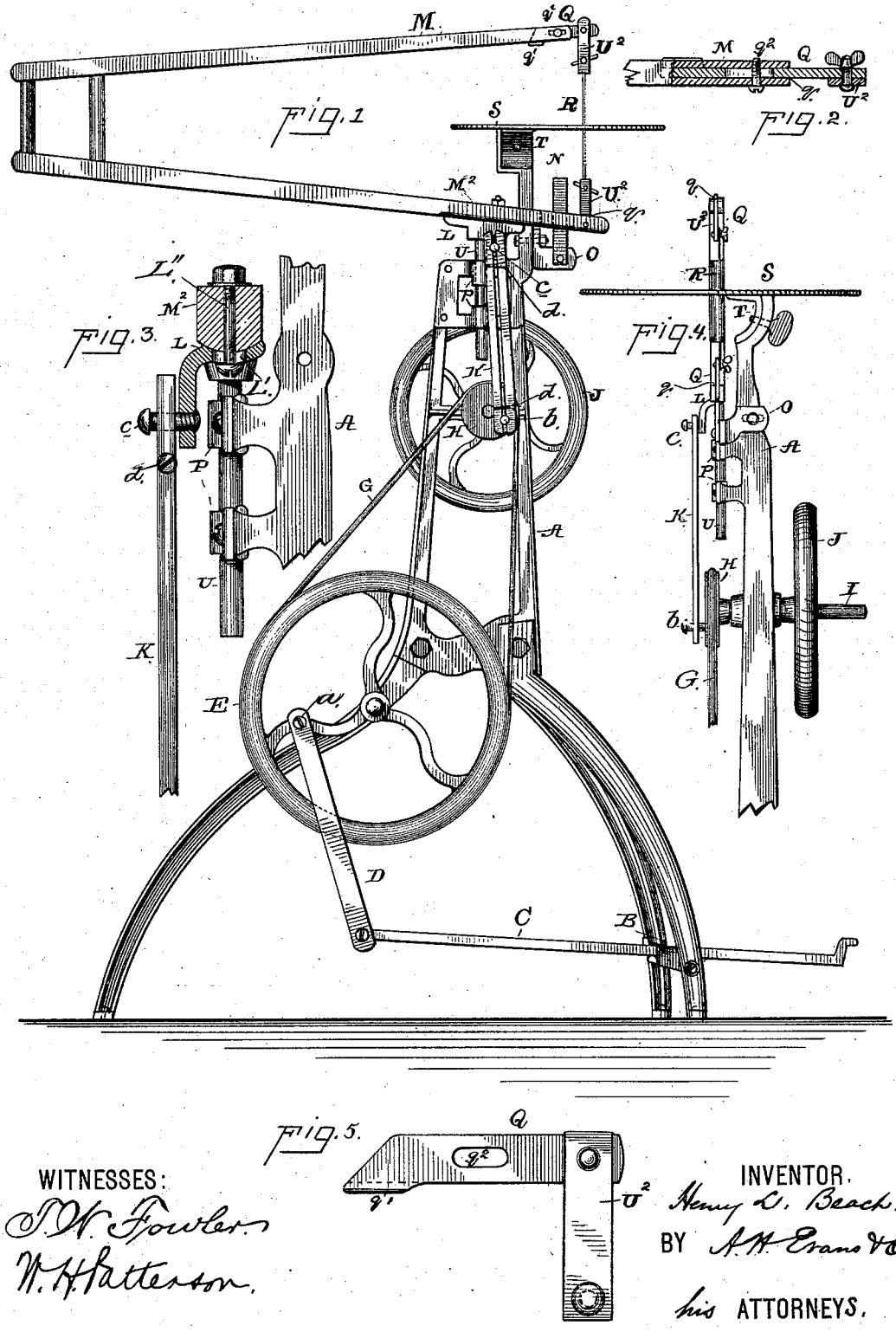
(No Model.)

H. L. BEACH.

SCROLL SAW.

No. 381,751. Patented Apr. 24, 1888.



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SCROLL-SAW.

SPECIFICATION forming part of Letters Patent No. 381,751, dated April 24, 1888.

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To all whom it may concern:

Be it known that I, HENRY L. BEACH, a citizen of the United States, residing at Montrose, in the county of Susquehanna and State of Pennsylvania, have invented certain new and useful Improvements in Scroll-Saws, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a side elevation of a scroll-saw embodying my invention. Fig. 2 is a sectional view showing the slotted end of the arm M, with the arm Q therein. Fig. 3 is a cross sectional view showing the lower arm, M^2, and its attached concaved plate L and spindle U. Fig. 4 is an end view of the scroll-saw with the lower portion of the main frame broken away. Fig. 5 is a detail showing the slotted horizontal arm or support and the clamping-arm pivoted thereto.

My invention relates to certain new and useful improvements in scroll-saws; and it consists in the improved constructions and combinations of devices, which I shall hereinafter fully describe and claim.

To enable others skilled in the art to which my invention appertains to make and use the same, I will now describe its construction and indicate the manner in which the same is carried out.

In the said drawings, A represents the main frame of my machine, within which the operative parts are appropriately mounted. This frame is provided with a cross-bar or rock-shaft, B, to which is pivotally connected the usual treadle, C, said treadle having its rear end pivoted to the lower end of a pitman, D, whose opposite end is mounted on a pin, *a*, projecting from grooved wheel E, as shown in Fig. 1. A belt, G, after passing around the wheel, extends to a smaller grooved wheel, H, on one end of a transverse shaft, I, mounted in the main frame and carrying on its opposite end a balance-wheel, J. A crank-pin, *b*, projecting from the grooved wheel H, is fitted in the lower end of a pitman, K, whose upper end is likewise fitted to a pin or bolt, *c*, projecting from one side of a plate, L, to be hereinafter referred to.

It will be observed the pitman K is composed of two parallel spaced bars, between the inner surfaces of which the pins *c* and *b* are seated, while adjusting-screws *d*, passing through said bars, are designed to take up any wear that may occur between the contacting parts.

The plate L, previously referred to, has a downwardly-extending spindle, U, which passes through suitable bearings, P, formed in the main frame, and its upper face is concaved to receive the convex lower face of the arm M^2 of the saw-frame, as shown more clearly in Fig. 3. A slot, L′, formed in the plate L, receives a threaded bolt, L″, which secures the arm M^2 and plate L together in any of its adjusted positions.

By reason of the above construction, it is manifest, if, in the manufacture of the saw-frame, it should be found that the arms M and M^2 thereof were not in the same vertical plane, or, in other words, if it should appear that the two arms were not diametrically opposite to each other, then the bolt L″ is released and the lower arm adjusted in its concaved seat in the plate L until the saw R, carried by the arms M and M^2, is found to be absolutely true or parallel with the spindle U. I am thus enabled to so adjust the saw-frame with relation to the plate L that its saw may always reciprocate in a true vertical plane, even though the arms comprising said frame should be twisted or warped.

If desired, the construction of the meeting faces of the plate L and lower arm, M^2, may be reversed without departing from the spirit of my invention—that is, the plate may have a convex upper surface adapted to be fitted into a concaved seat in the under surface of the arm—the operation in both instances, however, being the same.

The two arms M and M^2 of the saw-frame are rigidly connected to each other at or near their rear, while their forward ends are slotted at *q* to receive the horizontal arm or support Q for the saw-clamping plate V^2. This arm Q is slotted at q^2 and provided at its rear with a lip or stop, q', as shown in Fig. 5.

One of the vertical arms U^2 is pivotally connected with the arm Q, while the other arm is pivoted in the slotted front end of the lower arm of the saw-frame, and these arms

U^2 are provided with means—such as clamping-screws—for securing the ends of the saw-blade.

From the description of these parts it will be seen that if the operator wishes to make the saw "lead" or cut through the wood with great rapidity he will adjust the horizontal arm Q forward, which movement "cants" the upper end of the saw-blade toward the front, so that the saw in its downward stroke will penetrate the wood to a much greater depth than if the blade was truly perpendicular. Another advantage of this construction is that by securing the ends of the saw-blade in the pivoted arms U^2, should the blade meet a knot or other hard surface, or should the operator feed the work too rapidly, then the arms U^2, swinging upon their pivots, will be moved backward a slight distance, carrying the saw-blade with them and obviating the danger of the blade snapping. The movement of the arms U^2, although slight, is sufficient, in connection with the elasticity of the saw frame and blade, to relieve the latter of the strain which is brought against it, and as soon as this strain is relieved the tensile power of the frame and saw-blade is exerted to cause the arms U^2 to swing forward to their normal position. During the backward movement of the arms U^2 the lip q' bears against the under surface of the arm M and holds the arm Q in a horizontal position. By this means the strain is removed from the blade, the tendency of the same buckling or breaking being thereby reduced to a minimum.

The table S is supported upon the plate T and is provided with the usual slot (not shown) for the saw, and is mounted so as to be tilted in the usual manner, while the main frame has adjustably secured thereto a plate or casting, O, having a slot through which an adjusting-screw is passed, as shown in Fig. 4. An arm, N, rigidly secured to the arm of the casting O, extends upwardly through the slotted end of the lower arm, M^2, and is designed to keep the saw-frame from rotating in the bearings, and also to keep the saw-blade in a position where it will pass directly through the center of the slot in the table.

I am thus enabled to provide a simple and effective saw for several purposes, and so construct the several parts of the machine that the necessary adjustments may be accomplished by the operator without difficulty.

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

1. The combination, with the main frame, of a saw-frame, a slotted plate, L, secured thereto, having a curved seat between itself and said saw-frame, and an adjusting screw or bolt passed through said frame and slotted plate, whereby said frame is adjusted to a perpendicular position, substantially as described.

2. The main frame, the plate L, having a spindle mounted therein, said plate having a concaved upper face and slot L′, a saw-frame having an arm, M^2, with convex under face seated on said plate, and a screw or bolt, L″, passing through said arm and slot and adjusting the saw-frame perpendicularly, substantially as described.

3. The main frame, the slotted table, and a saw-frame mounted in the main frame and having a slotted end, in combination with the casting O, adjustably secured by means of a slot therein to the main frame and having an arm passing through the slotted end of the saw-frame to keep the saw in the center of the slot in the table, substantially as described.

4. An improved scroll-saw comprising a main frame, a saw-frame consisting of arms M and M^2, a plate having a spindle mounted in the main frame, a curved bearing between said plate and lower arm of the saw-frame, the adjustable arm Q in the forward ends of the upper arm, M, the clamping-plates pivoted thereto and to the lower arm, M^2, and carrying the saw-blade, a table, and an adjustable casting or plate, O, on the main frame, having an arm for holding the saw-blade in the center of the slot in the table, and also for preventing the rotation of the saw-frame, substantially as herein described.

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Witnesses:
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