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Fig. 1

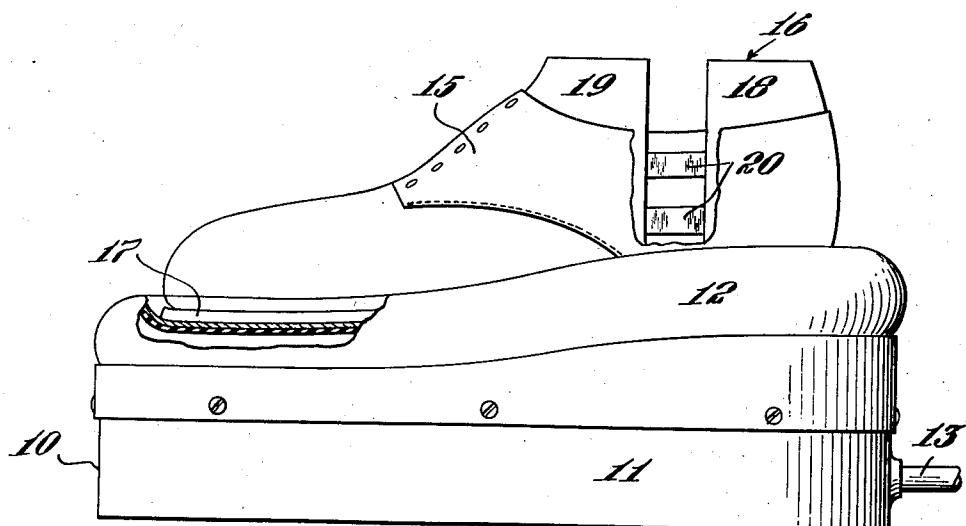
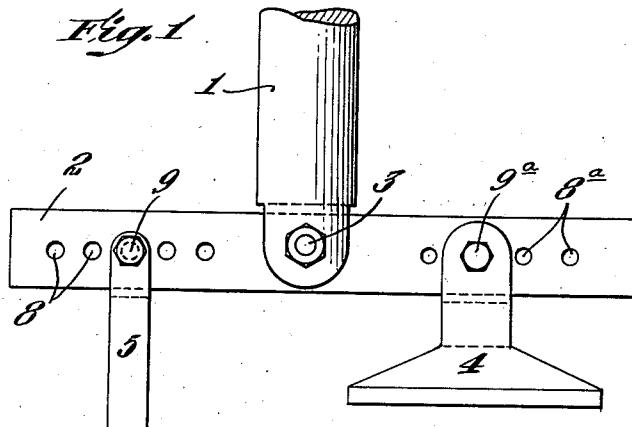


Fig. 2

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UNITED STATES PATENT OFFICE

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SHOE PRESS

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1 Claim. (Cl. 12—33)

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This invention relates to an improvement in apparatus for making shoes and more specifically in a machine by which the partially completed shoe mounted upon a last of the longitudinally separable type, such as that disclosed in my copending application Serial No. 574,276, filed January 24, 1945 is subjected to pressure as for the purpose of bonding an outsole to the body of a lasted shoe. The invention will be described herein as employed in bonding the outer sole, i. e. sole laying, but it will be understood that it is not limited to such use.

Heretofore in sole laying the machine employed applies pressure directly to the top surface of the heel part only of the last upon which the shoe has been made and to the top surface of the forepart of the shoe, such pressure acting to press the bottom structure of the lasted shoe against the outsole which is supported upon a suitable surface preferably of a yielding or flexible character.

The present invention resides in a machine by which the pressure applied to the shoe is exerted upon the top faces of both the heel part and the forepart of the last as well as upon the top surface of the forepart of the shoe. This application of pressure is of particular value when the last employed is of the longitudinally separable type such as that disclosed in my copending application, Serial No. 574,276, filed January 24, 1945, since it avoids any substantial danger of distorting the elements which connect the forepart and heel portions of the last.

In the accompanying drawing is illustrated in side elevation the essential elements of a machine which embodies this invention, certain parts being broken away, Fig. 1 showing the pressure-applying means and Fig. 2 the work and yielding pad.

The machine includes a vertically reciprocable power delivery member 1 for instance a piston rod provided at its lower end with downwardly directed parallel ears between which an elongate equalizer bar 2 is pivoted by means of a bolt 3. The bar 2 is provided with rows of spaced openings 8, 8^a at opposite sides respectively of its pivotal axis. A pressure-applying pad 7 of soft leather or the like is formed about a block or core 6 (preferably hollow) provided with a rigid stem 5 bifurcated at its upper end and straddling the lower edge of the left-hand portion of the bar 2 by means of a bolt 9 designed to pass through any selected one of the row of openings 8. An elongate flat bottomed rigid pressure-applying plate 4 has a rigid stem bifurcated at its

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upper end and straddling the lower edge of the right-hand portion of the bar 2 and is pivotally connected to the bar 2 by a bolt 9^a passing through any selected one of the openings 8^a.

5 The machine also includes a rigidly supported pad box 10 of any well known type. The box 10 here shown comprises an open receptacle 11 of metal or other rigid material which receives a hollow pad or pillow 12. The pad 12 is fluid tight and contains fluid, usually water or air, introduced in sufficient amount through a pipe 13 to provide a yieldable support for the shoe under treatment.

The shoe 15 has been previously formed upon 15 a last 16 and provided with an outsole 17 which is to be bonded to the bottom structure of the shoe by the use of the machine. The last 16 as here shown comprises a heel part 18 and a forepart 19 each part having a substantially flat upper 20 surface which surfaces are in the same plane. The parts 18 and 19 are spaced out of contact and are connected by rods 20.

In the operation of the apparatus, the shoe 15 is placed upon the member 10 with the outsole 25 17 resting upon the pad 12. Suitable gauges (not shown) may be provided to position the shoe in a predetermined location. The plate 4 is so secured to the bar 2 that the axis of the bolt 9^a is over the space between the heel part and forepart of the last. The rod 5 is so positioned that the core 6 and pad 7 are above the forepart of the shoe.

The rod 1 is caused to descend by any suitable operator controlled mechanism (not shown) 35 until the plate 4 rests against the upper surfaces of the forepart 19 and heel part 18 of the last, and the pad 6 rests against the forepart of the shoe. As the rod 1 continues its descent the shoe is forced down against the pad 12 and 40 is embedded therein to a distance determined by the amount of fluid in the pad and the amount of pressure applied to the rod 1. Since, as pointed out above, the bar 2, plate 4 and rod 5 each pivotally depend from their supports these 45 pressure-applying instrumentalities will each move into such positions that a uniform pressure is applied to the entire surface of the outsole.

It will be noted that the plate 4 thus applies pressure directly to both the heel part 18 and the forepart 19 of the last, that the top surfaces of such parts are at all times in the same plane and that the bars 20 connecting these parts are not required to transmit pressure from one such 55 part to the other part as would be the case if

the pressure were applied solely to the top surface of either part.

The bonding of the outsole 17 to the bottom structure of the lasted shoe is usually attained by the use of an adhesive previously applied to the bottom structure of the lasted shoe or to the outsole or to both contacting surfaces. During the application of pressure in the machine, heat may be applied to the shoe either to set the adhesive or, if a thermoplastic adhesive is employed, to activate and set it.

While one embodiment of this invention has been shown and described it will be understood that it is not limited thereto and that other embodiments may be made without departing from the spirit and scope thereof, as set forth in the following claim.

I claim:

A shoe press for applying sole-attaching pressure to the bottom of a shoe mounted on a last having relatively movable forepart and heel portions having substantially flat upper surfaces arranged to be at all times in the same plane, said press comprising a cushion-like support on which the outsole of the shoe rests, a vertically movable power delivering rod, a rigid elongate bar pivotally connected to the lower end of the rod and bodily movable by the latter toward and from the shoe support, the bar having two series of apertures, one at each side of

its pivotal connection to the rod, a pressure-applying pad designed to contact the shoe upper at the forepart portion of the latter, a rigid pressure-applying plate having a substantially flat bottom of such shape that it may simultaneously contact the upper surfaces of the forepart and heel portions of the last, and means engageable with any selected aperture of the two series of apertures in the bar for pivotally attaching the respective pressure-applying elements to the bar.

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