2 Sheets--Sheet 1.

T. DOYLE.

Saw-Filing Machine.

No. 162,356. Patented April 20, 1875.

Fig. 1.

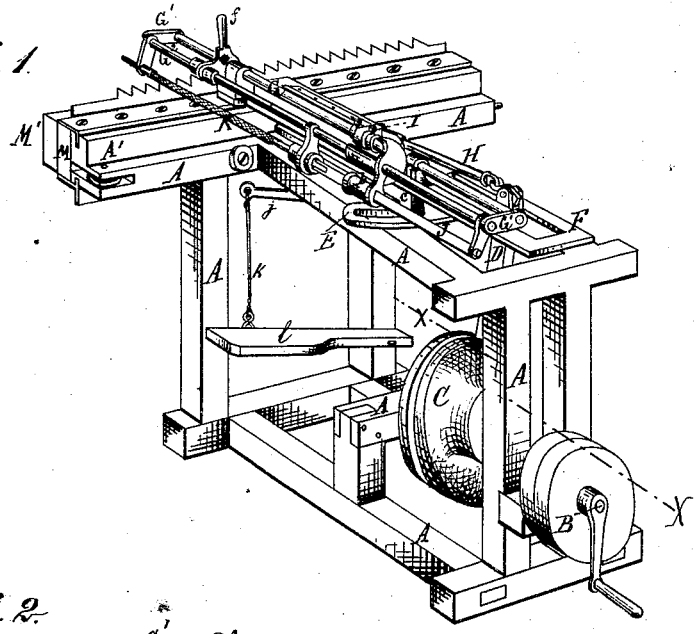
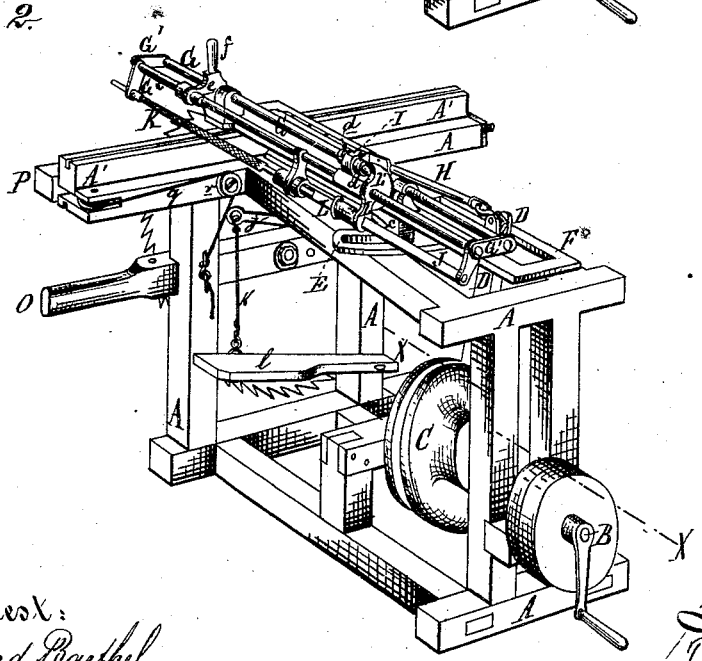


Fig. 2.



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2 Sheets--Sheet 2.

T. DOYLE.

Saw-Filing Machine.

No. 162,356. Patented April 20, 1875.

Fig. 3.

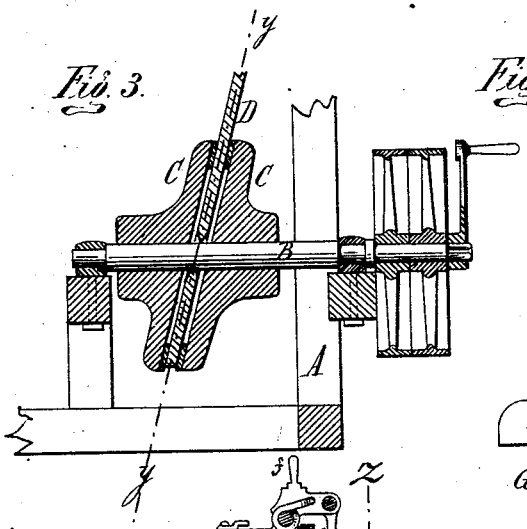
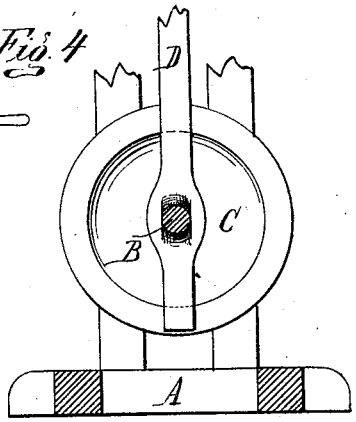


Fig. 4.



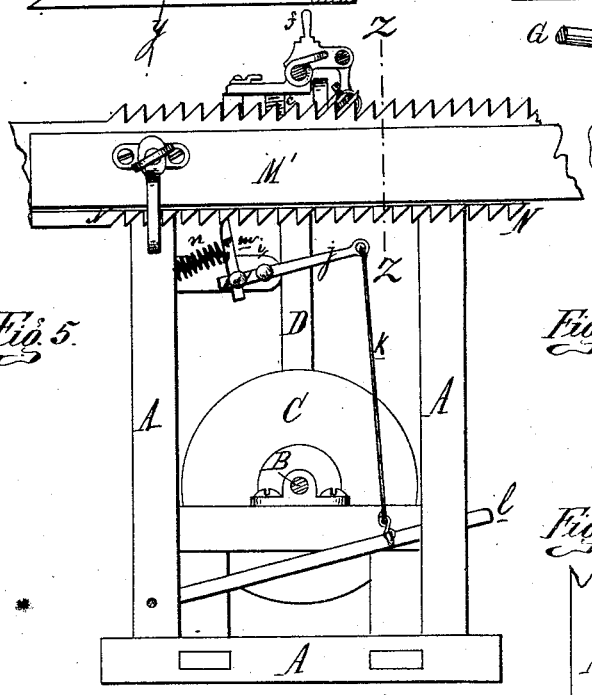


Fig. 5.

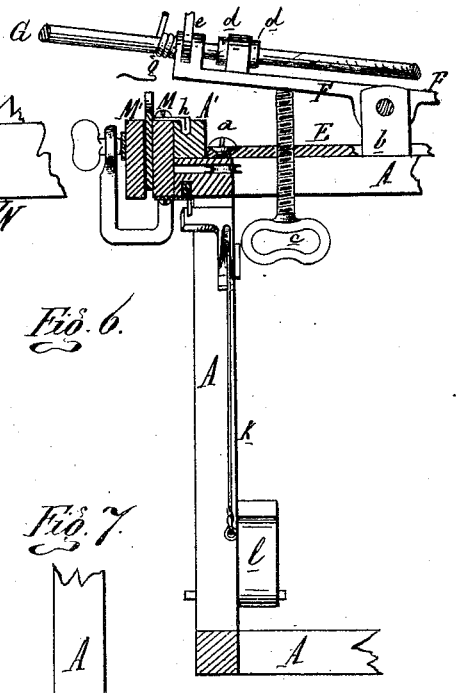
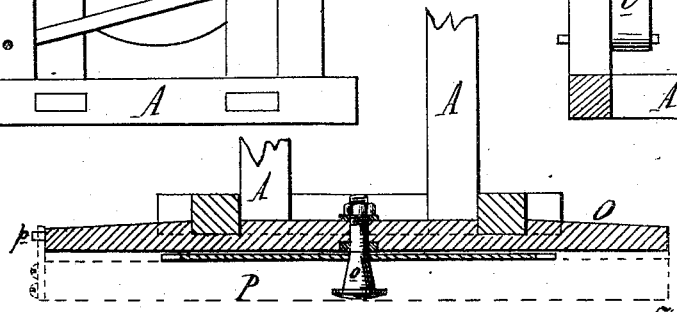


Fig. 6.

Fig. 7.



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UNITED STATES PATENT OFFICE.

THOMAS DOYLE, OF BRIDGEPORT CENTRE, MICHIGAN.

IMPROVEMENT IN SAW-FILING MACHINES.

Specification forming part of Letters Patent No. **162,356**, dated April 20, 1875; application filed January 15, 1875.

To all whom it may concern:

Be it known that I, THOMAS DOYLE, of Bridgeport Centre, in the county of Saginaw and State of Michigan, have invented an Improved Saw-Filing Machine, of which the following is a specification:

The nature of my invention relates to an improvement in machines for filing saws, more especially of that class that are to be driven by power; and it consists, first, in the peculiar construction of the filing-frame; second, in a peculiar clamp for holding a straight saw, and the feed-works for moving it forward; thirdly, in a peculiar circular-saw clamp, and devices for operating the same; and the general construction and arrangement of the various parts, as more fully hereinafter set forth.

Figure 1, Sheet 1, is a perspective view of the machine, looking at it from the side where the operator stands. Fig. 2 is a perspective view of the same, looking at it from the same position, but with a circular saw clamped in it ready for filing. Fig. 3, Sheet 2, is a longitudinal section of the wabble-collars at *x x* in Fig. 2. Fig. 4 is a cross-section of the same at *y y* in Fig. 3. Fig. 5 is a detail front elevation of the straight saw-clamp and its set-works. Fig. 6 is a cross-section of the same at *z z*. Fig. 7 is a horizontal section of the circular-saw holder and clamp.

In the drawing, A represents the frame-work of the machine, in the lower part of which a shaft, B, is longitudinally journaled, and on which two collars, C, are keyed a short distance apart. The faces of these collars are inclined to their axis, and between them a lever, D, is slipped on the shaft, having an eye, in it for that purpose. In the rotation of the shaft the collars impart a vibratory or wabbling motion to the lever. E is a metal bed-plate, pivoted at *a* to the center of the front part of the frame, having a radial adjustment thereon, so that the teeth of a saw may be filed at any desired angle. From the back part of the plate two lugs, *b*, rise, between which the filing-frame F is pivoted, and which can be set at any angle with the horizontal plane by means of two set-screws, *c*, rising through the plate E, to give the saw-teeth the required slope or bevel. The back end of the frame is slotted to receive and guide the head of the lever D, which reciprocates therein. G is a round rod sliding through and axially rotating in bearings rising from the plate E, being reciprocated by a link, H, which connects with the lever D, and with an arm, I, sleeved on said rod between two collars, *d*, secured thereon by set-screws, thus leaving said rod free to turn on its axis. At each end there is an arm, G^1, in the outer ends of which the end of another and parallel rod, G^2, is journaled. This rod slides through a sleeve at the end of an arm, *e*, sleeved on the rod G in a slot in the forward bearing, which keeps it from moving with the rods G G^2. The arm *e* has a handle, *f*, by which it may be rotated to carry the arm G^2 down toward the saw, while a spring, *g*, throws it up and away from the saw. There are three arms, G^1, on the rod G^2, one at each end, and an intermediate one, between which extends a square bar, J, whose ends are journaled therein, the front end of which bar has a socket for the tang of the file K, whose front end is inserted in a socket-sleeve journaled through the front arm G^1. The bar J slides through a handle-sleeve, L, at the end of an arm, L′, which is sleeved on the rod G^2, and has a segment on its lower edge, which plays in a slot in the rearmost bearing of the plate E, which keeps it from sliding forward or back, while the operator can, with one hand, rotate axially the bar J and the file, while with the other on the handle *f* he can swing the file down into contact with a saw-tooth. Across the front end of the frame is a girt, A′, to the face of which is secured by metal slides *h*, dovetailed in its top and bottom, a clamp-bar, M, which is free to slide longitudinally. M′ is a clamp, held against the bar M by two screw-clamps secured to the lower edge of the latter, and curved up in front of the former.

This device is used for clamping mill and other straight saws to the bar M, to the bottom of which is secured a feed-bar, N, notched like the saw, and operated in the following manner: To one of the front posts is secured a bracket, *i*, to which is pivoted a lever, *j*, whose outer end is connected by a cord, *k*, with a treadle, *l*. The short arm of the lever has a diagonal notch, in which is pivoted an inverted L-shaped pallet, *m*, pulled back by

a spiral spring, *n*, connected with the post. When the treadle is depressed the arm of the pallet engages with a tooth of the feed-bar N, and moves the clamp forward. When the treadle is released the pallet-arm, sliding down the back of the tooth, (being pulled by the spring,) turns on its pivot enough to clear the point of the tooth, when the spring pulls it to a right angle with the lever, which is as far as the diagonal notch in the latter will allow. To file a circular saw the clamp M M′ is removed and the cord *k* detached from the treadle. A horizontal bar, O, notched on its inner face to embrace the front posts of the frame, is placed against the latter, and suspended by cords or secured by bolts at the proper distance from the top of the girt A′. In the center of the bar is a hole through which to insert a conical bolt, *o*, drawn forward by a nut on its inner end, thus enabling the filer to mount and center saws of varying diameter of eye. A clamp-bar, P, is hooked over a stud, *p*, at one end of the girt A′, having a plate across one end for that purpose. At the other end a cord, *q*, is led around guide-pulleys *r* on the rear side of the girt and down to the treadle, which, when depressed, draws the bar P against the upper part of the saw, clamping it against the face of the girt. When the treadle is free the saw may be rotated on its support—the conical bolt.

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

1. The combination, with the frame A of a saw-filing machine, of the bed-plate E, pivoted at *a* to said frame, and having a radial adjustment thereon to give the teeth the proper angle, and carrying the filing-frame F, pivoted in the lugs *b*, and adjustable at any angle by set-screws *c* rising through said bed-plate, to give the teeth the required bevel, all substantially as and for the purpose set forth.

2. The bars M M′, with their clamp-screws, and the feed-bar N, bracket *i*, lever *j*, cord *k*, pallet *m*, spring *n*, and treadle *l*, in combination with the frame and girt A′, for feeding forward said clamping-bars M M′, the several parts being constructed and arranged substantially as described.

3. The bar O, conical bolt *o*, clamp-bar P, and cord *q*, in combination with the frame, the guide pulleys, and the treadle, for clamping a circular saw, substantially in the manner described.

THOMAS DOYLE.

Witnesses:

H. S. SPRAGUE,

H. F. EBERTS.