H. L. BEACH.

Scroll-Sawing Machine.

No. 163,843. Patented June 1, 1875.

Fig. 1

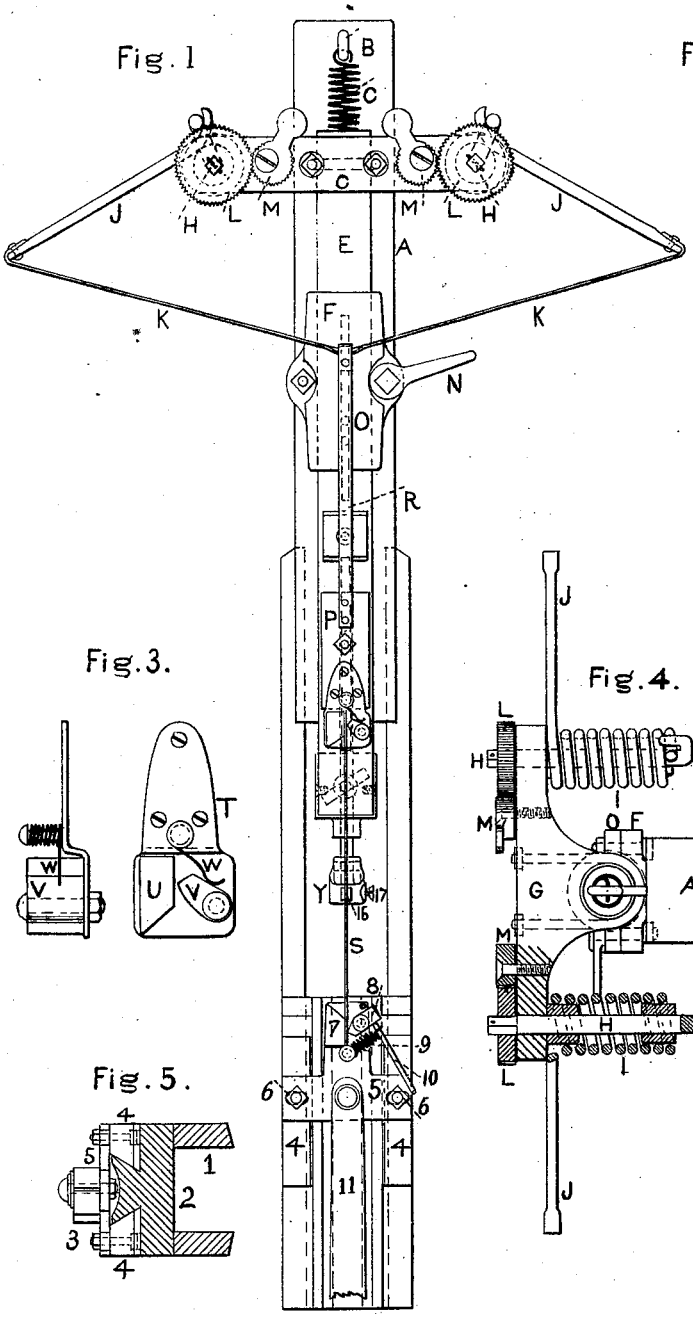

Fig. 2.

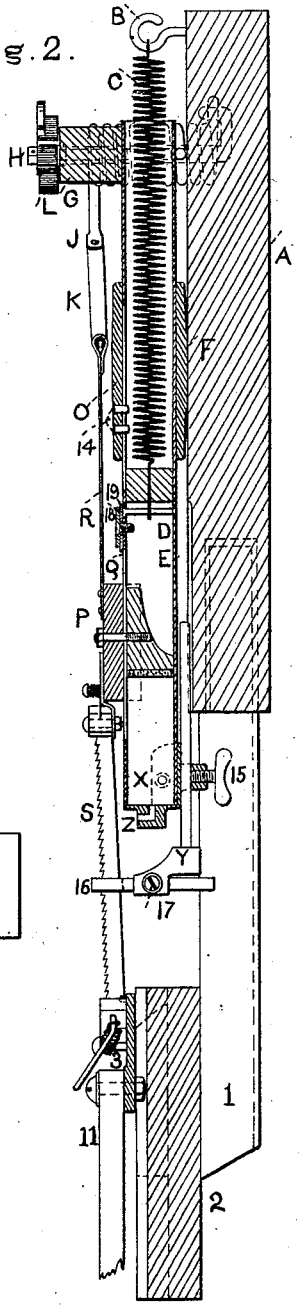

Fig. 3.

Fig. 4.

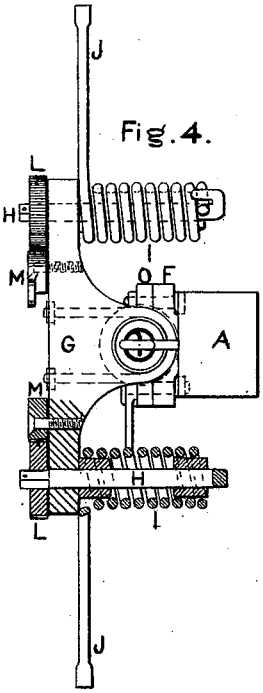

Fig. 5.

WITNESSES.

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HENRY L. BEACH, OF MONTROSE, PENNSYLVANIA.

IMPROVEMENT IN SCROLL-SAWING MACHINES.

Specification forming part of Letters Patent No. **163,843**, dated June 1, 1875; application filed August 25, 1874.

To all whom it may concern:

Be it known that I, HENRY L. BEACH, of Montrose, Susquehanna county, Pennsylvania, have invented an Improvement in Scroll-Sawing Machines; and that the following is a full, clear, and correct description of the same, reference being had to the accompanying drawing making part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a front view of my improved sawing machine. Fig. 2 is a sectional view of the same. Fig. 3 is a view of the means employed to hold the saw. Fig. 4 is a top view of the means employed to adjust the belt or cord. Fig. 5 is a view of the lower portion of the frame supporting the saw.

In the drawing like parts of the invention are pointed out by the same letters of reference.

The nature of the present invention consists in certain improvements in scroll-sawing machines, as more fully hereinafter set forth, and will be found to relate more particularly to the means employed to hold the saw in the machine and to operate the same.

To enable those skilled in the arts to make and use my invention I will describe the same.

A represents a frame-work or base for supporting the operative parts of my scroll-sawing machine; and B is a hook inserted in the head or upper portion of the same, to which one end of a spiral spring, C, is attached, the opposite end of said spring being attached to a bolt, D, inserted in the tubular support E free to move in the box F secured upon the base-plate A. E shows a tubular support free to move in the box F, for supporting the means for operating the saw, and slotted above the bolt D to allow pins 14 to pass into it, and also slotted below the bolt D to allow of the movement of the cross-head P. G shows a bridge bolted to the tubular support, through which pass the shafts H, for supporting the springs I. I show helical springs passed over the shafts H. The wire of which the springs is formed is continued in the manufacture, so as to form levers J, to the extreme ends of which the ends of a cord, belt, or strap, K, are attached. Upon the forward ends of the shafts H are secured toothed wheels L, with which the eccentrics M engage to hold them in position. K shows a cord, belt, or strap, the ends of which are attached to the levers J. N shows a cam-lever employed to tighten the cap O upon the box F, and thus confine the tubular support in the same. As the lever N is turned its cam portion bears against the cover of the box, depressing or tightening the same upon the box F, the lever being turned until the cam upon the same is brought into contact with a cam cast upon the face of the cap O. P shows the cross-head composed of two parts, one outside of the tubular support and the other placed within it. These two parts are bolted together by means of a bolt or in any convenient manner. The interior portion of the cross-head is made to fit the tubular support snugly at its lower end, and the cross-head moves in a slot, Q, in the tubular support. R is a strap, belt, or cord, one end of which is attached to the cross-head P and its opposite end to the cord, belt, or strap K. Attached to the lower end of cross-head P is the upper portion of the means employed to support the saw S. The same consists of a plate of metal, T, provided with a side plate, U, which forms a stationary jaw and a movable jaw, V, retained in position by a spring, W, placed behind it, between which jaws U and V the upper end of the saw S is received and held. X shows the bottom of the tubular support F, which also forms a support for the saw-support Y, held in the same by a set-screw, 15. The bottom is provided with a projection having in it an opening, Z, the use of which will be explained hereinafter. Y shows the saw-support, consisting of a rod provided with a slotted plate, in which are received three plates of metal, one placed within the other two and separating them. The middle plate is made just the thickness of the saw, so that when placed between the side plates 16 the opening will be of the proper size to admit the saw. This middle plate is placed back of the face line of the side plates 16, and forms a back support for the saw, while the side plates 16 form side supports for the same, and these side plates 16 are regulated to saws of different width by means of a set-screw, 17. The plate portion of the device serves also to prevent any jumping or ris-

ing up of the stuff as it passes through the machine.

1 represents the lower frame-work for supporting the guideways 2, in which moves the lower cross head 3. This cross-head consists of the side pieces 4, having their inner sides inclined, to fit snugly the inclined sides of the guideways 2, held or connected together by a plate, 5, provided with the elongated openings 6, through which pass bolts, the openings 6 in the plate 5 allowing the side pieces to be adjusted to the inclined sides of the ways 2, and any lost motion or wear of parts to be taken up or compensated for. The plate 5 is provided at one end with the stationary jaw 7, and supports the movable jaw 8, held and retained in position by a spring, 9, to which plate 8 is attached a handle, 10, by which the jaw 8 may be turned away from the stationary jaw 7, to allow the lower end of the saw S to be inserted between the stationary and movable jaws. Attached to the plate 5 is the upper end of the pitman 11, the lower end of which is attached to a crank-wheel. The bolt D is passed through a plate of metal, 18, and a rubber cushion, 19.

Such being the construction, the operation may be thus set forth: The tension of the springs is first adjusted by turning the wheels L, and fastening them in the desired position by means of the eccentrics M. By this movement the cord, belt, or strap K is tightened or strained sufficiently to lift the saw S. The lower end of the saw is now inserted between the stationary and movable jaws of the lower cross-head, and the saw S is supported centrally in the saw-support Y. The lever N is now loosened, and the tubular support E is drawn down a sufficient distance to allow the upper end of the saw to be inserted between the stationary and movable jaws U and V, attached to the cross-head P, the spiral spring C being expanded by such movement; and after the upper end of the saw has been inserted between the jaws U and V, the tubular support E is allowed to rise a sufficient distance, by the contraction of the spring C, to prevent the cross-head P from striking the cushion 19 when the saw is in motion, and the tubular support is held in this position by turning the lever N, and tightening the cap or cover upon the box F. The sawing-machine may now be set in motion through the pitman 14, and the stuff to be sawed may be fed or supplied to the saw by placing the same upon the table of the machine and feeding it up to the saw, the saw being drawn down by or through the pitman 14, thus contracting the helical springs I, and drawn up by their expansion.

The interior plate of the cross-head P, as stated, is made to fit the interior of the tubular support E. Thus as the cross-head is drawn up, as described, the air is drawn into the support through the slot in the same. Upon the downward movement of the cross-head and saw, this air is expelled through the opening Z into a flexible tube, which supplies it to the table, to remove therefrom the sawdust. This feature will be found of importance.

The means of holding the saw will be found efficient; and one advantage arising from their peculiar construction is that, the front being open, the saw can be instantly removed from the machine.

It will be seen that the side plates of the lower cross-head can be readily adjusted to the guideways, and that any wear or lost motion can be thus taken up. Thus any removal of the guideways is rendered unnecessary, and they become a permanent part of the machine.

Having now set forth my invention, what I claim as new is—

1. The slotted tubular support E, in combination with the spiral spring C, hook B, bolt D, box F, cap O, and cam-lever N, substantially as and for the purposes set forth.

2. The slotted tubular support E, in combination with the cross-head P, the bands K and R, the helical springs I, levers J, and geared wheels L, and eccentrics M, substantially as and for the purposes set forth.

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Witnesses:

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