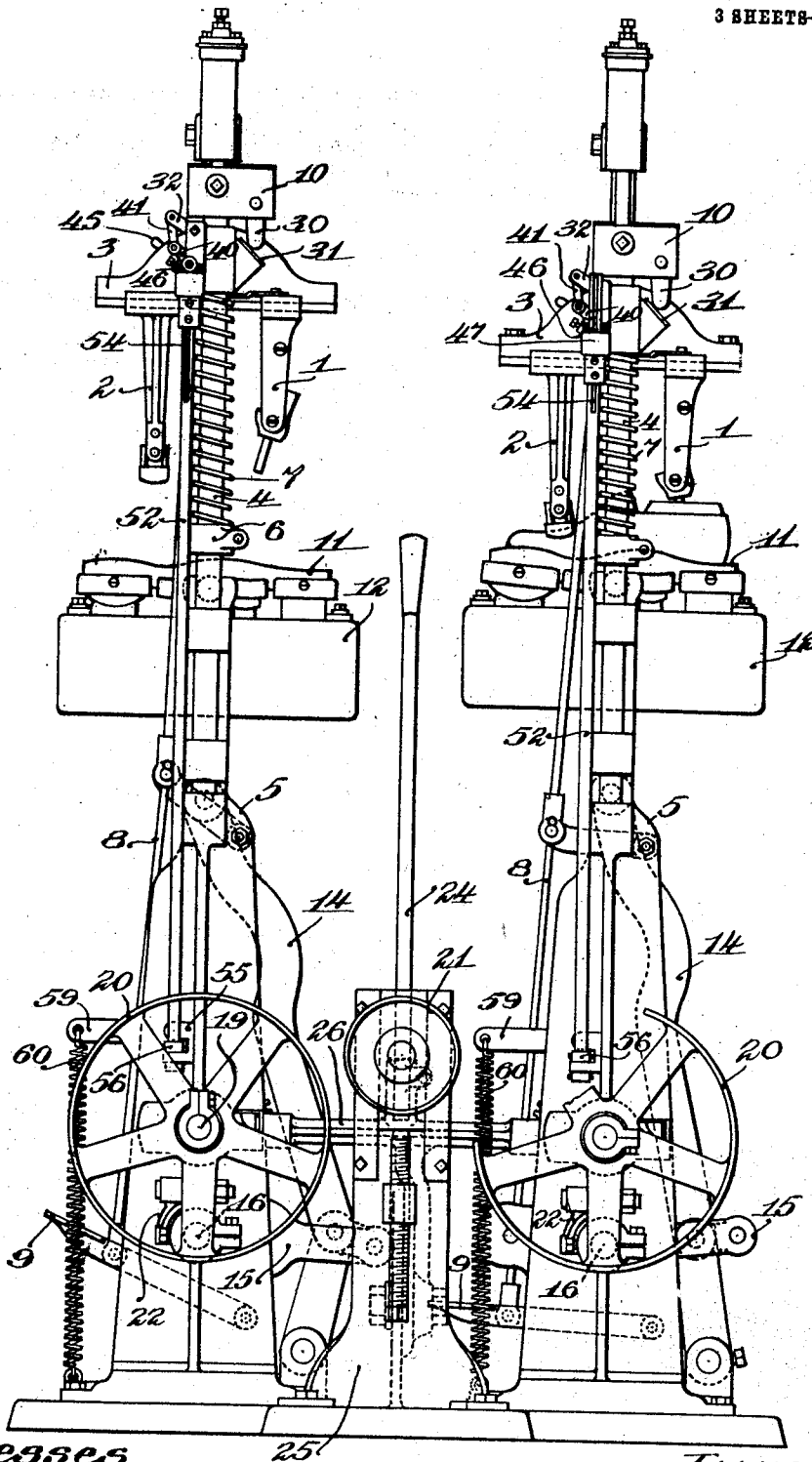


H. A. DAVENPORT.
SOLE PRESSING MACHINE.
APPLICATION FILED OCT. 25, 1909.

1,058,732.

Patented Apr. 15, 1913.

3 SHEETS—SHEET 1.



Witnesses
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H. D. McPhail

Fig. 1. Inventor
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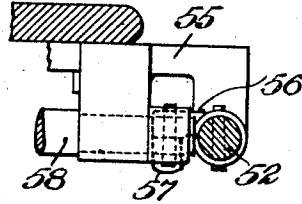
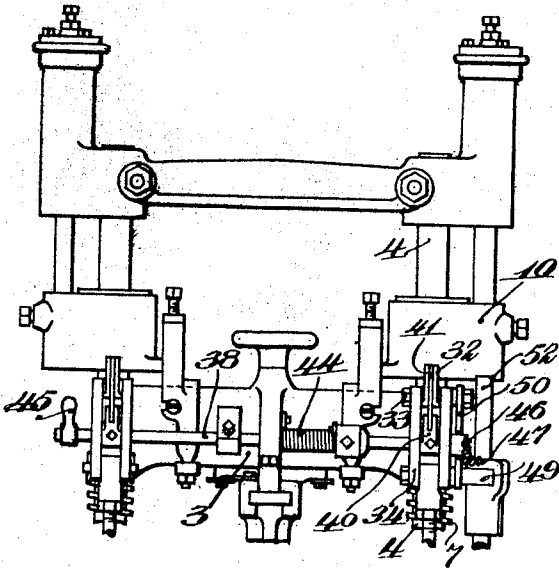


Fig. 3

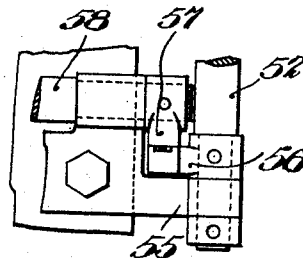
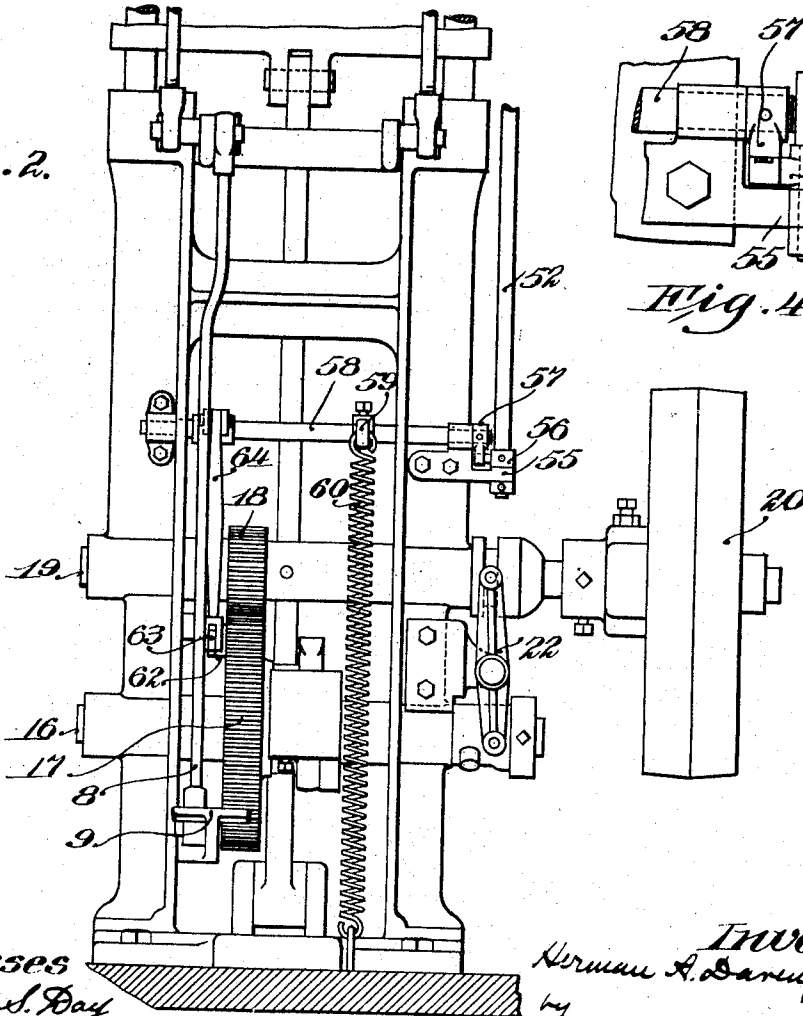


Fig. 4.

Fig. 2.



Witnesses
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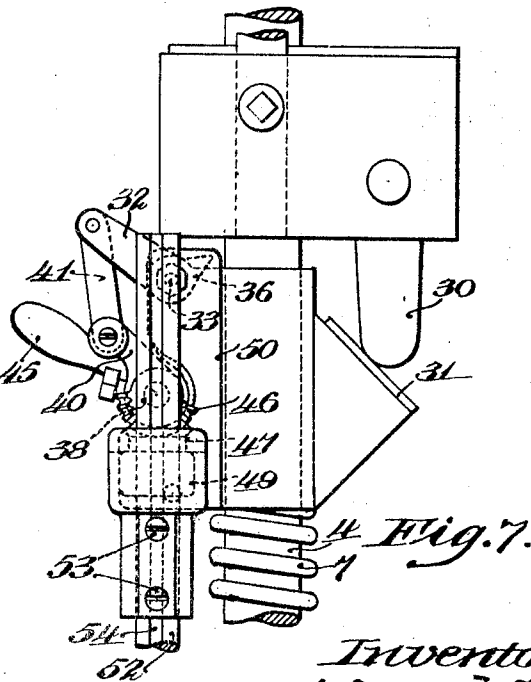
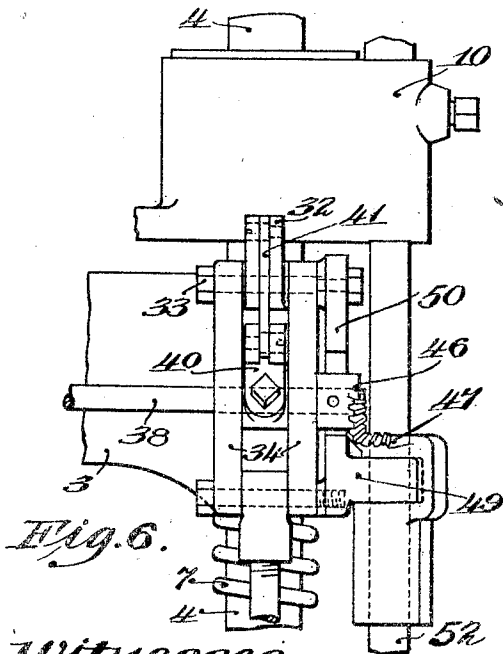
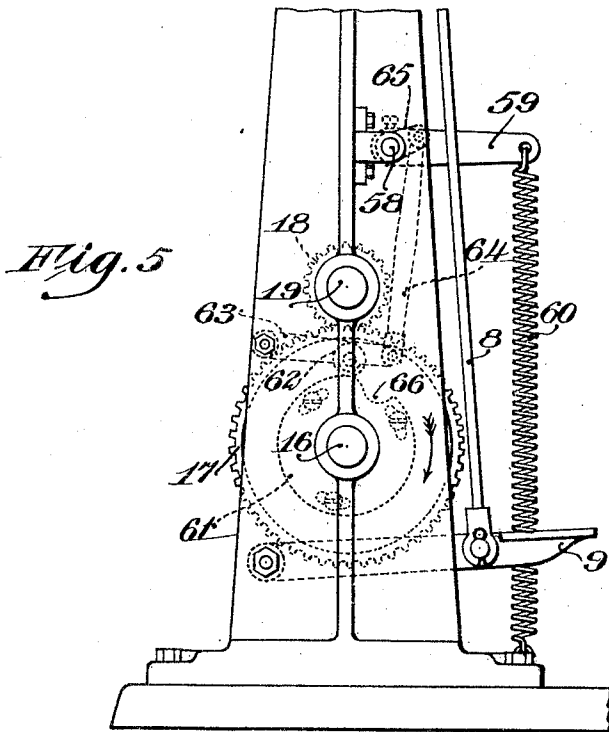
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3 SHEETS—SHEET 3.



Witnesses
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UNITED STATES PATENT OFFICE.

HERMAN A. DAVENPORT, OF BROCKTON, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SOLE-PRESSING MACHINE.

1,058,732.

Specification of Letters Patent. Patented Apr. 15, 1913.

Application filed October 25, 1909. Serial No. 524,402.

To all whom it may concern:

Be it known that I, HERMAN A. DAVENPORT, a citizen of the United States, residing at Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Sole-Pressing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to sole pressing machines, and more particularly to that class of sole pressing machines which comprise a shoe supporting jack and a sole pressing pad, and which are used to perform the operation of laying the sole.

The invention is intended primarily as an improvement in the sole laying machine disclosed in the U. S. patent to H. A. Davenport, No. 930,272, dated August 3, 1909, although not limited in its application to this machine. In the operation of the twin sole laying machine disclosed in said patent it is customary for the operator to jack or unjack a shoe on one machine while the shoe on the other machine is being put under pressure. When the pressing operation is completed the machine is automatically stopped with the pad and carrier in lowered position, but the jack-carrying cross head remains locked in its lowered position. It is necessary for the operator to reach from the machine upon which he is jacking a shoe to the other machine to manually release the clutch which holds the jack in its lowered position. This operation consumes considerable valuable time which it is the purpose of this invention to save, by providing mechanism acting automatically to release the jack locking mechanism when the sole pressing operation is completed.

With this object in view, the present invention consists in a sole laying machine having its various parts constructed and arranged as hereinafter described and claimed.

A machine embodying the present invention in its preferred form is illustrated in the accompanying drawings, in which—

Figure 1 is a view in rear elevation of the machine with a portion of one of the driving pulleys broken away to show underlying parts; Fig. 2 is a side elevation on an enlarged scale of one unit of the machine with parts broken away; Fig. 3 is a fragmentary

sectional plan view of the trip for the automatic release of the jack frame; Fig. 4 is a fragmentary side elevation of the same; Fig. 5 is a fragmentary side elevation of one unit of the machine showing the mechanism for automatically controlling the jack-releasing mechanism; Fig. 6 is a fragmentary side elevation of one of the clutches and releasing mechanism; and Fig. 7 is a fragmentary rear elevation of the same.

As shown in the drawings the machine comprises two shoe supporting jacks, two sole pressing pads arranged to cooperate respectively therewith, a foot treadle and connecting rod for moving each jack toward its cooperating pad to bring the sole of the shoe supported on the jack into contact with the pad, and a separate shaft and connected mechanism for actuating each pad to force the pad toward the jack with sufficient pressure to properly lay the sole. Each jack and its cooperating pad is constructed and arranged as in the well known Goodyear sole laying machine, and the mechanism for actuating each jack and form to bring the sole of the shoe into engagement with the pad and to lay the sole is also the same as in that machine. The construction and arrangement of these parts and mechanism are clearly illustrated and described in the patents to Hamm, No. 375,549, dated December 27, 1887, and Davenport, No. 930,272 dated August 3, 1909, and will, therefore, be only briefly described herein. Each jack comprises a heel post 1 and a toe post 2 adjustably secured upon a cross-head 3 which is mounted to reciprocate upon vertical guide rods 4. The rods 4 project upwardly from side standards 5 and are provided with collars 6 between which and the cross-head 3 coiled springs 7 are interposed. These springs normally hold the cross-heads elevated in the position indicated in the left hand side of Fig. 1 and return the cross-heads to this position when they are released after being depressed. Each cross-head is connected by a rod 8 to a foot treadle 9, by means of which the cross-head is moved downwardly to bring the sole of the shoe into contact with the sole pressing pad. Clutch collars 10, constructed as fully disclosed in the patent to Hamm, are mounted to slide upon the rods 4 with the cross-heads 3, said clutch collars acting to lock the cross-heads in their depressed positions until released manually

by the operator, or automatically, as will be hereinafter explained.

The sole pressing pads 11 are mounted in pad carriers 12 provided with collars having a sliding engagement with the vertical rods 4. Each carrier 12 is pivotally connected to the upper arm of a toggle lever 14 which is actuated by a link 15 through an eccentric on a shaft 16, the arrangement of the eccentric and links being such that a complete rotation of the shaft 16 raises and lowers the carrier 12 and the pad supported therein. Each shaft 16 has secured thereto a gear 17 which meshes with a pinion 18 upon a driving shaft 19. The driving shafts 19 are arranged parallel with each other and each shaft is provided at one end with a driving pulley 20 mounted to rotate loosely thereon and driven by a single belt passing over an idler 21. A friction clutch is provided for clutching each driving pulley to its shaft, the clutch being of well known construction and being actuated to clutch the pulley to the shaft by a lever 22.

The shafts 19 and the mechanism driven thereby are entirely independent of each other, so that after the driving pulleys are clutched to the shafts the two sole pressing pads are operated independently and the shafts are thrown out of operation independently. In order to enable the movements of both sole pressing pads to be conveniently controlled by the operator a lever 24 is provided which is mounted upon a standard 25 projecting upwardly from the base of the machine. The lever is provided with a cross bar 26 which coöperates with the levers 22 so that the operator may move both clutch collars simultaneously and connect both driving pulleys to their shafts so that the actuating mechanism of both sole pressing pads is thrown into operation. Each mechanism is automatically thrown out of operation after the shaft 16 has made a half revolution, so that each pad is stopped alternately in its highest and its lowest position.

The parts of the machine so far described are the same in construction and mode of operation as the corresponding parts of the machine disclosed in the prior Davenport patent heretofore referred to.

The construction illustrated in the drawings as embodying the preferred form of the present invention comprises mechanism whereby the clutch collars 10 are automatically released in a predetermined timed relation with the operation of pressing a sole. In order to release the clutch collars 10 it is necessary to raise them sufficiently to free the levers 30 from the inclined faces 31 on the cross-head 3 as is fully explained in the patent to Hamm. In the present instance this is accomplished by levers 32 each fulcrumed upon a bolt 33 carried by lugs 34

on the cross-head 3. Said levers are each provided with a lateral projection 36 which is adapted to engage the under side of the body of one of the clutches 10 to raise said clutches. The levers 32 are operated from a rock shaft 38 journaled in the lugs 34 on the cross-head, said rock shaft being provided with arms 40 secured thereon, which are connected to the levers 32 by means of links 41. A coiled spring 44 surrounds the shaft 38 and is attached at one end to said shaft and at the other end to a lug on the cross-head. This spring tends normally to maintain the shaft 38 in the position shown in the drawings. A handle 45 is also secured to the rock shaft 38 whereby said shaft may be rocked manually to raise the clutches 10 to release the cross-head. For the purpose of automatically actuating the rock shaft 38 it is provided with a mutilated bevel gear 46 secured thereto which meshes with a similar gear 47 which spans the horizontal arm 49 of a bracket 50 secured to one of the lugs 34. The gear 47 is slidably mounted on a vertical shaft 52, but is prevented from rotation thereon by screws 53 which enter an elongated groove 54 on said shaft. The lower end of the vertical shaft 52 is journaled to rotate in a bracket 55 secured to a side standard of the machine and the upper end of said vertical shaft is rotatably and slidably mounted in the projection 49. This construction enables the gears 46 and 47 to always remain in mesh and an operative connection is maintained with the vertical shaft 52 irrespective of the vertical position of the cross-head 3.

A finger 56 is secured to the lower end of the vertical shaft 52 and is adapted to be engaged by a finger 57 secured to a rock shaft 58 journaled in suitable bearings on the side standard of the machine when said shaft is automatically rocked as will be hereinafter explained. By this construction it will be observed that the shaft 52 may be rotated in one direction independently of the rock shaft 58 by swinging the finger 56 away from the finger 57 as when the clutches are raised manually by drawing down the handle 45. Such a movement of the handle 45 causes the rock shaft 38 to be rotated counter-clock-wise, as viewed in Fig. 7, and by means of the gears 46 and 47 the shaft 52 is rotated so as to swing the finger 56 away from the finger 57, and at the same time the links 41 are drawn down and the projections 36 are raised to engage the under side of the clutches 10.

A spring 60 attached at its lower end to the base of the machine and at its upper end to an arm 59 secured to the rock shaft 58 tends normally to turn said shaft in a direction to release the clutches. It is prevented from so doing by a cam 61 on the shaft 16. This cam engages a roller 62 carried by a 130

lever 63 fulcrumed on a side standard and connected by a link 64 with an arm 65 on the rock shaft 58. The cam 61 is provided with a depression 66 which is adapted to receive the roller 62. This depression is so located with respect to the pad operating mechanism that it comes into register with the roller 62 just before the shaft 16 has completed the half revolution during which the pad is lowered. When the roller 62 enters the depression 66, the arms 59 and 65 are lowered under the influence of the spring 60, causing the rock shaft 58 to be partially rotated. The finger 57 engages the finger 56 and turns the shaft 52 and with it the gear 47 which in turn partially rotates the gear 46 and with it the rock shaft 38 to swing the arms 40 downwardly and the ends 36 of the levers 32 upwardly to raise the clutches 10 and free the levers 30 from the inclined faces 31. Thereupon the cross-head is pushed into its uppermost position by the spring 7. Each jack is thus automatically released and raised when the corresponding pressing pad is lowered, without requiring any attention or manipulation on the part of the operator. As the shaft 16 completes its half revolution the roller 62 rides out of the depression 66, thus returning the parts to normal position so that they will not interfere with the proper operation of the clutches 10 when the jack is again depressed to bring the shoe carried thereby against the pressure pad.

35 The invention having been thus described, what I claim is:—

1. A sole pressing machine, having, in combination, a jack and coöperating sole pressing pad, guide rods on which the jack is mounted to reciprocate, clutches for automatically locking the jack against movement on the rod in one direction while allowing free movement in the opposite direction, and means acting automatically to release the locking mechanism, substantially as described.

2. A sole pressing machine, having, in combination, a jack and coöperating sole pressing pad, guide rods on which the jack is mounted to reciprocate, means for actuating the jack to bring the sole of a shoe supported thereon into engagement with the pad, locking devices on said rods for locking the jack against movement away from the pad, a rock shaft and connections for releasing the locking devices, means for manually actuating the rock shaft, and mechanism for automatically actuating said shaft having provision enabling the rock shaft to be actuated manually independent of the automatic mechanism, substantially as described.

3. A sole pressing machine, having, in combination, a jack and coöperating sole pressing pad, guide rods on which the jack is mounted to reciprocate, mechanism for

automatically locking the jack on the rods against movement away from the pad, a rock shaft and connections for releasing said locking mechanism, a second rock shaft, a cam for automatically controlling the operation of said second rock shaft, and connections between said rock shafts having provision whereby the former shaft may be operated independently of the latter shaft, substantially as described.

4. A sole pressing machine, having, in combination, a jack and coöperating sole pressing pad, guide rods on which the jack is mounted to reciprocate, clutches on the rods for automatically locking the jack against movement away from the pressure pad while allowing free movement of the jack toward the pad, devices upon the jack for releasing the clutches, means for manually operating said devices, and a cam and connections for automatically releasing the clutches having provision for enabling the devices to be manually actuated independently of the cam, substantially as described.

5. A sole pressing machine, having, in combination, a shoe supporting jack and coöperating sole pressing pad, means for actuating the jack to bring the sole of a shoe supported thereon into engagement with the pad, locking clutches constructed to automatically lock the jack against movement away from the pad while allowing free movement toward the pad, mechanism for relatively actuating the pad and jack to press the sole of a shoe supported on the jack, and mechanism for automatically releasing the jack and moving it away from the pad, substantially as described.

6. A sole pressing machine, having, in combination, a shoe supporting jack and coöperating sole pressing pad, guide rods on which the jack is mounted to reciprocate, means for actuating the jack to bring the sole of a shoe supported thereon into engagement with the pad, clutch collars mounted to reciprocate on the rods for automatically locking the jack against movement away from the pad, mechanism for relatively actuating the jack and pad to press the sole of a shoe supported on the jack, and mechanism acting automatically to release the clutch collars, substantially as described.

7. A sole pressing machine, having, in combination, a shoe supporting jack and coöperating sole pressing pad, guide rods on which the jack is mounted to reciprocate, clutch collars also mounted to reciprocate on the rods for locking the jack against movement away from the pad, means for actuating the jack to bring the sole of a shoe supported thereon into engagement with the pad, mechanism for relatively actuating the jack and pad to thereafter press the sole of a shoe supported on the jack, and mechanism acting to automatically release the clutch

collars after the pressure is released having provision to enable the jack and clutch collars to move toward the pressure pad preparatory to the succeeding sole pressing operation, substantially as described.

8. A sole pressing machine, having, in combination, a shoe supporting jack and co-operating sole pressing pad, guide rods on which the jack is mounted to reciprocate, 10 clutch collars also mounted to reciprocate on the rods for automatically locking the jack against movement away from the pressure pad, devices on the jack for releasing the clutch collars, means for manually 15 operating said devices, mechanism for automatically actuating said devices having provision to enable the jack to be moved toward the pressure pad, means for actuating the jack to bring the sole of a shoe supported 20 thereon into engagement with the pad, and mechanism for relatively actuating the jack

and pad to thereafter press the sole of a shoe supported on the jack, substantially as described.

9. A sole pressing machine, having, in combination, a jack and a coöperating sole pressing pad, guides on which the jack is mounted to reciprocate, mechanism for automatically locking the jack against movement in one direction while allowing free 30 movement in the opposite direction, means for manually moving the jack into engagement with the pressing pad, means for manually releasing the locking mechanism, and means acting automatically to release the 35 locking mechanism, substantially as described.

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