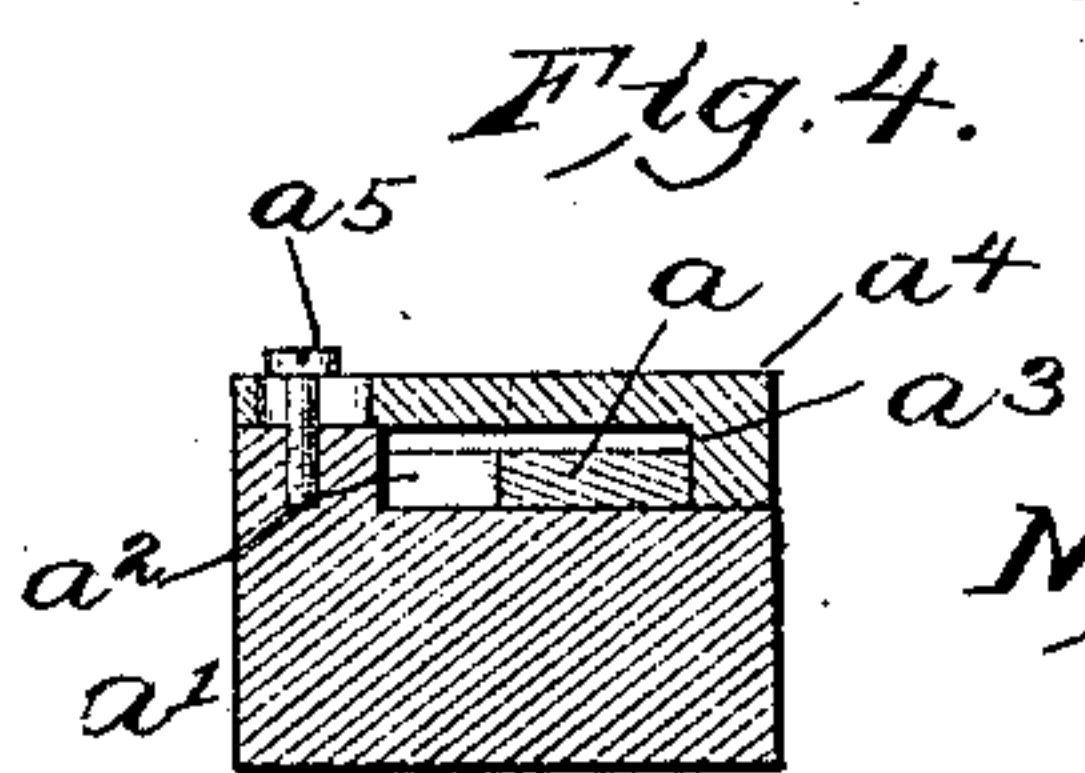
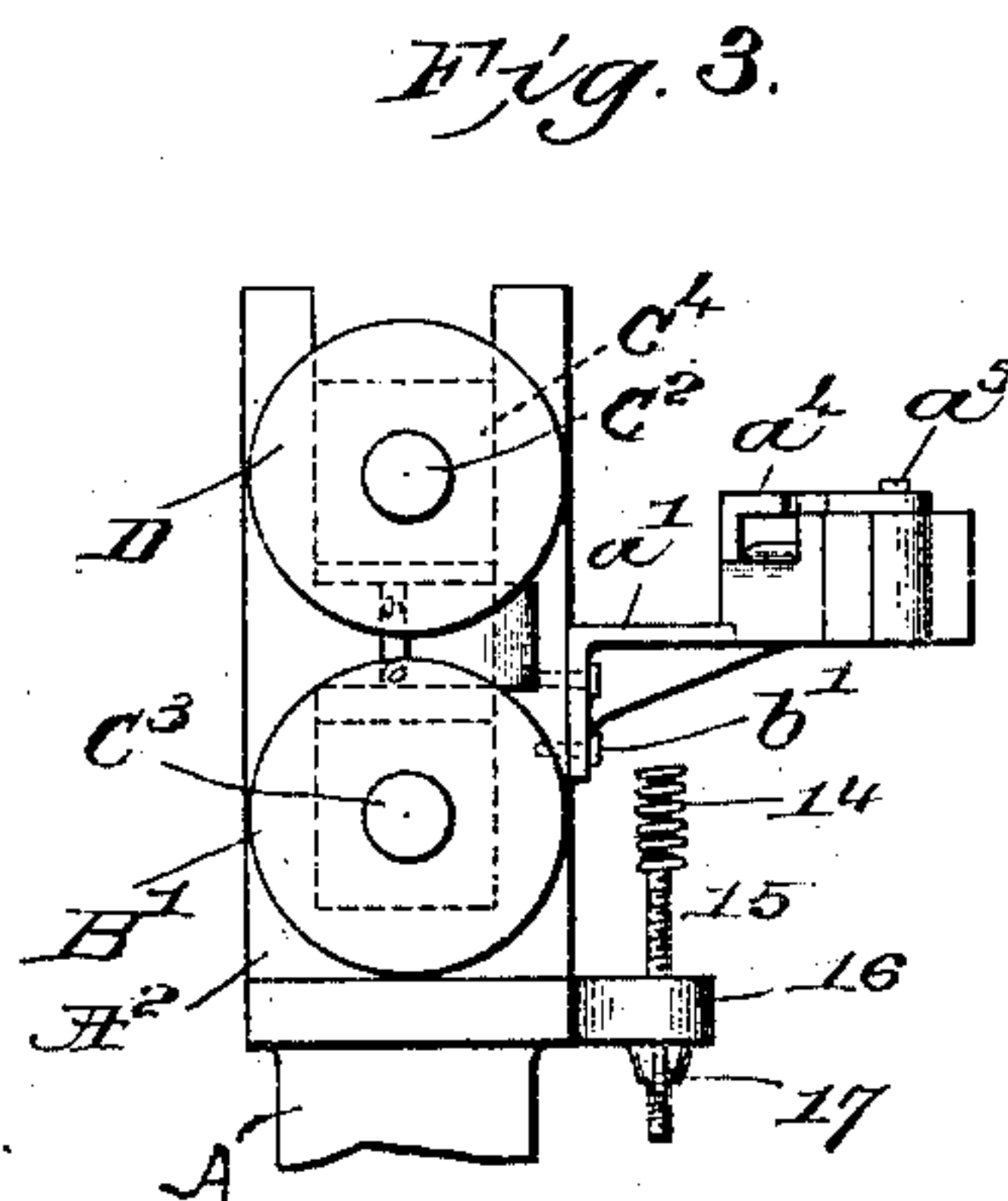
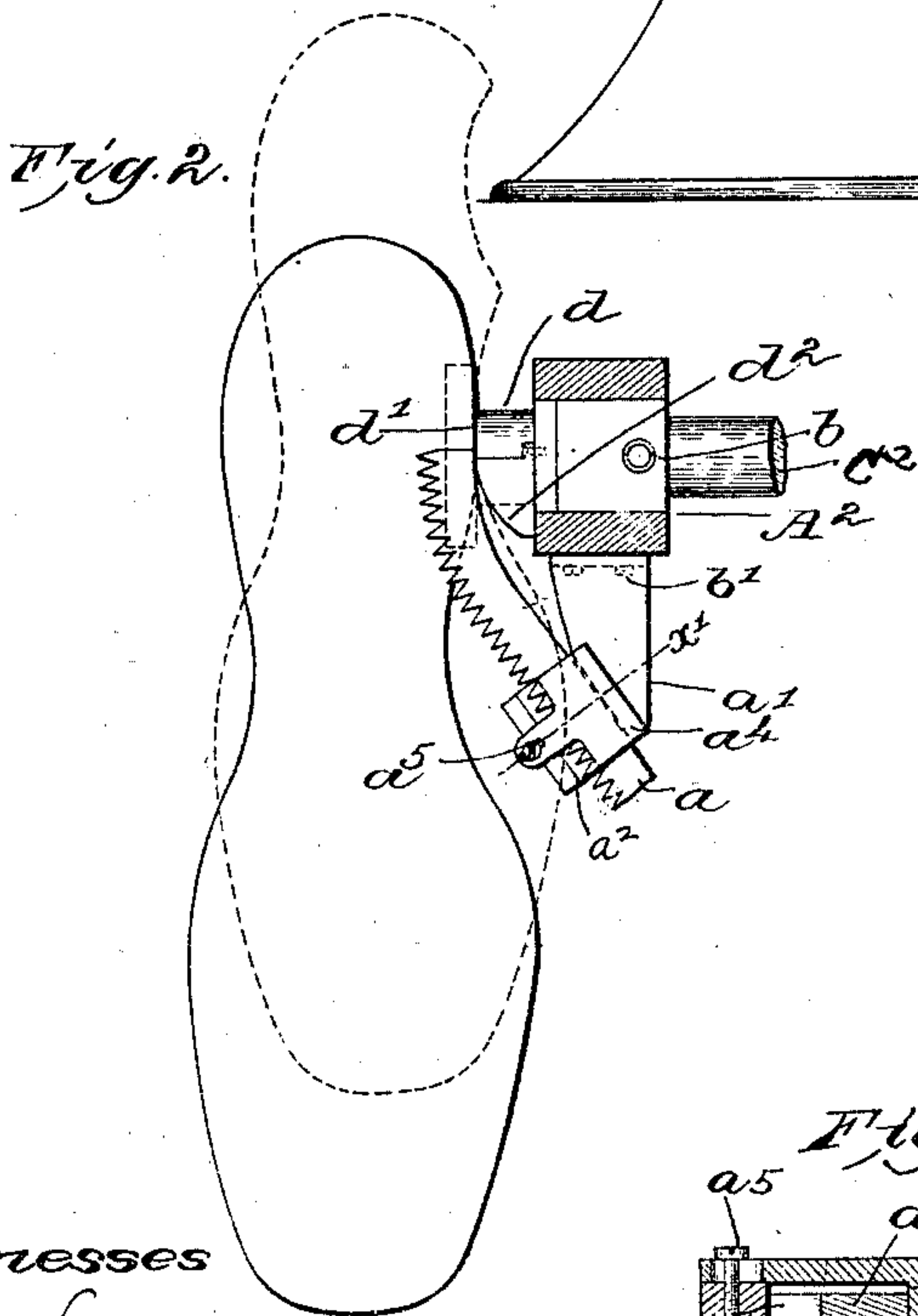
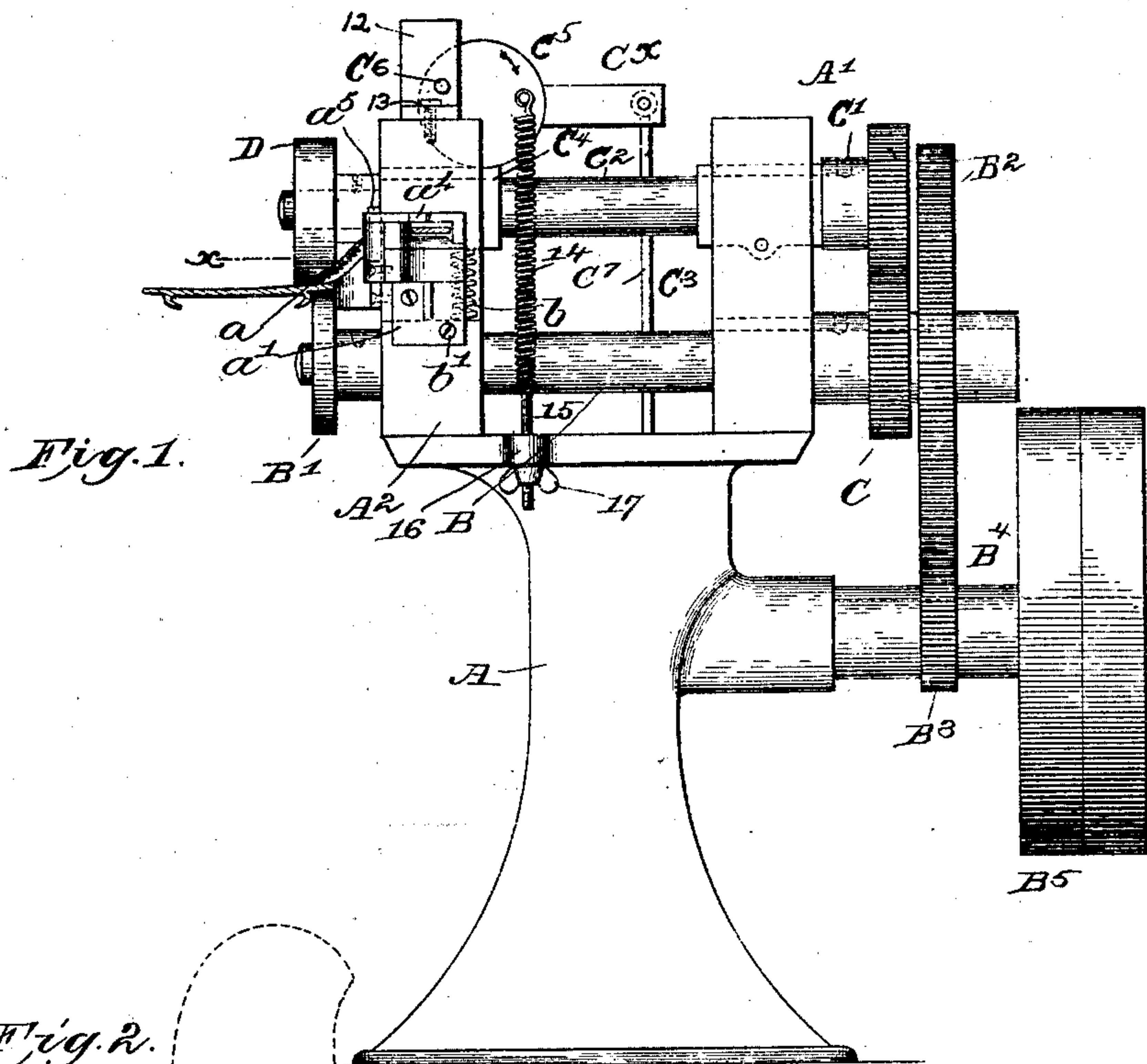


No. 671,397.

Patented Apr. 2, 1901.

M. H. LYONS.  
WELT LAYING MACHINE.  
(Application filed July 27, 1900.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

MICHAEL H. LYONS, OF EAST BRIDGEWATER, MASSACHUSETTS, ASSIGNOR  
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## WELT-LAYING MACHINE.

SPECIFICATION forming part of Letters Patent No. 671,397, dated April 2, 1901.

Application filed July 27, 1900. Serial No. 24,990. (No model.)

*To all whom it may concern:*

Be it known that I, MICHAEL H. LYONS, a citizen of the United States, residing at East Bridgewater, county of Plymouth, State of Massachusetts, have invented an Improvement in Welt-Laying Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention has for its object the production of a novel machine for laying upon the inner side of an outer sole a welt, the welt being joined to said sole by cement of some suitable form. Preferably the welt will be notched, as a notched welt may be more readily bent to adapt its outer or thicker edge to the configuration of the sole and especially when the welt is being applied to rounded portions of the sole. Heretofore welts have been laid upon a sole by a hand operation, which is a slow and laborious process, and by the employment of the machine herein to be described the welts may be laid with great rapidity and with greater accuracy.

My improved machine consists, essentially, of a support for the face of the sole, a welt-guide to present the welt, a welt-presser or device to insure close contact of the under side of the welt with the sole, and an edge-gage against which the outer or thick edge of the welt may run. For the best results the face of this edge-gage will be curved at that part thereof against which the outer edge of the welt being laid first contacts, and this gage will also preferably act to guide both the welt and the edge of the sole. The welt-guide, which receives and controls the welt, is so located with relation to the upper side of the support and the acting face of the edge-gage that the welt approaches the sole diagonally and meets the sole substantially in the line of pressure between the support and the presser or device which acts upon the upper side of the welt, the angular presentation of the welt being of very material advantage, for if the welt should contact with the sole materially in advance of the line of pressure referred to difficulty would be experienced in thereafter sliding the welt on the sole laterally when adapting the welt to the contour of

the sole. It will be remembered that the welt will preferably be coated with cement before it is applied to the sole, and the cemented welt will preferably be moistened to soften or make active the cement, that it may adhere properly to the sole, the compression between the presser and support of the sole and welt causing the welt to adhere firmly to the sole.

Figure 1, in side elevation, represents a sufficient portion of a machine embodying my invention to enable the same to be understood, the sole and welt being represented in position, the sole being in section. Fig. 2 is a detail plan view below the dotted line  $x$ , Fig. 1, chiefly to show the welt-guide and the gage for the edge of the welt and the sole. Fig. 3 is a detail showing part of the machine looking at it from the left, Fig. 1; and Fig. 4 is a section in the line  $x'$ , Fig. 2.

The column A, adapted to stand on a bench or floor, has suitable uprights  $A^1$   $A^2$ , in which are mounted suitable bearings for a shaft B, having secured to its front end a sole-support  $B^1$ , represented as a wheel or disk. The rear end of this shaft has connected with it a large toothed gear  $B^2$ , which is engaged and driven from a toothed gear  $B^3$ , fast on a sleeve  $B^4$ , having connected with it a belt-pulley  $B^5$ , which when rotated rotates the shaft B. The shaft B has a connected toothed pinion C, which engages a second pinion  $C^1$ , fast on a shaft  $C^2$ , mounted at its rear end in a pivotal bearing  $C^3$ , located between the uprights  $A^1$ . The front end of the shaft  $C^2$  has a presser D, which acts directly upon the upper side of the welt  $\alpha$ , said presser being herein represented in the form of a roller. The shaft  $C^2$  near its front end is free to rotate in a bearing  $C^4$ , which is normally depressed by or through a cam  $C^5$ , pivoted at  $C^6$  in a stand 12, attached to the upper ends of the uprights  $A^2$  by means of suitable screws 13, the cam being acted upon by a spring 14, connected therewith, the spring having attached to its lower end a suitable threaded rod 15, extended through a bearing 16 and having applied to it a nut 17, the adjustment of the nut varying the pressure of the cam upon the bearing. Whenever the work is to be removed or the pressure device is to be raised, the cam  $C^5$  will be turned by or through a link  $C^7$ , connected



at its lower end with a suitable treadle. A suitable spring  $b$  acts when permitted to lift the bearing  $C^4$  and release the contact of the presser  $D$  from the welt.

5 At the front of the machine I have connected to the uprights  $A^2$  by suitable screws  $b'$  a stand  $a'$ , having a shoulder  $a^2$ , which serves as a guide for the inner or serrated edge of the welt  $a$ , the opposite outer or straight edge  
10 of the welt being acted upon by a lip  $a^3$ , forming part of an adjustable cap or cover  $a^4$ , connected with the stand  $a'$  by a suitable screw  $a^5$ . (See Fig. 4.) By loosening this screw the cap  $a^4$  may be adjusted to receive under it a welt of  
15 any width. This guide is located (see Figs. 1 and 3) above the horizontal plane in which the upper edge of the support rotates, and said guide is also located at the right-hand side of the edge-gage  $d$ , so that the welt will ap-  
20 proach the straight portion  $d'$  of the edge-gage at an angle both downwardly and laterally.

The location of the welt-guide above the sole-support and the surface of the sole sus-  
25 tained thereon enables the cemented welt to contact with the sole substantially in the vertical line of pressure of the support and presser, and by locating the guide at one side of the line of travel of the shoe, as repre-  
30 sented in Fig. 2, and by rounding the edge  $d^2$  of the edge-gage it is possible to cause the welt to be bent in the direction of its width, especially when the welt is being laid with  
35 its outer edge against an incurved portion of the sole, as in the shank. The straight part of the edge  $d'$  serves not only to guide and position the edge of the welt, but also the edge of the sole, so that the outer edge of the welt and the edge of the sole are correctly  
40 alined.

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

1. In a welt-laying machine, a sole-support,

a presser or device to act on the outer side 45 of the welt, a welt-guide, and a gage for the outer edge of the welt and sole, that part of the face of the gage against which the welt first strikes on its way to the sole being curved to enable the welt to be bent and laid on the 50 sole to conform with the shape of the edge thereof.

2. In a welt-laying machine, a sole-support, a presser to act on the outer side of the welt, a welt-guide, and a gage for the outer sole 55 and welt, said gage having its face next the welt-guide curved, and its face farthest from the said guide substantially at right angles to the longitudinal axis of the shaft carrying the sole-support. 60

3. In a welt-laying machine, a sole-support, and presser, and edge-gage, combined with a welt-guide located above the point of contact of the support and presser with the sole and welt that the under side of the welt may be 65 presented to the sole substantially in a vertical line intersecting the axis of rotation of the support and the presser.

4. In a welt-laying machine, a sole-support, a presser to act on the welt as it meets the 70 sole, a welt-gage to aline the edge of the sole and welt and curved to support the edge of the welt and enable it to be bent in the direction of its width when being laid about an incurved part of the sole, and a guide for 75 said welt, said guide being located above the upper side of the sole to enable the under side of the welt to contact with the sole substantially in the line of pressure between the support and presser. 80

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MICHAEL H. LYONS.

Witnesses:

MARION D. HOWLAND,  
RICHARD W. NUTTER.