I. P. HICKS.

Scroll-Sawing Machine.

No. 168,019. Patented Sept. 21, 1875.

Fig. 1.

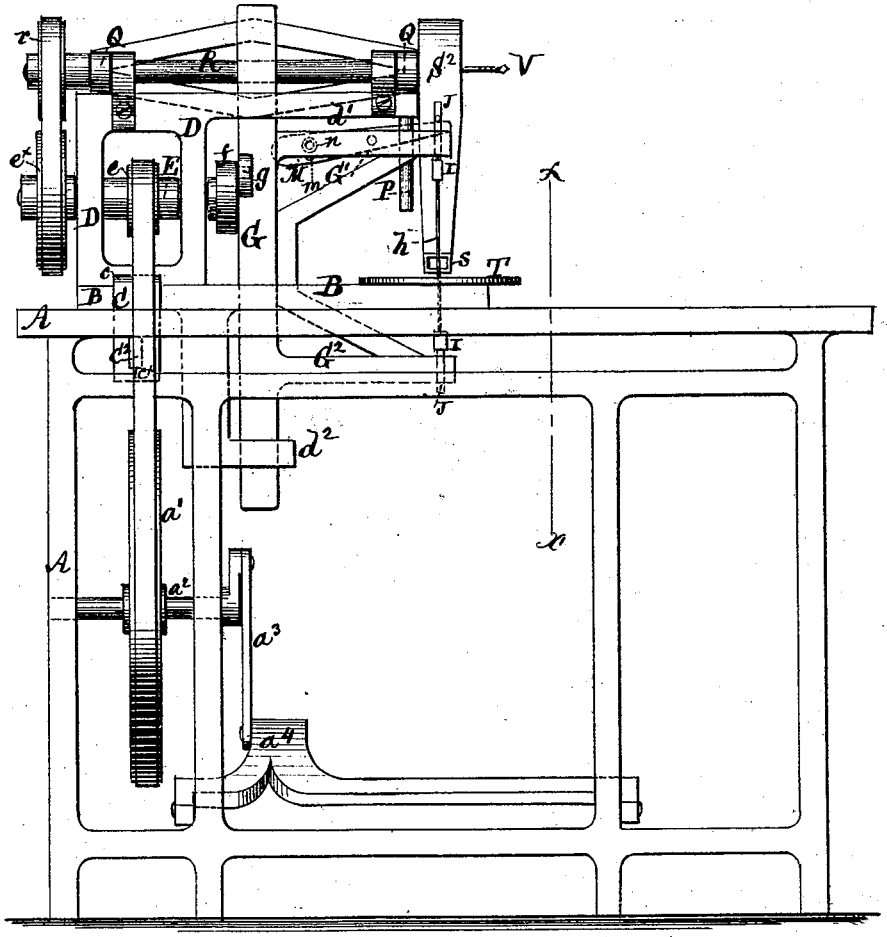


Fig. 2.

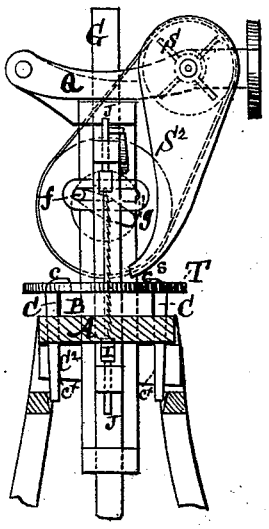


Fig. 3.

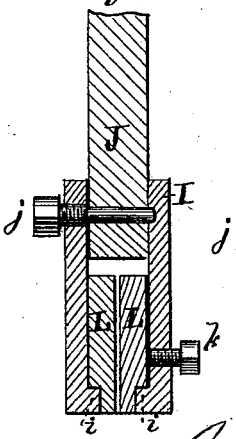
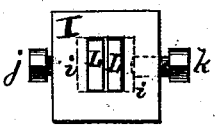


Fig. 4.



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ISAAC P. HICKS, OF PINE PLAINS, NEW YORK.

IMPROVEMENT IN SCROLL-SAWING MACHINES.

Specification forming part of Letters Patent No. **168,019**, dated September 21, 1875; application filed July 13, 1875.

To all whom it may concern:

Be it known that I, ISAAC P. HICKS, of Pine Plains, in the county of Dutchess and State of New York, have invented certain Improvements in Scroll-Sawing Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

My invention relates to sawing-machines; and consists of a novel construction and arrangement of parts, which will be fully hereinafter described, and specifically pointed out in the claims, a preliminary statement being therefore deemed unnecessary.

In the accompanying drawing, Figure 1 is a side view of a machine constructed according to my invention. Fig. 2 is a transverse vertical section taken in the line *x x* of Fig. 1. Figs. 3 and 4 are detail views of the saw-clamp.

The working parts of the machine are supported by a table or frame-work, A, provided with a driving-wheel, a^1, on a crank-shaft, a^2, connected by a pitman, a^3, with a treadle, a^4, of any suitable construction. The working parts are attached to a bed-plate, B, which rests upon the top of the table A, and is secured in place by means of two clamping bars or plates, C C, and a tapering key, C^2. Each of the clamping bars or plates is formed with a hooked or shouldered projection, *c*, at the upper end, and with a slot, $c^\times$, in the lower portion. The two bars or plates are passed through slots in the table A, at opposite sides of the bed-plate B, with the hooks or shoulders *c* hooked over the edges of the bed-plate, and the key C^2 is passed through the slot $c^\times$, below the table A, and bearing against the under side thereof, by which means the bed-plate is securely held in place on the table, and may be readily removed when desired. To the bed-plate B, near one end, is attached a block or standard, D, in which is journaled a shaft, E, carrying a pulley, *e*, over which passes a belt from the driving-wheel, a^1. On the inner end of the shaft E is a crank, *f*, which gives motion to the saw-frame. At the upper end of the block or standard D is a horizontal arm, d^1, extending toward the opposite portion of the machine, and terminating about over the center of the table A; and in the lower part of said block D is another arm, d^2, extending downward through a slot in the table A a suitable distance below said table, and then extending in a direction parallel with the upper arm d^1. These arms d^1 d^2 are provided with slots forming bearings for the saw-frame, which consists of a bar, G, with two arms, G^1 G^2, extending horizontally therefrom, the bar G working vertically in the slots in the arms d^1 d^2. To the bar G, in a horizontal position and at right angles to the arms, is attached a cross-head, *g*, provided with a longitudinal slot, in which works the wrist-pin of the crank *f*. When the shaft E revolves, the engagement of the crank-pin with the slotted cross-head imparts a vertical reciprocating motion to the saw-frame and to the saw carried thereby. The saw *h* is carried by the arms G^1 G^2, to which it is attached by clamping devices constructed as follows: Referring to Figs. 3 and 4, I represents a tube or box, open at both ends, and receiving at its upper end a bar, J, which serves as a shank, and which is held in place in the box by means of a screw, *j*. The lower end of the tube or box is provided with inwardly-projecting lugs or lips *i i*. The saw-clamps consist of two blocks, plates, or bars, L L, which, when placed together, correspond with the shape of the lower part of the interior of the box I, (being formed with shoulders corresponding with the lugs or lips *i*,) but are sufficiently smaller to allow the end of the saw to be placed between them. One of these clamping devices is attached to each of the arms G^1 G^2, by passing the shank J through a hole in the arm, and securing it by a pin, bolt, or otherwise. The saw is attached and held in place by inserting each end thereof between the clamps L L, and tightening a screw, *k*, which passes through the box I, and has its point bearing against one of the clamps, by which means said clamps are pressed toward each other, and made to hold the saw firmly between them. The shape of the lower portions of the clamps and of the box prevents the possibility of the falling out of the clamps from the box, and the position of the shank J in the upper portion of the box prevents any upward motion of the clamps.

A saw-clamping device thus constructed may be applied to a machine of any suitable description.

To the arm G^1 a lever, M, is pivoted so as to oscillate in a vertical plane. One arm of this lever connects with the shank of the upper saw-clamping device, by means of the bolt or pin which secures said shank, or by other suitable means, so as to enable the lever to impart vertical motion to said shank. Between the fulcrum and the other end of the lever is a transverse slot, *m*, through which a tightening-screw, *n*, passes into the arm G^1.

A washer may be provided between the arm and the head of the screw. By loosening the screw *n* and depressing the long arm of the lever, the short arm may be made to raise the saw-clamp so as to strain the saw, and the lever may be held in position by tightening the screw *n*.

To the outer end of the arm d^1 is attached a rod, P, which extends downward and passes through a hole in the arm G^1 of the saw-frame, so that as the saw-frame rises and falls, the rod works freely in the hole in the arm G^1, and thus guides the saw-frame, and insures a true cut of the saw. Above the block or standard D a frame, Q, is arranged, being hinged or pivoted to said block, so that it may be turned up out of the way when not in use. In this frame is journaled a shaft, R, on the outer end of which is a pulley, *r*, over which passes a belt from a pulley, $e^{\times}$, on the shaft E, by which means the shaft R is driven. Near the inner end of the shaft E is a fan-wheel, S, inclosed in a fan-chamber, S^2, which is gradually contracted into a tube, and terminates in a nozzle, *s*, near the working point of the saw in the work-table T. As the shaft R revolves, the fan S creates in the fan-chamber a current of air which escapes through the nozzle *s*, and blows the sawdust from the work, so as to keep the pattern clear, and enable it to be seen by the operator. The end of the shaft R is constructed or fitted to serve as a bit-stock to receive and hold a drill or boring-tool, V, so that as the shaft revolves, the tool is operated to bore or drill a hole in any work which may be held up to it.

This arrangement is particularly useful for boring holes to receive the saw before the commencement of its work; but it may be used for general boring and drilling purposes.

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

1. The combination of the table A, bed-plate B, arranged above the said table, the clamping-bars C C, constructed with the slots $c^{\times}$, hooked ends *c*, which hook over the edge of the bed-plate B, and the keys C^2 passing through the slots in the hooked bars, as and for the object specified.

2. The combination, with the saw-frame or arm G^1, of the guiding-rod P, arranged as shown and described, for the purpose specified.

3. The combination of the hinged or pivoted frame Q, shaft R, fan-wheel S, and fan-chamber S^2, arranged as shown and described, for the purpose specified.

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Witnesses:
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