L. O. ORTON.

MACHINE FOR SETTING THE TEETH OF SAWS.

No. 172,931. Patented Feb. 1, 1876.

Fig. 1.

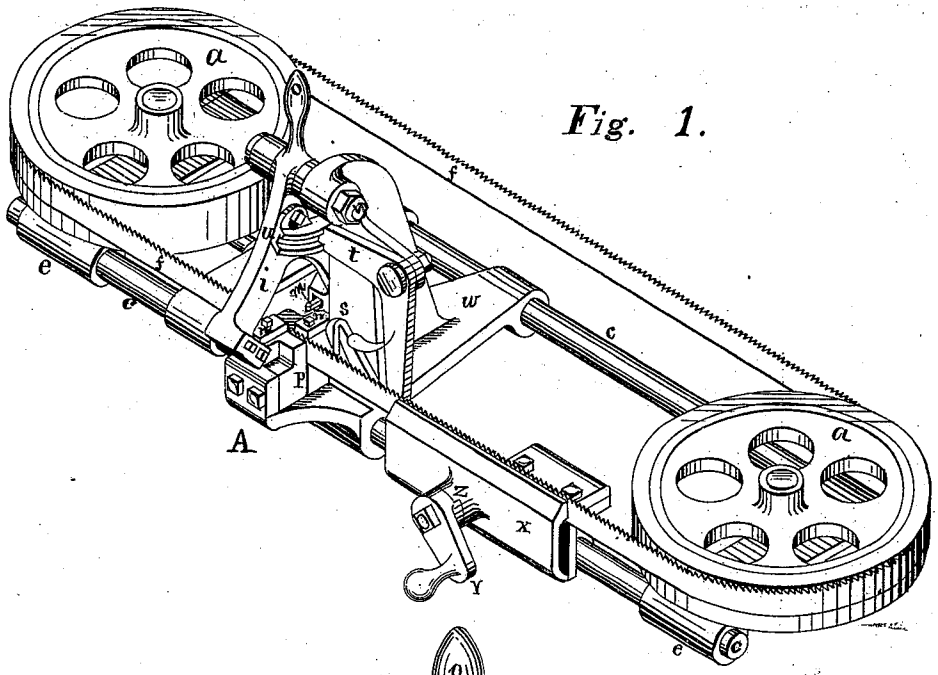
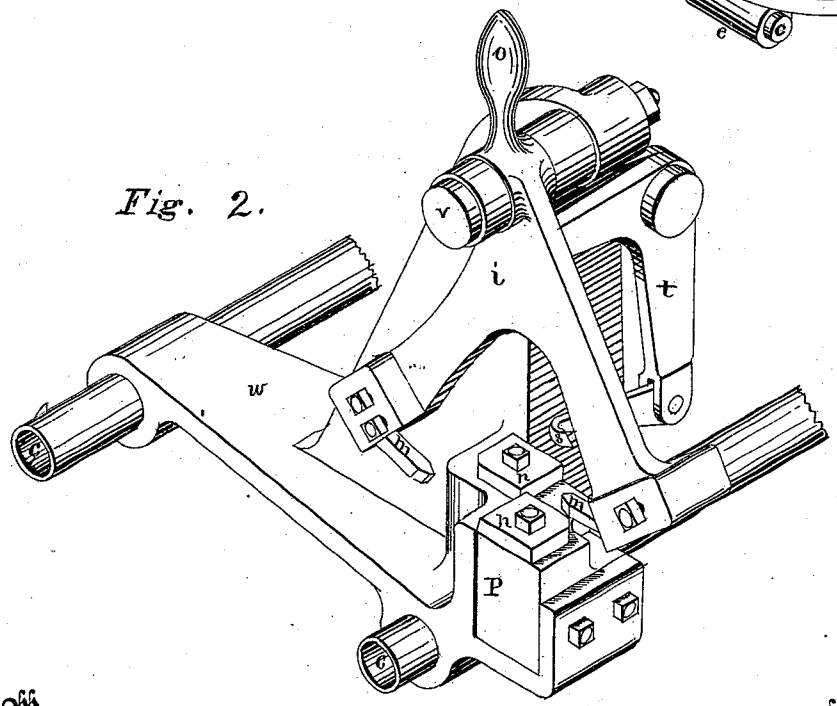


Fig. 2.



Witnesses

L. W. Berry.

Wm. S. Keller.

Inventor

Lyman O. Orton.

UNITED STATES PATENT OFFICE.

LYMAN O. ORTON, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR SETTING THE TEETH OF SAWS.

Specification forming part of Letters Patent No. **172,931**, dated February 1, 1876; application filed June 7, 1875.

To all whom it may concern:

Be it known that I, LYMAN O. ORTON, of the city and county of Philadelphia, and State of Pennsylvania, have invented certain Improved Devices for Setting Saws, of which the following is a specification:

This invention has two objects—to provide means for rapidly setting the teeth of saws, dispensing with the skill which is required in setting saws without the aid of machinery, and to set the teeth of saws by impact or blows, as is done by hand with a common hammer, so that a permanent set will be given to the teeth, and they will remain in position during use, and not change, as when they are only sprung or bent.

Figure 1 of the drawing shows a perspective elevation of a filing-frame, such as is employed for filing and setting band-saws, having my improved devices attached thereto. Fig. 2 is an enlarged detail of the setting device.

Similar letters of reference on the different figures indicate corresponding parts.

The frame, consisting of the two rails or bars *c c*, cross-rails *e e*, and wheels *a a*, is employed to stretch and hold the band-saw blade *f* in position while the setting and filing of the teeth is performed. The setting mechanism (shown at A, Fig. 1, and in the enlarged view, Fig. 2) consists of a pivoted swinging frame, *i*, carrying two dies or hammers, *m m*, so arranged as to strike right and left against the two die-blocks *n n*. On the top of the pivoted frame *i* is a handle, *o*, by means of which an operator can swing the frame *i* from right to left, giving alternate blows of the hammer *m* against the dies *n*. The saw-blade passes through the groove at P, the teeth being opposite to the dies *n*. When the frame *i* is swung from right to left an oscillating movement is given to the bell-crank *t* by means of the curved guide seen at *u*, Fig. 1. To the lower end of the crank *t* is attached a hook or pawl, *s*, which engages with the saw-teeth, and, at each movement of *i* and the crank *t*, draws the saw forward, so that the teeth are automatically brought to a proper position to be struck by the hammers *m m*. The range of movement of the bell-crank *t* and the hook *s* is adapted to the space between the teeth of different saws by adjusting the curved guide *u* so that it will stand more or less eccentric from the pivotal point *v*.

In the case of setting large saws, or where the teeth are far apart, a duplicate curved guide, bell-crank, and pawl are fitted on the opposite side of the swinging frame *i*, so as to feed alternately with the feeding mechanism shown, and thus divide the movement of the blade between two pawls, and also equally dividing the feeding resistance between both right and left oscillation of the swinging frame; but in setting ordinary scroll-blades with the usual pitch of teeth the single feeding mechanism, as shown, is preferred, because of the less cost in the construction of same.

The whole of this setting mechanism is attached to a frame, *w*, which embraces the rails *c c*, and may slide to any part, or be removed from the frame and used independently.

The degree of force given at each blow and the time in which the blows are given are at the direct control of the operator, while the action on the saw-teeth is the same in effect, but more perfect than can be attained by employing a hammer in the ordinary way.

x is a short filing-vise arranged with the improved clamping device, which consists of two volute faces, as shown at *z*—one formed solid with the vise, and the other with the handle *y*. These two surfaces or faces at *z* are like sections of a screw, and by turning the handle *y* right or left the jaws of the vise are instantly closed and released.

For long vises, or in any case when one of the clamping devices is not sufficient, two or more are employed, the handles being connected together by links, so as to move simultaneously.

Having thus described the objects and nature of my invention, and the manner of applying it, I claim as my invention—

1. The combination, in a device for setting saw-teeth, of the stationary dies or anvils and the vertical oscillating hammers, which bend or set the teeth successively by blows delivered in alternately-reversed directions, substantially as set forth.

2. The combination of the frame and pulleys for holding the saw taut, and free to be

moved forward, with a device for setting the teeth of the saw, substantially as described.

3. The combination of the oscillating hammer-frame *i*, hammers *m m*, anvils *n n*, bell-crank lever *t*, pawl *s*, and a cam moving with the hammer-frame, to actuate the lever, substantially as described.

4. The combination of the oscillating hammer-frame *i*, the adjustable cam-piece *u*, bell-crank lever *t*, and the pawl *s*, substantially as described.

LYMAN O. ORTON.

Witnesses:
L. H. BERRY,
WM. S. KELLEY.