

G. F. SALMON.

Machines for Stamping and Striping Hosiery.

No. 157,766.

Patented Dec. 15, 1874.

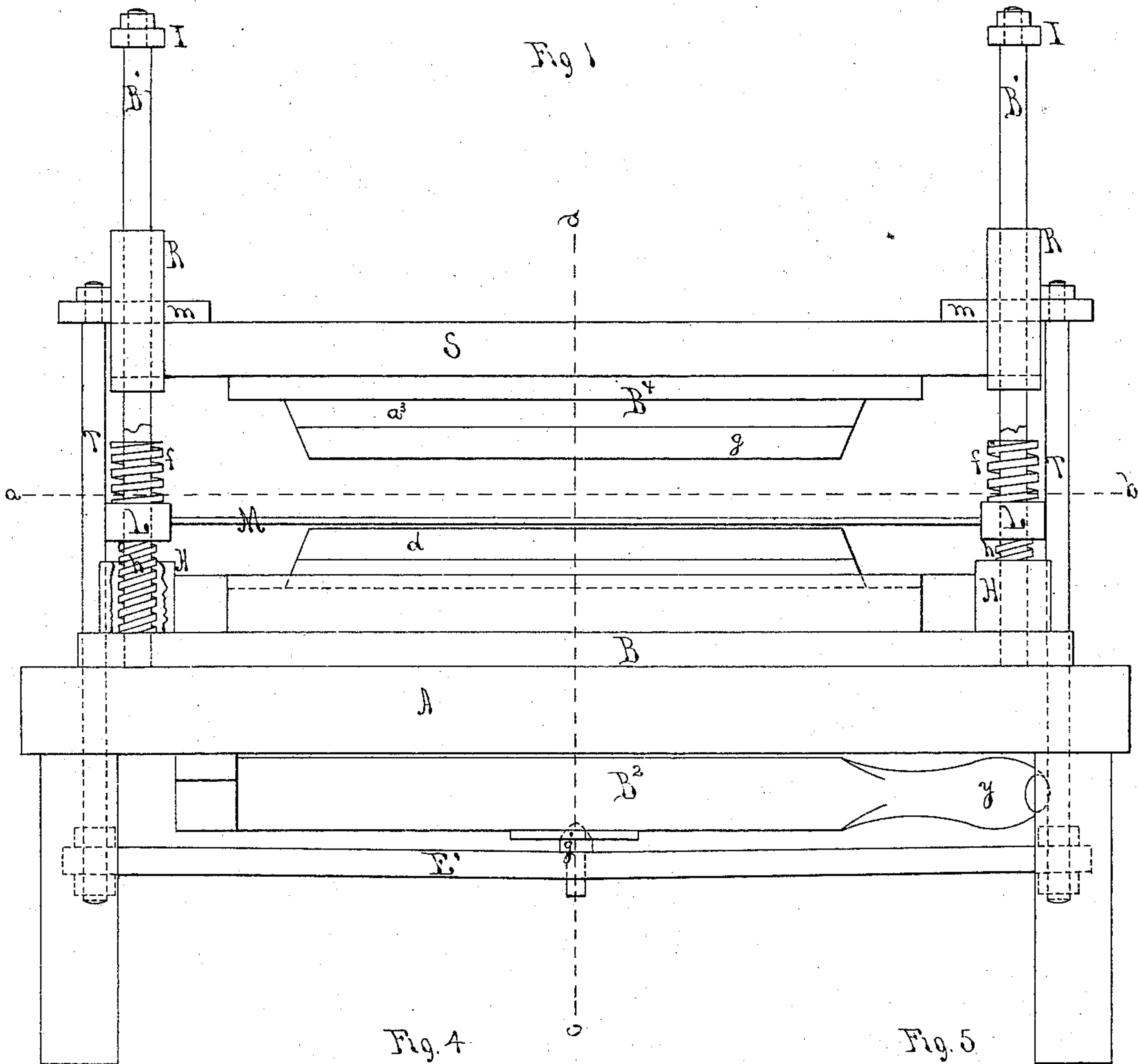
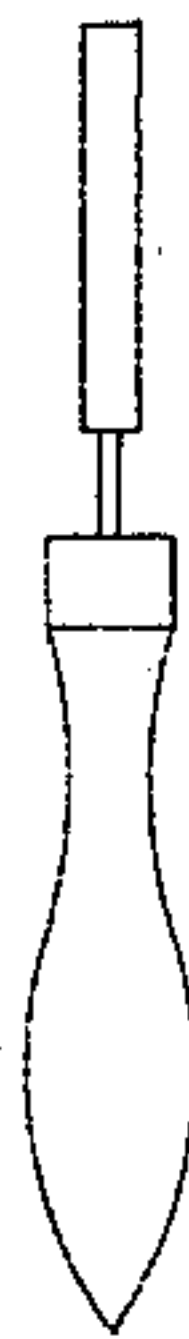
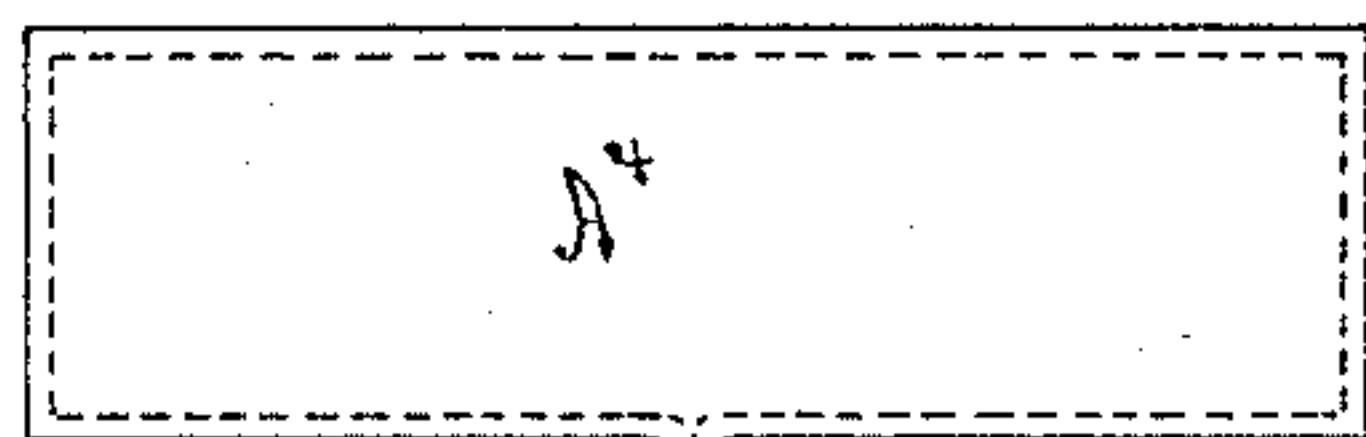


Fig. 4

Fig. 5



Witnesses:
John E. Crane
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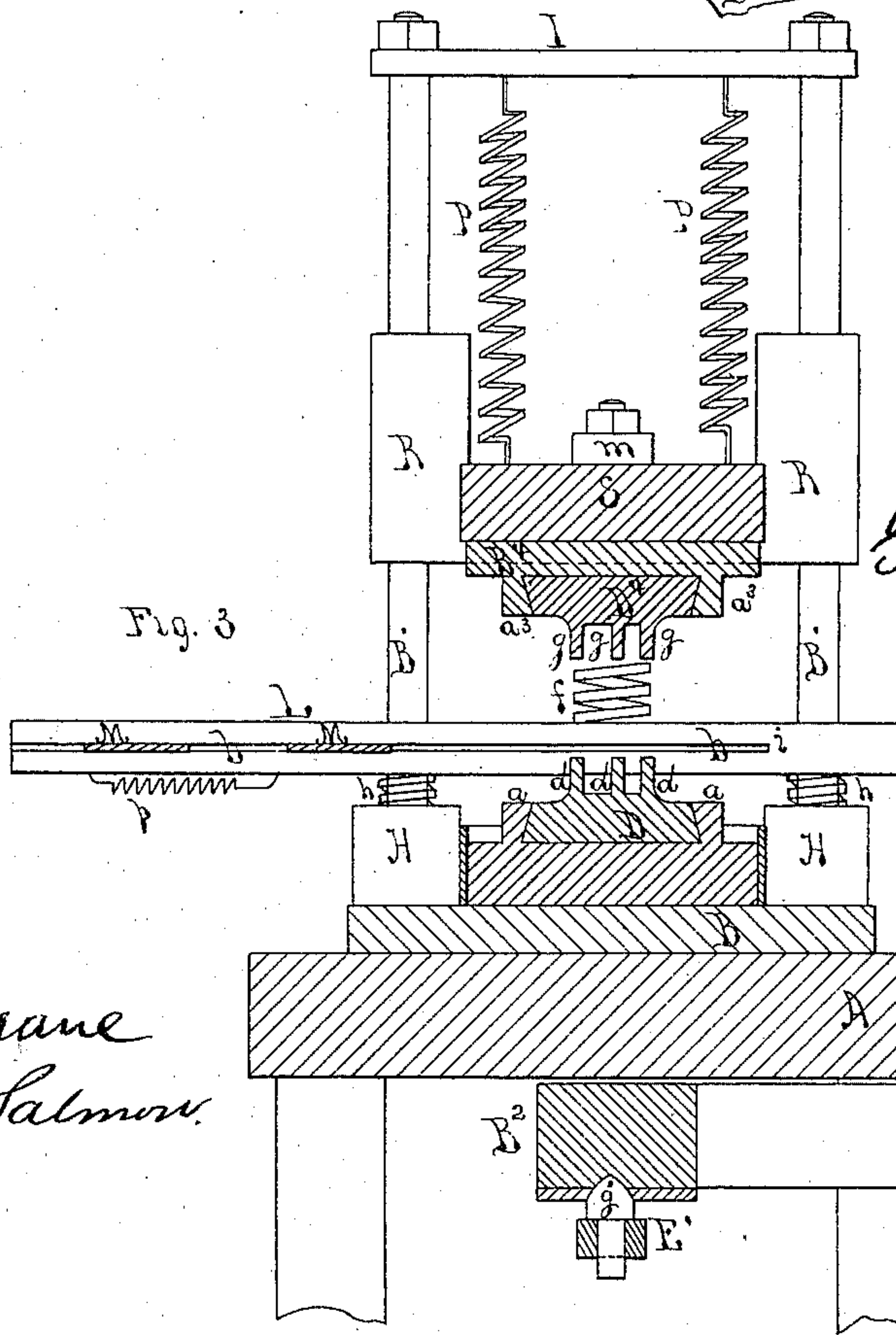
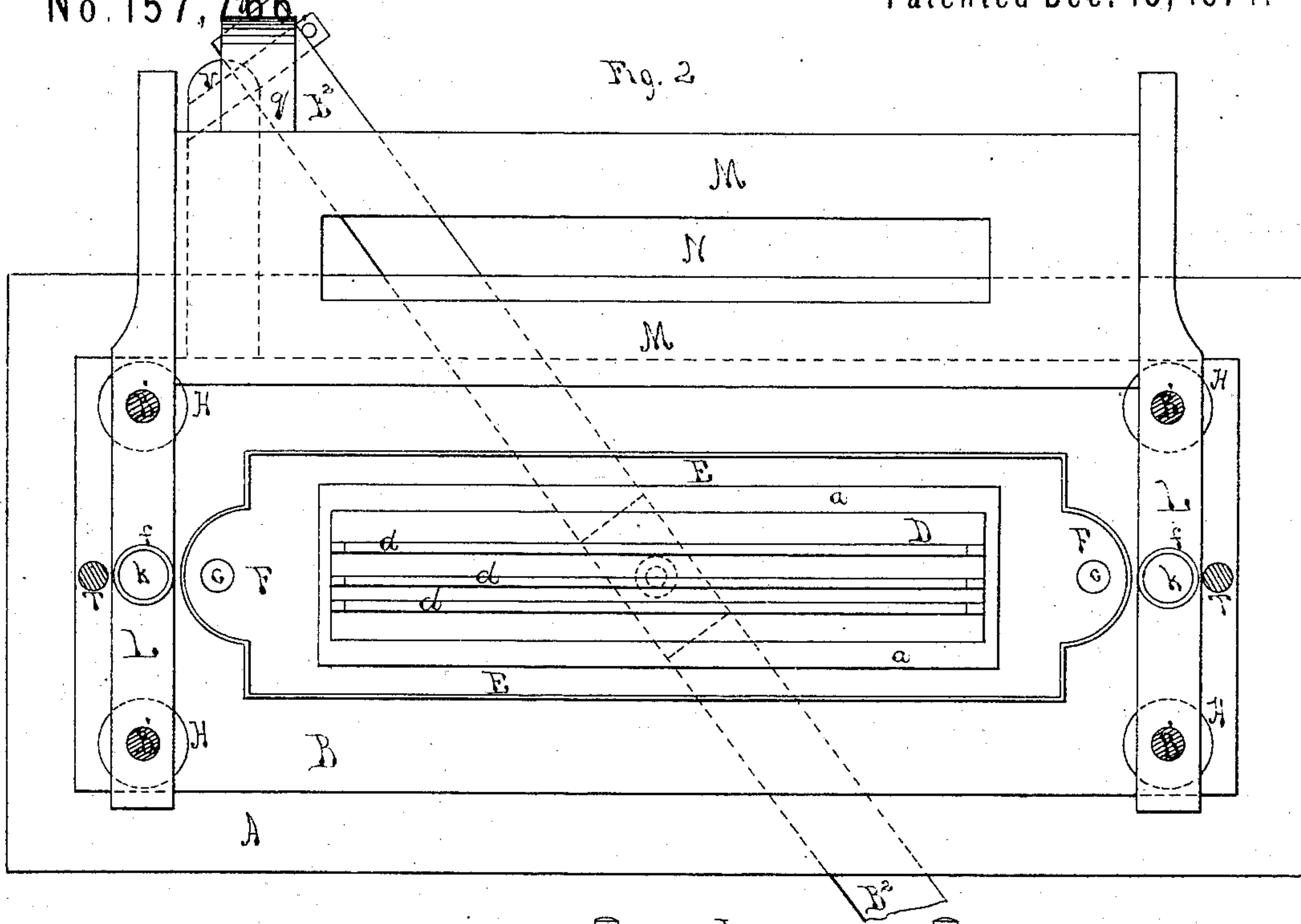
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UNITED STATES PATENT OFFICE.

GEORGE F. SALMON, OF LOWELL, MASSACHUSETTS, ASSIGNOR OF ONE-HALF HIS RIGHT TO WILLIAM F. SALMON, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR STAMPING AND STRIPING HOSIERY.

Specification forming part of Letters Patent No. **157,766**, dated December 15, 1874; application filed October 19, 1874.

To all whom it may concern:

Be it known that I, GEORGE F. SALMON, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Stamping or Striping Hosiery, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation. Fig. 2 is a horizontal plane section on the line *a b* of Fig. 1. Fig. 3 is a vertical transverse section on the line *c d* of Fig. 1. Fig. 4 is a plan, and Fig. 5 an edge view, of the inking-pad used with this machine.

This invention relates to and consists of certain new and useful improvements in machines which are used for striping hosiery—that is, for stamping or printing one or more stripes upon hosiery as upon the tops or leg portions of hose worn by ladies or gentlemen.

This invention has for its object to stripe hosiery more evenly, uniformly, and perfectly, and with greater facility, and at a cheaper rate than they have heretofore been striped.

In the ordinary machine for striping hosiery the bottom striping-dies are stationary, and the upper striping-dies are carried by and on the under side of an operating lever, hinged at one end to a fixed support a short distance beyond one end of the bottom dies, the free end of the hinged lever having a handle by which to operate the lever, and the dies it carries; and to operate such common striping-machine the free end of the lever is raised to about a vertical position, so as to carry the back ends of the upper dies from the same ends of the lower dies a sufficient distance to admit the introduction of the inking-pad, which is saturated with the coloring matter to make the stripes on the hosiery. The inking-pad is then placed on the tops of the lower dies, and the hinged lever, with the upper dies, is brought down onto the pad, and instantly raised again, thus leaving or depositing coloring matter on both the upper and lower dies; a piece of hosiery is then placed carefully on the tops of the lower dies, and the hinged lever and the upper dies brought down with a blow, or with

pressure, which causes the color-furnished dies to stripe that part of the hose lying between them.

In the use of such a common hosiery-striping machine the striping is of necessity carried on very slow, and it is also imperfectly done, for while each piece of hosiery lies on the lower dies awaiting the action of the upper dies to be brought down by the hinged lever, the coloring matter on the lower dies is absorbed by the hosiery fabric, thus forming a wider strip or stripes on the under side than by the sudden blow or by pressure of the upper dies on the upper side of the fabric; and, besides this, the lower portions of the stripes will have dim uneven edges or outlines, by reason of the color being absorbed slowly from the lower dies; and, besides this, when the upper dies and the hinged lever are in a vertical position, the coloring matter runs from the upper to the lower ends of the dies; and when the upper dies are brought down onto the hosiery, such dies print a stripe too full at one end, and quite pale at the opposite end; and the color which runs from the upper dies, when in a vertical position, frequently spots the hosiery fabric, much to its injury.

My improved machine for striping hosiery is constructed with a suitable frame-work, *A*, upon the top of which I secure the bed-plate *B*, supporting the lower dies *d*, formed on or connected to a block, *D*, inserted in a dovetail groove between two ribs, *a*, rising from the bed-plate, which has side troughs *E* leading to end spaces *F*, and to outlets *c*, to conduct all surplus coloring matter from the lower dies. At each corner of the bed-plate *B* is a rising hub, *H*, containing each a spiral spring, *h*, and forming the step or bottom support of vertical guide-rods *B*¹, encircled by the springs *h* in each hub. These guide-rods extend upward a suitable distance, where their tops are secured by connecting cross-bars *I*. A little above the hubs *H*, at each end of the machine, and resting on the springs *h*, are transverse pressure-bars *L*, arranged loosely upon the rods *B*¹, and having their inner edges grooved, as at *b*, to receive the slide *M*, which carries the hosiery forward to be striped. The springs *h* retain the pressure-bars and the slide so high

above the lower dies that the hosiery laid upon the slide and pushed forward passes freely over said dies without coming in contact with them until pressure is applied, as hereinafter described. The slide M is constructed with an open center or space, N, wider and longer than the space covered by the dies, so as to allow the slide to pass over or downward below the tops of the lower dies when the springs *h* are depressed. Above each pressure-bar L a spring, *f*, is arranged on a stub, *k*, rising from each bar at about the center, between the rods B¹, and these springs *f* act in connection with the springs *h*, and with other parts of the machine, as explained hereafter. Above the pressure-bars L and the springs *f* follower-guides R are arranged to move on the rods B¹; and to these two guides R I connect the opposite ends of the follower S, which carries the upper dies *g* depending from its under side, and directly over and matching the lower dies *d* when brought together.

The follower is suspended from the cross-bars I by spiral springs P, which yield to the action of the mechanism used to draw the follower downward, and return the follower after the downward pressure is released. A brace, *m*, secured to the top, and projecting from each end of the follower, forms suitable connections for vertical rods T, passing through the frame A, or this and the plate B, and extending downward below the frame, where a longitudinal bar, E', connects with their lower ends, to operate the follower, by a lever, B², pivoted at one end to a stand, *v*, at one side of the frame A, and having a socket-pivot, *g'*, at the center of the bar E', by which to make the lever operative through the bar E', the rods T, and braces *m*, to depress the follower and its depending dies. The slide M has an operating pusher-plate, *q*, at one end, by which to push the slide forward over the dies. The slide is returned or drawn back by spiral springs *p*, connected to the inner edge of the slide, and to supports or hooks near the outer ends of the bars L.

My improved striping-machine is operated as follows: First, place the saturated inking-pad A⁴ upon the lower dies *d*, and press down on the free end *y* of the lever B² until the upper dies are brought down and press upon the pad, which deposits coloring matter on both the upper and the lower dies. Next, release the pressure on the lever, when the springs P raise the follower and the upper dies to about the position shown in Figs. 1 and 3. Next, place the piece of hosiery upon the slide, with that part to be striped over the opening N, and move the slide and the piece of hosiery forward over the lower dies, to where the stops *i* arrest the forward motion of the slide, and, holding the latter, press down on the lever B² with a sudden motion and sufficient force to bring the upper dies down upon the piece of hosiery, and this and the upper dies down into good pressing-contact with the lower dies, and the piece of hosiery is striped in a

superior manner, the stripes on both sides being even, uniform, and quite perfect, as the striping is quickly done by both the upper and the lower dies at the same instant, and the operation of supplying the dies with coloring matter, and of feeding in the separate pieces of hosiery, and depressing the dies, and with these the slide and the hosiery, to print the stripes thereon, is repeated with reasonable rapidity; and in order to repeat the above-described operation with much greater rapidity, two attendants are employed, one to handle and apply the inking-pad to and between the dies, and to depress the lever B² and the follower, and the upper dies and the slide, as described, and another attendant to operate the slide, and to feed and withdraw the hosiery, respectively, to and from the slide and the dies in the process of striping.

The first part of the downward motion of the follower and the upper dies merely brings the follower down onto the springs *f* on the top of each bar L, and a continued downward motion depresses the springs *f*, and, by their compressed force and the force exerted on the lever, causes the springs *h* to yield, and allows the slide and the piece of hosiery thereon to come down into contact with the lower dies at the same instant the upper dies meet the top of the fabric, which receives the stripe from the coloring-matter on both the dies simultaneously, and, after the piece of hosiery has been striped, releasing the pressure on the lever B² allows the follower to rise, and also allows the springs *h* to raise the slide M, and suddenly lift the piece of striped hose directly off from and above the lower dies, where it is withdrawn with the slide without contact with the dies. The upper dies, *g*, like the lower dies, *d*, are connected to or formed on a block, D⁴, and inserted in a dovetail groove between two ribs, *a*³, depending from a plate, B⁴, secured to the under side of the follower S, and either set or series of said dies are easily removed to substitute others of different shape or configuration, and that will print a stripe or stripes of any form or width within their capacity.

In the construction of my said striping-machine it will be obvious that the springs *f* may be dispensed with, and the follower allowed to press down upon studs substituted for the springs and the stubs which hold them; but I prefer the springs, as their yielding action produces an easier and more gentle motion, both of the follower and of the parts below it, and prevents arresting the motion of the follower suddenly, and the liability of displacing or breaking the connected parts when the follower is depressed.

I claim as my invention—

1. The combination of the springs *h*, the bars L, slide M, and springs *f* with, and operated by, the follower S, when the latter is depressed, substantially as described.

2. The pressure-bars L, constructed as described, with grooves *b* and stops *i*, and ar-

ranged upon the rods B¹, in combination with, and resting on, springs *h*, and carrying the slide M, and operating to depress the slide when the follower descends, and to rise when the follower rises, substantially as described.

3. The slide M, constructed, as described, with a central opening, N, and a pusher-plate, *q*, in combination with the grooved bars L,

having stops *i*, and with the springs *p*, *f*, and *h*, and follower S, all operating substantially as described.

GEORGE F. SALMON.

Witnesses:

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