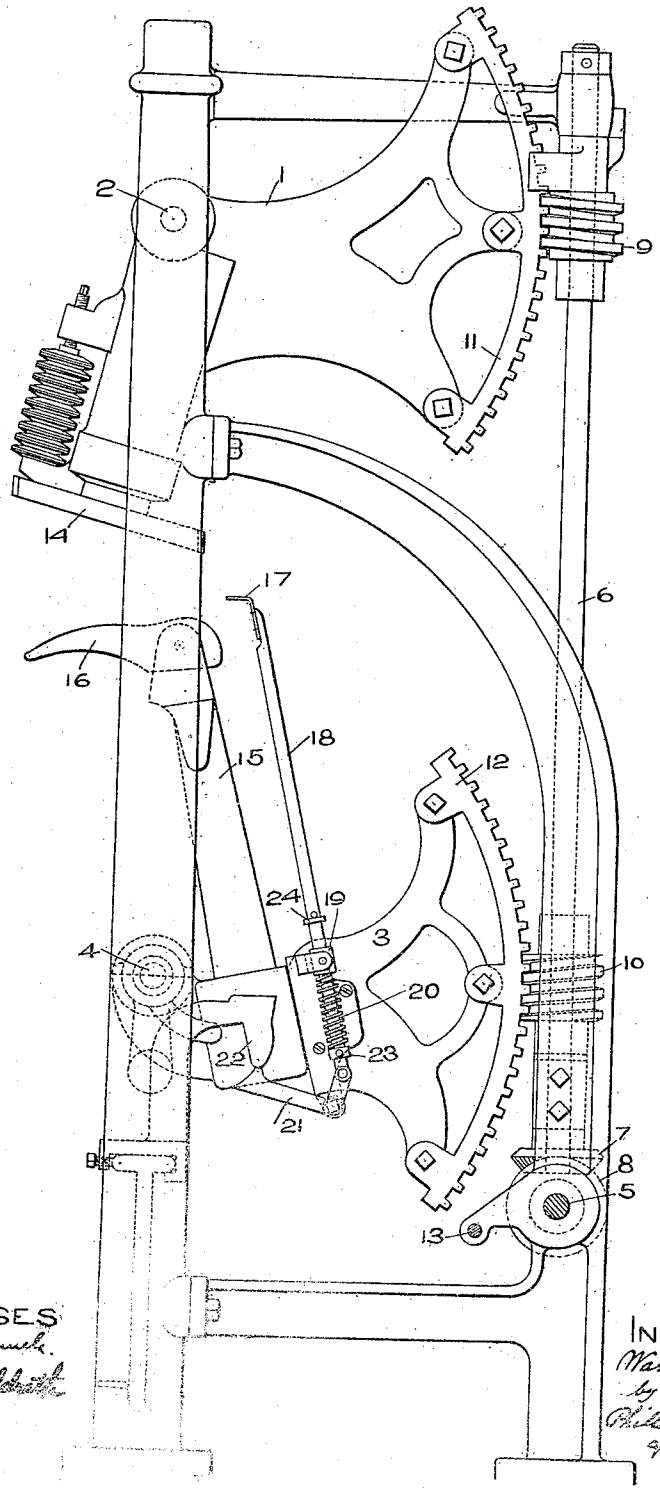
W. FRASIER.

SOLE PRESSING MACHINE.

APPLICATION FILED MAY 21, 1903. RENEWED AUG. 10, 1906.

997,798.

Patented July 11, 1911.



WITNESSES

Edwin P. Samuels.

Alfred H. Hildreth

INVENTOR

Warren Frasier

by his Attorneys

Phillipps Van Leuven

& Finch

UNITED STATES PATENT OFFICE.

WARREN FRASIER, OF LYNN, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SOLE-PRESSING MACHINE.

997,798. Specification of Letters Patent. Patented July 11, 1911.

Application filed May 21, 1903, Serial No. 158,189. Renewed August 10, 1906. Serial No. 330,067.

To all whom it may concern:

Be it known that I, WARREN FRASIER, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Sole-Pressing Machines, and 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 form coöperating therewith to subject the sole of a shoe supported upon the jack to a rolling pressure.

In rolling pressure sole pressing machines, difficulty has been experienced in causing the heel portion of the shoe to remain upon the last or upon the iron follower of the jack, while pressure is being applied to the forepart of the sole as the heel portion of the shoe tends to rise from the last or follower at this point in the pressing operation and allow the shoe to become displaced.

The object of the present invention is to provide means whereby this difficulty is overcome and the heel portion of the shoe is held firmly in position on the last or follower and the shoe is prevented from being displaced while the pressure is being applied to the forepart of the sole.

With this object in view the present invention contemplates providing a sole pressing machine comprising a shoe supporting jack and a coöperating form arranged to subject the sole of a shoe supported upon the jack to a rolling pressure with a clamp mounted to move into and out of engagement with the shoe and arranged to bear upon the sole at the heel of the shoe and to hold the shoe upon the last or follower while pressure is being applied to the forepart of the sole.

It is believed to be new in a rolling pressure sole pressing machine to provide a clamp mounted to move into and out of engagement with the shoe and arranged to bear upon the sole of the shoe so as to hold the sole or shoe in position while pressure is being applied to the sole, and it is accordingly considered that a feature of the present invention consists in the provision of such a clamp in a rolling pressure sole pressing machine, whether or not the clamp is arranged to bear upon the heel portion of the sole.

In addition to the broad feature of invention above referred to the present invention also consists in the devices, combinations and arrangements of parts hereinafter described and claimed, the advantages of which will be obvious to those skilled in the art.

In the drawing accompanying this application the invention is illustrated as embodied in the best form which has at present been devised and as applied to a rolling pressure sole pressing machine similar to that disclosed in the patent to Tripp No. 296,486, April 8, 1884. It is to be understood, however, that except as defined in the claims the invention is not limited to use in a machine having its various parts constructed and arranged to operate as in the machine of the Tripp patent nor is it limited to the specific form of clamp and actuating means therefor illustrated in the drawings.

The invention will be clearly understood from an inspection of the accompanying drawing in which is illustrated in side elevation a rolling pressure sole pressing machine embodying the same, the machine being substantially the same in construction and mode of operation as the machine of the Tripp patent hereinbefore referred to, but one jack and its coöperating form, however, being illustrated, and so much only of the machine being shown as is necessary to show the connection of the present invention therewith.

Referring to the drawing 1 indicates a form supporting arm pivotally mounted at 2 in the upper front portion of the machine frame and 3 a jack supporting arm pivotally mounted at 4 in the frame of the machine below the arm 1. The jack and form are supported upon these arms in the usual manner and the arms are so arranged that when oscillated the sole of a shoe supported upon the jack is subjected to a rolling pressure. The arms are oscillated from a main driving shaft 5 by means of a vertical worm shaft 6 connected at its lower end by bevel gears 7 and 8 to the driving shaft and provided

with worms 9 and 10 which mesh with worm segments 11 and 12 secured to the arms 1 and 3. The driving shaft 5 is rotated alternately in opposite directions, its direction of rotation being reversed by means of a shipper rod 13, which when moved longitudinally connects one or the other of two oppositely driven pulleys to the shaft as in the machine of the Tripp patent.

The jack and form may be of any well known or suitable construction. The form, which is not illustrated in the drawing, is secured to a carrier 14 which is yieldingly mounted in the arm 1 so that a yielding pressure is exerted upon the sole of the shoe supported upon the jack when the form and jack supporting arms are oscillated. The form carrier 14 illustrated in the drawing is of well-known construction as will be readily seen by those skilled in the art. The jack illustrated is also of well-known construction and comprises a post 15 secured to the arm 3 and provided at its upper end with a last or follower 16 rigidly but detachably bolted thereto.

The mechanism so far described is substantially the same in construction and mode of operation as that of prior well-known sole pressing machines and more particularly of the Tripp Giant sole leveling machine which is disclosed in the patent to Tripp hereinbefore referrred to.

In carrying out the present invention a clamp 17 is provided which is secured upon the end of a rod 18 mounted to slide longitudinally in a block 19 pivotally secured to the jack supporting arm 3. The rod 18 is thus mounted upon the arm 3 so as to be capable of oscillating and moving longitudinally. During the oscillating movements of the jack and form to subject the sole of a shoe to a rolling pressure the rod 18 is oscillated and moved longitudinally to bring the clamp 17 into contact with the sole of the shoe supported upon the last or follower 16 at the heel portion of the shoe so as to hold the heel portion of the shoe down upon the last or follower while pressure is being applied to the forepart of the sole and to remove the clamp from between the last or follower 16 and the form so as to allow the heel portion of the shoe to be subjected to pressure. To impart the necessary movements to the rod 18 to so actuate the clamp 17 a spring 20, a bell crank 21, and a cam 22 are provided. The spring 20 is coiled around the lower end of the rod 18 and is interposed between the block 19 and a collar 23 secured to the rod. The bell crank 21 is pivotally mounted upon the arm 3 and one arm of the bell crank is pivotally connected to the lower end of the rod 18 while the other arm of the bell crank is arranged to bear against the cam 22 which is supported from a stationary part of the machine frame. The arrangement of the spring 20, the bell crank 21, and the cam 22 is such that during the inward movement of the jack and form the rod 18 is moved longitudinally and oscillated by the action of the spring 20 to bring the clamp 18 between the jack and form and into engagement with the sole of the shoe supported upon the jack at the heel portion of the shoe and during the return movement of the jack and form toward the front of the machine the rod 18 is oscillated and moved longitudinally by the action of the cam 22 and the bell crank 21 to remove the clamp 17 from between the jack and form to allow pressure to be applied to the heel portion of the sole. A collar 24 secured to the rod 18 above the block 19 serves as a stop for limiting the downward movement of the rod 17 under the influence of the spring 20 in case the jack is actuated after the last or follower 16 has been removed from the jack.

I am aware that its has been proposed to provide a rolling pressure sole pressing machine with a clamp for holding the heel portion of the shoe down upon the last or follower during the pressing operation, such a clamp being disclosed in the patent to Tripp hereinbefore referred to. This clamp, however, has been arranged to bear against the upper of the shoe and in actual practice has proved unsatisfactory. The clamp which I have provided acts to perform its intended function in a reliable and satisfactory manner as it is arranged to bear upon the sole of a shoe at the heel portion thereof and effectively prevents the shoe from being displaced while pressure is being applied to the forepart of the shoe.

I am also aware that it has been proposed to provide a rolling pressure sole pressing machine with a fixed clamp to bear upon the heel portion of the shoe sole such a clamp being disclosed in the patent to Tripp, No. 164,235, dated June 8, 1875. This clamp, however, consists of a hook, the shank of which is received in a socket and is held rigidly therein by means of a set screw so that the clamp either remains permanently in place or is removed and replaced with considerable difficulty and loss of time. My improved clamp has the advantage that it is mounted in the machine so as to be movable into and out of engagement with the shoe sole and is actuated in such a manner that the operator is put to no inconvenience and no loss of time is occasioned by its use. In this connection it may be noted that the clamp, hereinbefore described, is the first sole clamp to be applied to a rolling pressure sole pressing machine which is mounted so as to be movable into and out of engagement with the shoe sole. Also it is the first sole clamp to be applied to a rolling pressure sole pressing machine

which is held out of engagement with the shoe while the shoe is being placed on the jack. Also it is the first movably mounted sole clamp which is automatically held in engagement with the shoe. Also it is the first sole clamp which is moved into engagement with the sole of the shoe during the actuation of the jack and form. Accordingly I consider that certain features of my invention are broad enough to include a sole clamp having any or all of these characteristic features whether or not the clamp is automatically actuated in either or both directions and whether or not the clamp moves into and out of engagement with the shoe during the sole pressing operation.

Having thus indicated the nature and scope of my invention and having specifically described a construction embodying the preferred form thereof, I claim as new and desire to secure by Letters Patent of the United States—

1. A sole pressing machine, having, in combination, a shoe supporting jack, a sole pressing form, means for actuating the jack and form to subject the sole of a shoe supported upon the jack to a rolling pressure, a clamp arranged to bear upon the sole at the heel of a shoe and hold the shoe upon the jack while pressure is being applied to the forepart of the sole and means for actuating the clamp to engage and disengage the sole of the shoe, substantially as described.

2. A sole pressing machine, having, in combination, a shoe supporting jack, a sole pressing form, means for actuating the jack and form to subject the sole of a shoe supported upon the jack to a rolling pressure, a clamp and means for moving the clamp into a position to bear upon the sole at the heel of a shoe while pressure is being applied to the forepart of the shoe and for moving the clamp from between the jack and form to allow pressure to be applied to the heel portion of the sole, substantially as described.

3. A sole pressing machine, having, in combination, a pivotally mounted jack and a form coöperating therewith to subject the sole of a shoe to a rolling pressure, a rod mounted upon the jack to oscillate and move longitudinally, a clamp carried by the rod and means for actuating the rod to cause the clamp to intermittently engage the sole at the heel of the shoe, substantially as described.

4. A sole pressing machine, having, in combination, a pivotally mounted jack and a form coöperating therewith to subject the sole of a shoe to a rolling pressure, a rod mounted on the jack to oscillate and move longitudinally, a clamp carried by the rod, a bell crank pivotally mounted upon the jack and having one arm connected to the rod and a stationary cam engaging the other arm of the bell crank, substantially as described.

5. A sole pressing machine, having, in combination, a pivotally mounted jack, a form coöperating therewith to subject the sole of a shoe to a rolling pressure, a clamp, and means for moving the clamp into engagement with the sole at the heel of a shoe when the jack is moved in one direction and for moving the clamp from between the jack and form when the jack is moved in the other direction, substantially as described.

6. A sole pressing machine, having, in combination, a pivotally mounted jack, a form coöperating therewith to subject the sole of a shoe to a rolling pressure, a rod mounted upon the jack to oscillate and move longitudinally, a clamp carried by the rod, a spring for actuating the rod to cause the clamp to engage the sole at the heel of the shoe, and a cam and suitable connections for actuating the rod to move the clamp from between the jack and form, substantially as described.

7. A sole pressing machine, having, in combination, a shoe supporting jack, a sole pressing form, means for actuating the jack and form to subject the sole of a shoe supported upon the jack to a rolling pressure, a clamp, and means for actuating the clamp to cause it to alternately engage and disengage the sole of the shoe during the sole pressing operation, substantially as described.

8. A sole pressing machine, having, in combination, a shoe supporting jack, a sole pressing form, means for actuating the jack and form to subject the sole of a shoe supported upon the jack to a rolling pressure, a sole clamp mounted to move into and out of engagement with the sole of the shoe, and means for moving the clamp, substantially as described.

9. A sole pressing machine, having, in combination, a shoe supporting jack, a sole pressing form, means for actuating the jack and form to subject the sole of a shoe supported upon the jack to a rolling pressure, a sole clamp mounted to move into and out of engagament with the shoe, and means acting automatically to hold the clamp in position after it is moved into engagement with the shoe sole, substantially as described.

10. A sole pressing machine, having, in combination, a shoe supporting jack, a sole pressing form, means for actuating the jack and form to subject the sole of a shoe supported upon the jack to a rolling pressure, a sole clamp mounted to move into and out of engagement with the shoe sole, and means for holding the clamp out of engagement with the shoe sole while the shoe is being placed upon the jack, substantially as described.

11. A sole pressing machine, having, in

combination, a shoe supporting jack, a sole pressing form, means for actuating the jack and form to subject the sole of a shoe supported upon the jack to a rolling pressure, a sole clamp mounted to move into and out of engagement with the shoe sole, and means operated automatically to move the clamp into engagement with the shoe sole during the actuation of the jack and form, substantially as described.

12. A sole pressing machine, having, in combination, a shoe supporting jack, a sole pressing form, means for actuating the jack and form to subject the sole of a shoe supported upon the jack to a rolling pressure, a sole clamp mounted to move into and out of engagement with the shoe sole, and means operated automatically to move the clamp into engagement with the shoe, substantially as described.

13. A sole pressing machine, having, in combination, a shoe supporting jack, a sole pressing form, means for actuating the jack and form to subject the sole of a shoe supported upon the jack to a rolling pressure, a sole clamp mounted to move into and out of engagement with the shoe sole and means operated automatically to move the clamp out of engagement with the shoe sole, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses.

WARREN FRASIER.

Witnesses:
FRED O. FISH,
HORACE VAN EVEREN.