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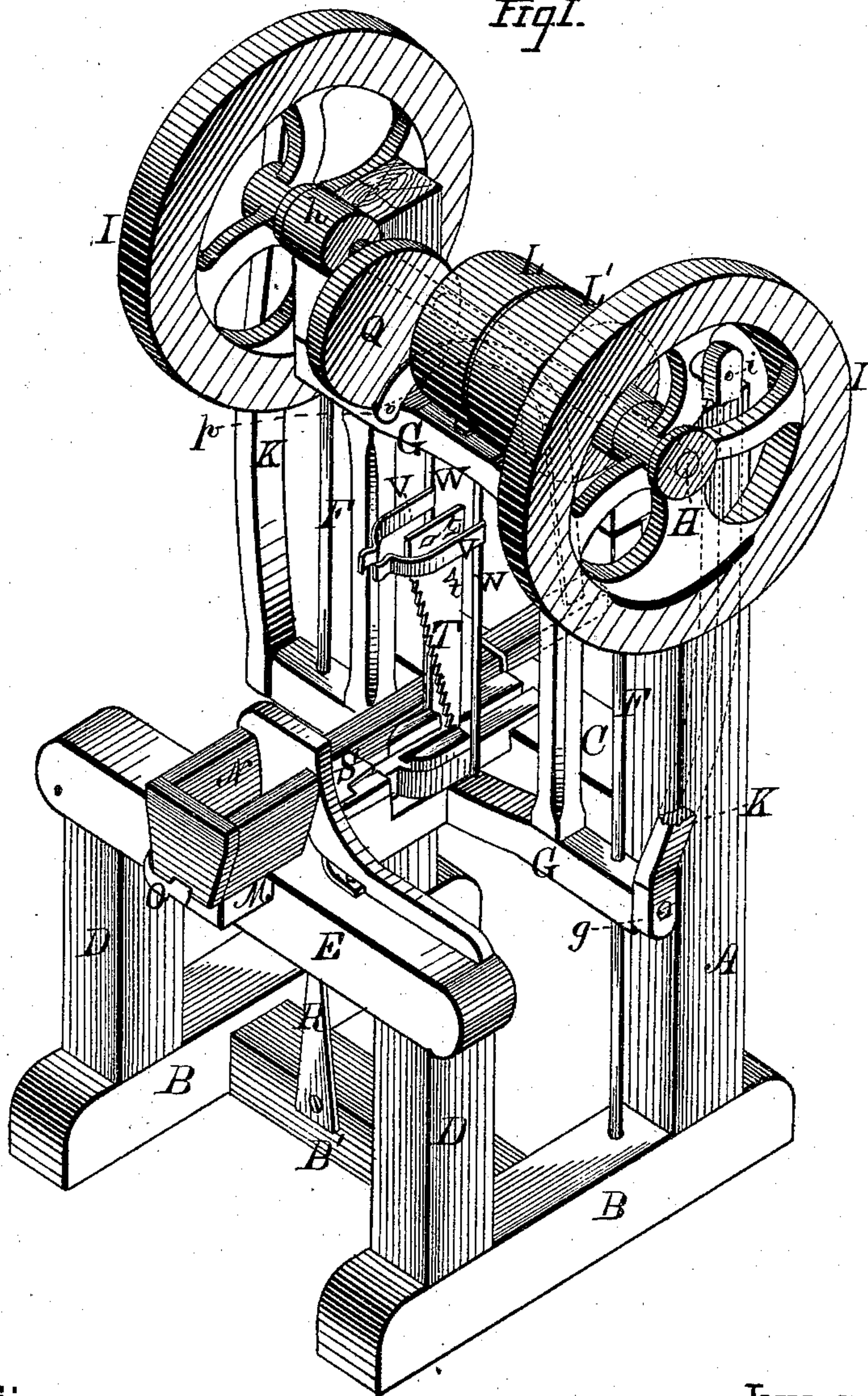
A. R. STEWART.

Machines for Making Clothes-Pins.

No. 150,909.

Patented May 12, 1874.

Fig 1.



WITNESSES:

Gas. E. Hutchinson.
John R. Young

INVENTOR.

A. R. Stewart, by
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Fig. 2.

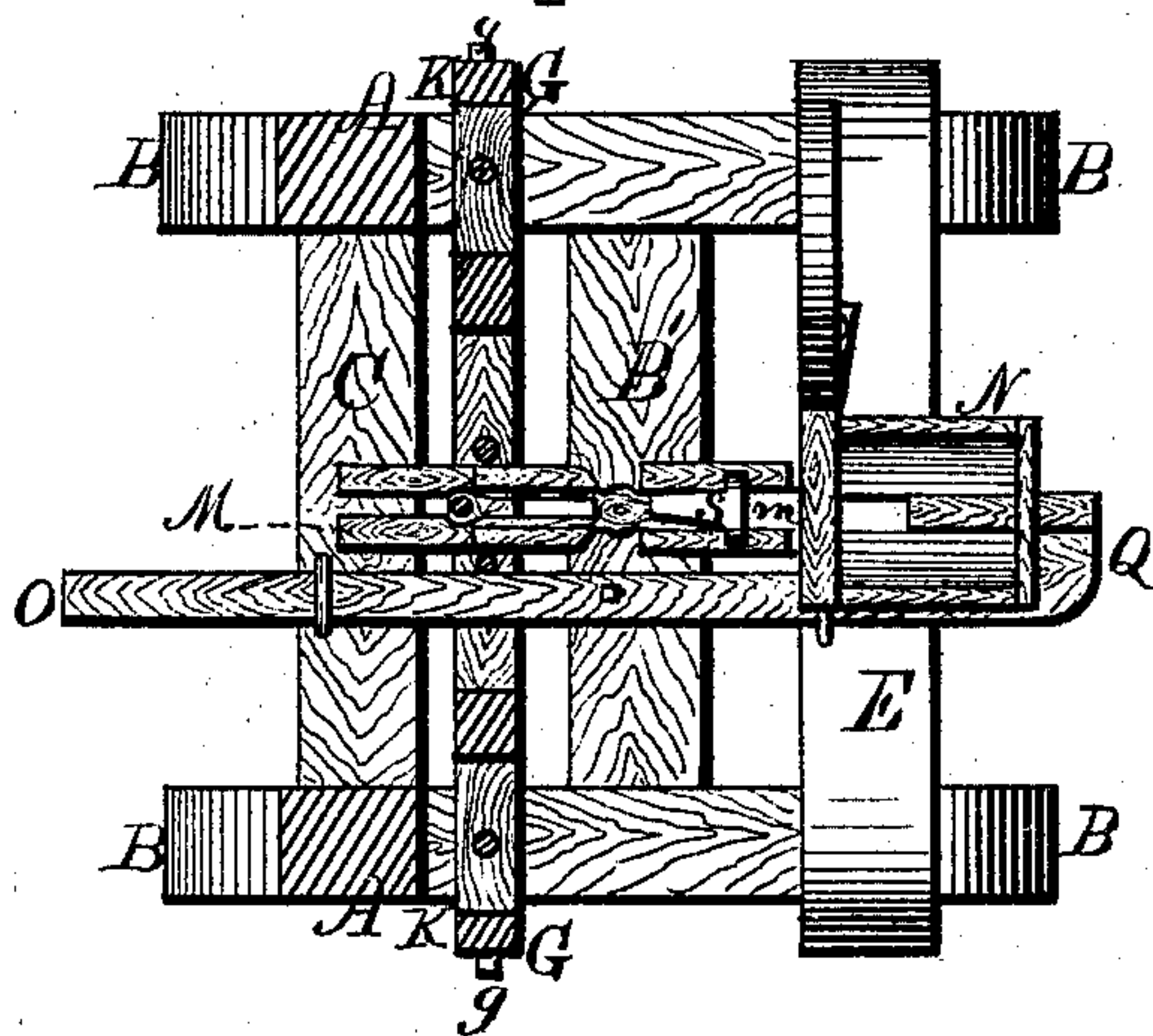
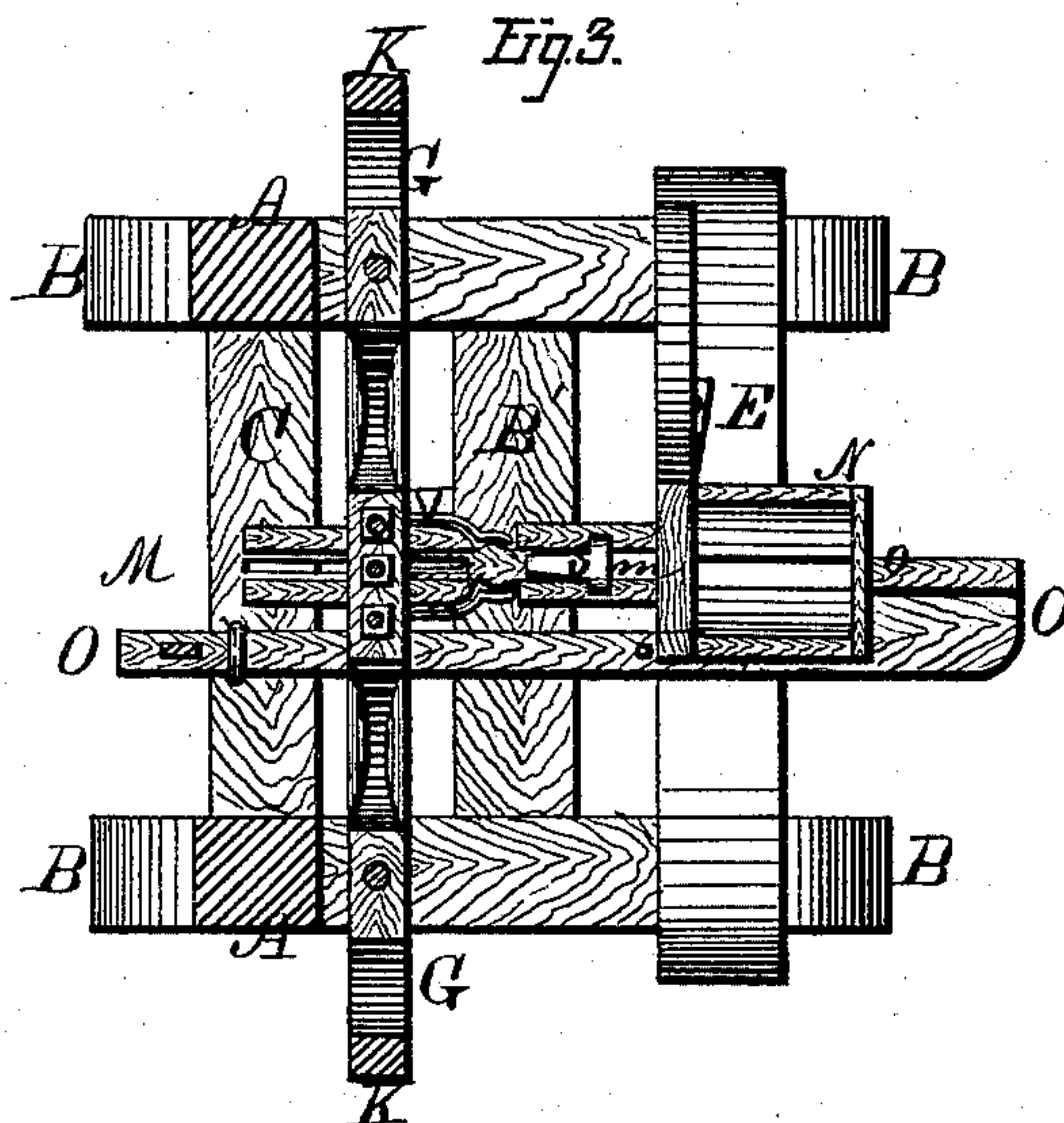


Fig. 3.



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Fig. 4.

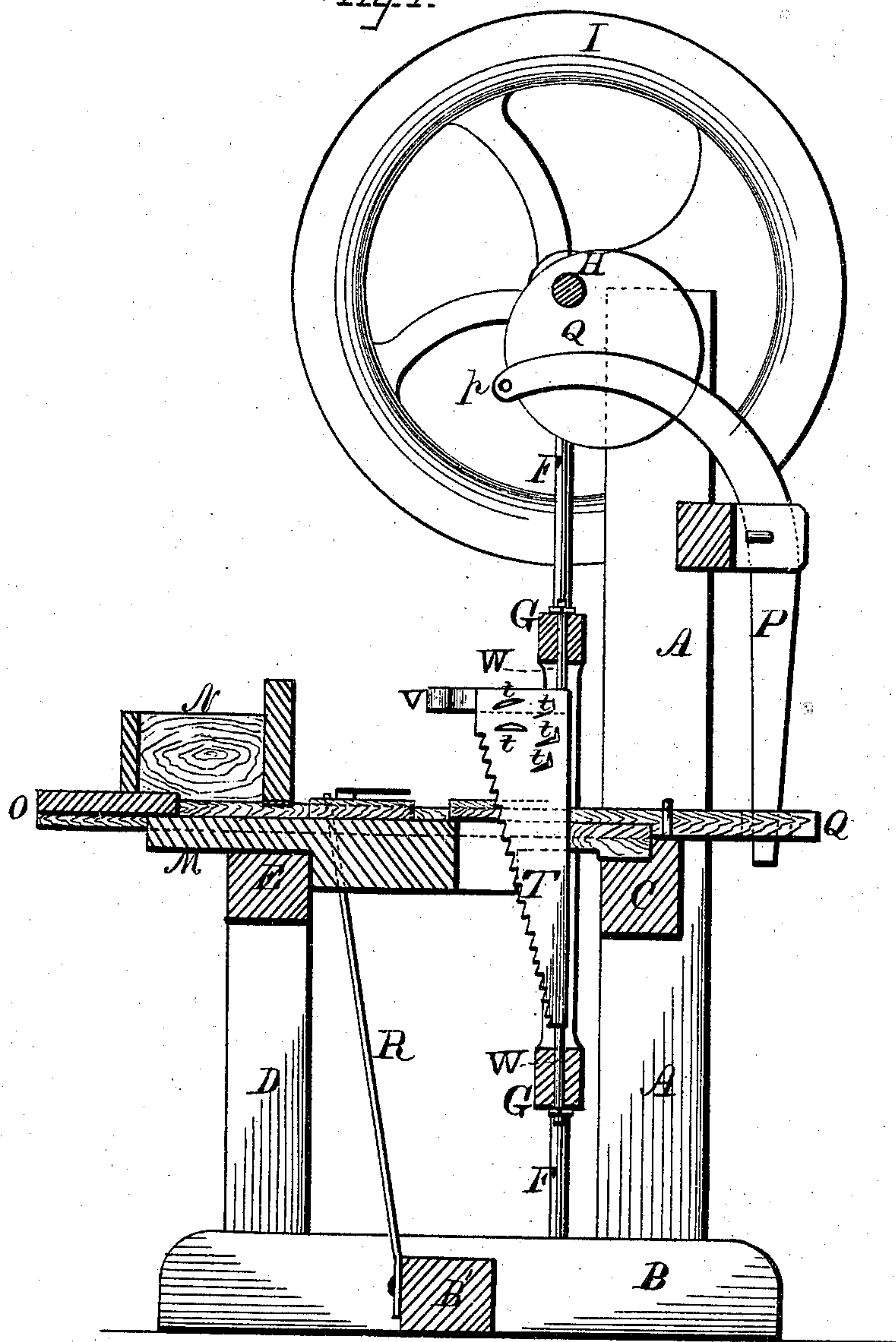


Fig. 5.



WITNESSES:

*Jas. E. Hutchinson.
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UNITED STATES PATENT OFFICE.

ALEXANDER R. STEWART, OF DAYTON, OHIO.

IMPROVEMENT IN MACHINES FOR MAKING CLOTHES-PINS.

Specification forming part of Letters Patent No. 150,909, dated May 12, 1874; application filed
October 29, 1873.

To all whom it may concern:

Be it known that I, ALEXANDER R. STEWART, of Dayton, in the county of Montgomery and in the State of Ohio, have invented certain new and useful Improvements in Machines for Making Clothes-Pins; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 is a perspective view of my improved machine. Figs. 2 and 3 are plan views of the upper side of said machine, the upper portion of the frame being removed so as to better show the feeding mechanism. Fig. 4 is a vertical central section of the same upon a line extending from front to rear, and Fig. 5 is a plan view of a clothes-pin as constructed.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to enable a wooden clothes-pin to be constructed from a proper blank at one operation; and it consists, principally, in the mechanism employed for feeding the blanks forward beneath the cutters and saw, substantially as and for the purpose hereinafter specified. It consists, further, in the means employed for shaping the inner and outer faces of the pin, substantially as is hereinafter shown. It consists, finally, in the machine as a whole, when its several parts are constructed and combined to operate substantially as and for the purpose hereinafter set forth.

In the annexed drawings, A and A represent two frame-posts, which extend vertically upward from the ends of two sills, B and B, and are connected together near their longitudinal centers by means of a cross-bar, C. Two other short posts, D and D, are secured within and extend upward from the opposite ends of said sills B, and at their upper ends are connected together by a cross-bar, E. A cross-sill, B', extending between the longitudinal centers of the sills B, completes the frame upon which the operating mechanism is placed. Secured upon and directly in front of each post A is a round metal bar, F, which, in connection with the opposite bar, furnishes guides or ways upon which a saw-frame or gate, G, is permitted to move in a vertical plane.

Above the frame G a shaft, H, journaled within suitable bearings *h* attached to the upper ends of the posts A, is provided upon each end with a fly-wheel, I, within the outer face of which is secured a crank-pin, *i*, that has journaled thereon one end of a pitman or connecting-rod, K, the opposite end of which pitman is journaled upon a bearing, *g*, that is formed upon the extended end of the lower bar of said saw-frame. Suitable pulleys L and L' being placed upon the shaft H, a rotary motion is imparted to the latter by means of belts, which motion through the pitman K is converted into a vertically-reciprocating movement of the saw-frame. Secured upon and extending across the upper sides of the cross-bars C and E is a bar, M, which is provided within its upper face with a central groove, *m*, that corresponds in width and depth to the transverse dimensions of the clothes-pin to be formed, and at its front end is provided with a hopper, N, for containing the pin-blanks and feeding the same into said groove. A slide, O, working within suitable guides *o* attached to or upon the upper side of the cross-bars C and E, is provided with a lateral arm, O', which fits into the groove *m* beneath the hopper N and, when said slide is caused to reciprocate in a line with said groove, passes outward until a pin-blank is permitted to drop into said groove, and upon its inward or rearward stroke carries said blank rearward to the rear end of said hopper. Motion is imparted to the slide O by means of a curved lever, P, (seen in Fig. 3,) which is pivoted at its longitudinal center to or upon the frame of the machine, has its lower end contained within a corresponding opening in the rear end of said slide, and at its upper end is provided with a stud, *p*, which extends horizontally and laterally outward, and bears against the forward face of an eccentric, Q, that is secured upon and revolves with the driving-shaft H. A bar-spring, R, secured upon the forward side of the cross-sill B', and from thence extending upward, with its upper end contained within an opening formed in the slide O, presses the same forward, so as to cause the stud *p* to bear against the face of the eccentric Q, the arrangement being such as to cause said eccentric to move said slide rearward, while said

spring returns the latter to its forward position. A suitable spring, S, attached to or upon the upper side of the bar M, and extending rearward over the groove *m*, has such width as to enable its said rear portion to pass downward slightly into said groove, so that the rearward passage of a clothes-pin blank shall press said spring upward, and after such passage the latter shall spring downward in rear of said blank and operate as a stop, to prevent it from being moved forward by the action of the cutters. Secured upon the frame G at its transverse center is a saw, T, which works within a slot that is formed at the transverse center of the groove *m*. At its lower end said saw has but slight breadth from front to rear, while from the same to its upper end the breadth of said saw is increased regularly, as shown in Figs. 1 and 4, such increase being just equal to the length of the slot which divides the end of the clothes-pin. As thus arranged a blank, U, is moved rearward at the instant when the saw has attained its highest point, and being held securely in position as said saw descends, the outward and upward sloping cutting-edge of the latter cuts from the rear ends of said blank forward to the desired point near its head. The slot *u* of the clothes-pin U has the form shown in Fig. 5; its outer end being given a V shape, and immediately within said end the sides of said slot being curved outward, so as to give increased breadth at such point.

The peculiar shape described is given by means of a number of cutters, *t*, which are secured upon opposite sides of the saw T just below its upper end, and have each such shape as to cut a portion of the surplus material from one side of the slot *u*. The cutters *t* may be formed separately, and attached to said saw, but I prefer to form them by cutting horizontally through the latter, springing out the metal at the upper side of such cut to the required shape, and then sharpening its lower edge so as to enable it to cut.

The head *u'* is formed by means of two cutter-arms, V, one of which is secured to or upon a suitable brace-rod, W, at each side of the saw, and extending forward is formed at and in rear of its forward end upon a line corresponding to the shape of one-half of said head *u'*. The cutters thus constructed descend with the saw, and at one stroke remove the surplus material from the end of the pin-blank, so as to complete the head.

The machine described is capable of forming a perfect clothes-pin at each downward movement of the saw and cutters, and, as the finished pins are removed by the same upon their upward stroke, no other attention is necessary except to supply the blanks to the hopper.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. The bar M, provided with the groove *m*, the slide O and O', the curved lever P and stud *p*, and the eccentric Q attached to and revolving with the shaft H, when said parts are constructed and combined in the manner and for the purpose substantially as specified.

2. The means employed for shaping the inner and outer faces of the pin U, consisting of the saw T, provided with the cutters *t*, and the cutter-arms V, when said parts are constructed as shown, and combined with the vertically-reciprocating frame G, substantially as set forth.

3. The hereinbefore-described machine for producing clothes-pins, when its several parts are constructed and arranged to operate in the manner and for the purpose substantially as shown.

In testimony that I claim the foregoing I have hereunto set my hand this 26th day of June, 1873.

ALEX. R. STEWART.

Witnesses:

WM. ALTICK,
SUMNER T. SMITH.