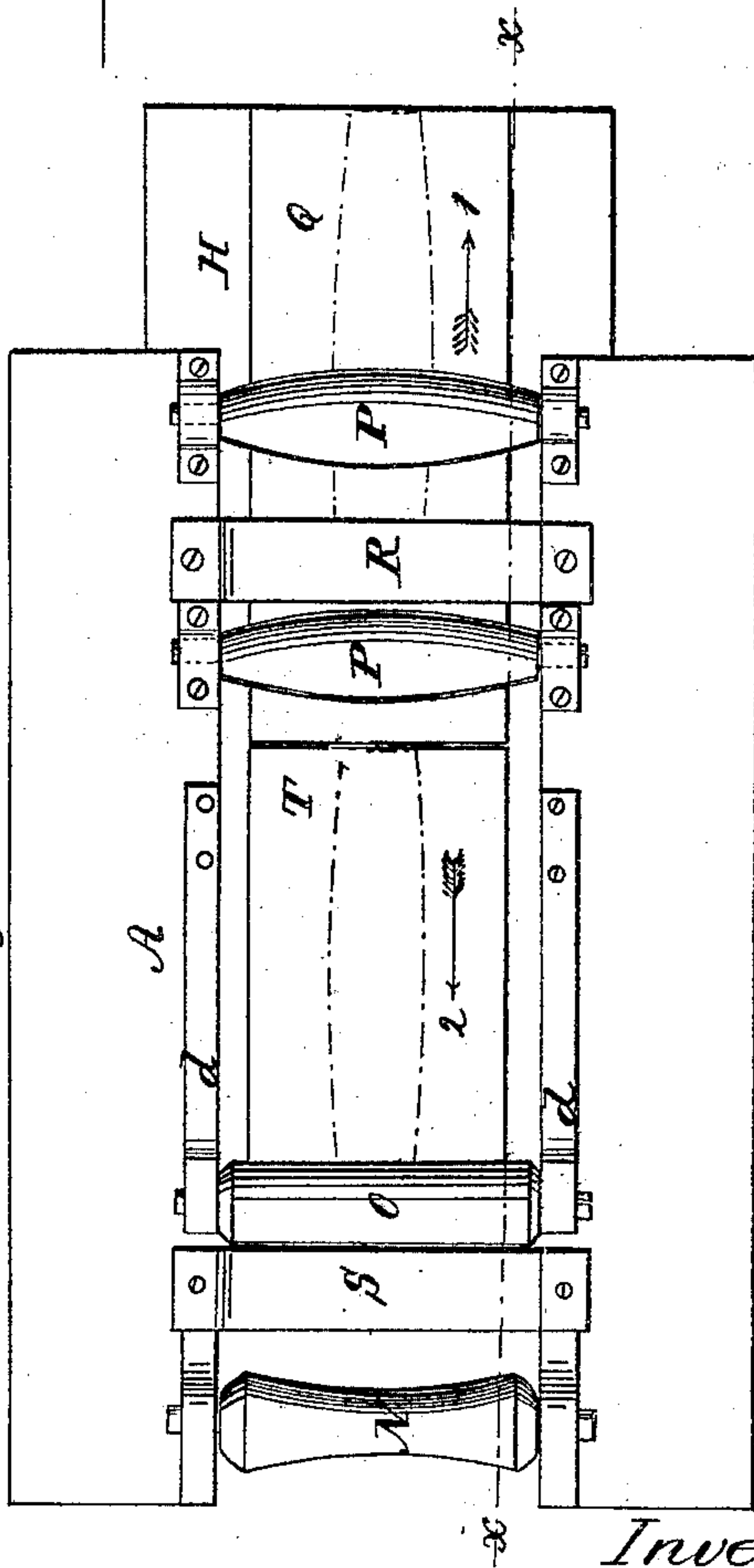
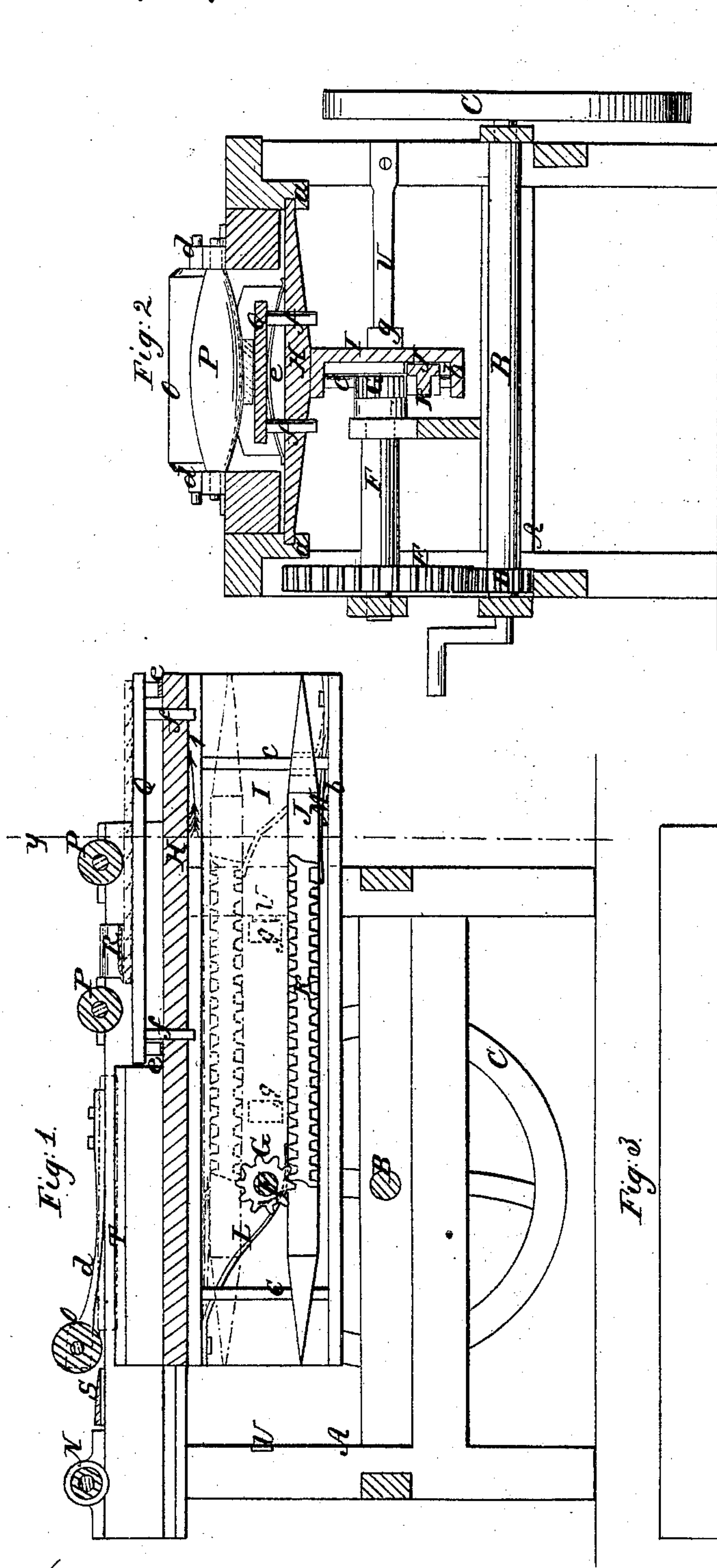


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*Stave Mach.*

*N<sup>o</sup> 27607.*

*Patented Mar. 27. 1860.*



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# UNITED STATES PATENT OFFICE.

JAMES W. ADAMS, OF PLEASANT VALLEY, VERMONT.

## STAVE-MACHINE.

Specification of Letters Patent No. 27,607, dated March 27, 1860.

*To all whom it may concern:*

Be it known that I, JAMES W. ADAMS, of Pleasant Valley, in the county of Chittenden and State of Vermont, have invented a new and Improved Machine for Dressing Staves; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side sectional view of my invention, taken in the line *x, x*, Fig. 3. Fig. 2 is a transverse vertical section of the same taken in the line *y, y*, Fig. 1. Fig. 3 is a plan or top view of the same.

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

This invention consists in the employment or use of concave and convex stationary knives, pressure rollers, and a reciprocating bed, operated in a novel way, and the whole arranged for joint operation, substantially as hereinafter shown and described, whereby staves may be dressed at both sides by a very simple, economical and compact machine.

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

A represents a rectangular frame which may be constructed in any proper way to support the working parts of the machine, and B is the driving shaft which is fitted transversely in the frame, A, has a fly, C, at one end, and a pinion, D, at the opposite end, the pinion, D, gearing into a wheel E, on a shaft, F, the inner end of which is provided with a pinion, G.

In the upper part of the frame, A, a bed, H, is placed. This bed is fitted at its sides in suitable grooves or guides, *a a*, both of which are shown in Fig. 2, and to the center of the bed a longitudinal pendent board, I, is attached, said board extending the whole length of the bed, and having a horizontal ledge or flanch, *b*, at its lower end. To the flanch, *b*, two uprights, *c, c*, are attached, one near each end, said uprights being secured at their upper ends to the bed, H. On the uprights, *c c*, a bar, J, is fitted, said bar being allowed to rise and fall freely on the uprights, which serve as guides for the same. The bar, J, has a rack, K, attached to it at one side, said rack being toothed both at its upper and lower sides, the teeth at the lower side being opposite the spaces between the teeth at the upper side as shown in Fig. 1.

Against one end of the bar, J, and on its upper face a spring, L, bears and a similar spring, M, bears against the under surface of the bar at its opposite end.

On the upper surface of the frame, A, there are placed pressure rollers, N, O, P, P. The roller, N, has its journals fitted in fixed bearings, but the roller, O, has its journals fitted in bearings which are attached to springs, *d, d*. The rollers, P P, have their journals fitted in fixed bearings.

On the bed, H, a supplemental bed, Q, is placed, said bed resting on springs, *e e*, to allow it a vertical yielding movement. The bed has vertical guide rods, *f*, attached to it, which rods pass through the bed, H, and keep the bed, Q, in proper position. To the upper part of the frame, A, and between the two rollers, P P, a knife, R, is permanently attached. This knife has an upper concave surface. To the frame, A, between the rollers, N, O, a knife, S, is permanently attached said knife having a convex upper surface. To the bed, H, directly below the rollers, N, O, and knife, S, a supplemental bed, T, is attached having a convex upper surface in its transverse section.

In the frame, A, at one side of the board, I, there are secured two springs, V, which project inward toward the board, I, and within the path of the movement of projections, *g*, attached to the board, J. One of the springs and a projection are shown in Fig. 2.

The operation is as follows: The staves to be dressed are rived or sawed out of proper dimensions by any of the machines used for such purpose, and motion is given the shaft, B, by any convenient power. As the shaft, B, rotates a reciprocating movement is communicated to the bed, H, in consequence of the pinion, G, gearing into the rack, K, of bar, J. The pinion, G, works into the top and bottom of rack, K, moving the same and bar, J, alternately up and down as it acts at its ends, the spring, M, favoring the elevation of the rack, and the spring, L, its depression. A stave is first placed on the supplemental bed, Q, when the same is moving in the direction indicated by arrow 1, and said stave is passed underneath the rollers, P P, and knife, R, the latter cutting the upper and inner surface of the stave transversely in concave form. At the return motion the stave is placed on the convex bed, T, concave side down, which side corre-



sponds inversely with the convex surface of bed, T, and the stave is forced underneath the roller, O, and knife, S, the latter giving the upper and outer surface of the stave a convex form in its transverse section. The supplemental bed, Q, in consequence of its yielding capacity compensates for any inequalities in the thickness of the staves and the rollers, P P, may therefore be fixed. The supplemental bed, T, however being rigid the roller, O, is necessarily yielding. The roller, N, is permanent and of concave form longitudinally, so as to conform to the dressed surface of the stave, and serve to discharge the same from the machine. The machine, it will be seen, dresses a stave at both sides at every complete vibration of the bed, H, that is to say at every forward and backward movement combined, the inner concave sides being dressed when the bed moves in the direction indicated by the arrow 1, and the convex sides being

dressed when the bed moves in the direction indicated by arrows 2—see Fig. 3. The springs, V, serve to give an impetus to the bed, H, at the commencement of each charge of its movement, and thereby facilitate the operation of the pinion and rack.

I do not claim separately any of the within described parts, but

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

The reciprocating bed, H, operated by the pinion, G, and movable rack, K, and the supplemental yielding and rigid beds, Q, T, in connection with the concave and convex knives, R, S, and pressure rollers, N, O, P, P, all being arranged for joint operation as and for the purpose set forth.

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Witnesses:

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