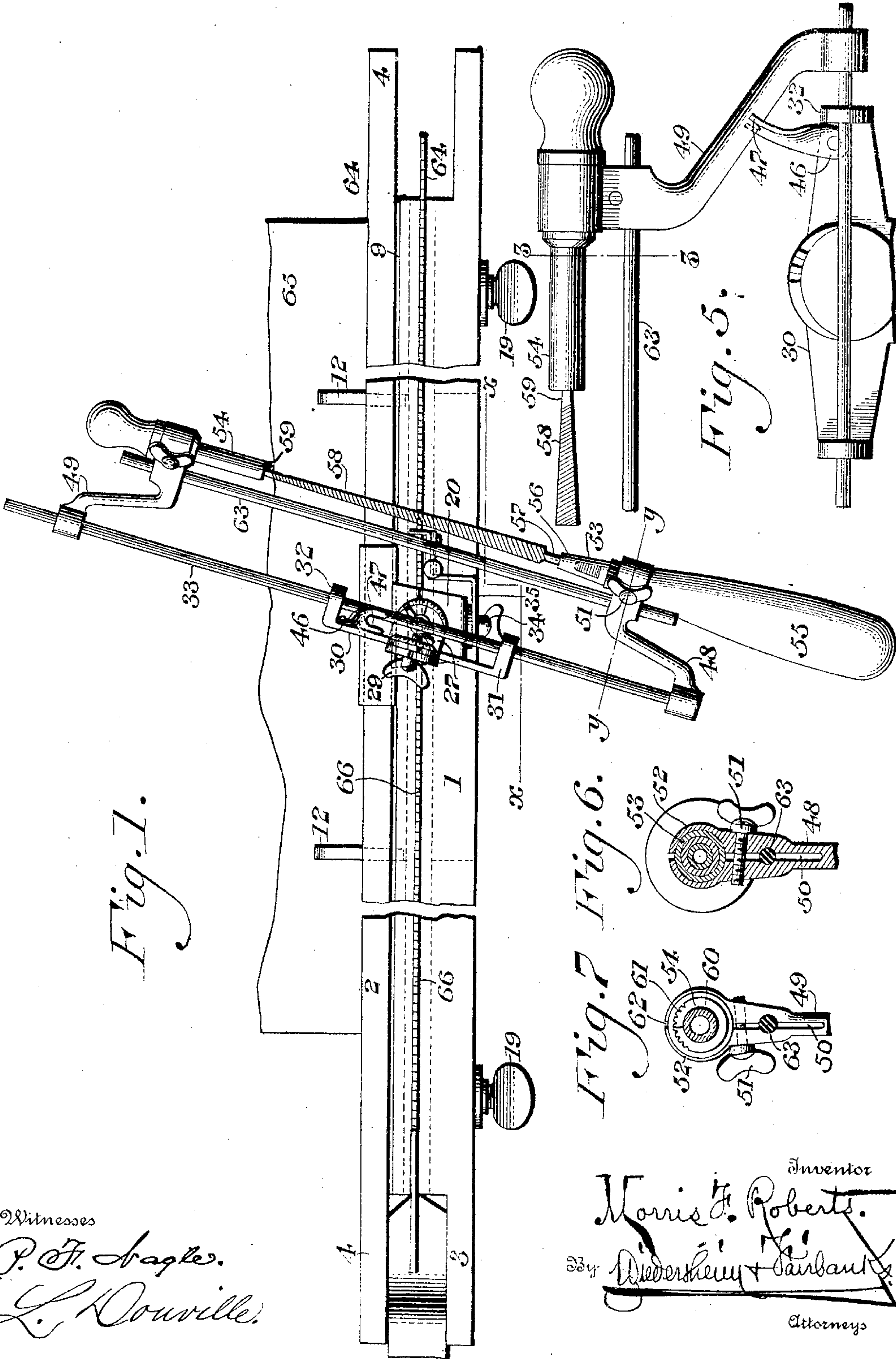


No. 803,434.

PATENTED OCT. 31, 1905.

M. F. ROBERTS.
SAW FILING DEVICE.
APPLICATION FILED APR. 30, 1904.

2 SHEETS—SHEET 1.



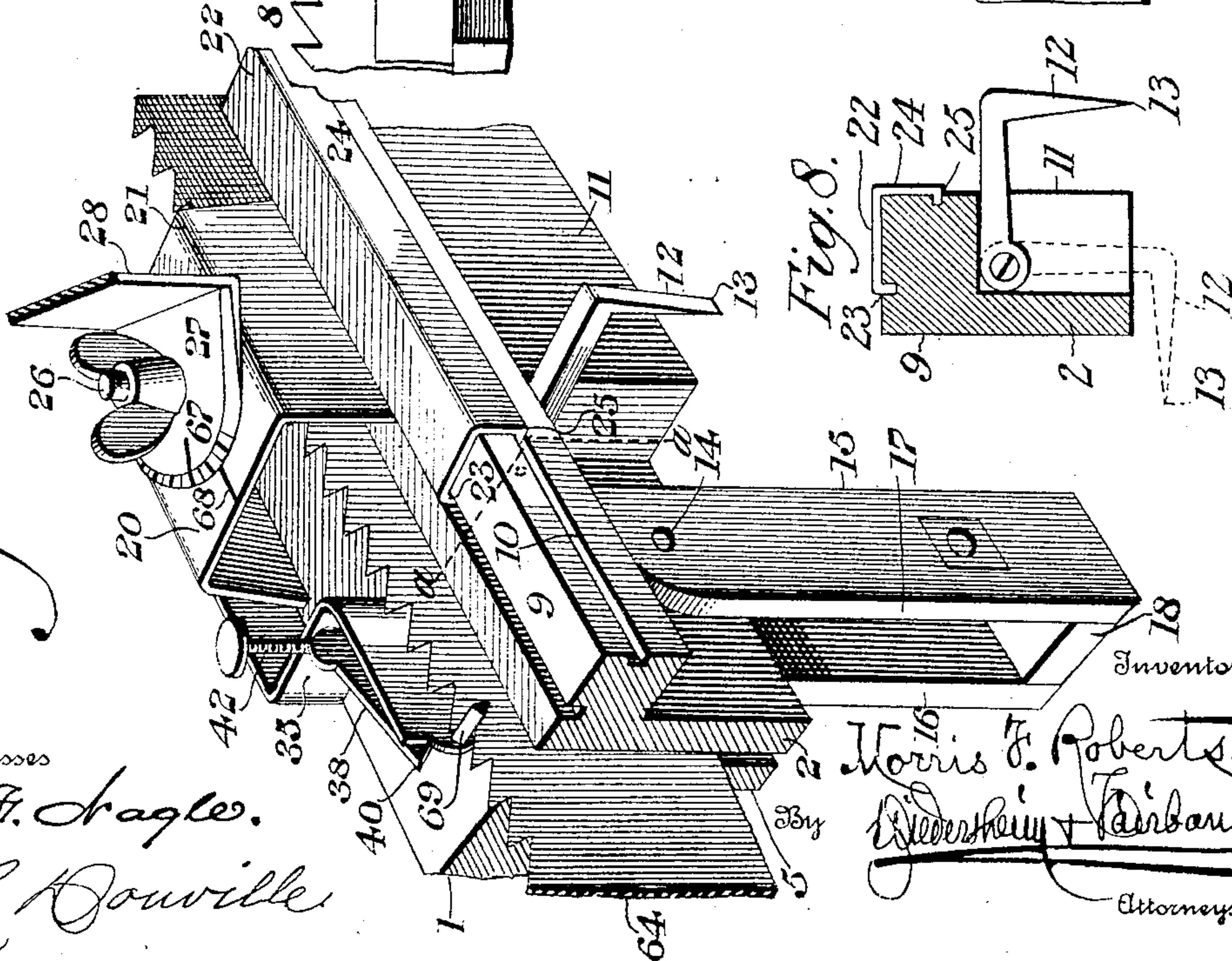
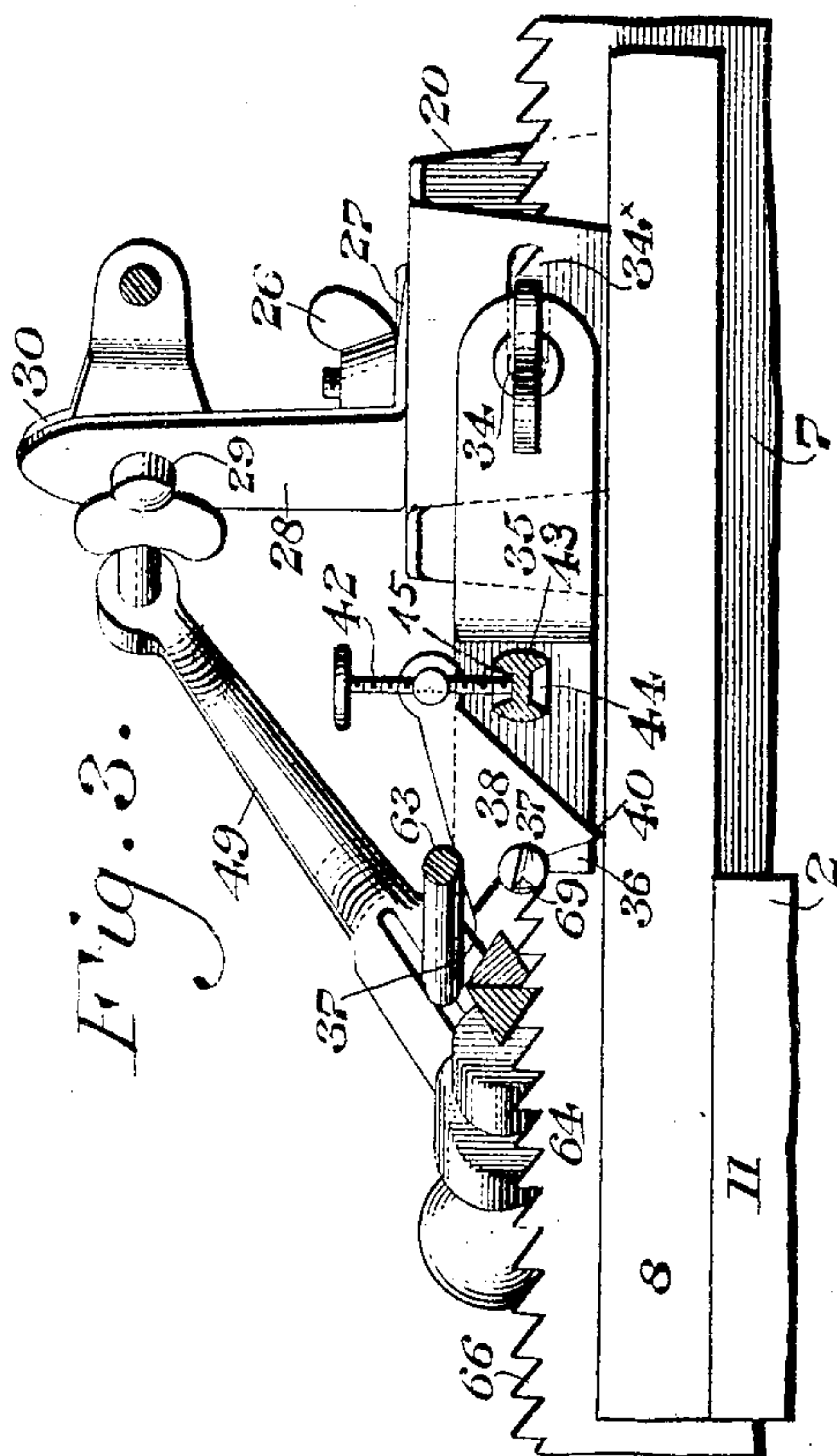
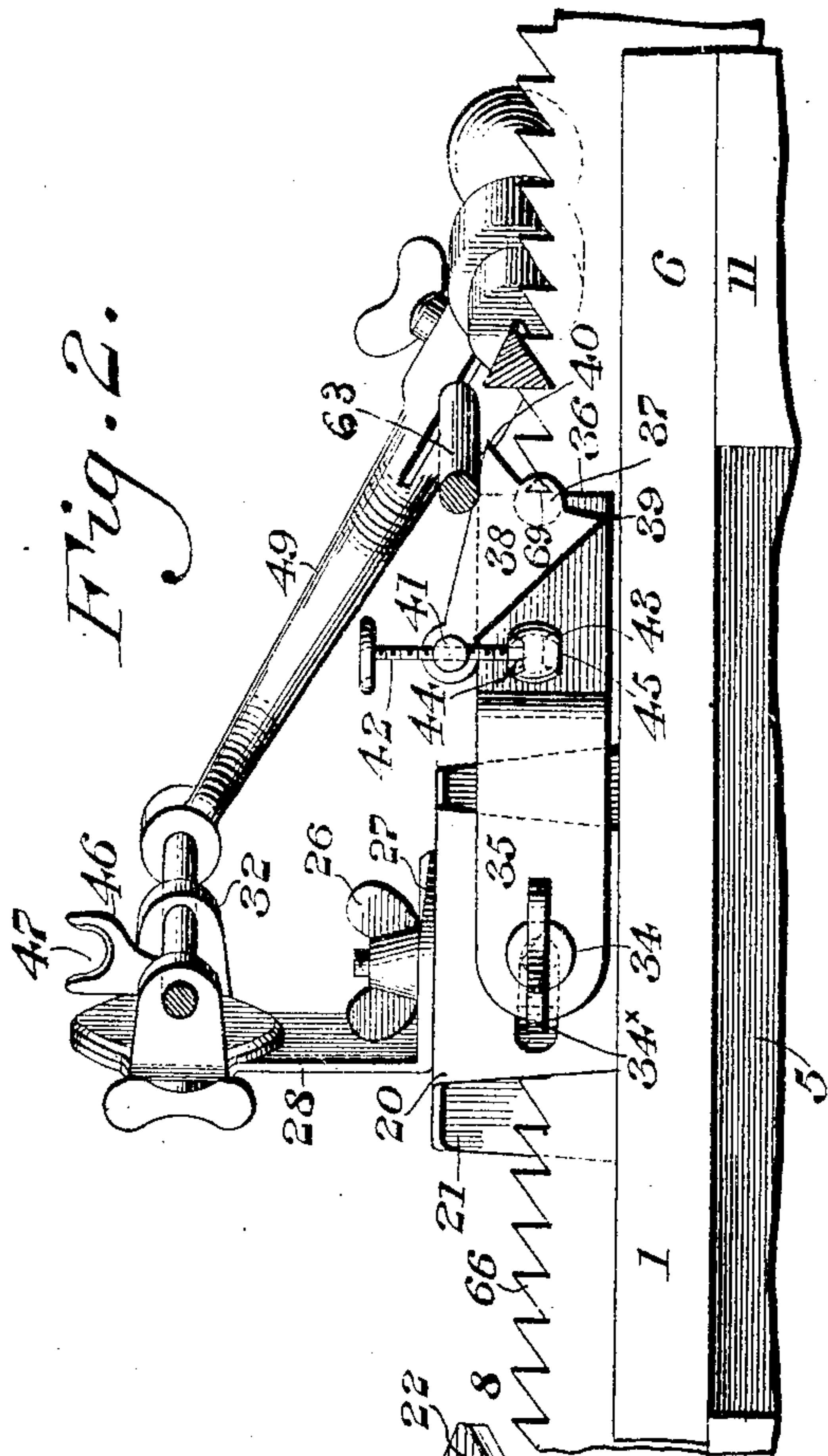
Witnesses
P. F. Hagler.
L. Douville.

Inventor
Morris F. Roberts.
By *Wiederheim & Harbault*
Attorneys

M. F. ROBERTS.
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APPLICATION FILED APR. 30, 1904.

2 SHEETS—SHEET 2.



Witnesses
P. H. Nagle.
L. Bouville

Inventor
Morris F. Roberts.
Wiederheim & Bairbank
Attorneys

UNITED STATES PATENT OFFICE

MORRIS F. ROBERTS, OF PHILADELPHIA, PENNSYLVANIA.

SAW-FILING DEVICE.

No. 803,434.

Specification of Letters Patent.

Patented Oct. 31, 1905.

Application filed April 30, 1904. Serial No. 205,716.

To all whom it may concern:

Be it known that I, MORRIS F. ROBERTS, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Saw-Filing Devices, of which the following is a specification.

My invention relates to saw-filing devices.

It consists of means for guiding the file at any desired angle with the blade of the saw and providing adjustments for the depth of cut, the level or angle at which the file is held for different bevel of teeth, for the size of the file, and for the number of teeth to the inch.

It further consists of novel features of construction, all as will be hereinafter fully set forth.

Figure 1 represents in top plan view a saw-filing device embodying my invention. Fig. 2 represents a vertical section through the line *x x*, Fig. 1. Fig. 3 represents a similar section showing the file-carrying device reversed in position. Fig. 4 represents a fragmentary rear elevation. Fig. 5 represents a partial elevation of the carrier, showing it in a position of rest. Figs. 6 and 7 represent vertical sections through the lines *y y*, Fig. 1, and *z z*, Fig. 5, respectively. Fig. 8 represents a vertical section of a portion on line *a a*, Fig. 4.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, 1 and 2 designate clamping-jaws of inverted-L shape, the upper portions of which are provided with longitudinal extensions 3 and 4 at each end, for a purpose which will hereinafter appear. The front jaw 1 consists of a vertical saw-engaging portion 5 and a head 6. The rear jaw consists of a vertical saw-engaging portion 7 and a head portion 8, longitudinal grooves 9 and 10 being cut in the top and rear portions of the head, respectively. Blocks 11, secured under the head 8 and against the jaw portion 7, serve to strengthen and stiffen the device. Adjacent the rear blocks 11 are pivoted dogs 12, having wedged-shaped teeth 13.

Pivoted at 14 to the saw-engaging portions 5 and 7 of the jaws 1 and 2 are legs 15, shown as formed of front and rear strips 16 and 17, respectively, united by a block 18 at their lower ends. A thumb-screw 19 connects the strips 16 and 17 and serves to clamp them together.

Mounted and moving longitudinally on the

head 8 of the jaw 2 is a slide 20, consisting of an arch-shaped portion 21 and a slide portion 22, the latter being provided with downwardly-projecting flanges 23 and 24, from the latter of which extends an inwardly-projecting portion 25. As clearly shown in Fig. 4, the flanges 23 and 25 engage in the grooves 9 and 10, respectively. Mounted on the arch-shaped portion 21 by means of a set-screw 26 is a graduated plate 27, having an upwardly-extending portion 28, to which is pivotally secured by a bolt 29 a guide 30, having laterally-turned arms 31 and 32, through which is adapted to pass the bar 33 of a file-frame.

Pivoted on a screw 34 in a slot 34^x in the front wall of the arch-shaped portion 21 of the slide 20 is a bent lug or plate 35, having a longitudinally-projecting arm 36, on which is pivoted at 37 a plate 38, having similar projecting teeth 39 and 40. At the end of the plate 38 is a pivoted stud 41, in which is a set-screw 42, the point of which bears in the lug 43 on the arm 36, the stud 41 being provided with opposite recesses 44 and 45, said recesses being countersunk and either of which is adapted to receive the point of the screw 42 to permit the same to oscillate therein in either of the positions in which said screw may be placed.

Pivoted on the guide 30 is a bracket 46, having a recess 47, the function of which will appear from Fig. 5, from which it will be seen that said bracket is adapted to support the file-carrier when the latter is in its non-operative position.

Secured at each end of the rod 33 are brackets 48 and 49, the ends of which are split at 50, the split portions being held together by set-screws 51. The ends of the split portions 50 are formed into semicircular portions 52, adapted to clamp rotatable file-engaging sockets 53 and 54, respectively. The socket 53 is secured to a handle 55 and is formed with a split threaded portion on which is secured a tightening-nut 56, adapted to engage the tang 57 of a file 58. The point 59 of the file is engaged in the socket 54, the socket being provided with a flange 60, having notches or other graduated characters 61, adapted to register with an index 62 on the clamp 52. The split ends 50 of the brackets 48 and 49 also engage a rod 63, which forms part of the file-carrying frame.

The operation is as follows: The saw-blade

64 is engaged between the jaws 1 and 2, its handle being located between the extending portions 3 and 4, as shown in Fig. 1 of the drawings. When the clamping device is held 5 in the vise of a bench or the like, the jaws of the device may be engaged with the blocks 11, or it is obvious that the device may be secured to the edge of a board or stick of timber 65 by means of the dogs 12, the teeth 63 10 of which may be forced thereinto. In this case the legs 15 (it being understood that there is a leg 15 at each end of the engaging-jaw portions) may be lowered to rest against the face of the board or stick 65 and assist in 15 maintaining the device in position. It is obvious that the slide 20 may be moved longitudinally of the clamping device, so as to bring the file 58 into proper position for acting successively on the teeth 66 of the saw. By 20 loosening the screw 26, which permits the rotation of the plate 27, the latter may be set to bring any of its graduations 67 in line with an index 68 on the plate 21. As will be clearly seen from Fig. 1, the effect of this 25 will be to set the file at any desired angle with the blade of the saw, by which the rake or pitch of the teeth may be regulated. In the same way by loosening and resetting the screw 29, which holds the guide 30, the angle 30 of elevation of the file may be adjusted as desired. These adjustments having been made, the alternate teeth of the saw may be filed, the parts being as shown in Figs. 1 and 2 of the drawings.

35 Figs. 2 and 4 clearly show a pin 69, located on the rear side of the arm 35 and triangular in shape, so as to set down into the throat of each tooth. By longitudinally adjusting the arm 35 by means of the bolt 34 and slot 34^x 40 the pin 69 may be moved so as to fit down into the throat of a tooth when the file is engaged with an adjacent tooth, so that saws having differently-spaced teeth may be filed. It is evident that by moving the pin to each alter- 45 nate tooth successively the file will be engaged with each alternate tooth, so that one-half the saw may be sharpened while the parts are in the position shown in Figs. 1 and 2 of the drawings. Fig. 2 clearly shows the rod 50 63 of the file-carrying frame as engaging with the upper side of the plate 38. This plate 38 may be adjusted in height by means of the screw 42, so that the depth of the cut of the file may be regulated. This insures an even 55 cutting of all the teeth and saves "jointing" the saw. When each alternate tooth of the saw has been filed, the slide 20 is moved off the end of the guide-slots 9 and 10, the bar 35 is turned in the reverse direction, as shown 60 in Fig. 3 of the drawings, and the slide replaced. The file-carrier is then turned over, as is also shown in Fig. 3, the plate 27 being adjusted to the position corresponding to that which it formerly occupied, but on the oppo-

site side of the marker 68. It is obvious that 65 the rake and bevel of the file with relation to the saw will be as before and that the file will be adapted to cut the alternate teeth when its position in the clamps 52 is adjusted by the graduations 61 and index 62. As the plate 70 38 is symmetrical, the rod 63 will engage with it as before, so that all the teeth of the saw will be cut the same depth.

It will be noted that the vertical relation of the pin 69 and either of the teeth 39 or 40 75 is constant, so that when the pin is resting in the throat of a saw-tooth and the teeth 39 or 40 resting upon the top of the clamping-jaw the saw must be a definite height above the jaws, so that when it is reversed for filing 80 alternate teeth it may be easily adjusted to the same height as before. It will be also noticed that the arm 36 rests on the head of the jaw 1, thus regulating the depth of the cut of the file. The pin 69 rests on the bases 85 of the throats of adjacent teeth. The file-frame rests on the plate or dog 38, and so presses on the plate or said base and causes the arm 36 to be most firmly held during the filing operation. The dog sets at an incline, 90 whereby the side of the file, which is also inclined, presses firmly against the said tooth. When the screw 34 is loosened, the lug or plate 35 may be overturned and placed in re- 95 versed position. The dog 38 is also overturned, and as the screw 42 occupies the pivotal stud 41 said screw is also reversed and its point inserted in the countersunk recess that was formerly below but is now above, whereby filing may be accomplished accu- 100 rately in the opposite direction of the saw.

It will be evident that various changes may be made by those skilled in the art which may come within the scope of my invention, and I do not, therefore, desire to be limited in 105 every instance to the exact construction herein shown and described.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is— 110

1. A saw-filing device comprising saw-clamping jaws, a slide movable longitudinally on one of said jaws and having an arched portion extending over and disconnected from the other jaw, a reversibly-mounted file-carrier 115 pivotally mounted on said arched portion to rotate thereon in a horizontal plane, a rod carried by the file-carrying frame, and a gage reversibly mounted for coöperation with said rod. 120

2. A saw-filing device comprising saw-clamping jaws, a slide movable longitudinally on one of said jaws and having an arched portion extending over and disconnected from the other jaw, a reversibly-mounted file-carrier 125 pivotally mounted on said arched portion to have partial rotation therein in a vertical plane, a rod carried by the file-carrying frame, and

a gage reversibly mounted for coöperation with said rod.

3. A saw-filing device comprising saw-clamping jaws, a slide movable longitudinally on one of said jaws and having an arched portion extending over and disconnected from the other jaw, a reversibly-mounted file-carrier pivotally mounted on said arched portion to rotate thereon in a horizontal plane and to have partial rotation thereon in a vertical plane, a rod carried by the file-carrying frame, and a gage reversibly mounted for coöperation with said rod.

4. A saw-filing device comprising saw-clamping jaws, a slide movable longitudinally on one of said jaws with one edge terminating in an arched portion extended over and disconnected from the other jaw, a plate pivotally mounted on said slide on the said arched portion and having upwardly-extending portion, a guide pivotally mounted on said upwardly-extending portion for rotation, a reversibly-mounted file-carrier adapted to reciprocate in said guide, a rod carried by the file-carrying frame, and a gage reversibly mounted for coöperation with said rod.

5. A saw-filing device comprising saw-clamping jaws, a slide movable longitudinally on one of said jaws and having an arched portion extending over and disconnected from the other jaw, a file-carrier pivotally mounted on said arched portion to rotate in a horizontal plane, an arm longitudinally adjustable on said slide, a pin on said arm to engage a saw-tooth, a pivotally-mounted vertically-adjustable plate on said arm in front of said arched portion, a toothed plate on said plate, and a pivoted stud at the end of the pivoted plate, adjusting means for said plate mounted in said stud, and a rod on the file-carrying frame for coöperation with said toothed plate.

6. A saw-filing device comprising saw-clamping jaws, a slide movable longitudinally on one of said jaws and formed with arched portion extending over and disconnected from the other jaw, a file-carrier pivotally mounted on said arched portion, an arm longitudinally adjustable on said slide, a pin on said arm to engage a saw-tooth, a vertically-adjustable plate on said arm in front of the said arched portion, a toothed plate on said plate, a pivoted stud at the end of the pivoted plate, and a screw carried thereby to engage means on said arm, and a rod on the file-carrying frame for coöperation with said toothed plate.

7. A saw-filing device comprising saw-clamping jaws, a slide movable longitudinally on one of said jaws and having an arched portion extending over and disconnected from the other jaw, a file-carrier pivotally mounted on said arched portion for rotation in a horizontal plane and for partial rotation in a vertical plane, a plate longitudinally adjustable on said slide, a pin on said arm to en-

gage a saw-tooth, a pivoted toothed plate for coöperation with said pin, a rod on the file-carrying frame for coöperation with said toothed plate a pivoted stud at the end of said plate, and a screw carried thereby to engage means on said arm, and a lug on said arm having oppositely-disposed recesses.

8. A saw-filing device comprising saw-clamping jaws, a slide movable longitudinally on one of said jaws and having an arched portion extending over and disconnected from the other jaw, a file-carrier pivotally mounted on said arched portion, an arm longitudinally adjustable on said slide, a pin on said arm to engage a saw-tooth, a pivotally-mounted vertically-adjustable plate on said arm in front of the arched portion, and provided with oppositely-disposed teeth, a pivoted stud at the end of said plate and a screw carried thereby to engage means on said arm, and a rod carried by the file-carrying frame for coöperation with said toothed plate.

9. A file-carrying device comprising saw-clamping jaws having lateral heads and rear blocks, file-carrying means adjustably mounted on said jaws and dogs pivotally mounted on said jaws adjacent said rear blocks beneath said heads so as to fold thereunder when not in use and to extend rearwardly therefrom, said dogs having teeth adapted to engage with a timber or the like.

10. A saw-filing device comprising saw-clamping jaws, a reversibly-mounted file-carrier, a guide longitudinally adjustable on said jaws in which said file-carrier reciprocates, a longitudinally-projecting arm on said guide, a pin on said arm, and a plate pivotally mounted on said arm and having similar projecting teeth at each side thereof, said guide being mounted for longitudinal adjustment and the guide and arm mounted for inversion, whereby said teeth are alternately adapted to rest upon one of said jaws when said pin is in engagement with the throat of a saw-tooth.

11. In a saw-filing device, saw-filing and saw-clamping means, a reversible plate, a reversible toothed plate thereon, reversible file-carrier a reversible screw, a pivoted stud on said toothed plate carrying said screw, and a lug on the first-mentioned plate, said first-mentioned plate being mounted for adjustment in the direction of its length.

12. In a saw-filing device, saw-filing and saw-clamping means, a reversibly-mounted plate, a reversible toothed plate thereon, a reversible file-carrier a reversible screw, a pivoted stud on said toothed plate carrying said screw, and a lug on the first-mentioned plate having recesses upon opposite sides to serve with said screw, and reversible with said plate, said first-mentioned plate being mounted for adjustment in the direction of its length.

13. In a saw-filing device, saw-filing and saw-clamping means, a reversibly-mounted

plate, a reversible toothed plate thereon, a reversible file-carrier a reversible screw, a pivoted stud on said toothed plate having means for carrying the screw, means for securing
5 the first-mentioned plate in either of its positions, and a lug on the first-mentioned plate having countersunk recesses, said first-men-

tioned plate being mounted for adjustment in the direction of its length.

MORRIS F. ROBERTS.

Witnesses:

JOHN A. WIEDERSHEIM,
GEO. S. COOPER.