(No Model.)

3 Sheets—Sheet 1.

A. B. FISHER.

SAW FILING MACHINE.

No. 290,875. Patented Dec. 25, 1883.

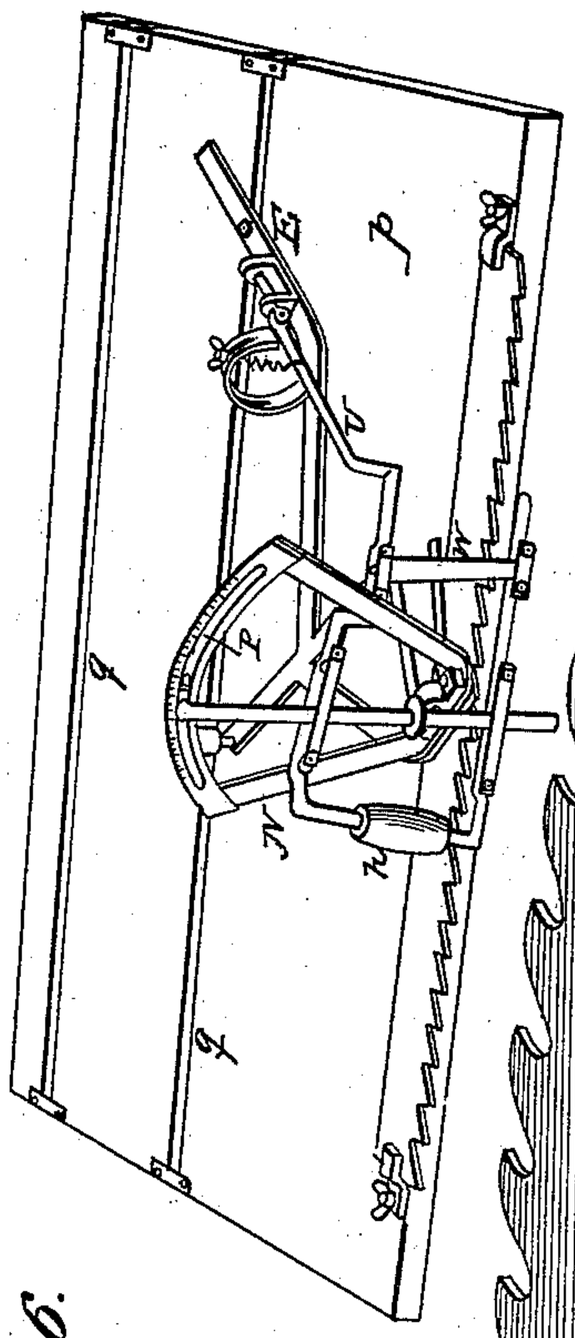

Fig. 6.

Fig. 1.

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(No Model.)

3 Sheets—Sheet 2.

A. B. FISHER.

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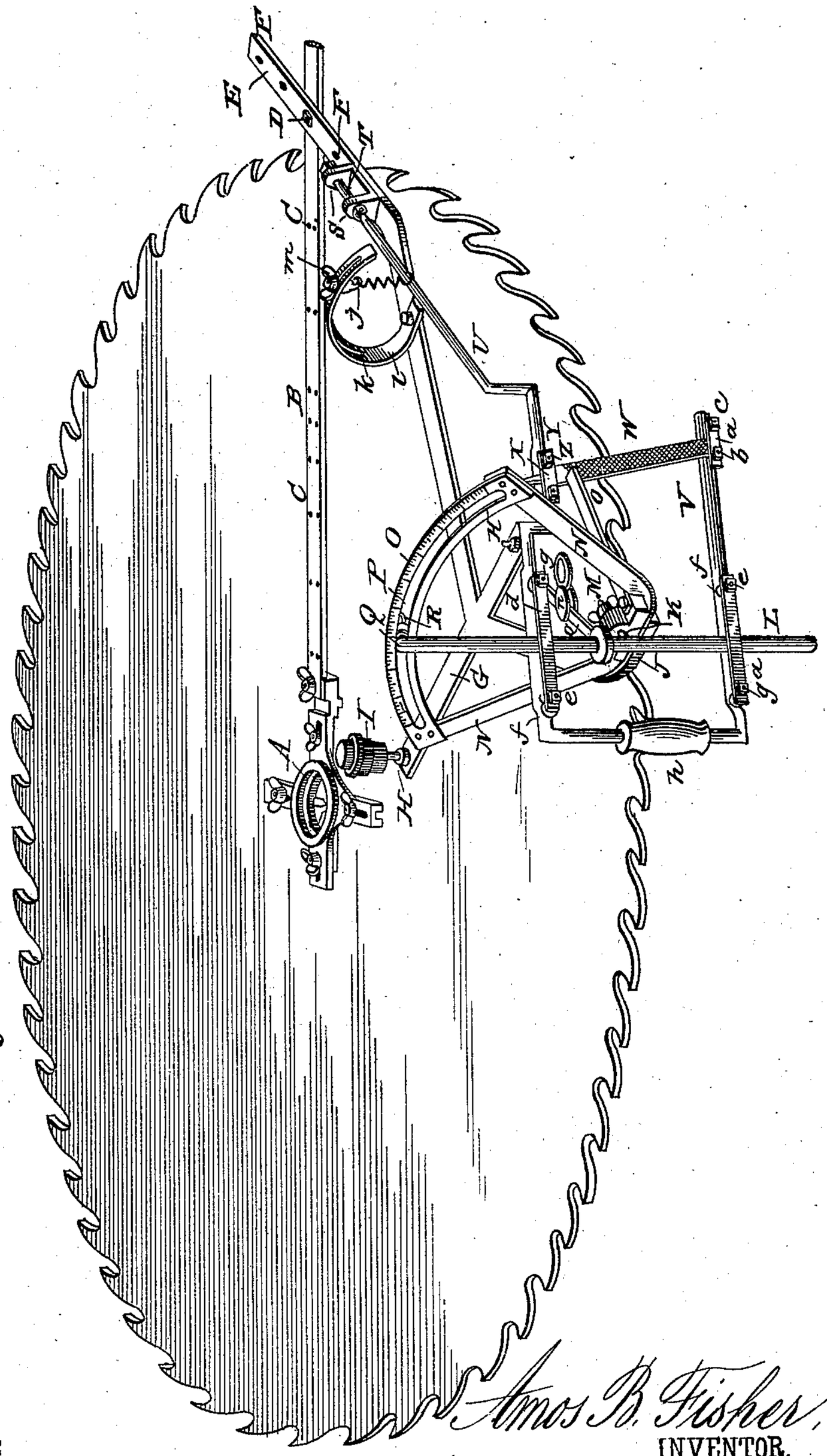

Fig. 2.

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(No Model.)

3 Sheets—Sheet 3.

A. B. FISHER.

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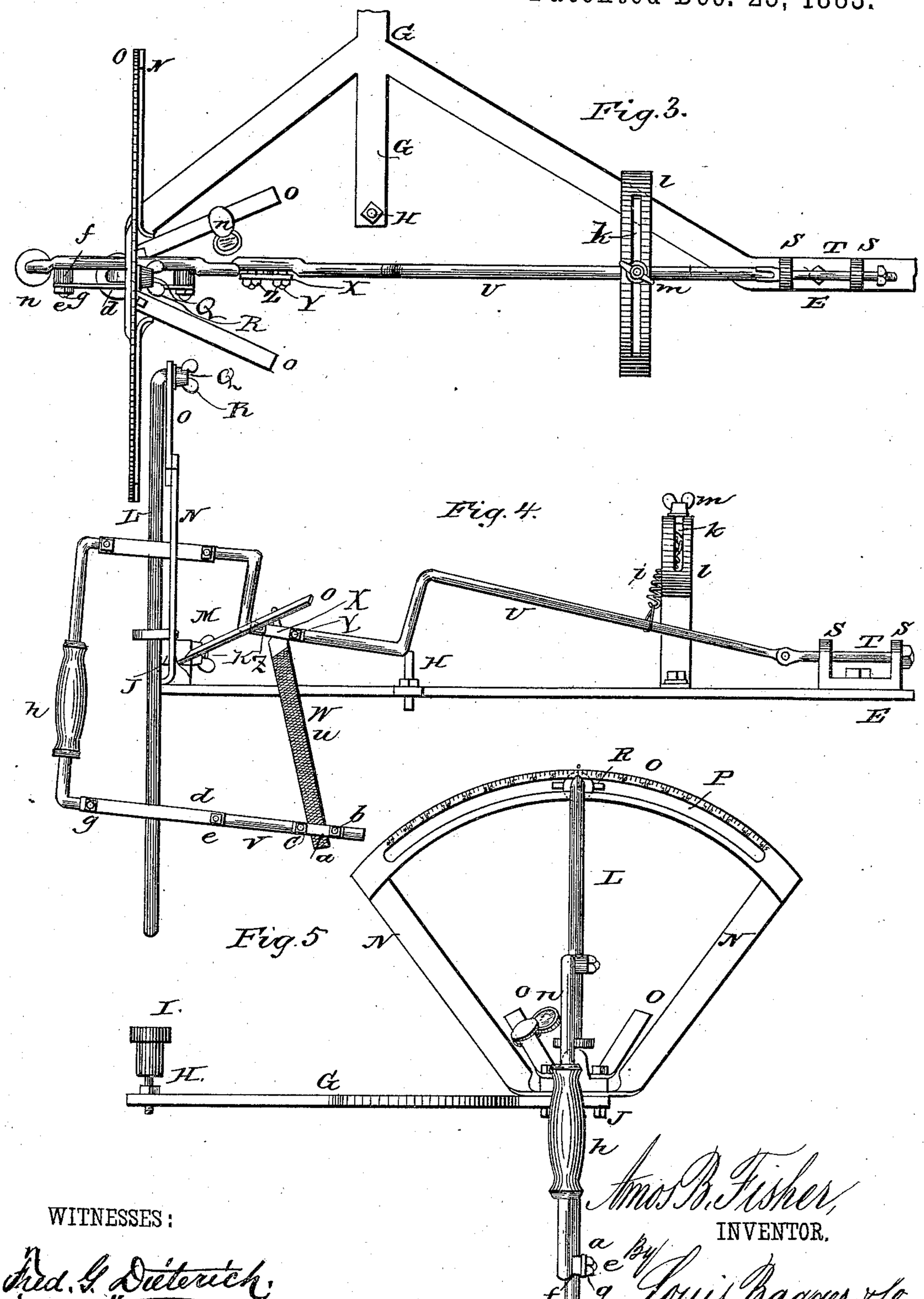

Fig. 3.

Fig. 4.

Fig. 5

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UNITED STATES PATENT OFFICE.

AMOS B. FISHER, OF CARIBOU, MAINE.

SAW-FILING MACHINE.

SPECIFICATION forming part of Letters Patent No. 290,875, dated December 25, 1883.

Application filed April 9, 1883. (No model.)

To all whom it may concern:

Be it known that I, AMOS B. FISHER, of Caribou, in the county of Aroostook and State of Maine, have invented certain new and useful Improvements in Saw-Filing Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of my improved saw-filing machine in position for filing the fronts of the teeth of a circular saw. Fig. 2 is a similar view of the same in position for filing the tops of the teeth. Fig. 3 is a top view of the machine. Fig. 4 is a side view. Fig. 5 is an end view of the same; and Fig. 6 is a perspective view of the machine adapted to file the teeth of a crosscut-saw or other straight saw.

Similar letters of reference indicate corresponding parts in all the figures.

My invention has relation to machines for filing saws; and it consists in the improved construction and combination of parts, as hereinafter more fully described and claimed.

In the accompanying drawings, the letter A indicates the expansion-bushing described in my Patent No. 269,654, of December 26, 1882, and B the flat bar described in the same, upon which the squaring and rounding head and the tooth-pattern are fastened. This bar is provided with a series of perforations, C, at certain intervals, adapted to receive a small screw-bolt, D, which secures a flat bar, E, upon which the filing apparatus is mounted, and which likewise has a series of perforations, F, at certain intervals, the relative distances between the perforations being such as to adjust the filing apparatus to the correct position for filing the teeth of different sizes of saws by inserting the screw-bolt into the corresponding holes in the two bars. The outer portion of bar E is bent to one side, forming an obtuse angle, through the point of which passes a bar, G, extending to both sides at a right angle to the straight portion of bar E, and provided at each end with a screw, H, passing through it, and serving as feet, raising it above the surface of the saw.

Upon the screw passing through the outer end of bar G is fastened a weight, I, which serves to counterbalance the weight of the other parts of the device, distributing the weight of the device over a larger surface of the saw. The outer end of bar E is bent at a right angle to the inner straight portion, and forms a bearing, J, in which turns a bolt or pin, K, projecting from the center of a bar, L, which serves as a guide for the file-frame. This bolt K is screw-threaded at its outer end, and a thumb-nut, M, fitting upon the same on the other side of the bearing, secures it in the bearing. Two arms, N N, extend obliquely upward from the sides of the bearing, and a segmental plate, O, is secured between the ends of the same, having a segmental slot, P, concentric with the bolt K, and a small screw-threaded pin, Q, projecting from the upper end of bar L, slides in the slot, and may be adjusted in the same by means of a thumb-nut, R, fitting upon the same and bearing against the other side of plate O. The outer face of this segmental plate is divided and marked to indicate degrees of the arc formed by the plate, so that the guide-bar may by means of pin Q and thumb-nut R be adjusted at any angle desired.

Near the inner end of bar E are fastened two upward-projecting perforated lips, S, in which a round rod, T, slides and turns, to the outer end of which is hinged a bent arm, U, the outer portion of which is bent downward and inward, forming the file-frame V. The upper end of the file W is clamped to the arm U by means of a plate, X, secured to it by two screw-bolts, Y, projecting from the arm and provided with nuts Z, and the lower end of the file is secured to the inner end of the horizontal portion of the file-frame by means of a similar plate, *a*, secured upon screw-bolts *b* by nuts *c*. The horizontal ends of the file-frame slide upon the guide-bar, the slides being formed by one side of the frame-pieces and two plates, *d*, secured at a distance a little more than the thickness of the guide-bar by two screws, *e*, projecting from the end pieces of the frame, and having two washers, *f*, slightly thicker than the guide-bar, interposed between the end pieces and the plates, and nuts *g* securing the latter. A handle, *h*, is fastened upon the vertical portion of the frame,

adapted to be grasped by the operator, who moves the frame up and down.

To prevent the frame from striking the upper side of the bearing when allowed to drop down, the lower end of a spiral spring, *i*, is fastened to the arm U, and its upper end, which is bent to form an eye, is held by a hook, *j*, the screw-threaded shank of which is passed through a slot, *k*, in an arched plate or strip, *l*, of metal, fastened to the inner portion of bar E and secured by a thumb-nut, *m*. When the machine is to be used, the bar E is adjusted upon the flat bar B, the screw-bolt passing through the holes in the bars corresponding to the size of the saw, when the file will bear upon the fronts of the teeth, and after the guide-bar has been adjusted at the angle it is desired to file the teeth, the frame is moved up and down until that tooth is sufficiently filed, the guide-bar keeping the frame and file perfectly true, whereupon it is moved to the next tooth, and so forth. When the fronts of the teeth are to be filed, the bar E is adjusted upon the inner portion of bar B, while when the tops of the teeth are to be filed, the bar is fastened to the outer end of the bar B, bringing the file to bear upon the tops of the teeth, as shown in Figs. 1 and 2.

A magnifying-glass, *n*, may be adjustably fastened upon one of two double strips, *o*, of metal, projecting inward from bearing J—one on each side of the file—to enable the operator to see the effect of the filing more exactly.

The machine may also be used in filing cross-cut or other straight saws by clamping the saw, as shown in Fig. 6, in the edge of a frame, *p*, having two longitudinal slots, *q* and *r*, parallel to the edge, in which the adjusting screw-bolt may slide and be adjusted, the bolt sliding in the slot farthest from the edge when filing the fronts of the teeth, and in the slot nearest to the edge when filing the backs of the teeth.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a saw-filing machine, the combination, with bar E, having means for adjusting it upon the saw, of guide-bar L, turning upon bolt K in bearing J, and having screw-threaded pin Q and thumb-nut R, slotted segmental plate O, supported upon arms N above the end of bar E, and file-frame V, sliding upon bar L and fastened upon the end of hinged arm U, as and for the purpose shown and set forth.

2. In a saw-filing machine, the combination, with bar E, having means for adjusting it upon the saw, and bent to one side, forming an obtuse angle, and having transverse bar G, passing through the point of the angle, provided with screws H at both ends, and counter-balance I, of guide-bar L, segmental plate O, and file-frame V, as and for the purpose shown and set forth.

3. In a saw-filing machine, the combination and arrangement, with expansion-bushing A, of perforated bar B, screw-bolt D, flat bar E, having cross-bar G, weight I, bearing J, bar L, bearing-pin K, segmental plate O, sliding rod T, bent arm U, file W, frame V, clamps X Y Z and *a b c*, slideways *d e f g*, handle *h*, spiral spring *i*, adjustable hook *j*, and arched slotted plate *l*, all constructed to operate as and for the purpose shown and set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

AMOS B. FISHER.

Witnesses:
EBEN W. LOWNEY,
WILLIAM C. SPAULDING.