

(No Model.)

E. E. WINKLEY.  
FORM FOR SOLE LAYING MACHINES.

No. 549,471.

Patented Nov. 5, 1895.

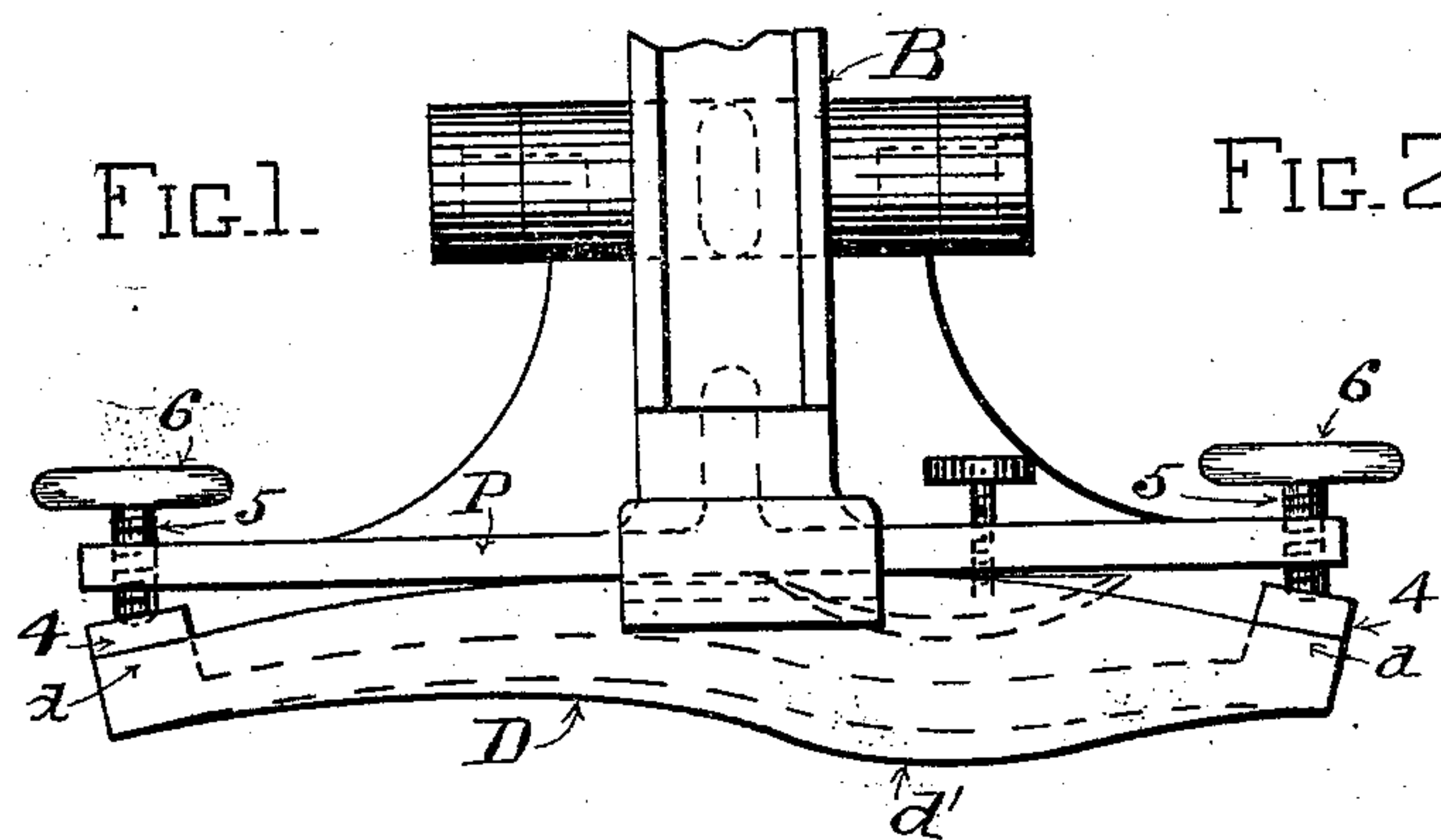


FIG. 2.

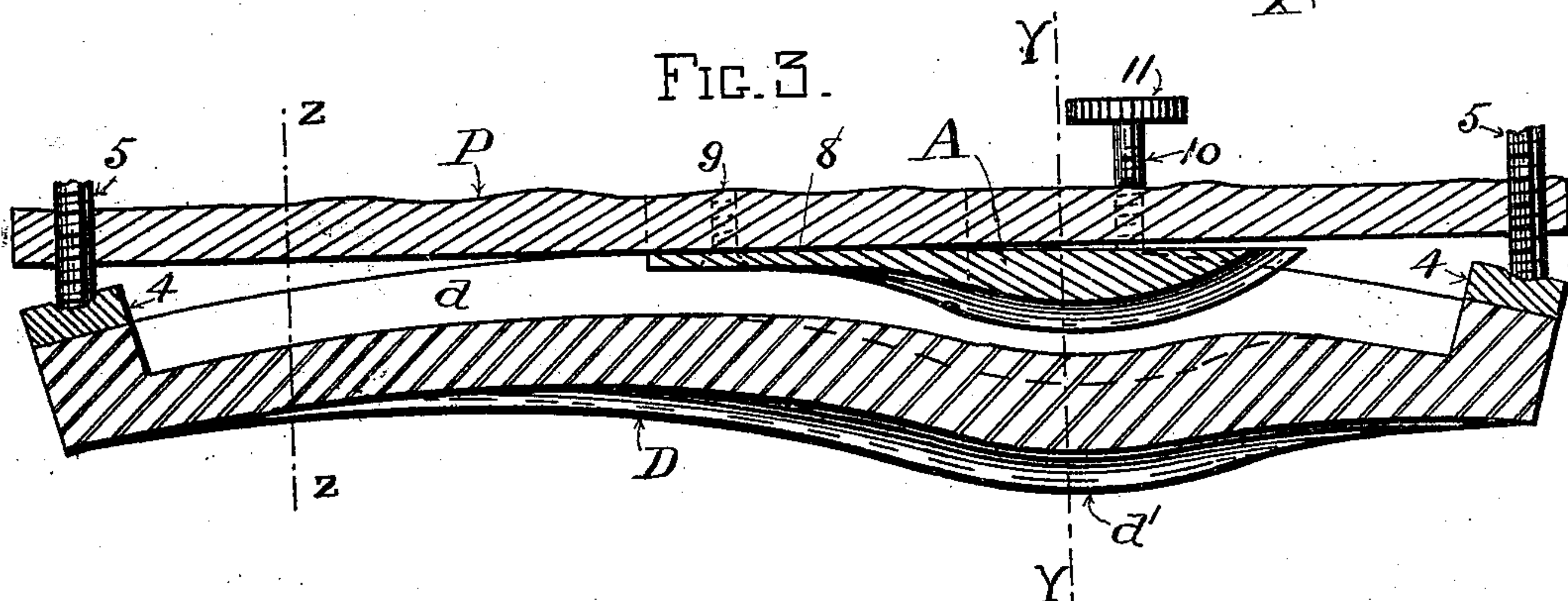
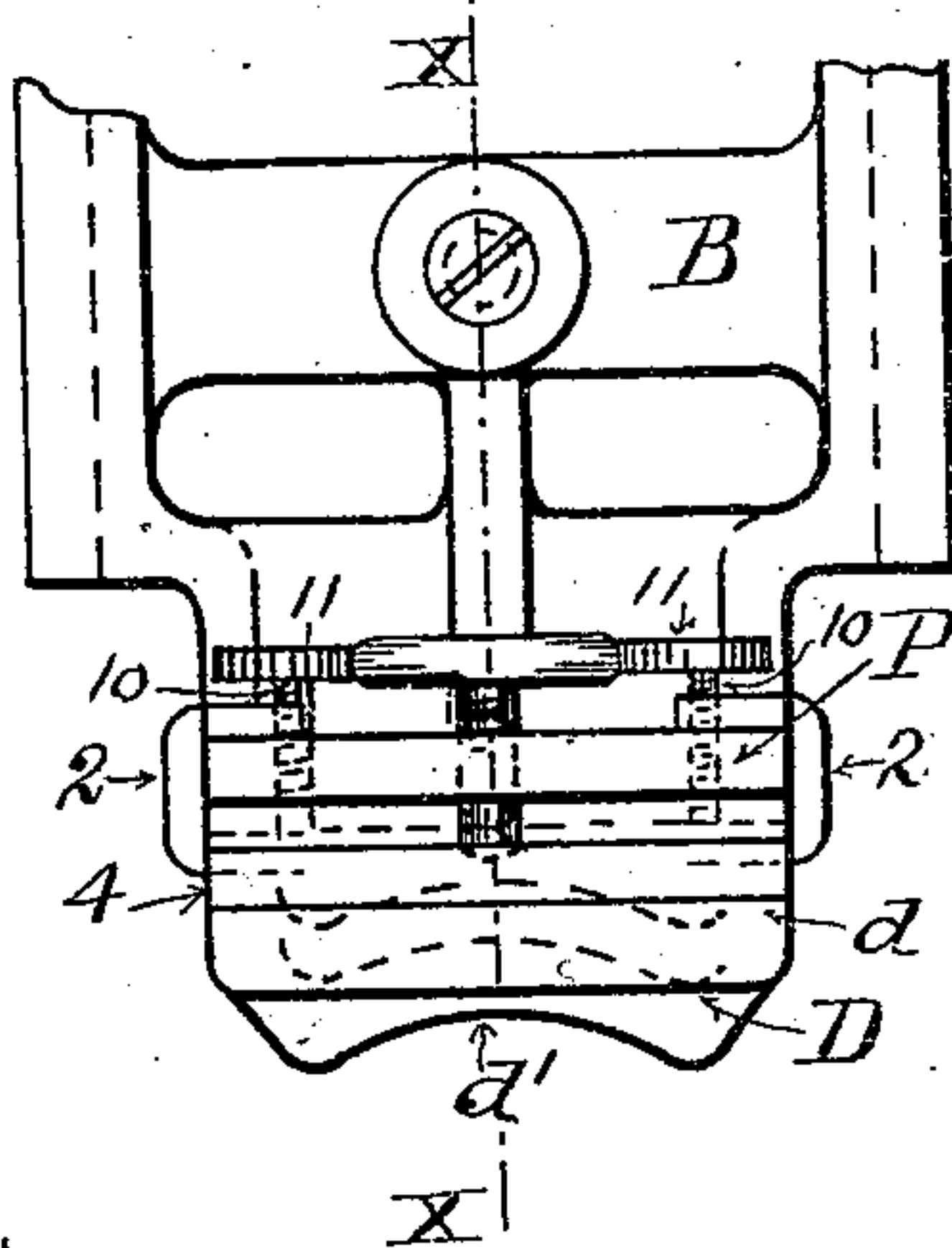


FIG. 4.

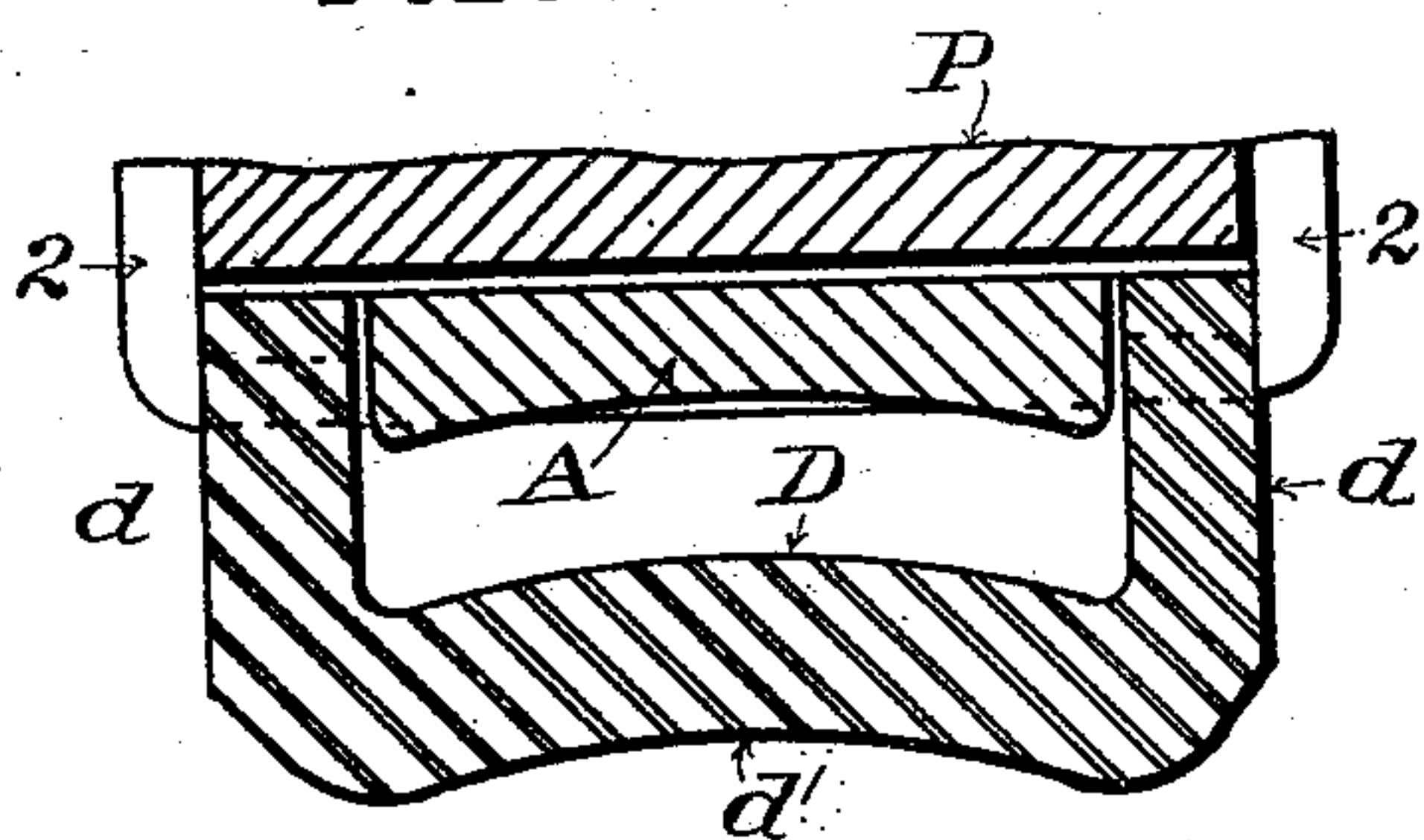


FIG. 5.

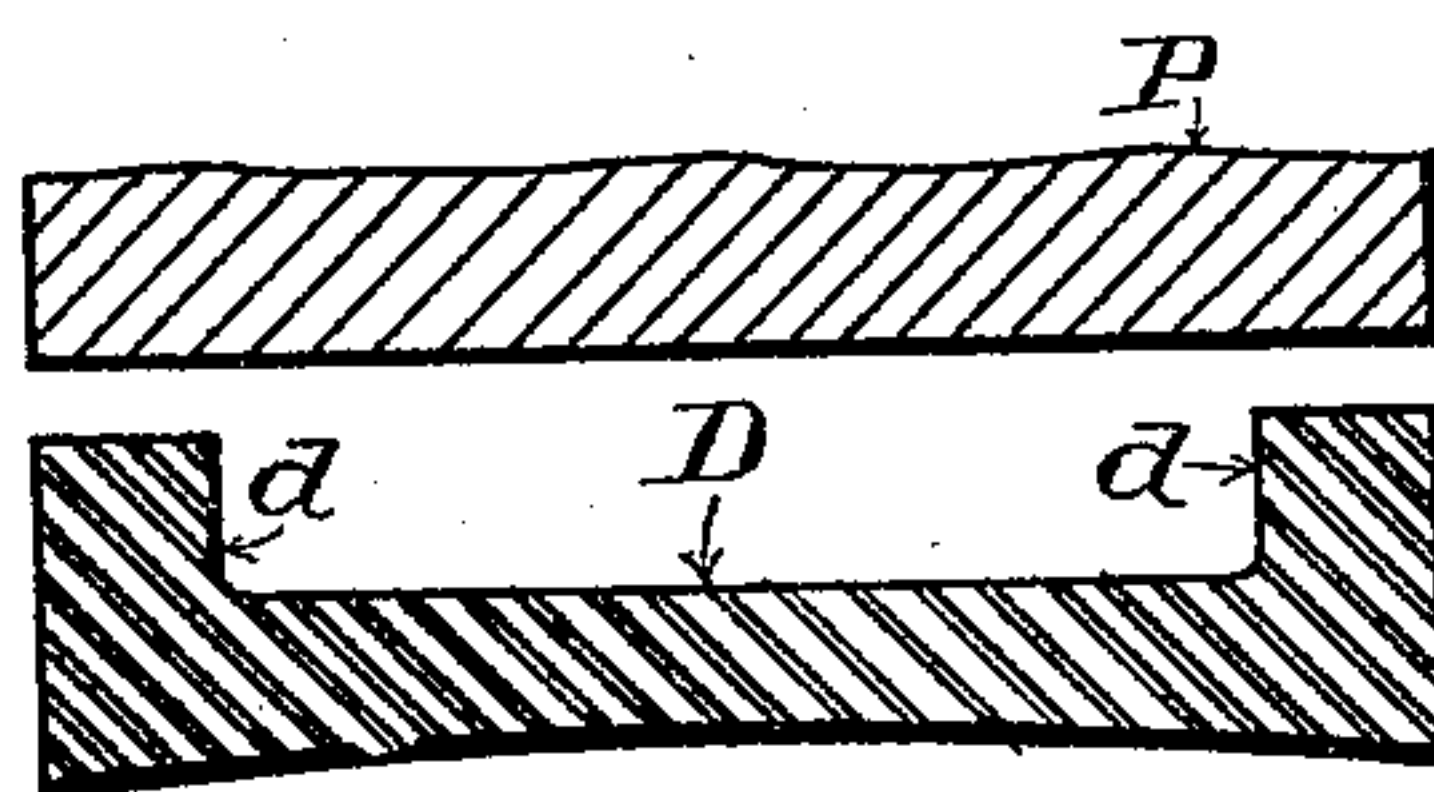
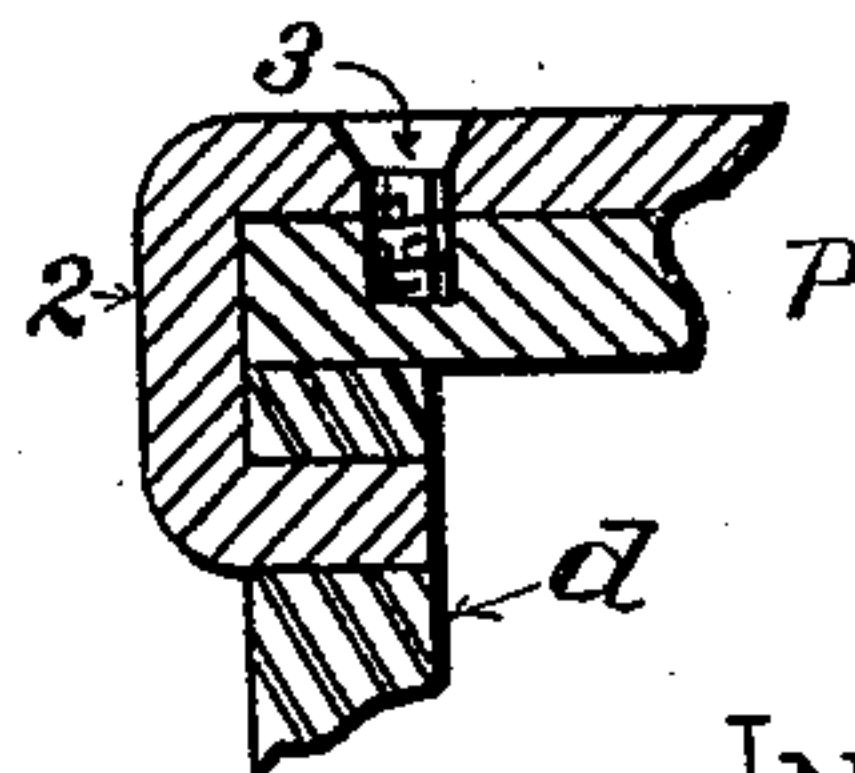


FIG. 6.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

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## FORM FOR SOLE-LAYING MACHINES.

SPECIFICATION forming part of Letters Patent No. 549,471, dated November 5, 1895.

Application filed April 24, 1894. Serial No. 547,041. (No model.)

*To all whom it may concern:*

Be it known that I, ERASTUS E. WINKLEY, a citizen of the United States, and a resident of Lynn, in the county of Essex and Commonwealth of Massachusetts, have invented a new and useful Improvement in Forms for Sole-Laying Machines, of which the following is a specification, reference being had to the drawings herewith submitted, and which are to be taken as forming a part hereof.

This invention relates, generally, to devices of the above class, but more particularly to such types of mold for sole-laying machines as embody in their structure a continuous elastic pad, against which the shoe is pressed upon its last, the sole to be laid having been previously cemented and placed in proper position upon the shoe.

A continuous yielding or elastic pad is a device well known in this art, but as the same has been heretofore arranged the results secured thereby have been found to be unsatisfactory, owing to the difficulty of properly distributing the pressure over the sole while acted upon thereby. Attempt has been made in the latter art to remedy the objection above cited by dividing the pad into a series of independent sections independently supported and capable of a change in longitudinal (in the direction of the length of the shoe) inclination. The divided pad, however, has also been found to be objectionable, owing to its liability (even when covered with a continuous cover) to leave ridges across the sole where the sections abut upon each other.

The object of the present invention is to provide a continuous pad so formed and arranged that by means of the same the pressure can be distributed over the sole as required to secure the proper set of the sole upon varying sizes and styles of shoe; and to such end this invention consists of the form and arrangement of the continuous elastic pad and its adjusting and supporting devices, as hereinafter more specifically set forth and claimed.

This invention is illustrated by the drawings herewith submitted, in which—

Figure 1 is a side view of a device embodying the same. Fig. 2 is an end view. Fig. 3 is a section on line X X, Fig. 2. Fig. 4 is a section on line Y Y, Fig. 3. Fig. 5 is a sec-

tion on line Z Z, Fig. 3. Fig. 6 is a detached sectional view showing clamping means for securing the pad to its support.

Similar letters and figures of reference refer to similar parts throughout the several views.

In the drawings, B represents a suitable frame or head provided with means for adjusting the same in and upon a sole-laying machine. The form and arrangement of head B will of course vary with the types of machine upon which the mold is used; but I do not consider any further description of the same necessary herein, as it in no way pertains to the present invention.

Mounted upon the head B is a rigid supporting-plate P, which supports the pad D, which is secured to the same, as hereinafter described. The under surface of the plate P is, preferably, plane, the curvature of the form, to adapt it to conform to the bottom of the sole, being secured in the pad. If desired, however, the plate P may be slightly curved for such purpose.

D represents a continuous elastic pressing-pad, made of rubber or other suitable elastic material. The edge of the pad D is thickened or reinforced by a strip or band *d*, also of elastic material, made integral with or suitably secured to the pad D. The strip or band *d* covers substantially that portion of the pad D which, in the operation of the pad D comes in contact with the edge and portions adjacent to the edge of the sole, leaving that part of the pad D which comes in contact with the central portions of the sole without reinforcement. The advantage which I claim for the construction of the pressing-pad, as above set forth, is that by yielding more freely over the central portions of the sole than over the edge portions it concentrates the pressure on the edge portions, where the greatest pressure is required.

The pad D is provided with a projected shank portion *d'*, the arrangement of which is such that when the pad D is brought in contact with the sole of a shoe the projected portion *d'* is the first part to make contact with the sole.

When a shoe of any style or size is placed upon a substantially-horizontal jack, the highest point upon the sole is at or near the



ball portion, so that a pad with a plane under surface and horizontally supported would first come in contact with the sole at the ball portion.

5 For the above reason I find it desirable to form at or near the ball portion of the pad D a relatively-fixed point, with reference to which the vertical adjustment of the several parts of the pad D is made. To secure this  
10 result in the form of my invention shown in the drawings I have secured the pad D to the plate P at the ball portion by means of the U-shaped clamps 2 2, which are projected through suitable slots in the strip  $d$  and are  
15 held in position by the bolts 3 3, which extend through the plate P and one arm of each of the clamps 2 2 and secure the pad D at its ball portion fixedly to the plate P. (See Fig. 6.)

20 I will now describe the devices shown for vertically adjusting the toe and heel portions of the pad D with reference to the shank portion and the intermediate adjustment for controlling the pressure upon the shank portion. To secure the heel and toe adjustment  
25 I have provided the strip or band  $d$  at the toe and heel with a cap 4, of metal or other suitable material, suitably secured thereto, which rests against a threaded bolt 5, provided with a correspondingly-threaded bearing in the plate P and conveniently with an operating-handle 6.

I find in practice that the elasticity of the pad D will keep the caps 4 4 in contact with  
35 bolts 5 5; but a device for that purpose may be provided if desired.

To regulate the pressure of the pad D upon the shanks of soles of different sizes and styles I have provided a vertically-adjustable  
40 shank-rest A, which is attached to the plate P above the projected shank portion  $d'$  of the pad D, and which is arranged to form a fixed bearing for the shank portion  $d'$  after it has been forced upward to the required point,  
45 and thereby increase the pressure upon the shank portion of the sole to which the pad D is applied.

As shown in the drawings, the shank-rest A upon its lower surface is shaped to correspond to the general shape of the shank of a shoe, and is secured to the plate P by means of a spring-tongue 8 projected therefrom and secured to the plate P by a bolt 9 or other convenient means. Against the upper surface of the rest A bear the lower ends of the threaded bolts 10 10, having correspondingly-threaded bearings in the plate P and conveniently provided with the operating-handles 11 11. As shown in the drawings, the rest A  
60 is held in contact with the bolt 10 by the spring-tongue 8; but such arrangement is not essential, and the rest A may if desired be secured to the plate P by a simple hinge or other convenient device and allowed to fall  
65 onto the shank portion  $d'$ , being (in the operation of the machine) forced inward onto the

threaded bolts 10 10, upon which it is brought to a fixed bearing.

In practice I find it convenient to adjust my improved form as follows: The shoe is  
70 placed in position upon the jack and the mold brought down until its positive point is in contact with the ball of the sole. The heel and toe are then brought down to the proper position with reference to the ball by means  
75 of the bolts 5 5, and the shank-rest adjusted to secure the desired pressure on the shank by means of the bolts 10 10.

It will be noted that by fixing the positive point of the pad D at the ball portion of the  
80 sole and providing for the vertical adjustment of other portions of pad D relatively thereto I am enabled to adjust the pad D while under pressure, as above described, for the reason that the ball, being the highest  
85 portion of the sole, sustains the pressure and supports the pad while the adjustment of the other parts is being made.

I consider the foregoing to be a desirable feature in this class of machines, since the  
90 form can be fitted to the sole with greater accuracy than by the devices heretofore employed.

After adjustment the operation of my improved form is substantially as follows: The  
95 shoe, with a cemented sole thereon, being in position upon the jack, as the form descends the projected shank portion  $d'$  first comes in contact with the shank portion of the sole, bending the sole into the curve of the last  
100 and holding it in position while a gradual contact occurs between the shoe and the form from the shank to the toe and from the shank to the heel, thus insuring an even set of the sole. The central portions of the sole being  
105 higher than the edge are the first to come in contact with the form, and since the central portions of the pad have no reinforcement readily embed themselves in the pad, bringing the reinforced edge of the pad in contact  
110 with the edge portions of the sole. At substantially the same time at which the reinforced edge of the pad comes in contact with the edge of the sole the shank-rest A begins to act to resist further inward yielding of the  
115 shank portion  $d'$  and pressure is applied to give the sole its final set, all parts of the frame being in position to distribute such pressure over those portions of the sole at which it is required.

It will be noted that the pad D is supported by separated supports from the plate P, and that between such supports the pad D is elastically supported by the reinforcing strip  
120  $d$ . By such construction I gain all the advantages acquired by pivotally mounting the independently-supported sections hereinbefore referred to without incurring any disadvantages incident to such construction, the independent sections and their pivoted connection  
125 being both dispensed with.

I desire to say that I am aware of the state



of the art as shown in United States Letters Patent to A. T. Tregurtha, No. 398,358, dated February 19, 1889; Winslow & Rogers, No. 149,364, dated April 7, 1874, and J. W. Rogers, No. 194,265, dated August 14, 1877, and claim nothing shown therein.

I, however, consider as novel and desire to secure by Letters Patent—

1. In a form for sole laying machines, the combination with a continuous elastic pad, of an elastic reinforcing strip for the edge pressing portions of said pad, and a projected yielding shank portion forming a part of said pad, substantially as described.

2. In a form for sole laying machines the combination with a rigid supporting plate, of a continuous elastic pad supported at separated points along said plate, and an elastic reinforcing strip for the edge pressing portions of the pad arranged to support the pad

between said separated points of support, substantially as described.

3. In a form for sole laying machines the combination, with a continuous elastic pad, of an elastic reinforcing strip for the edge pressing portions of said pad, a projected yielding shank portion forming a part of said pad, a vertically adjustable rest for said shank portion arranged to form a fixed bearing therefor after the several parts of the pad have been brought into a position of pressure, substantially as described.

Witness my hand affixed hereto, in the presence of two attesting witnesses, at Lynn aforesaid, this 22d day of April, A. D. 1895.

ERASTUS E. WINKLEY.

Witnesses:

A. E. WHYTE,  
CHARLES H. PURCELL.