

J. W. COSGROVE & E. ERICKSON.
SOLE PRESSING MACHINE.
APPLICATION FILED MAR. 10, 1910.

1,058,729.

Patented Apr. 15, 1913

3 SHEETS—SHEET 1.

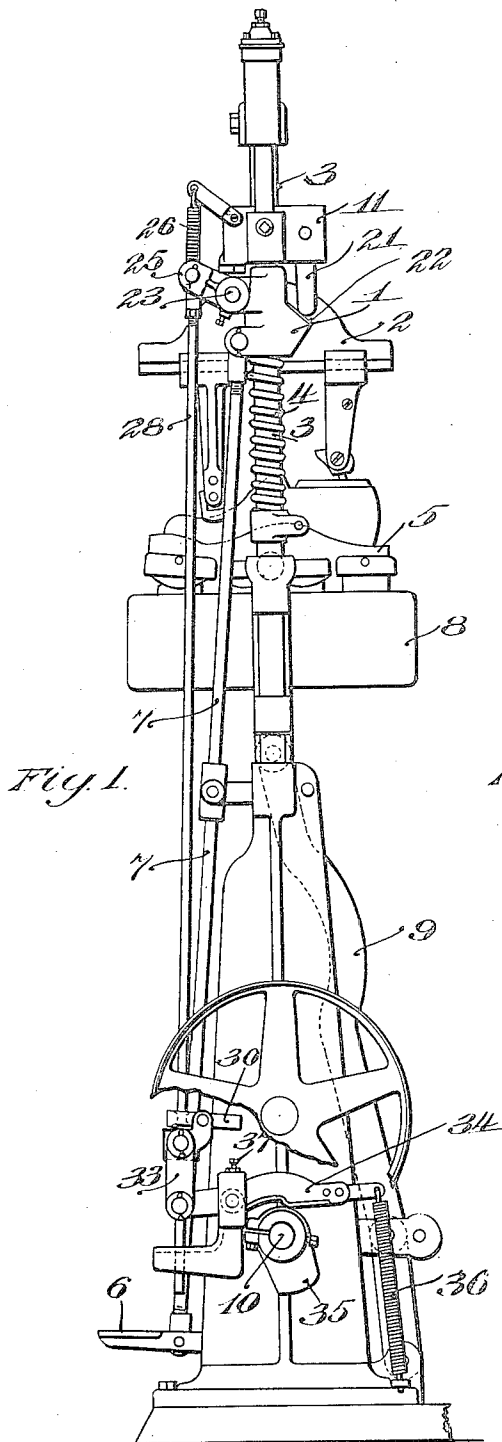


Fig. 1.

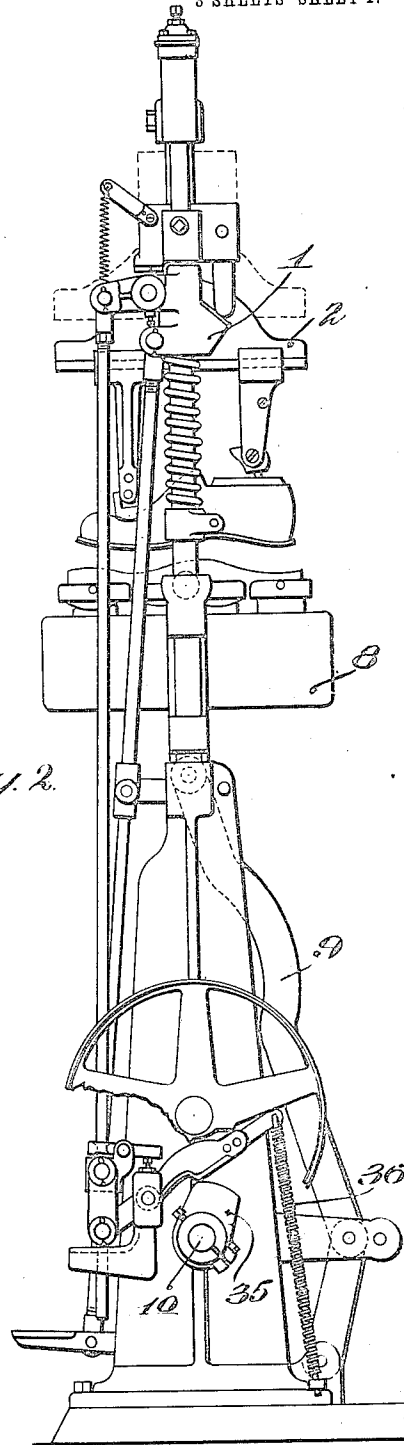


Fig. 2.

Witnesses:

Patent A. Tech
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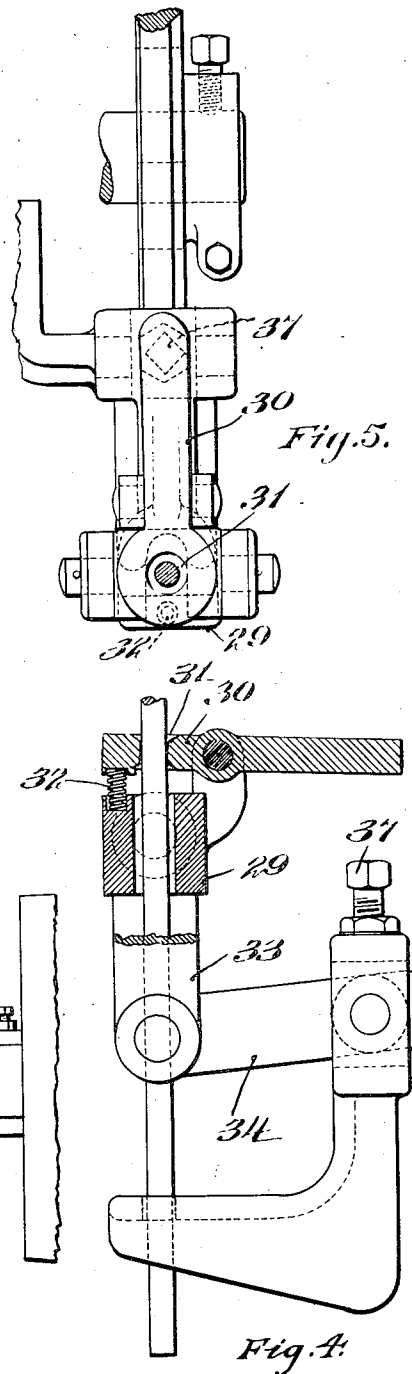
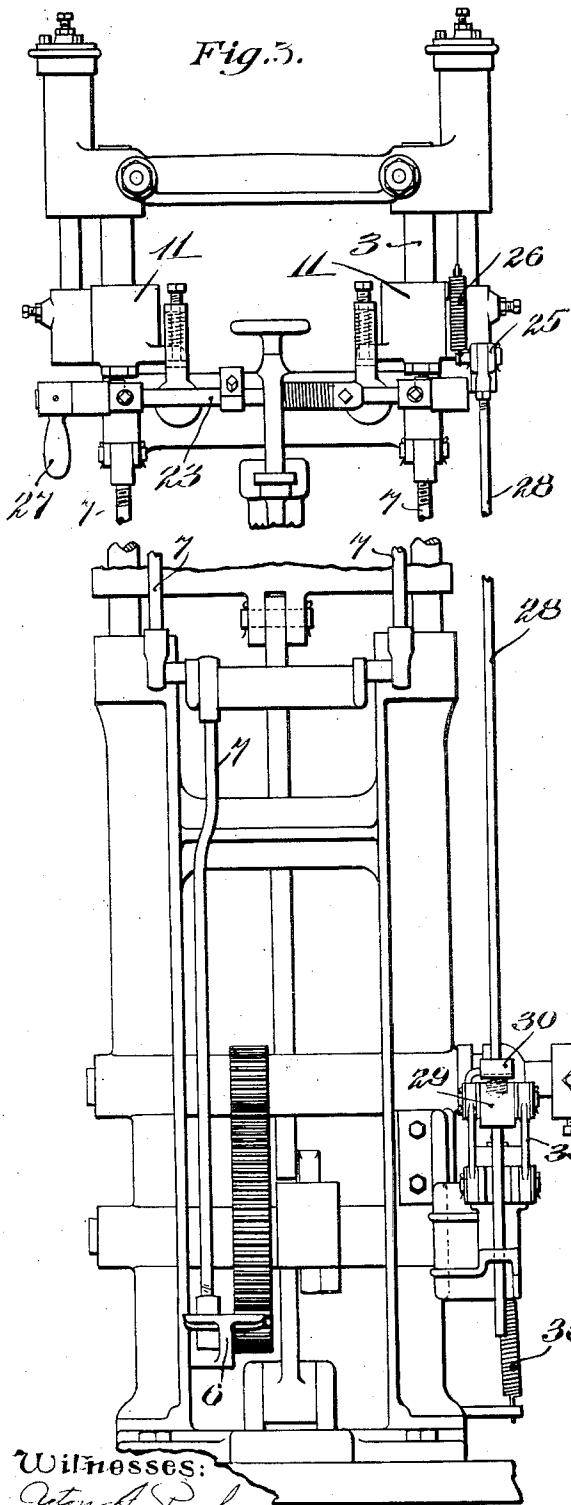
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3 SHEETS SHEET 2



Witnesses:
Anton A. Beck
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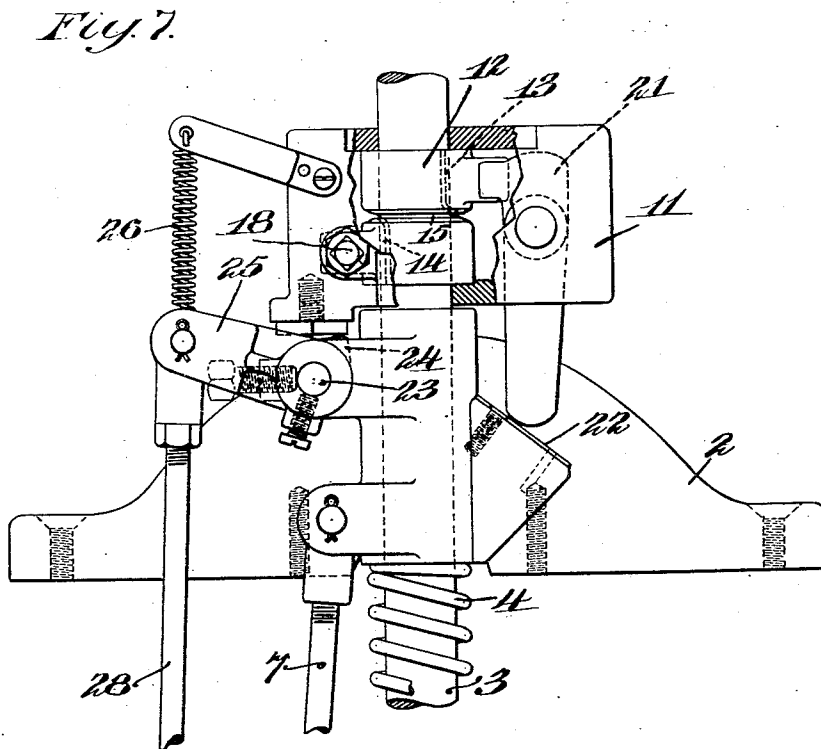
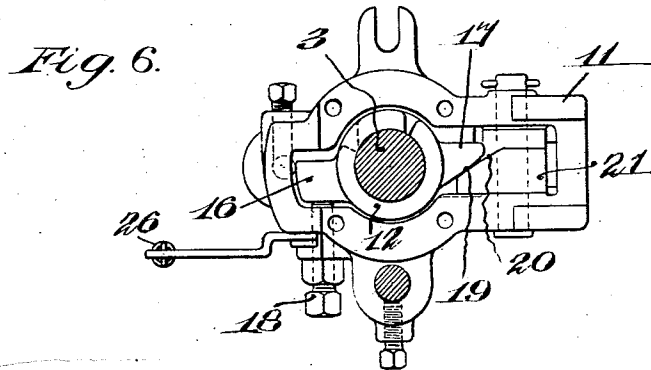
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

JOHN W. COSGROVE, OF MEDFORD, AND EDWARD ERICKSON, OF BEVERLY, MASSACHUSETTS, ASSIGNORS TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SOLE-PRESSING MACHINE.

1,058,729.

Specification of Letters Patent.

Patented Apr. 15, 1913.

Application filed March 10, 1910. Serial No. 548,329.

To all whom it may concern:

Be it known that we, JOHN W. COSGROVE and EDWARD ERICKSON, citizens of the United States, residing, respectively, at
5 Medford, Middlesex county, and Beverly, Essex county, and State of Massachusetts, have invented certain new and useful Improvements in Sole-Pressing Machines; and we do hereby declare the following to be a
10 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
15 class of machines which comprise a shoe supporting jack and a sole pressing pad, and which are used in performing the operation of laying the sole.

The invention is intended primarily as an improvement in the sole laying machine disclosed in the patent to Davenport, No.
20 930,272, dated August 3, 1909, although not limited in its application to this machine.

The machine illustrated in the patent is provided with two duplicate sole laying mechanisms which are alternately thrown
25 into operation by the operator, one mechanism acting to lay the sole of a shoe while the operator is removing a shoe from the other machine and inserting a new shoe
30 and sole therein. In each of these duplicate machines the shoe supporting jack is secured to a crosshead which is mounted to reciprocate upon vertical guide rods. The cross-
35 head is supported upon springs surrounding the guide rods, and is depressed by a treadle to bring the sole of the shoe carried on the jack into contact with a pressing pad.
40 Clutch collars are mounted to slide on the guide rods above the crosshead, and jack to automatically lock the crosshead in its depressed position during the upward movement of the pressing pad to press the sole
45 into position upon the shoe. After the pressing pad has been moved away from the shoe, the jack is released so that it may return to its initial position by actuating devices carried on the jack supporting cross-
50 head.

The devices for clutching the clutch collars to the guide rods in the machine of the patent referred to consist of split sleeves and operating devices having substantially

the construction shown in the patent to 55 Ham, No. 375,549, dated December 27, 1887. It has been found that these split sleeves do not always operate to securely lock the jack in position, and that they soon become worn in such manner as to render their
60 operation uncertain and unreliable.

One object of the present invention is accordingly to provide novel and improved means for automatically locking the jack which will be uniformly reliable in opera- 65 tion, and which may be readily adjusted to take up any wear upon the parts, and to maintain the parts in proper active relation.

A further object of the invention is to provide a novel and improved construction 70 and arrangement of devices for automatically releasing the jack after the pressure between the pressing pad and jack has been removed and the jack is to be returned to its initial position. 75

To the above ends the invention consists of the features and combinations of parts hereinafter described and referred to in the claims, the advantages of which will be obvious to those skilled in the art. 80

The various features of the invention will be readily understood from an inspection of the accompanying drawings and the following detailed description of the machine illustrated therein. 85

In the drawings Figure 1 is a side elevation of one of the two machines which are embodied in a twin sole pressing machine; Fig. 2 is a similar view showing the parts in different position; Fig. 3 is a front eleva- 90 tion of the machine, a part of the machine being broken away; Fig. 4 is a detail showing a part of the jack releasing mechanism; Fig. 5 is a plan view of the parts shown in Fig. 4; Fig. 6 is a plan view of the devices 95 for locking the jack upon the guide rods, the upper plate of the clutch carrying collar being removed; and Fig. 7 is a side elevation of the devices shown in Fig. 6.

As shown in the drawings, the machine 100 is provided with a crosshead 1 which carries a shoe supporting jack 2 and is mounted to reciprocate upon guide rods 3. The crosshead is raised and held in elevated position by springs 4, and is depressed to bring the 105 shoe carried by the jack against the pressing pad 5 by a treadle 6 and connecting rods 7. The pressing pad 5 is carried upon a

head 8 mounted to reciprocate upon the rods 3, and moved toward and from the jack by the toggle levers 9 which are connected with the shaft 10 in the manner described in the Davenport patent above referred to.

When the jack is moved downward to bring the shoe carried thereby into engagement with the pressing pad 5, it is automatically locked against upward movement on the rods 3 by clutch collars 11 which are mounted to slide upon the rods 3. The devices for securing the clutch collars to the rods comprise tubular clutches in the form of sleeves 12 which surround the rods and are held within the clutch collars 11. Each of these sleeves is provided with a cut or slot through its wall which extends from end to end of the sleeve and also throughout a part of its length at least extends circumferentially around the sleeve, the result being that a substantially helical sleeve is formed by the cut or slot. In the specific construction shown the slot or cut is provided with two end portions 13 and 14 which extend longitudinally of the sleeve, and with an intermediate portion 15 which extends circumferentially of the sleeve and connects the inner ends of the two end portions. The sleeve is provided near its lower end with a projecting lug 16, and near its upper end with a second lug 17, the lugs being formed on opposite sides of the cut which extends from end to end of the sleeve, as shown in Figs. 6 and 7. The lug 16 is arranged to engage an adjustable stop screw 18, the inner end of which forms an adjustable abutment for determining the position of the sleeve. The lug 17 is provided with an inclined surface 19 arranged to be engaged by an inclined cam surface 20 formed on the upper end of an actuating lever 21 which is pivoted in the collar 11. The lower end of the lever 21 is arranged to engage an inclined surface 22 on the jack carrying crosshead.

When the crosshead is moved down on the guide rods, the clutch collars 11 slide down with it, and then the treadle is released and the springs 4 tend to force the crosshead upward, the inclined surfaces 22 acting on the levers 21 force the cam surfaces 20 on the lever against the lugs 17, and thus contract the clutch sleeves 12. By reason of their substantially helical shape the clutch sleeves are contracted to secure a firm and reliable grip upon the guide rods, and thus securely lock the clutch collars and jack carrying crosshead against upward movement. By adjustment of the screw 18 the clutch sleeve may be brought into proper relation to the actuating lever 21 to secure the most effective operation of the clutch sleeve and to compensate for any wear upon the parts.

The devices for releasing the jack carry-

ing head, so that it may be returned to its initial position after the pressing pad has been actuated to relieve the pressure on the shoe, comprises a rock shaft 23 mounted in the head and provided with cams 24 which are arranged to engage and lift the clutch collars 11 when the shaft is rocked. The rock shaft is provided at one end with an arm 25, and is held in normal position with the cams 24 out of engagement with the clutch collars by a spring 26. The rock shaft 23 may be actuated manually by the operator through a handle 27 secured to the end of the rock shaft. The rock shaft is actuated automatically to release the clutch collars after the pressure on the shoe has been relieved, through a rod 28 connected to the end of the arm 25. The devices for actuating the rod 28 at the proper intervals comprise a clutch block 29 carrying a gripping lever 30 which is provided with a hole 31 through which the rod passes. The gripping lever is pivoted on the clutch block and is forced in a direction to engage and grip the rod 28 by a spring 32. The gripping lever is so arranged that it will slide freely on the rod when the block 29 is moved upward, but will securely grip the rod when the block is moved downward. The block is arranged to slide on the rod, and is connected by links 33 with the front end of a lever 34, the rear end of which is arranged to be engaged by a cam 35 secured to the shaft 10 of the machine. The lever is held in engagement with the cam by a spring 36.

When the pressing pad is in engagement with the shoe the parts are in the position indicated in Fig. 1, the clutch block being in its raised position. When the machine is thrown into operation the shaft 10 makes a half revolution and then stops. During the first part of the revolution of the shaft 10 the pressing pad is drawn downward to relieve the pressure upon the shoe. As the shaft 10 completes its revolution the cam 35 engages the lever 34 and operates it to draw the clutch block 29 downward as indicated in Fig. 2. During this movement of the lever 34 the clutch block operates to draw down the rod 28, thus rocking the shaft 23 to lift the clutch collars 11. This movement of the clutch collars disengages the lever 21 from the surface 22 on the jack carrying head, so that the clutch sleeves 12 no longer grip the guide rods 3. The clutch collars and jack carrying head are thus released so that the springs 4 quickly raise the jack to its normal position. In order that the rod 28 may move upward freely with the jack when the jack is thus released, the gripping lever 30 is operated to release the rod immediately after the rod is pulled downward. For this purpose an adjustable stop screw 37 is arranged to engage the rear end of the lever as the clutch block 29

completes its downward movement. When the lever strikes the stop screw it is rocked against the tension of the spring 32, and is held in such position that the rod 28 may slide freely through it. The clutch block and gripping lever remain in this position until the jack has been depressed to bring the shoe into engagement with the pressing pad, and until the machine is again thrown into operation. When the machine is again started the shaft 10 makes another half revolution, bringing the parts into the position indicated in Fig. 1. During this half revolution the pressing pad is actuated to apply pressure to the shoe, and the lever 34 returns to its initial position, thus carrying the clutch block and gripping plate upward along the rod 28, preparatory to its next jack releasing movement.

While it is preferred to employ the specific construction and arrangement of the parts shown and described, it will be understood that this construction and arrangement is not essential, and that it may be varied and modified without departing from the broader scope of the invention.

Having explained the nature and object of the invention, and specifically described one form of machine in which it may be embodied, what we claim is:—

1. A sole pressing machine, having, in combination, a sole pressing pad, a jack movable toward and away from the pad, locking devices constructed to automatically lock the jack against movement away from the pad while allowing free movement toward the pad, mechanism for operating the locking devices to release the jack comprising a rod connected to move with the jack, and mechanism for intermittently actuating the rod, substantially as described.

2. A sole pressing machine, having, in combination, a sole pressing pad, a jack movable toward and away from the pad, devices for automatically locking the jack against movement away from the pad, mechanism for automatically releasing the jack including a rod connected to move with the jack, and actuating devices having provision for releasing the rod when the jack is released, substantially as described.

3. A sole pressing machine, having, in combination, a sole pressing pad, a jack movable toward and away from the pad, devices for automatically locking the jack against movement away from the pad, mechanism for automatically releasing the jack including a rod connected to move with the jack, and actuating devices comprising a clutch constructed to move freely with relation to the rod in one direction and to grip the rod when moved in the opposite direction, substantially as described.

4. A sole pressing machine, having, in combination, a sole pressing pad, a jack

movable toward and away from the pad, devices for automatically locking the jack against movement away from the pad, mechanism for automatically releasing the jack including a rod connected to move with the jack, actuating devices comprising a clutch constructed to move freely with relation to the rod in one direction and to grip the rod when moved in the opposite direction, and means releasing the clutch when the jack is released, substantially as described.

5. A sole pressing machine, having, in combination, a sole pressing pad, a jack movable toward and away from the pad, devices for locking the jack against movement away from the pad, mechanism for releasing the jack including a rod connected to move with the jack, and mechanism for actuating and releasing the rod, substantially as described.

6. A sole pressing machine, having, in combination, a sole pressing pad, a jack movable toward and away from the pad, devices for locking the jack against movement away from the pad, mechanism for releasing the jack including a rod connected to move with the jack, a gripping lever mounted to slide on the rod in one direction and to grip the rod when moved in the opposite direction, a cam and connections for operating the gripping lever, and a stop for actuating the lever to release the rod when the jack is released, substantially as described.

7. A sole pressing machine, having, in combination, guide rods, a jack supporting head mounted to reciprocate thereon, tubular clutches also mounted on the rods each consisting of a sleeve having a cut through its wall extending from end to end and circumferentially of the sleeve, and devices for contracting the sleeves, substantially as described.

8. A sole pressing machine, having, in combination, guide rods, a jack supporting head mounted to reciprocate thereon, helical clutch sleeves also mounted to reciprocate on the rods, and devices for contracting and releasing the sleeves, substantially as described.

9. A sole pressing machine, having, in combination, guide rods, a jack supporting head mounted to reciprocate thereon, tubular clutches also mounted to reciprocate thereon each consisting of a sleeve having a cut through its wall extending from end to end and circumferentially of the sleeve, and relatively adjustable devices engaging the sleeves on opposite sides of the cuts for contracting and releasing the sleeves, substantially as described.

10. A sole pressing machine, having, in combination, guide rods, a jack supporting head mounted to reciprocate thereon, clutch sleeves surrounding the rods, actuating cams for contracting the sleeves to lock the

head, and adjustable abutments for cooperating with the cams in contracting the sleeves, substantially as described.

11. A sole pressing machine, having, in
5 combination, guide rods, a jack supporting head mounted to reciprocate thereon, clutch sleeves surrounding the rods, and relatively adjustable actuating cams and abutments for contracting the sleeves to lock the jack,
10 substantially as described.

12. A sole pressing machine, having, in

combination, guide rods, a jack supporting head mounted to reciprocate thereon, clutch sleeves sliding on the rods, adjustable abutments engaging the sleeves, and cam levers
15 operated by the head for contracting the sleeves, substantially as described.

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