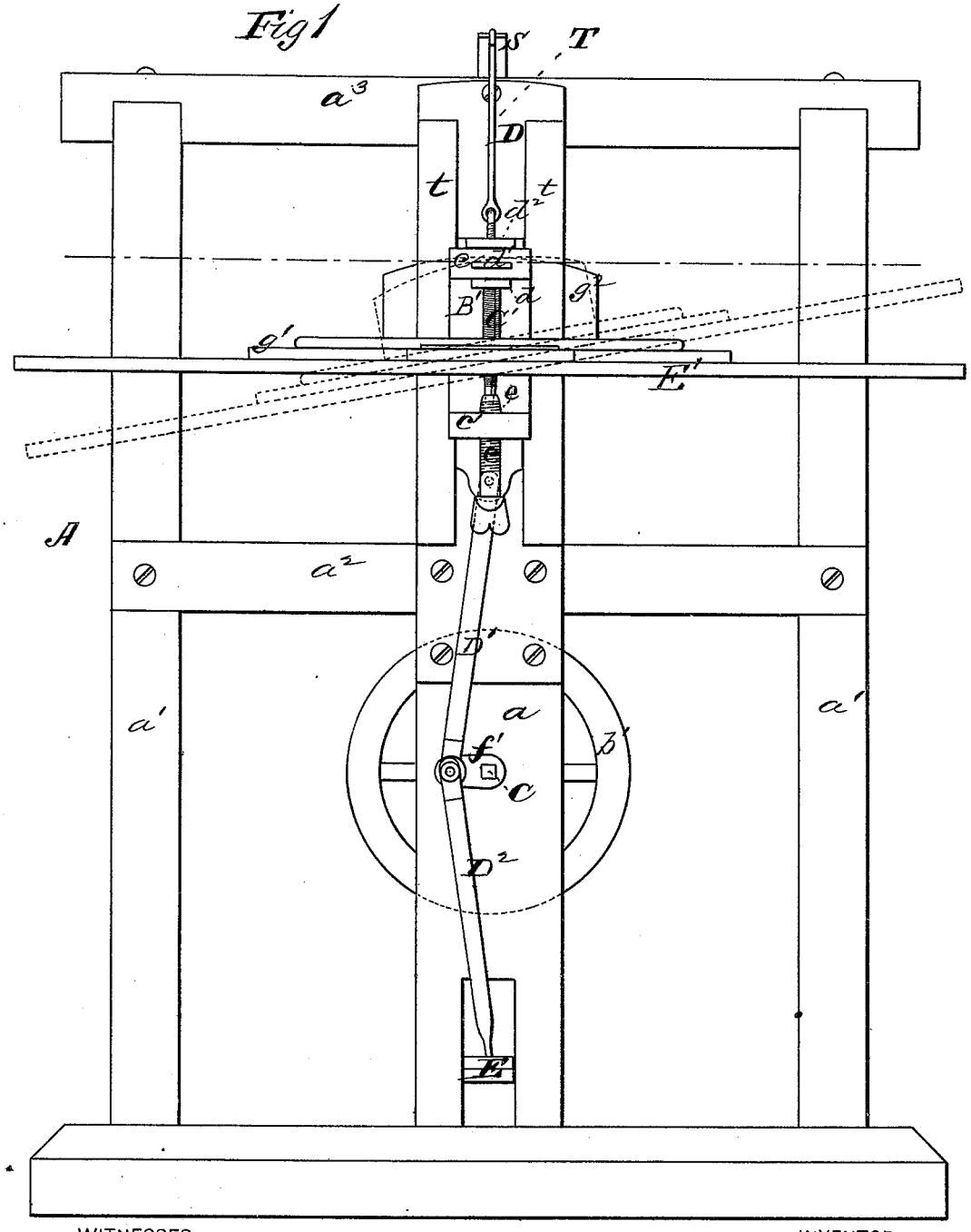
3 Sheets—Sheet 1.

J. MURPHIN.

SAW-SHARPENING MACHINES.

No. 195,633. Patented Sept. 25, 1877.

Fig 1



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3 Sheets—Sheet 2.

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Fig 2

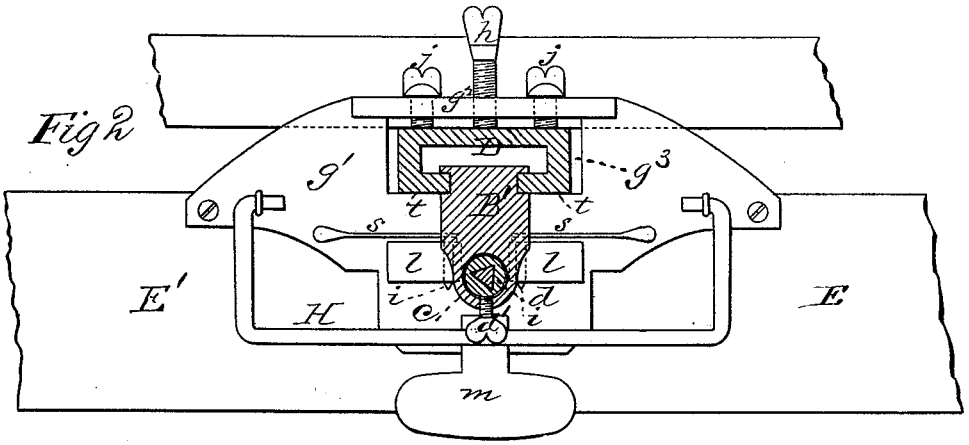

Fig 3

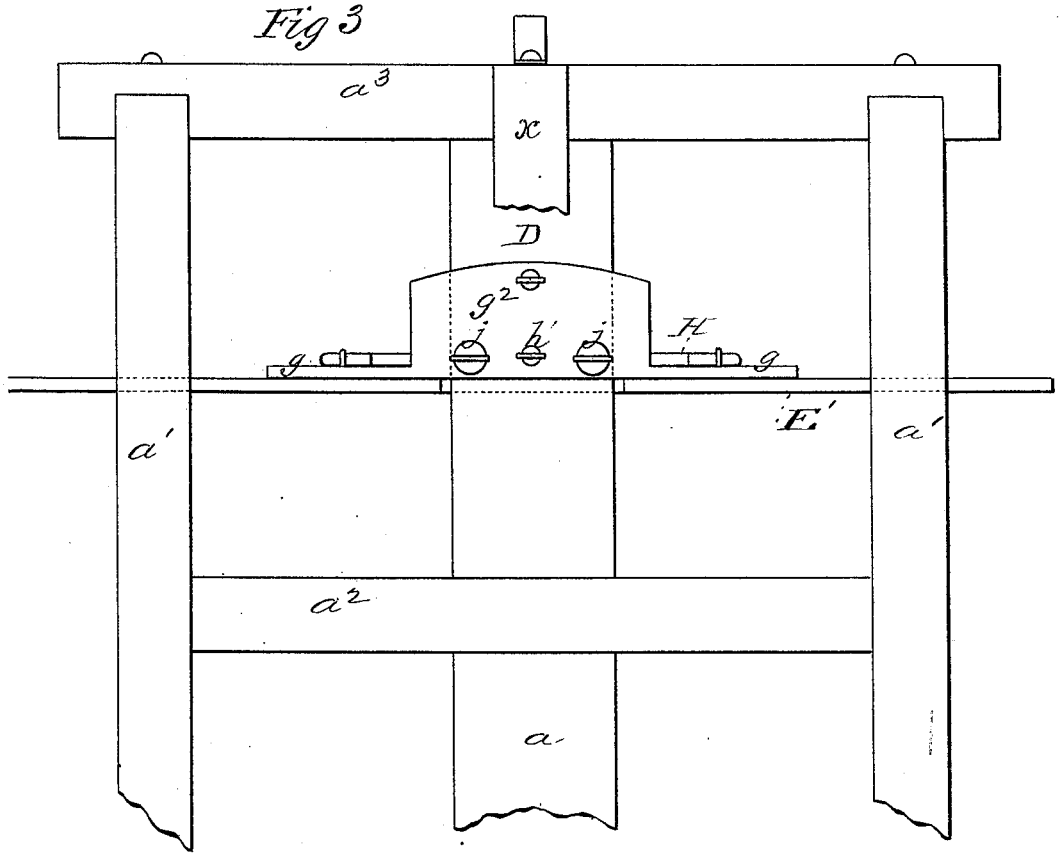

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Fig 4

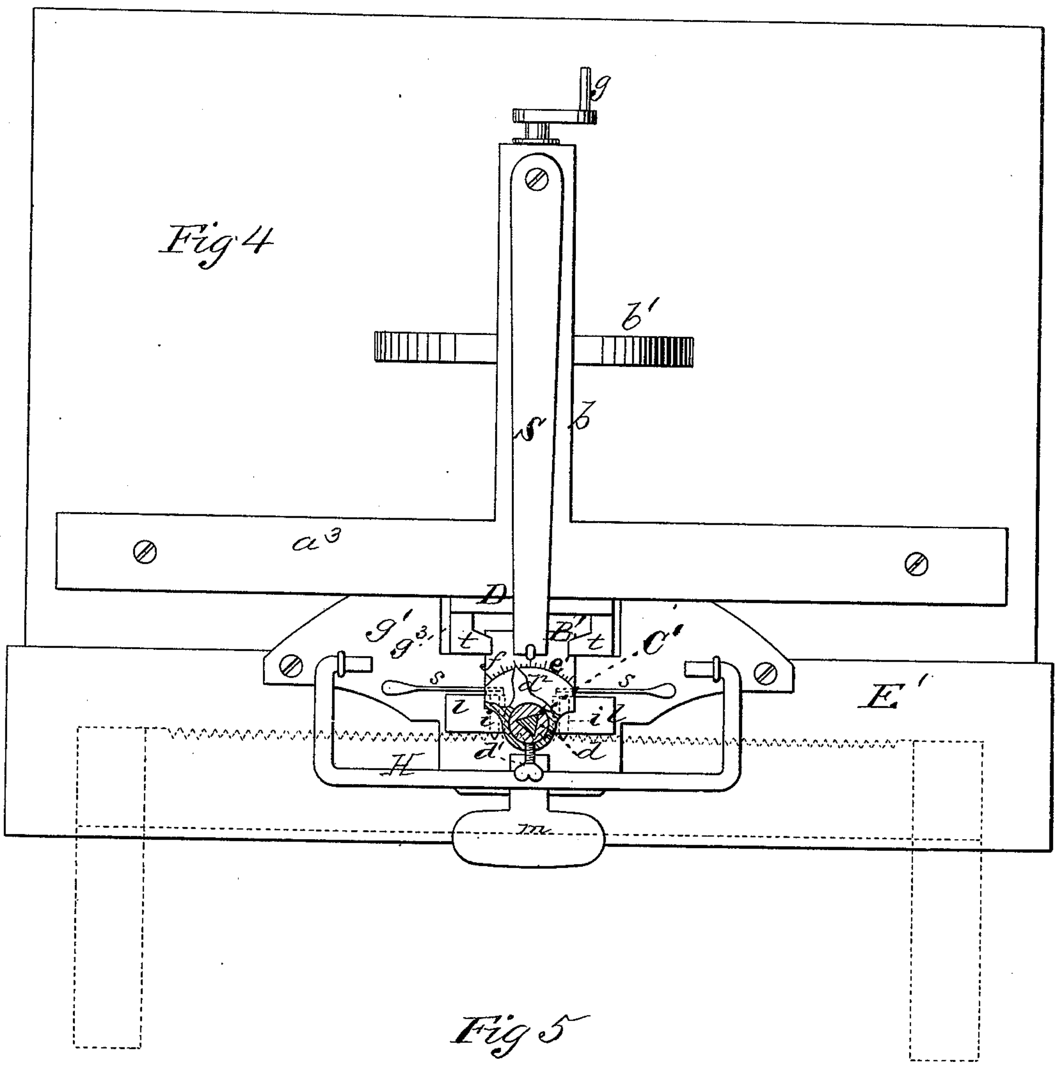
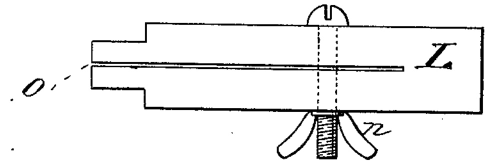


Fig 5



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UNITED STATES PATENT OFFICE.

JOSEPH MURPHIN, OF MALAGA, NEW JERSEY, ASSIGNOR OF ONE-HALF HIS RIGHT TO ALFRED B. RICHMAN, OF SAME PLACE.

IMPROVEMENT IN SAW-SHARPENING MACHINES.

Specification forming part of Letters Patent No. **195,633**, dated September 25, 1877; application filed July 28, 1877.

To all whom it may concern:

Be it known that I, JOSEPH MURPHIN, of Malaga, in the county of Gloucester and State of New Jersey, have invented a new and valuable Improvement in Saw-Sharpening Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a front view of my improved saw-sharpening machine. Fig. 2 is a detail horizontal section thereof. Fig. 3 is a rear view thereof. Fig. 4 is a top view thereof, and Fig. 5 is a detail view.

This invention has relation to improvements in saw-sharpening machines; and it consists in the construction and novel arrangement of various minor devices, whereby very desirable results are obtained, as will be hereinafter more fully set forth and claimed.

In the annexed drawings, the letter A designates an upright frame, having a central standard, *a*, braced to the lateral ones a^1 by means of cross-pieces a^2 a^3, the one above the other. In rear of the central standard, and connected therewith by a top brace, *b*, is an upright, *x*, affording a bearing to one end of a shaft, C, carrying a fly-wheel, *b'*.

D indicates a metallic plate, rigidly secured to the standard *a*, and provided with L-shaped flanges *t*, arranged parallel to each other upon its vertical edges. These flanges afford guides to a vertically-reciprocating sash, B', having, respectively, at its upper and lower ends, a circular offset, *c*, affording bearings for a rotating head, *d*, regulated by means of a set-screw, d^1, that supports the upper end of the file C', and a screw-threaded offset, *c'*, through which an adjustable chuck-screw, *e*, extends and engages the lower end of the said file. The screw *e* is recessed at its upper end, and the file aforesaid rests in the said recess. The rotating head *d* is tubular, and of the form of the file placed therein. It has upon its upper end a horizontal index or hand, d^2, that vibrates, when the head is turned in adjusting the file, over a graduated arc, *f*, upon the upper side of the offset *c*.

By loosening the set-screw d^1, the head *d* may be turned, carrying the file with it, so as to cause its inclined face to conform to the face of the teeth of the saw to be operated on, uniformity in this respect being secured by means of the graduated arc *f* and the index *e'* aforesaid.

A vertically-reciprocating motion is imparted to the sash by means of a pitman, D^1, pivoted in the usual manner to its lower end, and connected to a crank, *f'*, upon the end of the shaft C, that has its bearings in the uprights *a* and *x*, and is rotated through the medium of a crank-arm, *f'*, or other equivalent device. Crank *f'* is connected, by means of a pitman, D^2, to a treadle, E, designed to be operated by the foot of the workman manipulating the saw, should this mode of actuating the file-carrying sash be preferred.

E' designates a feed-table, having upon one edge, at the middle of its length, a strong metallic plate, g^1, having upon its free edge a vertical flange, g^2, and between said flange and the edge of the table a slot, g^3, through which the sash-plate D passes. The flange g^2 lies snugly up against the plate D, and is pivoted thereto, so as to allow the table free vertical vibration, by means of an adjusting-screw, *h*, that extends through the said flange, and bears against the back of the said plate D.

The file reciprocates through a transverse slot in the feed-table; and the saw being pressed against the file, and the treadle or crank-arm aforesaid being actuated, its teeth may be rapidly sharpened in succession.

The feed-table may be adjusted at any desired angle relative to the file by means of set-screws *j* extending through the flange g^2 and bearing against the back of plate D.

When the saw is applied to the file, it is thrust against metallic stops *l* on plate g^1 at each side of slot *h'*, and engages the pointed catches *i* seated therein, the saw being thus prevented from endwise displacement during the sharpening operation. The catches *i* extend completely through stops *l*, and have free endwise motion relative thereto, being caused

to project, as shown in Fig. 1, by means of springs *s*, against which their heels abut. When pressed against, they readily yield and permit a saw having short teeth to be brought within reach of the file.

When the saw is adjusted on the table, it passes under a U-shaped metallic holder, H, having a handle-plate, *m*, at the middle of its length. This holder is hinged in any suitable manner to the table at each end, and, when the saw is in position, it is rigidly held against upward displacement by pressing down upon the plate *m*. At the termination of each downward stroke of the file a spring, S, connected with the upper end of the sash by a connecting-rod, T, reacts and accelerates the upward stroke of the same, at the same time preventing the crank from stopping on its dead-centers. This spring is secured to the frame at one end, above the sash, in any suitable manner.

For convenience of handling the saw, I employ holders L, of the following description: They consist of deeply-cleft wooden bars and of a clamp-screw, *n*. The saw is passed into the cleft *o*, and the screw vigorously applied, with the effect of clamping the saw between the branches of the handle. It may then be applied to the sharpener and conveniently handled.

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

1. The combination, with the vertically-reciprocating sash B′, the file C′, and the vertically-vibrating and adjustable table E′, of the holder H, having handle *m*, and the stops *l*, having yielding catches *i*, substantially as specified.

2. The combination, with the vertically-reciprocating sash B′, the file C′, and the adjustable table E′, of the stops *l* and their yielding catches *i*, substantially as set forth.

3. The combination, with the plate D, having guide-flanges *t*, the reciprocating sash B′, arranged between said flanges, the file C′, and feed-table E′, of a treadle, E, a shaft having crank *f*′, the pitmen D^1 D^2, and a returning-spring, S, secured at one end to the sash, and at the other to the frame above said sash, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOSEPH MURPHIN.

Witnesses:
ALLEN H. GANGEWER,
CHAS. F. VAN HORN.