defaced as fast as cut. To remedy this the cut is made at a point directly beyond that at which the blank is supported, and thus the uncut portion of the blank only is allowed to rest upon the bed.

The cutting edges of the cutters T are circular, or they may be formed of only portions of circles. When dulled at one point, they may be instantly shifted by loosening the nuts *d* and revolving them a short distance. If made entirely circular, or even when they are formed of only portions of a circle, as in the machine represented in the accompanying drawings, they may be shifted around as they are dulled and may easily be ground by hand or sharpened in a lathe.

What I claim as my invention and desire to secure by Letters Patent is—

1. Operating upon the blank immediately beyond its point of support, in the manner and for the purpose substantially as herein described.

2. I claim feeding the blank forward and rotating it upon its axis as the cutting proceeds, when it is operated upon by the vibrating cutters in the manner substantially herein set forth.

3. I claim the method herein described, of operating the cutters by means of the wipers *b* and the springs A^2 and Z whereby the force of the blow is diminished as the size of the blank decreases, as set forth.

4. I claim forming the cutters of circular disks or of portions thereof, in the manner and for the purpose substantially as herein set forth.

MILTON D. WHIPPLE.

Witnesses:

SAM. COOPER,

THOS. R. ROACH.