(No Model.) 2 Sheets—Sheet 1.

F. MYERS.

MACHINE FOR FILING SAWS.

No. 255,007. Patented Mar. 14, 1882.

Fig. 1.

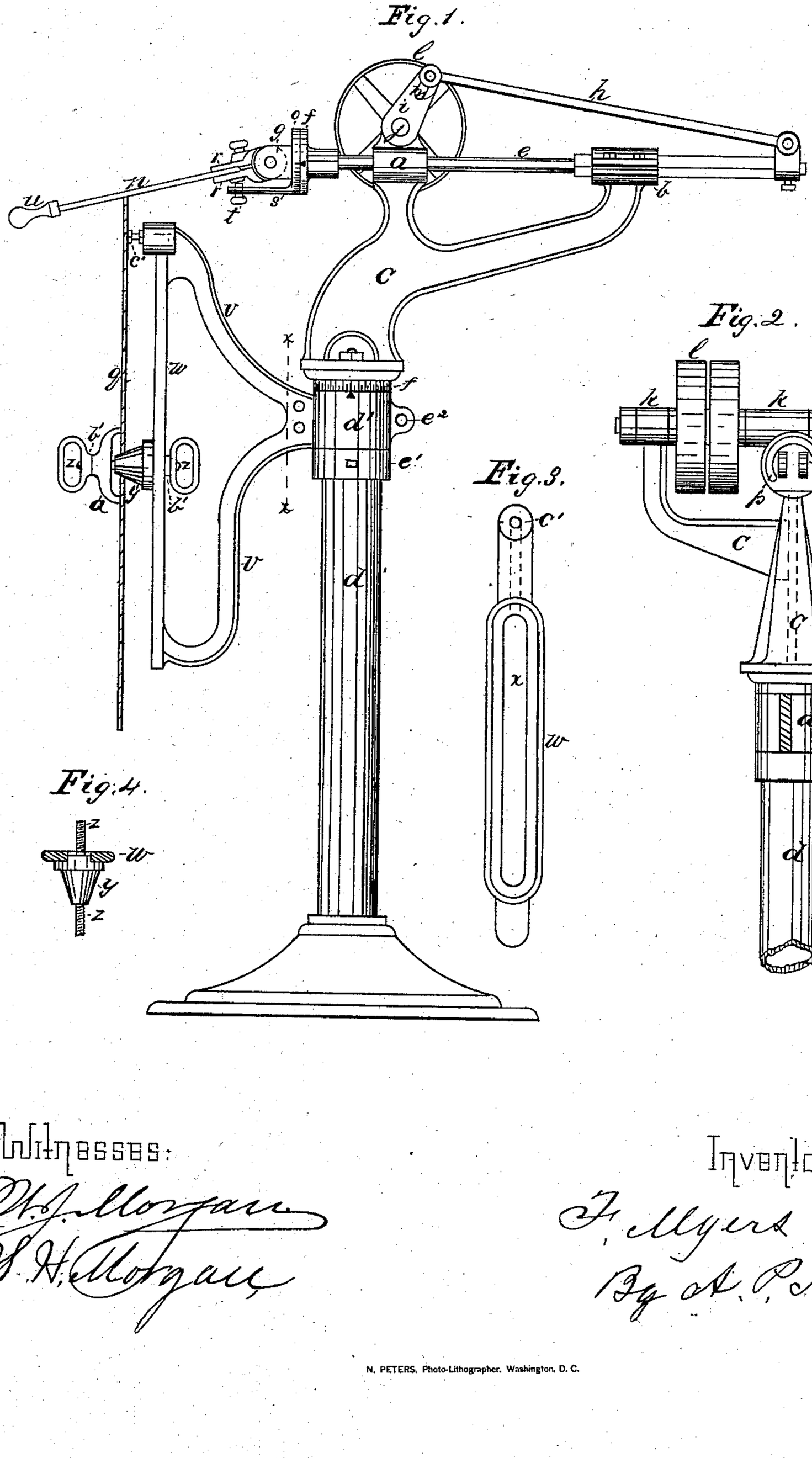

Fig. 2.

Fig. 3.

Fig. 4.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 5.

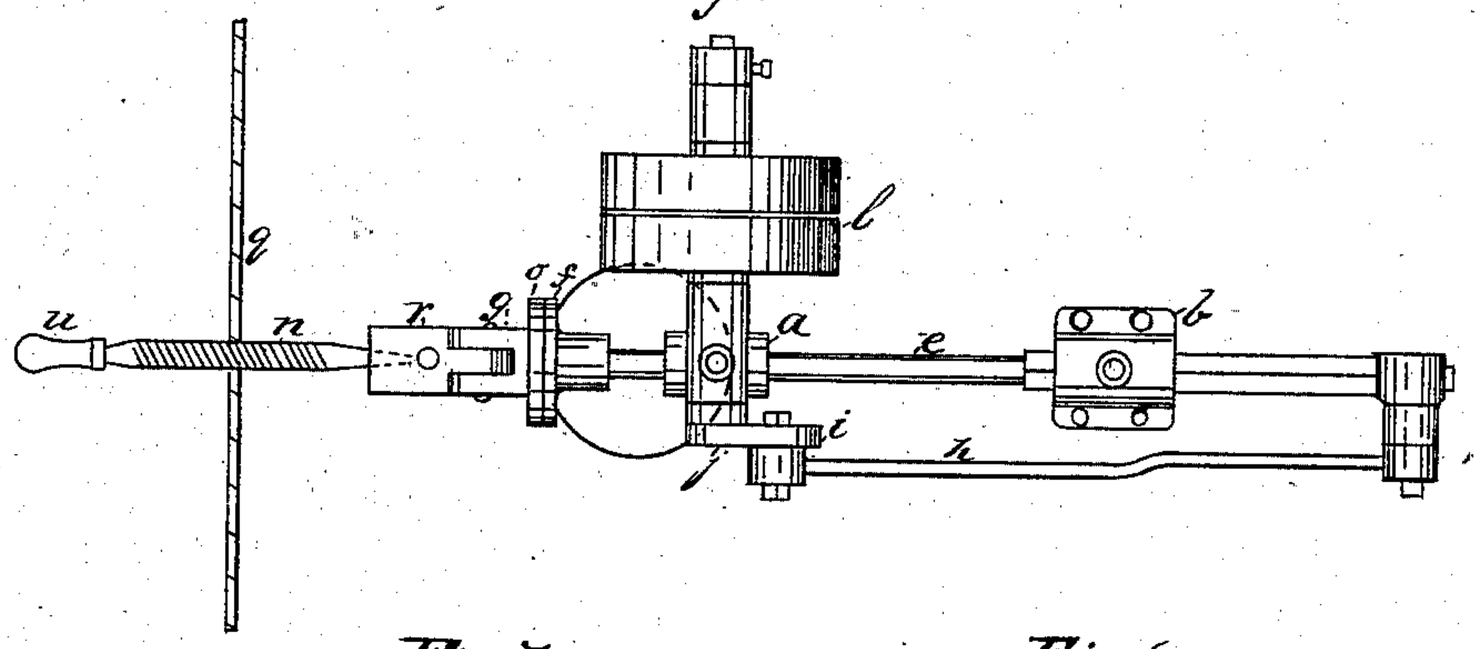


Fig. 7.

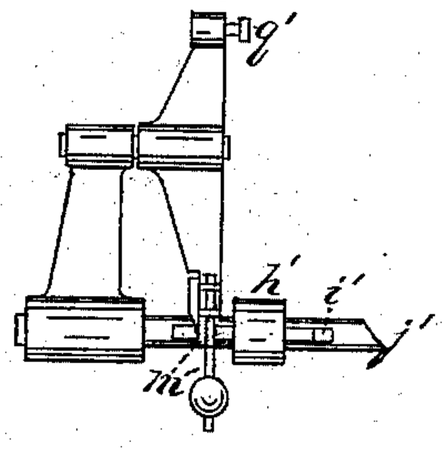


Fig. 6.

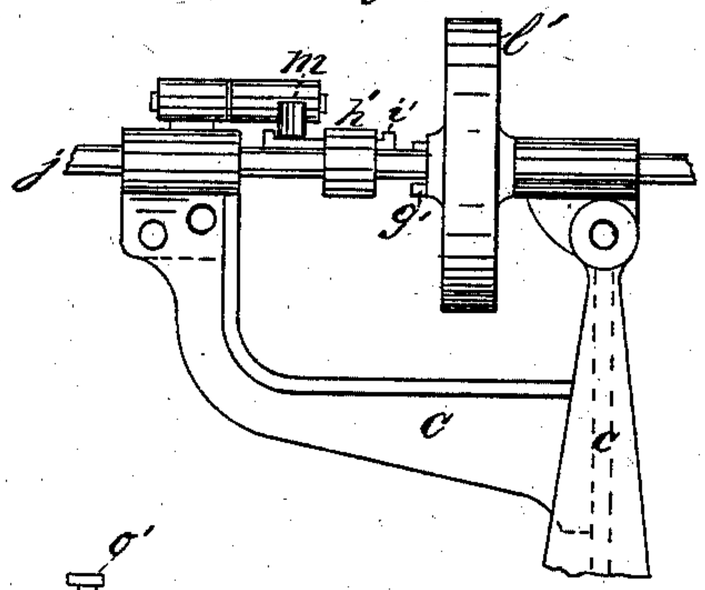
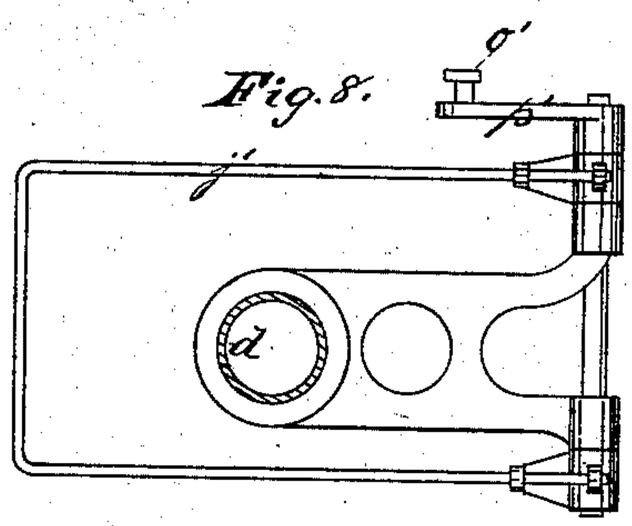


Fig. 8.



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UNITED STATES PATENT OFFICE.

FREDERICK MYERS, OF NEW YORK, N. Y.

MACHINE FOR FILING SAWS.

SPECIFICATION forming part of Letters Patent No. 255,007, dated March 14, 1882.

Application filed August 9, 1881. (No model.) Patented in England June 30, 1881.

To all whom it may concern:

Be it known that I, FREDERICK MYERS, of the city of New York, in the county and State of New York, have invented new and useful Improvements in Machinery or Apparatus for Sharpening or Filing the Teeth of Saws, of which the following is a specification.

My invention relates to machinery or apparatus for sharpening or filing the teeth of circular or other saws; and it consists in various novel features in the construction and arrangement of the same, as hereinafter described, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved machine. Fig. 2 is a partial front elevation sectioned on the line *x x* of Fig. 1. Fig. 3 is a front elevation of the saw-holding bracket. Fig. 4 is a detail of the saw-holding center stud. Fig. 5 is a plan view; and Fig. 6 is a front elevation, and Figs. 7 and 8 plans, of starting and stopping apparatus such as I prefer to use.

In carrying the said invention into practice I mount in suitable front and rear bearings, *a b*, attached to bracket *c*, on an upright standard or support, *d*, a longitudinally-reciprocating shaft, *e*, whose forward end is provided with a disk or plate, *f*, to which a file carrier or holder, *g*, is secured. The front end of the said shaft, which slides through the front bearing, *a*, is round, and the rear end of said shaft is square and slides through a correspondingly-shaped hole in the rear bearing, *b*, thereby preventing the rotation of the said shaft upon its axis. To the rear end of the said shaft I attach one end of a connecting-rod, *h*, whose other end is fixed to a crank-arm, *i*, upon a horizontal driving-shaft, *j*, also supported in bearings *k* upon the standard of the apparatus and provided with a driving-pulley, *l*, which receives motion from any suitable source or motive power. This crank is provided with a slot, *m*, to permit the front end of the connecting-rod to be moved nearer to or farther from the center of the driving-shaft, so as to decrease or increase the longitudinal throw of the aforesaid reciprocating shaft and the carrier and file *n*. To permit the said file-carrier to be turned upon its axis to give the file any desired cant or inclination laterally, I provide in a disk, *o*, formed on the said carrier and abutting against the disk *f* on the longitudinally-reciprocating shaft, a semicircular slot, *p*, through which a screw entering the last-mentioned hole passes. By loosening this screw the file-carrier can be readily turned, the said file and file carrier or holder being held in the desired position when the aforesaid screw is again tightened.

To limit the extent of downward movement of the file toward the saw *q* to be filed or sharpened, and consequently insure uniformity in the depth of the teeth, I pivot the jaws *r*, between which the said file is clamped, to lugs of the file carrier or holder and pass through a forwardly-projecting piece, *s*, on the said disk a set-screw, *t*, upon which the said jaws rest or touch. By the adjustment of this screw the extent to which the file can descend toward the saw may be readily determined. The file is provided at its forward end with a handle, *u*, to permit it to be readily raised from or forced down upon the saw to be sharpened or filed.

To support the saw to be sharpened in the proper position to be acted upon by the file, I arrange upon the standard *d* of the apparatus a bracket or support, *v*, which carries a face-plate, *w*, having a vertical slot, *x*, therein. Through this slot passes the shank of a center piece, *y*, upon which the saw is placed, the said piece being made conical, so that saws having central openings of various diameters may be readily placed thereon. Through this conical piece passes a screw, *z*, which carries at its forward end a clamp, *a'*, adapted to press the saw firmly upon the said center piece when suitable nuts, *b'*, are screwed up in contact with the said clamp and against the rear surface of the face-plate. By adjusting the conical piece and the parts carried thereby up or down within the aforesaid slot in the face-plate saws of various diameters may be brought into proper position to be operated upon by the reciprocating file.

To prevent breaking or twisting of the upper part of the saw when submitted to the action of the file I arrange on the rear side of the said saw an adjustable set-screw, *c'*, for a steady-rest, which, when the saw is clamped in position, is set up against the rear surface

of the saw near its periphery. To permit the saw to be adjusted laterally in a direction at right angles to the vertical axis of the standard of the apparatus I sometimes pivot the aforesaid face-plate *w* to the bracket *v* at its upper and lower extremities, so that by turning the said face-plate upon its pivots the saw may be adjusted in relation to the file, so that the front or cutting surface of the teeth of the saw when sharpened will have the desired angle. I also in some cases, and as here represented, arrange the aforesaid bracket or support with a band or split collar, *d'*, so that it may be swung around the standard of the machine for this purpose above the fixed collar *e'* and be secured by a screw, e^2. I also provide a graduated scale, *f'*, by which to gage the adjustments.

When my machine is employed for sh..rpening saws that are not circular the devices for holding the saw will be somewhat modified; but as the necessary modifications for this purpose will be obvious they need not be here described.

To effect the stopping and starting of the machine I in some cases arrange upon the driving-shaft of the same a loose pulley, Figs. 1, 2, and 5. I prefer, however, the following arrangement—that is to say, I arrange upon the said driving-shaft *j* a loose pulley, *l'*, only, whose hub is provided with lateral pins or projections *g'*. Adjacent to the said pulley I fix upon the driving-shaft a fast collar or ring, *h'*, which has a groove in it corresponding to a groove in the driving-shaft. Within these grooves I arrange a sliding gib or clutch, *i'*, which is forced into engagement with the pins on the loose pulley by a suitable spring, (not shown,) and consequently connects the said pulley with the shaft to set the apparatus in motion when a treadle, *j'*, is depressed and the weighted lever *m'* is raised to release said gib. When it is desired, however, to stop the apparatus this may be readily effected by releasing the said treadle to allow the weighted lever to fall and withdraw the gib. When this treadle is released the beveled or tapered end of the lever *m'* drops by the weight on it, so that a projection on the aforesaid gib is caused by the rotation of the shaft to pass against the beveled end of the lever, which draws the gib back, thereby disengaging the aforesaid pulley, so that it runs loose upon the driving-shaft, and the machine stops until the treadle is again depressed to lift the beveled end of the said lever and permit the spring to again act upon the gib. The treadle and the said lever will be connected for this purpose by a rod attached at one end to the pin *o'* of the treadle-arm *p'* and at the other end to the pin *q'* of the short arm of said lever.

What I claim is—

1. In a saw-filing machine, the file-clamping jaws *r*, pivoted to the lugs or head *g* of the adjustable disk *o*, pivoted to the head *f* of the reciprocating shaft *e*, and provided with the arm *s*, and adjusting-screw *t*, said devices being mounted on a standard and combined with a saw-holding device, also mounted on said standard, substantially as described.

2. The face-plate *w*, with steady-rest *c'* and center stud, *y*, combined with bracket *v* and standard *d*, said bracket being laterally adjustable on said standard, and said standard having a reciprocating file-carrier mounted upon it, substantially as described.

3. The combination of the adjustable conical center stud, *y*, clamp *a'*, screw *z*, and nuts *b'* with the slotted face-plate *w* and steady-rest *c'*, substantially as described.

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