H. A. DAVENPORT.

SOLE PRESSING MACHINE.

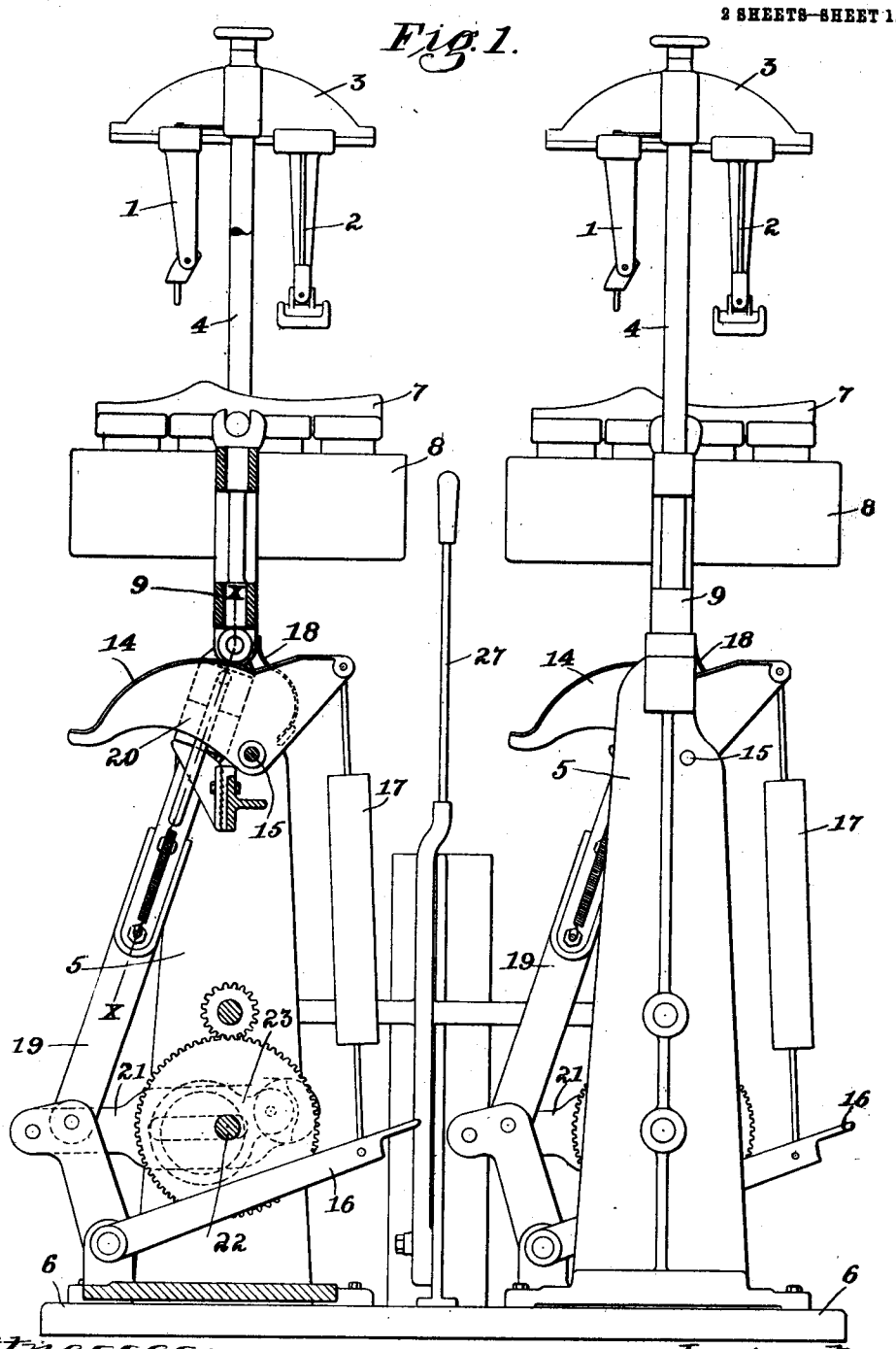
APPLICATION FILED OCT. 10, 1910.

1,066,473.

Patented July 8, 1913.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

Bowell F. Hatch.

Geo. C. Stebbins.

Inventor:

Herman A. Davenport

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2 SHEETS—SHEET 2.

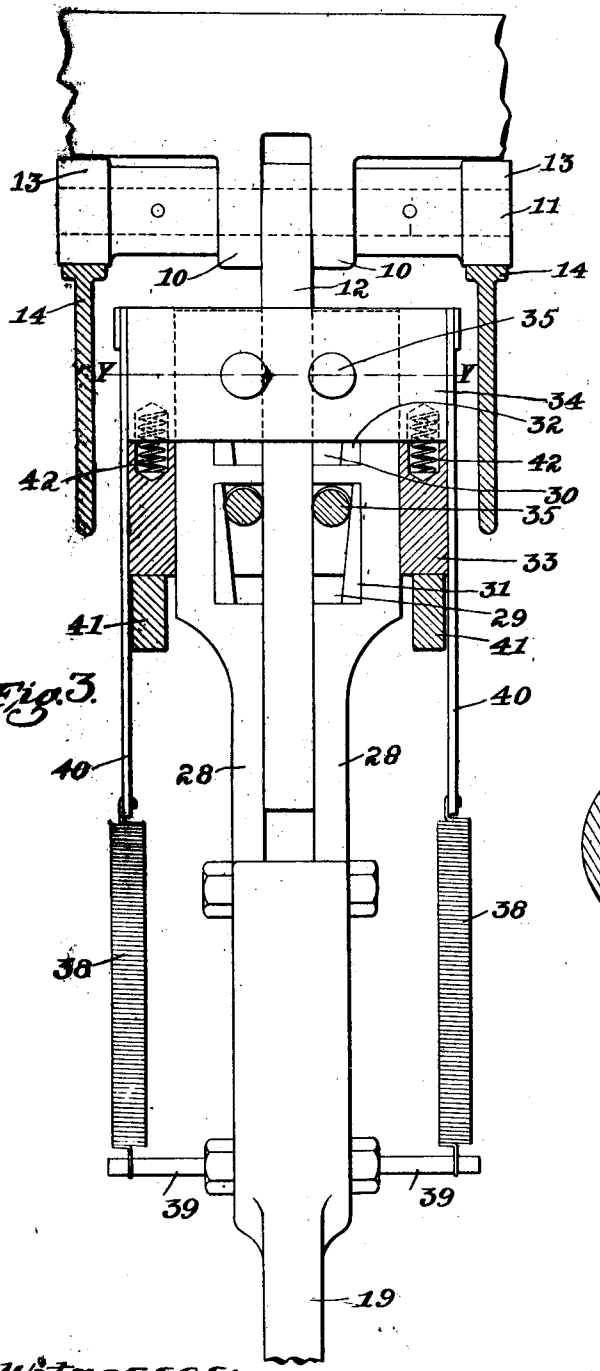


Fig. 3.

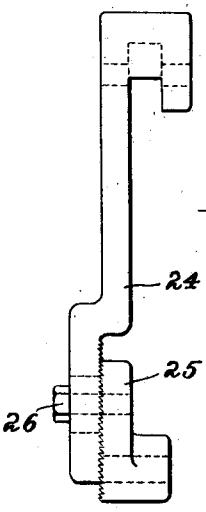


Fig. 2.

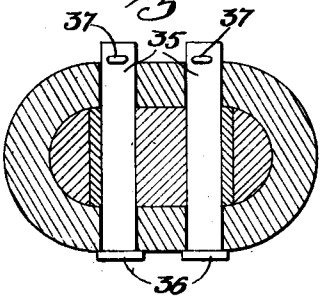


Fig. 4.

Witnesses:

Roswell F. Hatch.

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Its Attorneys

UNITED STATES PATENT OFFICE.

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SOLE-PRESSING MACHINE.

1,066,473. Specification of Letters Patent. Patented July 8, 1913.

Application filed October 10, 1910. Serial No. 586,243.

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 present invention is illustrated as embodied in a sole pressing machine of the type described in the patent to Davenport, No. 930,272, August 3, 1909, upon which the present invention is an improvement.

In the machine disclosed in the above patent, a shoe supporting jack is pressed downward by means of a treadle to bring the sole of a shoe held thereon into engagement with the pressing pad, the supporting jack is automatically locked in position, and the sole pressing pad is then given an upward sole compressing movement. After the sole is laid under pressure and the sole pressing pad is released from the work, to separate the jack and pressing pad sufficiently for the removal of the shoe it is necessary for the operator to raise his hand and release the clutch collars, which lock the jack in its downward position. After the operator has released the clutch collars, the jack is moved upwardly by its springs, and the shoe may be removed. In this machine, if, after the operator has moved the supporting jack downward, he finds it necessary to readjust the shoe, it is necessary for the operator to raise his hand from the work to release the jack locking collars to allow the shoe to be lifted and correctly adjusted.

One object of the present invention is to provide an improved structure in which the sole pressing pad shall be automatically retracted from the work upon completion of the sole pressing operation which obviates the necessity of the operator raising his hands from the work to release a clutch to separate the sole engaging parts for the removal of the shoe. In my improved machine, the position of the sole pressing pad is always under the control of the foot treadle which moves the pad into engagement with the shoe, so that if any readjustment of the shoe is necessary after the pad is raised, the operator has merely to raise his foot slightly from the treadle and adjust the shoe without the necessity of removing his hands from the work to release a clutch, as in the machine described in the Davenport patent.

Another object of my invention is to provide an adjustment whereby the length of the sole compressing stroke of the pressing pad may be varied to accommodate for soles of a different character.

Still other objects of my invention are to dispense with the use of springs for separating the sole pressing members, to reduce the number of parts, and to make a more compact and stronger structure.

With these objects in view, the present invention consists in a sole laying machine having its various parts constructed and arranged as hereinafter described and particularly pointed out in the claims.

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

Figure 1 is a front elevation of the machine taken partly in section; Fig. 2 is a top view of the adjustable toggle actuating link; Fig. 3 is a view taken partly in section along the line X—X of Fig. 1, showing the roller clutch in detail; and Fig. 4 is a section taken on the line Y—Y of Fig. 3.

The present invention is illustrated as embodied in a machine comprising two shoe supporting jacks, two sole pressing pads cooperating therewith, foot treadles arranged to lift the sole pressing pads into engagement with the shoes held on the jacks and power actuated toggles arranged to then engage the sole pressing pads and to move them against the shoes to lay their soles under pressure.

The present machine, like that of the Davenport patent, is arranged with twin presses to lay the soles on the right and left shoes respectively and is preferably constructed so that one sole pressing pad engages and lays the sole of one shoe while the other sole pressing pad is separated from the other shoe to allow the operator to change the work.

Each shoe holding jack comprises a heel post 1 and a post 2 holding a toe-engaging pad. These posts are adjustably mounted upon a cross-head 3 which is rigidly secured to the upper ends of supporting rods 4 projecting upwardly from the side standards 5 which are mounted upon the base plate 6 of the machine. The lasted shoe is held by the supporting jack and the sole is laid by a sole pressing pad 7 mounted in a pad carrier 8 which is suitably secured to a cross-piece 9 slidably held upon the vertical rods 4. The lower part of the cross-piece 9 is formed with downwardly projecting ears 10 which are bored to receive a shaft 11 which forms a pivotal bearing for the upper end of the bar 12 and upon whose outer ends are loosely mounted the rollers 13. The cross-piece 9, together with its pad carrier 8, is elevated by means of treadle actuated twin cams 14 which engage beneath the rollers 13. The cams 14 are rigidly secured together and pivoted to the side standards 5 at 15 and are lifted by means of a foot operated treadle 16 to which the cams are connected by a link bearing the counter-weight 17. The construction and arrangement of these parts is such that when the pad carrier and treadle 16 are free, the weight of the pad carrier bearing through the rollers 13 upon the cams 14 is sufficient to swing back the cams and raise the treadle, allowing the pad carrier to drop, the counter-weight 17 being added to partly compensate for the weight of the pad carrier and to require less pressure upon the treadle 16 when the operator presses it to turn the cams 14 and lift the pad carrier into engagement with the lasted shoe. The twin cams 14 are provided with a spring 18 which cushions the backward movement of the cams when the pad carrier is allowed to drop. Each pad carrier is given a positive upward movement by means of a power actuated toggle, the upper arm 19 of which carries a roller clutch, indicated generally by 20, which engages and lifts the bar 12 depending from the cross-piece 9. The toggle is straightened and the arm 19 consequently given an upward thrust by means of the link 21 which is slotted to slide over the shaft 22 by which it is reciprocated through an eccentric strap and link 23. The link 21, as shown in Fig. 2, is formed of two parts 24 and 25 which have matched serrated surfaces and are clamped together by a bolt 26 which allows the length of the link 21 to be adjusted, changing the angle between the upper and lower toggle lever, and consequently varying the amount of upward thrust of the toggle arm 19. The power driven mechanism by which the link 21 is reciprocated to move the toggle is the same as that disclosed in the patent to Davenport above cited, and a detailed description thereof is considered unnecessary, it being sufficient to state that the power is thrown on by a hand shipper lever 27, and after the link 19 has been moved either upwardly or downwardly the power is automatically thrown off and the link 19 held in either its extreme uppermost or lowermost position until the hand lever 27 is again moved by the operator.

Referring to Figs. 3 and 4 for a more detailed description of the roller clutch 20, the upper end of the toggle arm has bolted thereto twin bars 28 which are spaced apart sufficiently to allow the bar 12 to move freely between them. The upper ends of the bars 28 are enlarged and their inner sides are notched or recessed at 29 and 30 to receive hardened steel wedge pieces 31 and 32. Fitted about the upper ends of the bars 28 are two collars 33 and 34 which are oppositely bored each to receive loosely two rollers 35 which extend across the recesses 29 and 30, the caliber of the bores being slightly larger than the rolls to allow them a certain amount of loose play. The rolls 35 are removably secured in place by the enlarged heads 36 and cotter pins 37. The collars are normally held or pulled downwardly by means of two springs 38 secured at their lower ends by pins 39 upon the toggle lever 19 and connected to the upper collar 34 through straps 40. The downward movement of the collars 33 and 34 under the action of the spring 38 is limited by the adjustable stops 41 carried upon the frame of the machine. Between the collars 33 and 34, held in suitable recesses, are the springs 42, which are somewhat stronger than the springs 38 and hold the two collars slightly separated when the collars are held downwardly by the springs 38 against the stops 41.

When the toggle arm 19 is raised, the bars 28 move upwardly until the wedge pieces 31 and 32 engage the rollers 35, whereupon the rollers 35 are forced against and securely grip with a wedging action the bar 12, which is then positively moved upwardly by the toggle. By adjusting the stops 41 which limit the downward movement of the collars 33 and 34, the position of the rolls 35 in the recesses may be varied to compensate for the adjustment of the toggle actuating link 21, to compensate for wear on the clutching parts, or to allow any desired amount of slip between the bars 28 and 12 before the rolls 35 shall be brought into their wedging engagement. The collars 33 and 34 are normally slightly separated by the springs 42 to allow them slight degree of motion independently of each other, so that if the set of rolls held by one collar engages the bar 12 before the set of rolls held by the other collar, independent movement of the latter collar

may allow the second set of rolls to be independently brought into their gripping engagement. The use of the two collars and two sets of rolls causes the strain to be divided betwen two sets of gripping rolls and also has the advantage that if one of the rolls or wedges should become broken, the other set of rolls will do the work and obviate stopping the machine until a convenient time for repairing. It is evident that the above-described clutch is such that its gripping action is entirely independent of the position of the bar 12 therein, so that when the toggle lever 19 is moved upwardly the clutch will seize the bar 12 in whatever position it may be at the time and move it upwardly an amount proportional to the upward thrust of the toggle lever.

When the toggle arm 19 is near the lower limit of its stroke, the roller clutch is disengaged by means of the stops 41, which are engaged by the lower surface of the collar 33, causing the collars 33 and 34 to be held stationary while the bars 28 are moved downwardly by the toggle. The rolls 35 are lifted by the collars 33 and 34 from their wedging contact with the bar 12 and the wedge pieces 30 and 31, so that the bar 12 is left free to slide between the bars 28.

The operation of the machine is as follows: A lasted shoe is placed by the operator upon the jack. The operator then depresses the treadle 16, which, by means of the cams 14, advances or raises the pad carrier 8 to bring the sole pressing pad 7 into contact with the sole of the shoe. To give the sole laying compression stroke, the operator, still holding the treadle 16 depressed, moves the shipper lever 27, which throws on the power to straighten the toggle and gives an advance or upward thrust to the toggle lever 19 which by means of the clutch 20 seizes the bar 12 and positively moves the pad carrier 8 upwardly a predetermined distance from the position at which it was held by the treadle. When the pad carrier is at the upper limit of its movement the power is automatically thrown off and the shoe sole held under compression until the operator wishes to lower the pad for the removal of the shoe. This the operator does by again moving the shipper lever 27 which throws on the power to actuate the toggle and to move the toggle lever 19 downwardly carrying with it the bar 12 held in the clutch 20. The bar 12 and clutch 20 move downward together until near the downward limit of the stroke of the toggle lever the collar 33 engages the stops 41 and the roller clutch is disengaged, allowing the bar to slide freely downward, which it does under the weight of the pad carrier, which then drops under gravity to its lowest position, the rolls 13 moving back the cams 14 and raising the treadle. The shoe is now freed from the sole pressing pad and the work may be changed in preparation for the next pressing operation.

The sole pressing pad is entirely under the control of the operator by the treadle 16, and by means of the counter weight 17 a comparatively small amount of foot pressure is necessary to raise the pad 7, and if the operator wishes to readjust the shoe, the lever 16 may be merely allowed to rise a little so that the shoe may be readily readjusted on the pad 7. The pad is first positioned by the treadle and then after it is positioned, it is given a power-actuated stroke to lay the sole. In this way, the pad carrier may be positioned before the sole laying stroke to accommodate for different thicknesses of the soles, or sizes of lasts, and the sole laying stroke will begin its movement from the position in which the pad is held by the treadle.

In the machine described in the Davenport patent, upon which this is an improvement, four motions are required of the operator to actuate the machine: first, the operator must draw down the shoe holding jack, second, move the shipper lever to cause the sole compressing stroke, third, again move the shipper lever to cause the retraction of the sole pressing pad, and fourth, move a trip lever to unlock the shoe holding jack which then rises to separate the shoe and the sole pressing pad to permit the shoe to be removed.

In my improved machine three motions only are required of the operator to actuate the machine: the first, to depress the treadle to position the sole pressing pad, the second, to move the shipper lever to cause the sole compressing stroke, and the third, to again move the shipper lever, whereupon the sole pressing pad is both retracted from its compression stroke and also automatically released from its clutch and dropped by gravity to its lowermost position to permit the shoe to be removed. The necessity that the operator be required to manually unlock one of the shoe-engaging members to permit sufficient separation to permit the removal of the shoe is entirely obviated, this being automatic on the part of the machine, thus increasing the speed at which the machine can be operated.

In the above description of the operation of the machine only the operation of a single press which forms one-half of the machine has been described. It is to be understood, however, that the two presses which constitute the two halves of the twin machine preferably operate alternately as in the preferred operation of the machine described in the Davenport patent, so that the movement of the shipper lever 27 which throws on the clutch to give the sole compression stroke to one of the presses, shall

also throw on the clutch which releases the sole pressing pad in the other press and allows it to drop for the removal of the work. This in reality reduces the number of motions which the operator must make to actuate the machine in pressing a single sole to two motions, first depressing the pedal 16 to raise the pressing pad into engagement with the shoe, and second moving the shipper lever 27 to give the compression stroke, the sole pressing pad being released and dropped from the work by the movement which the operator gives to the shipper lever 27 to cause the sole compression stroke on the opposite half of the machine.

In laying the soles on different classes of shoes, it is desirable that the amount of compression may be varied from that required in heavy men's shoes to that required in the lighter women's shoes. Provision for this is made by the adjustment of the link 21 which allows the length of the sole laying stroke of the toggle to be varied according to the character of the work.

The machine in which my invention is shown as embodied has the shoe supporting jack uppermost and the pressing pad movable upwardly into engagement therewith. An interchange of parts so that the sole pressing pad might be uppermost and the shoe jack moved upwardly into engagement therewith is contemplated within the spirit of my invention.

The invention having thus been described, what is claimed is:—

1. A sole pressing machine, having, in combination, a fixed jack for supporting a lasted shoe, a movable sole pressing pad cooperating therewith, said sole pressing pad being normally drawn away from the sole of a shoe supported on the jack, manually operable means for moving the sole pressing pad into engagement with the sole of said shoe, power driven means for moving said sole pressing pad against the shoe to compress the sole and means including said power driven means for releasing said pressing pad from the work and allowing it to be drawn back to its initial position to permit the removal of the shoe.

2. A sole pressing machine, having, in combination, a fixed jack for supporting a lasted shoe, a movable sole pressing pad cooperating therewith, said sole pressing pad being normally held depressed from the sole of a shoe supported on the jack, a treadle actuated cam for lifting said pressing pad into engagement with the sole of said shoe, power driven means including a clutch for engaging and lifting said pressing pad against the shoe to compress the sole, and means including said power driven means for releasing said pressing pad from the sole and for automatically disengaging said clutch to allow the pressing pad to drop to its normally depressed position to permit the removal of the shoe.

3. A sole pressing machine, having, in combination, a fixed jack for supporting a lasted shoe, a movable sole pressing pad cooperating therewith, said sole pressing pad being normally held by gravity depressed from the sole of a shoe supported on the jack, a treadle-actuated cam for lifting said pressing pad into engagement with the sole of said shoe, the vertical position of the pressing pad being entirely under control of the treadle-actuated cam to permit the adjustment of the shoe and pad, power driven means including a clutch for lifting the pressing pad beyond the position to which it is lifted by the treadle-actuated cam to compress the sole of the shoe, and means including said power driven means for lowering and releasing said clutch to allow the sole pressing pad to drop under gravity to its initial depressed position to permit the removal of the shoe.

4. A sole pressing machine, having, in combination, vertical supporting rods, a jack fixed to the upper ends of said rods for supporting a lasted shoe, a movable sole pressing pad mounted in a pad carrier which is arranged to freely slide upon said rods to coöperate with the shoe supporting jack, said pad carrier being normally held depressed by gravity to separate the sole pressing pad from the sole of a shoe supported upon the jack, a treadle-actuated cam for engaging and vertically reciprocating said carrier upon said rods to bring the sole pressing pad into engagement with the sole of said shoe, a toggle having a clutch adapted to engage with said pad carrier, power driven means for actuating said toggle to cause said clutch to engage and positively lift said pad carrier a predetermined distance beyond the position to which it is lifted by the treadle-actuated cam, and means including said power driven means for lowering and releasing said clutch from its engagement with the pad carrier to allow the pad carrier to freely drop under gravity to its initial depressed position to permit the removal of the shoe.

5. A sole pressing machine, having, in combination, a fixed jack for supporting a lasted shoe, a movable pad carrier holding a sole pressing pad to coöperate with the supporting jack, said pad carrier being normally drawn away from the jack to separate the sole pressing pad from the sole of a shoe supported on the jack, manually operable means for moving the pad carrier to bring the sole pressing pad into engagement with the sole of said shoe, power driven means for moving said carrier a predetermined distance to cause the pressing pad to compress the sole of the shoe, and means including said power driven means for mov-

ing back said carrier a predetermined distance and then releasing it to allow it to be freely drawn back to its initial position to separate the pressing pad from the shoe to permit the removal of the shoe.

6. A sole pressing machine, having, in combination, a fixed jack for supporting a lasted shoe, a movable pad carrier holding a sole pressing pad to coöperate with the supporting jack, said carrier being normally held away from the jack to separate the sole pressing pad from the sole of a shoe supported on the jack, manually operable means for moving said carrier to bring said pressing pad into engagement with the sole of said shoe, a clutch adapted to engage said carrier, power driven means for actuating said clutch to engage and move said carrier a predetermined distance to cause said pressing pad to compress the sole of the shoe, and means including said power driven means for retracting said clutch and for releasing it from engagement with the pad carrier to allow said pad carrier to be freely drawn back to separate the pressing pad from the sole of a shoe to permit the removal of the shoe from the jack.

7. A sole pressing machine, having, in combination, a fixed jack for supporting a lasted shoe, a movable sole pressing pad coöperating therewith, said pad being normally held away from the sole of a shoe supported on the jack, manually operable means for moving said pad into engagement with the sole of said shoe, a clutch adapted to engage and move said pad, power driven means for actuating said clutch to cause it to engage and move said pad against the sole of the shoe and for retracting said clutch, and a stop for tripping said clutch upon its retraction and releasing it from the pad to allow said pad to move back to its initial position to separate it from the sole of the shoe to permit the removal of the shoe from the jack.

8. A sole pressing machine, having, in combination, two coöperating sole pressing members comprising a jack for supporting a lasted shoe and a sole pressing pad, one of said members being fixed and the other of said members being movable, manually operable means for advancing the movable member to bring the sole of the jacked shoe and pressing pad into engagement, power driven means for imparting a sole compressing stroke to the movable member, and means including said power driven means acting automatically to release the movable member, said movable member being free to move away from the fixed member after such release to allow the shoe to be removed from the jack.

9. A sole pressing machine, having, in combination, two coöperating sole pressing members comprising a jack for supporting a lasted shoe and a sole pressing pad, one of said members being fixed and the other of said members being movable, manually operable means for advancing the movable member to bring the sole of the jacked shoe and pressing pad into engagement, power driven means for imparting a sole compressing stroke to the movable member, means including said power driven means acting automatically to release the movable member, said movable member being free to move away from the fixed member after such release to allow the shoe to be removed from the jack, manually operable means for starting the power driven means, and means acting automatically to always stop the power driven means at the end of a cycle of operations of the machine.

10. A sole pressing machine, having, in combination, two coöperating sole pressing members comprising a jack for supporting a lasted shoe and a sole pressing pad, one of said members being fixed and the other of said members being movable and normally held in a retracted position to separate the sole of the jacked shoe and pressing pad, manually operable means for advancing the movable member to bring the sole of the jacked shoe and pressing pad into engagement, the position of the movable member being entirely under the control of said manually operable means to permit the adjustment of the shoe, power driven means for engaging and imparting a sole compressing stroke to the movable member, and means including said power driven means for retracting the movable member from the fixed member and automatically disengaging the movable member from the power driven means to allow it to freely move back to its initial retracted position.

11. A sole pressing machine, having, in combination, two coöperating sole pressing members comprising a jack for supporting a lasted shoe and a sole pressing pad, one of said members being fixed and the other of said members being movable and normally held in a retracted position to separate the sole of the jacked shoe and pressing pad, manually operable means for advancing the movable member to bring the sole of the jacked shoe and pressing pad into engagement, the position of the movable member being entirely under the control of said manually operable means to permit the adjustment of the shoe, power driven means for engaging and imparting a sole compressing stroke to the movable member, means including said power driven means for retracting the movable member from the fixed member and automatically disengaging the movable member from the power driven means to allow it to freely move back to its initial retracted position, manually operable means for starting the power driven means,

and means acting automatically to always stop the power driven means at the end of a cycle of operations of the machine.

12. A sole pressing machine, having, in combination, two coöperating sole pressing members comprising a jack for supporting a lasted shoe and a sole pressing pad, one of said members being fixed and the other of said members being movable and normally held in a retracted position to separate the sole of the jacked shoe and pressing pad, manually operable means for advancing the movable member to bring the sole of the jacked shoe and pressing pad into engagement, the position of the movable member being entirely under the control of said manually operable means to permit the adjustment of the shoe, power driven means for engaging and imparting a work compressing stroke to the movable member, means including said power driven means for retracting the movable member from the fixed member and for automatically disengaging the movable member from the power driven means to allow it to freely move back to its initial retracted position, means acting automatically to stop the power driven means at the limit of the compression stroke to hold the shoe sole under compression and to stop the power driven means after the movable member is released from the power driven means, and manually operable means for starting the power driven means, whereby the power driven means alternately compresses and releases the jacked shoe and pressing pad.

13. A sole pressing machine, having, in combination, two coöperating sole pressing members comprising a jack for supporting a lasted shoe and a sole pressing pad, one of said members being fixed and the other of said members being movable and normally held in a retracted position to separate the sole of the jacked shoe and pressing pad, a treadle actuated cam for lifting the movable member to bring the sole of the jacked shoe and pressing pad into engagement, the vertical position of the movable member being entirely under the control of the treadle actuated cam to permit the adjustment of the shoe and pad, power driven means including a clutch for lifting the movable member beyond the position to which it is lifted by the treadle actuated cam to compress the sole of the shoe, and means including said power driven means for lowering and releasing said clutch to allow the movable member to drop to its initial depressed position to permit the removal of the shoe, manually operable means for starting the power driven means, and means acting automatically to stop the power driven means at the end of a cycle of operations of the machine.

14. A sole pressing machine, having, in combination, two coöperating sole pressing members comprising a jack for supporting a lasted shoe and a sole pressing pad, one of said members being fixed and the other of said members being movable and normally held in a retracted position to separate the sole of the jacked shoe and pressing pad, manually operable means for moving the movable member to bring the sole of the jacked shoe and pressing pad into engagement, a clutch adapted to engage said movable member, power driven means for actuating said clutch to engage and move said movable member a predetermined distance to cause the compression of the shoe sole, means including said power driven means for retracting said clutch and for automatically releasing it from engagement with the movable member to allow said movable member to freely move back to its retracted position to separate the sole of the jacked shoe and pressing pad and permit the removal of the shoe from the jack, manually operable means for starting the power driven means, and means acting automatically to always stop the power driven means at the end of a cycle of operations of the machine.

15. A sole pressing machine, having, in combination, two coöperating sole pressing members comprising a jack for supporting a lasted shoe and a sole pressing pad, one of said members being fixed and the other of said members being movable and normally held in a retracted position to separate the sole of the jacked shoe and pressing pad, manually operable means for advancing the movable member to bring the sole of the jacked shoe and pressing pad into engagement, a clutch adapted to engage and advance the movable member, power driven means for actuating said clutch to cause it to engage and advance said movable member and for retracting said clutch, a stop for tripping said clutch upon its retraction and releasing it from the movable member to allow said movable member to move back to its initial retracted position to separate the sole of the shoe and pad to permit the removal of the shoe from the jack, manually operable means for starting the power driven means, and means acting automatically to always stop the power driven means at the end of a cycle of operations of the machine.

16. A sole pressing machine, having, in combination, two fixed jacks for supporting lasted shoes, two movable sole pressing pads coöperating with the jacks, a carrier for each pad normally held in a retracted position to hold the pad away from the sole of the jacked shoe, two treadles, each connected to one of the pad carriers for moving the carriers to bring the pads into engagement with the soles of the shoes, two clutches one for each pad carrier adapted to engage

and move the pad carriers, power driven means adapted to alternately advance the clutches to alternately grip and move the pad carriers to press the pads against the soles of the shoes to compress the soles and to alternately retract said clutches, stops for tripping the clutches upon their retraction and releasing them from the pad carriers to allow said pad carriers to move back to their initial positions to separate the pads from the soles of the shoes and permit the removal of the shoes from the jacks, a lever for controlling said power driven means to simultaneously and alternately advance and retract the two clutches, and means acting automatically for stopping the machine with the two clutches alternately advanced and retracted.

17. A sole pressing machine, having, in combination, a fixed jack for supporting a lasted shoe, a movable sole pressing pad cooperating therewith, said pad being normally held away from the sole of the shoe supported on the jack, a pad carrier, manually operable means for moving the pad carrier to bring the pad into engagement with the sole of the jacked shoe, a toggle having one member connected to the pad carrier, said member comprising a bar and a clutch adapted to grip said bar and move the pad carrier to compress the shoe sole when the toggle is straightened, a link connected to the joint of the toggle, power driven means for reciprocating the link to alternately straighten and break the toggle, a stop for tripping the clutch when the toggle is broken to release the bar and allow the pad and pad carrier to move back to their initial position to separate the pad from the sole of the shoe and permit the removal of the shoe from the jack, a manually operable means for starting the power driven means, means acting automatically for stopping the power driven means after the toggle is straightened and after the toggle is broken.

18. A sole pressing machine, having, in combination, vertical supporting rods, two fixed jacks for supporting lasted shoes mounted upon said rods, two sole pressing pads to coöperate with the jacks, carriers for said pads mounted to slide upon the supporting rods and normally held downward by gravity in a retracted position to hold the pad away from the soles of the jacked shoes, two cams, one for each carrier, treadles for moving the cams to raise the pad carriers to bring the pads into engagement with the soles of the jacked shoes, the vertical positions of the carriers being entirely under the control of the treadles so that the pads may be raised and lowered to adjust the shoes and pads counterbalancing weights to partially relieve the treadles of the weight of the pad carriers, a pivotally mounted depending bar on each pad carrier, two toggles having upwardly extending members bearing clutches adapted to grip the depending bars and raise the pad carriers to compress the soles of the shoes when the toggles are straightened, links connected to the joints of the toggles, power driven means for simultaneously reciprocating the links and acting to straighten and break one toggle and to break and straighten the other toggle alternately, stops for tripping the clutches when the toggles are broken to release the bars and allow the pad carriers to drop so that the shoes may be removed from the jacks, a shipper lever for starting the power driven means to simultaneously actuate both toggles, and means acting automatically to stop the power driven means with the two pad carriers alternately raised and lowered to permit the removal of the shoe from one jack while the shoe on the other jack is held under compression.

19. A sole pressing machine, having, in combination, two coöperating sole pressing members comprising a jack for supporting a lasted shoe and a sole pressing pad, one of said members being fixed and the other of said members being movable and normally held away from the fixed member to separate the sole of the jacked shoe and the pressing pad, manually operable means for advancing the movable member to bring the sole of the jacked shoe and pressing pad into engagement, a toggle mechanism having one member connected with the movable pressing member, said toggle comprising a bar and a clutch adapted to grip said bar to advance the movable pressing member to compress the shoe sole when the toggle is straightened, a link connected to the joint of the toggle, power driven means for reciprocating the link to alternately straighten and break the toggle, a stop for tripping the clutch when the toggle is broken to release the bar and allow the movable member to move back to its initial retracted position to separate the sole of the shoe and pad and permit the removal of the shoe from the jack, manually operable means for starting the power driven means, and means acting automatically for stopping the power driven means after the toggle is straightened and after the toggle is broken.

HERMAN A. DAVENPORT.

Witnesses:
GEORGE E. STEBBINS,
WARREN G. OGDEN.