

(No Model.)

2 Sheets—Sheet 1.

P. A. COUPAL.
SOLE LAYING MACHINE.

No. 353,251.

Patented Nov. 23, 1886.

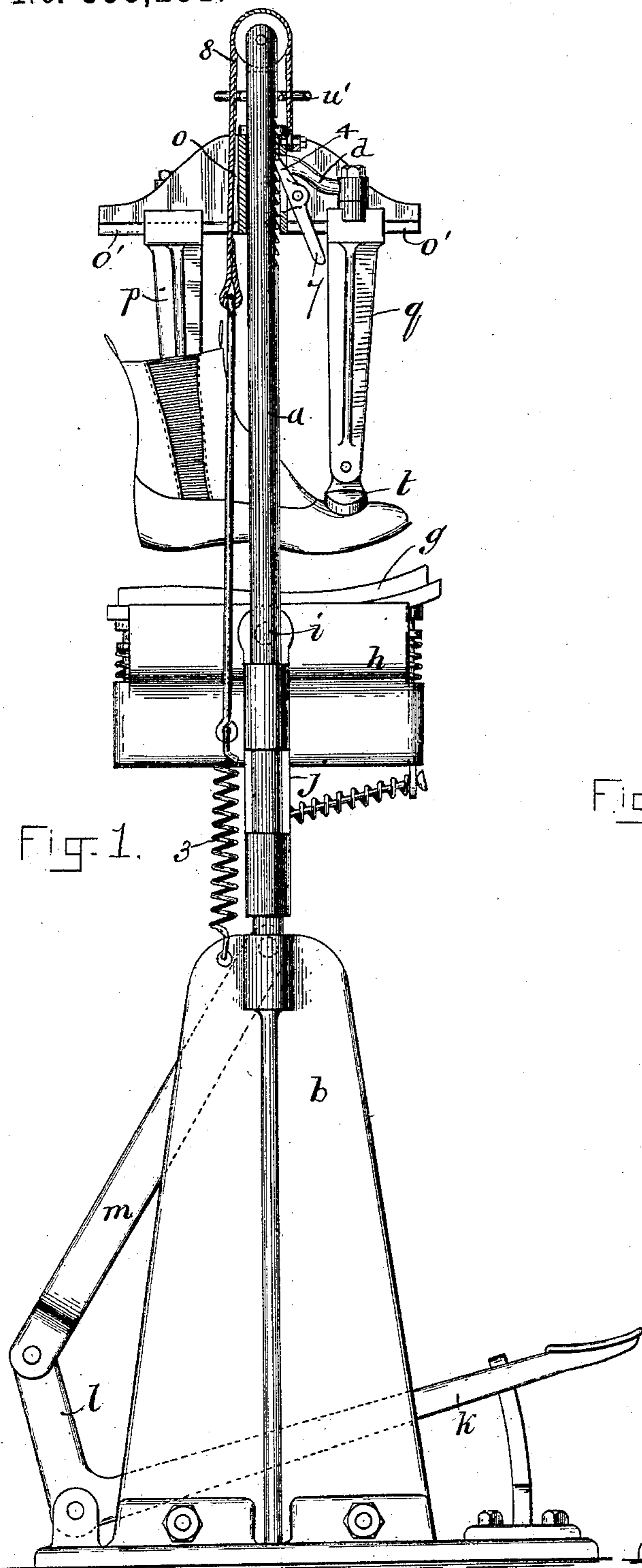


Fig. 1.

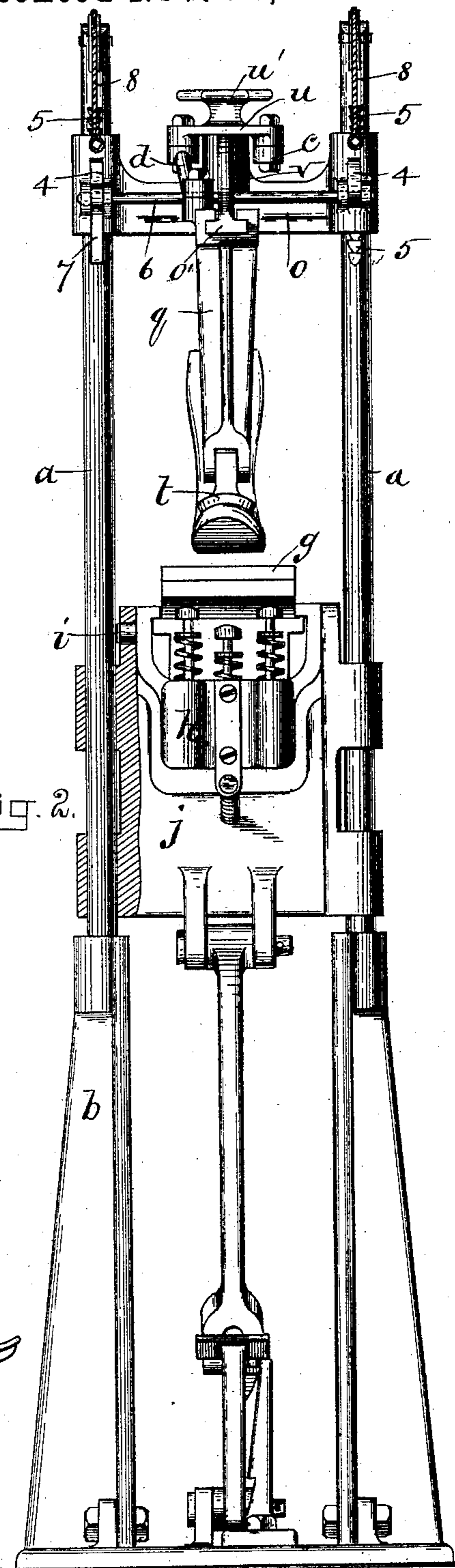


Fig. 2.

WITNESSES:
Chas S. Gooding.
John A. Rennie

INVENTOR:
P. A. Coupal
By Hugh B. Connelley, Attorney.

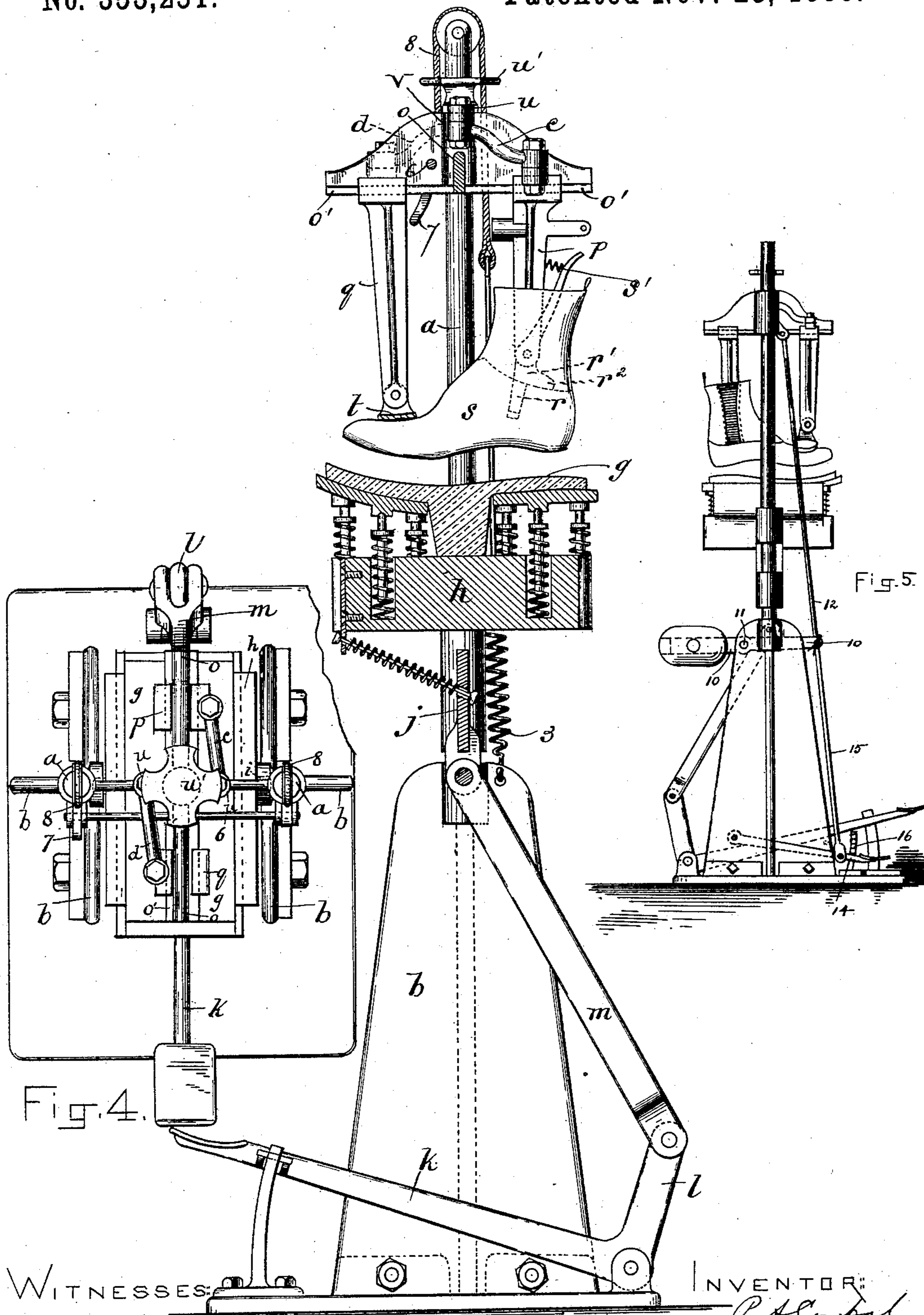
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2 Sheets—Sheet 2.

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SOLE LAYING MACHINE.

No. 353,251.

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WITNESSES:
Chas. S. Gooding.
John J. Kenna.

FIG. 3.

INVENTOR:
P. A. Coupal
by Knight Bros. & Co.
Atty.

UNITED STATES PATENT OFFICE.

PETER A. COUPAL, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE BOOT AND SHOE SOLE LAYING MACHINE COMPANY, OF PORTLAND, MAINE.

SOLE-LAYING MACHINE.

SPECIFICATION forming part of Letters Patent No. 353,251, dated November 23, 1886.

Application filed March 19, 1886. Serial No. 195,829. (No model.)

To all whom it may concern:

Be it known that I, PETER A. COUPAL, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Sole-Laying Machines, of which the following is a specification.

This invention relates to machines for temporarily connecting outer soles to lasted uppers and inner soles of boots and shoes by cement, preparatory to permanent connection by nails or other fastenings, the cement-coated sole being pressed firmly against the lasted upper and inner sole by an elastic bed forming a part of the machine, said bed causing the sole to conform closely to the shape of the bottom of the last, and holding it so conformed while the cement is hardening.

The present improvements relate to that class of sole-laying machines in which a jack or last-supporter is employed composed of two standards movable toward and from each other, the one having a spindle to engage with the spindle-socket of the last and the other a toe-rest, which bears on the fore part of the lasted upper, the movability of said standards adapting them to lasts of different lengths.

This invention consists, first, in the means for simultaneously moving or adjusting said standards to adapt them to different lasts, and, secondly, in the means for adjusting the jack vertically or toward and from the sole-pressing bed, all of which I will now proceed to describe.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of a sole-laying machine having my improvements. Fig. 2 represents a front elevation, partly in section. Fig. 3 represents a vertical section. Fig. 4 represents a top view. Fig. 5 represents a modification. The same letters of reference indicate the same parts in all the figures.

In the drawings, *a a* represent vertical standards, supported by a suitable base or frame, *b*.

g represents the elastic bed, which presses the cement-coated sole against the lasted upper and inner sole. Said bed may be of any suitable construction, and may be supported by any suitable means, the support here shown being a block or holder, *h*, having trunnions *i i*, journaled in ears on a cross-head, *j*, which is adapted to slide on the standards *a a*. The cross-head *j* is raised to force the bed *g* up-

wardly by a treadle, *k*, having an arm, *l*, and a rod, *m*, connecting said arm to ears on the cross-head.

The devices thus far described form no part of my present invention.

o represents a cross-head located on the standards *a a* over the bed *g*. Said cross-head is provided with horizontal wings or guides *o' o'*, on which the standards *p q*, constituting the jack, are adapted to slide. The standard *p* has a spindle, *r*, formed to enter the socket in the rear portion of the last *s*, while the standard *q* has a rest, *t*, which bears on the fore part of the lasted upper.

n represents a plate pivoted to the cross-head *o*, preferably by means of a stud affixed to the plate and swiveled in a socket, *v*, in the cross-head, so that the plate can be rotated freely. To the opposite sides of the center of said plate are pivoted rods *c d*, which are pivoted, respectively, to the standard *p* and the standard *q*.

It will be seen that by rotating the plate *n* the standards *p q* will be moved simultaneously toward or from each other, according to the direction of rotation of the plate. The standards may thus be adjusted more quickly than by the right and left screw-shaft heretofore employed for simultaneously moving said standards in opposite directions.

The plate *n* is preferably provided with a handle, *n'*, for the convenience of the operator.

The cross-head *o* is adapted to move vertically on the standards *a a*, for the purpose of adjusting the last vertically. The cross-head is held at any position to which it may be adjusted by suitable devices, which support the cross-head and exert an upward pressure on it, and pivoted dogs *4 4*, engaged with notches *5 5*, cut in the standards *a a*, so as to resist the upward pressure exerted on the cross-head. When the cross-head is to be adjusted downwardly, the operator depresses it against the supporting pressure until the required adjustment is obtained, and then engages the dogs with the notches in the standards to maintain the adjustment. When the cross-head is to be adjusted upwardly, the operator disengages the dogs from the standards and allows the cross-head to be raised to the desired height, and then secures it by the dogs, as before. The dogs are both rigidly attached to a rock-

shaft, 6, journaled in ears on the cross-head, so that they may be moved simultaneously into and out of engagement with the notches of the standards by a handle, 7, formed on one of the dogs.

In Figs. 1, 2, and 3 I have shown springs 3 3 as the means for raising the cross-head. Said springs are in this case connected to the frame *b* at their lower ends, and are connected with the cross-head by cords 8 8, passing over pulleys in the standards *a a*. It is obvious, however, that the springs may be arranged in any other suitable manner to exert an upward pressure on the cross-head.

In Fig. 4 I have shown a modification in which the springs 3 3 and their adjuncts are omitted, and the cross-head is raised by means of a weighted lever, 10, pivoted at 11 to the base *b*, and connected by rods 12 with the cross-head. The weight 13 of said lever is arranged to exert an upward pressure on the cross-head through the rods 12. To depress the cross-head, I provide a treadle, 14, which is connected by a rod, 15, with the weighted lever 10, and when depressed draws the cross-head downwardly. When this modification is employed, the dogs 4 4 and the notches with which they engage to hold the cross-head against the upward pressure may be omitted, in which case the cross-head may be held by a notched arm or ratchet-bar, 16, affixed to the base of the machine in position to engage with the treadle 14 and hold the latter, the cross-head, and the intermediate devices in any position to which they may be adjusted.

The spindle *r* is formed on an arm, *r'*, that is pivoted to the standard *p*, and is pressed by a spring, *s'*, so as to throw the spindle forward against the front side of the spindle-socket in the last. Said arm has a projection, *r''*, which bears against the top of the last behind the spindle, and prevents the wood of which the last is made from splitting or breaking away at the margin of the spindle-socket.

I claim—

1. The combination of the cross-head or support, the last-supporting standards adapted to move on guides on said head, a rotary plate pivoted to the head, and connections between said plate and standards, whereby the standards are moved simultaneously in opposite directions by the rotation of the plate, as set forth.

2. The combination of the cross-head, the standards *p q*, adapted to slide on guides on said head, the rotary plate pivoted to the head, and the rods *c d*, connecting said plate, respectively, with the standard *p* and the standard *q*, as set forth.

3. The combination of the vertical standards *a a*, the jack-supporting cross-head adapted to move thereon, springs 3 3, and cords 8 8, or equivalent devices, as specified, for imparting an upward pressure to the cross-head, and movable detents for supporting said cross-head at various heights against such pressure, as set forth.

4. The combination of the vertical notched standards *a a*, the jack-supporting cross-head adapted to move thereon and provided with the dogs 4 4, adapted to engage the notches of the standards, and devices, substantially as described, whereby the cross-head is normally forced upwardly, as set forth.

5. The cross-head having the last supporting standards, the rock-shaft 6, and the dogs 4 4, secured to said rock-shaft, combined with the notched standards and the devices for pressing the cross-head upwardly, as set forth.

6. The standard *p*, having the spindle *r* and the projection *r''*, formed to bear on the top of the last behind the spindle-socket, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 6th day of March, 1886.

PETER A. COUPAL.

Witnesses:

C. F. BROWN,
ARTHUR W. CROSSLEY.