J. L. Knowlton,

Reciprocating Saw Mill.

No. 41,707. Patented Feb. 23, 1864.

Fig. 2

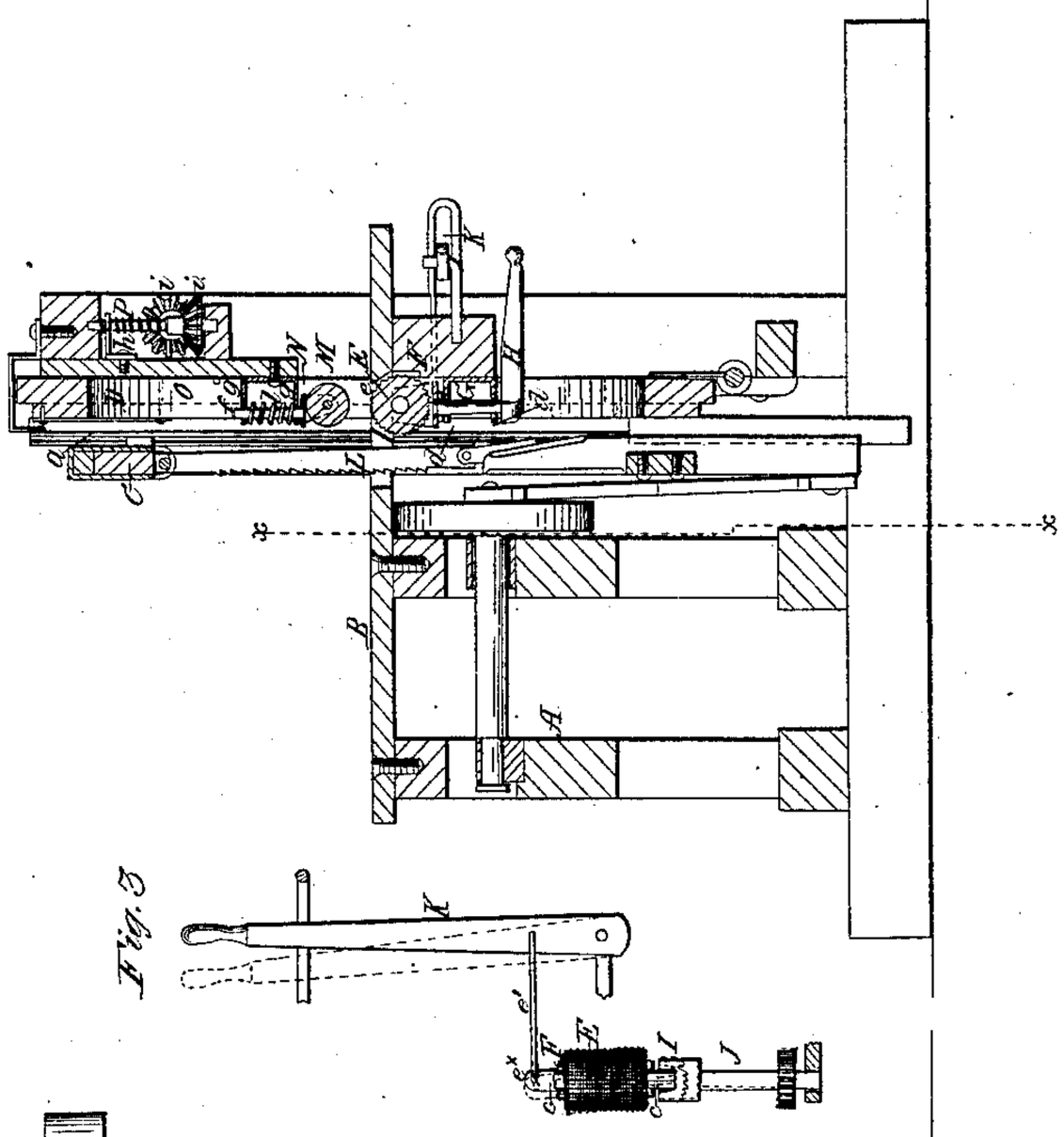
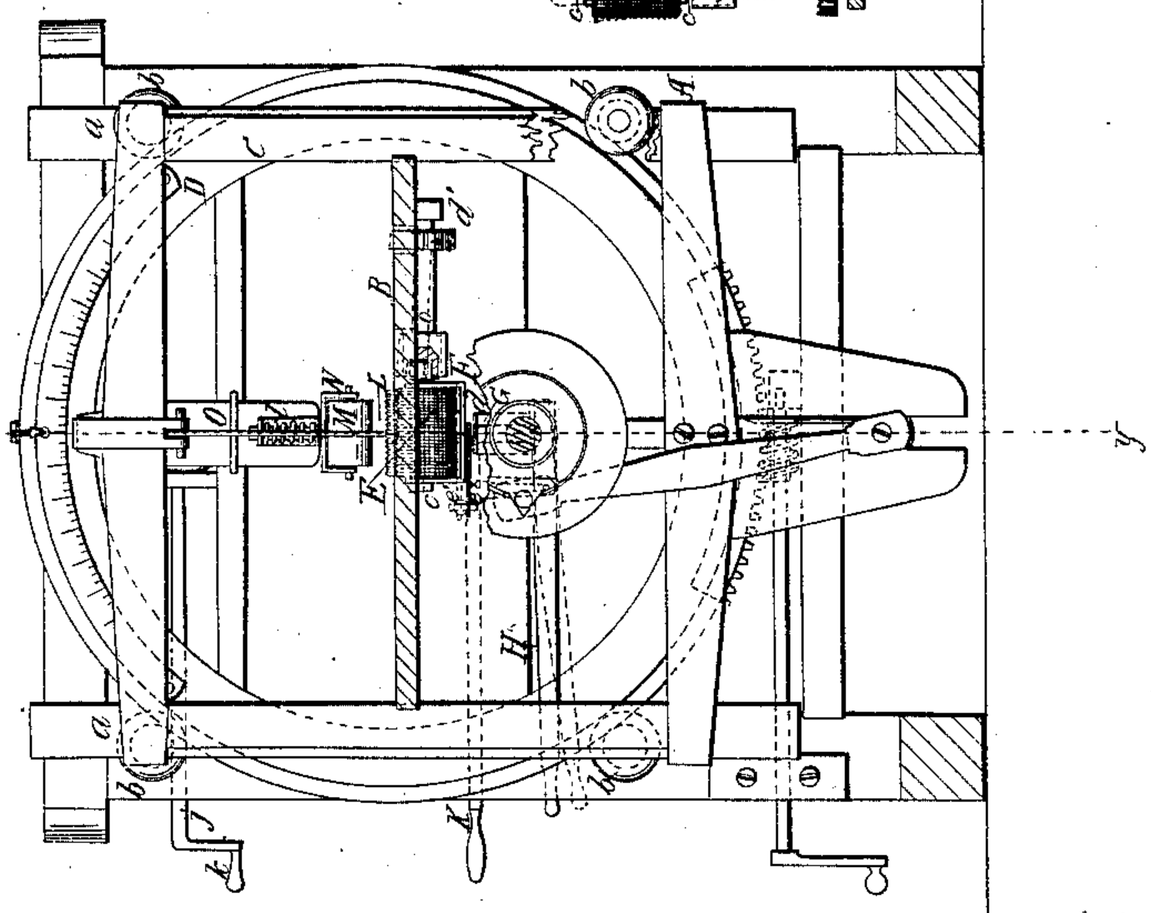


Fig. 3

Fig. 1.



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UNITED STATES PATENT OFFICE.

JOHN L. KNOWLTON, OF BORDENTOWN, NEW JERSEY.

IMPROVEMENT IN SAW-MILLS.

Specification forming part of Letters Patent No. **41,707**, dated February 23, 1864.

To all whom it may concern:

Be it known that I, JOHN L. KNOWLTON, of Bordentown, in the county of Burlington and State of New Jersey, have invented a new and Improved Sawing-Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a front sectional view of my invention taken in the line *x x*, Fig. 2; Fig. 2, a side sectional view of the same taken in the line *y y*, Fig. 1; Fig. 3, a detached view of the feed-roller pertaining to the same.

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

This invention relates to an improvement on a sawing-machine for sawing ship and other timber in curved and beveled form for which Letters Patent were granted to me bearing date October 30, 1863. The within-described invention consists in a novel arrangement of a feed-roller whereby the same is rendered capable of being thrown in contact with or free from the log, and also of being adjusted in such a manner as to cause the log or stuff to be fed to the saw in a direction corresponding with the form of the cut to be made, whether the same be straight or curved, thereby causing the saw to work in line with the cut and avoiding much friction in the working of the former, as well as much wear and tear.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a framing on which a fixed horizontal bed, B, is placed, and C is a reciprocating-saw gate, which works between parallel guides *a a*, attached to a ring, D, the latter being fitted between friction-rollers *b*.

The above parts are precisely the same as shown in my patented machine previously referred to, and therefore do not require a special description.

E represents a feed-roller the journals *c c* of which are fitted in a box or frame, F, the latter having a pendent rod, G, attached to it, which is fitted loosely in bearings *d d*, attached to the framing A. The feed-roller E is fitted in an opening, *e*, in the bed B, and the lower end of the pendent rod G rests upon the inner end of a lever, H, by operating which the roller E may be raised and lowered. One of the journals, *c*, of the feed-roller G is fitted in a socket, I, which is at the inner end of a shaft, J, underneath the bed B, the portion of the journal *c*, which is fitted in a socket, I, which is at the inner end of a shaft, J, underneath the bed B. The portion of the journal *c* which is fitted in the socket I is of square form, and the interior of the socket is of corresponding form, so as to admit of the feed-roller being rotated by the shaft J, the latter having motion communicated to it in any proper way. The square part of said journal *c* is also fitted loosely in the socket I to admit of the box or frame F and roller G being turned in a position more or less obliquely with the shaft J, as will be understood by referring to Fig. 3, in which an oblique position of said roller with the shaft J is shown in red, the shaft J being allowed to move laterally to a certain extent, its bearing *d'* being constructed with a view to that end. The frame F is turned in order to adjust the feed-roller G in this way by means of a lever, K, which is connected by a rod, *e'*, with one end of the frame F, or with a plate, $e^{\times}$, attached thereto, as shown clearly in Fig. 3.

The feed-roller E is placed directly behind the saw L, as shown in Fig. 2, and directly over the feed-roller E there is a pressure-roller, M, which has a smooth periphery, and is fitted in a frame, N, which has an upright rod, *f*, attached to it, said rod being fitted in bearings *g*, secured to a vertical slide, O, in the upper part of the framing A. This slide O has a plate, *h*, projecting horizontally from its rear side, said plate being notched and fitting on a vertical screw, P, which is rotated by bevel-gears *i*. (Shown in Fig. 2.) This screw when rotated raises and lowers the slide O in consequence of the notched plate being engaged with it, said plate serving the office of a nut. One of the gears *i* is on a shaft, *j*, having a crank, *k*, at its outer end. (See Fig. 1.)

The feed-roller E is grooved both longitudinally and circumferentially, as shown clearly in Fig. 3. These grooves have tooth-shaped projections on the face or periphery of the feed-roller, and prevent the log from slipping laterally while being fed to the saw. By adjusting the feed-roller E in an oblique position relatively with the saw through the medium

of the lever K the log or stuff may be fed to the saw in the direction of the cut, and this is a great advantage in sawing curves, as it protects the saw from lateral pressure and obviates much friction. The pressure-roller M is allowed to turn freely to conform to the direction of the feed movement of the log, owing to the rod *f* of the frame N being allowed to turn freely in its bearings *g*, and said rod *f* has a spiral spring, *l*, which keeps the roller M down upon the log. The roller M may be raised up free from the log at any time by turning the shaft *j*, and the feed-roller E may be let down at any time when it is desired to stop the feed by actuating the lever H.

The two levers H K may, if desired, be connected with treadles, so that the attendant can operate them with his feet, or pins or any suitable fastening may be employed for retaining the levers at any desired point.

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

1. The employment or use, in a sawing-machine for sawing ship and other timber in curved and beveled form, of a feed-roller, E, arranged substantially as herein shown and described, so as to admit of a vertical adjustment, and also of an oblique adjustment relatively with the saw, for the purposes specified.

2. In combination with the feed-roller E, thus arranged, a swivel pressure-roller, M, as and for the purpose set forth.

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