

T. LUND.
COMPRESSING MACHINE.
APPLICATION FILED MAR. 16, 1907.

1,030,739.

Patented June 25, 1912.

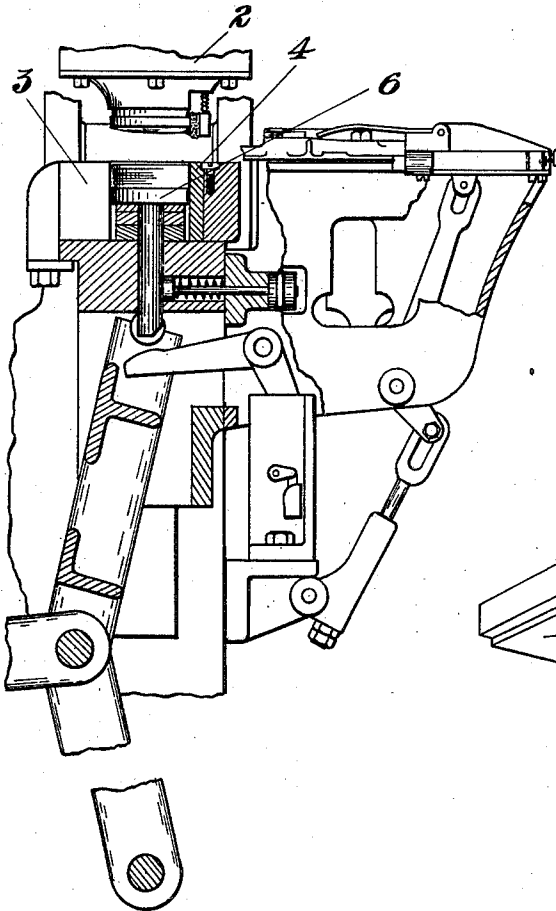


FIG. 1.

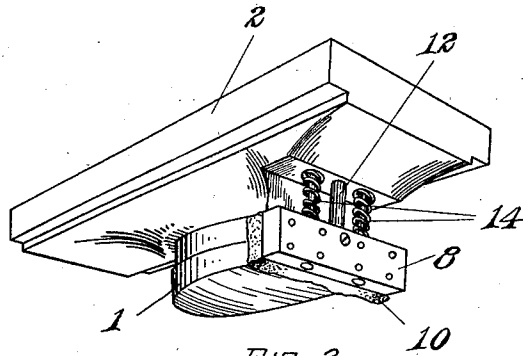


FIG. 2.

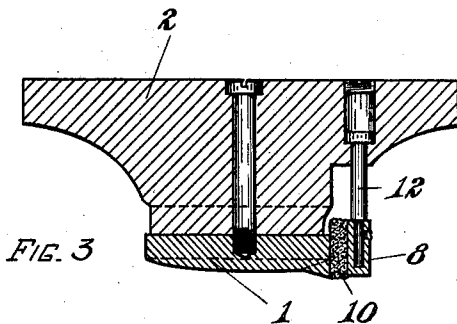


FIG. 3.

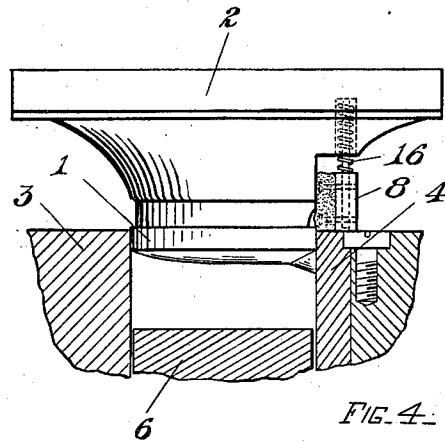


FIG. 4.

WITNESSES

Edith C. Hallbrook
Benton H. Hartman

INVENTOR.

Thomas Lund
By his Attorney,
Velandt & Norrand

UNITED STATES PATENT OFFICE

THOMAS LUND, OF BEVERLY, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

COMPRESSING-MACHINE.

1,030,739.

Specification of Letters Patent.

Patented June 25, 1912.

Application filed March 16, 1907. Serial No. 362,767.

To all whom it may concern:

Be it known that I, THOMAS LUND, a citizen of the United States, residing at Beverly, in the county of Essex and Commonwealth of Massachusetts, have invented certain Improvements in Compressing-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to compressing machines and more particularly to machines for compressing heels.

In the manufacture of boots and shoes, heel compressing machines are in common use in which a heel seat former, shaped to mold the heel seat face of the heel, is arranged to enter a suitable mold cavity to subject to pressure a heel contained in said cavity, the side walls of the cavity being formed by side dies and a breast plate. The arrangement of the parts has commonly been such that the heel being compressed is first subjected to lateral pressure of the side dies and the breast plate and is then compressed vertically by relative movement of the heel seat former and the mold. The breast edge of the heel seat surface of the heel in the compressing operation lies at the junction of the surface of the former and the surface of the breast plate. It will be seen, therefore, that unless the former and the breast plate are in close contact a space will be presented between them into which the leather of the heel at the breast edge will be forced, thus causing a roughened projection at said breast edge. As is well known, the presence of such a projection upon a compressed heel is objectionable as it defaces the shank portion of the sole to which the heel is attached, leaving a mark or indentation which is exposed to view when the breast portion of the heel is removed in the heel breasting operation.

The object of the present invention is more particularly to improve the construction of heel compressing machines of the class above described to obviate objections such as that mentioned. It will be understood that during the latter part of the operation of compressing a heel the breast face of the former has rubbing contact with the face of the breast plates. In conse-

quence of the shearing action of these two parts and the abrasion resulting from the repeated movement of one surface over the other, it has heretofore been practically impossible to prevent a space from being formed between said parts. Even though the parts of the machine have been originally carefully constructed and adjusted to secure an exact alinement of the breast edge of the former and the surface of the breast plate, it has been found that the wear of the parts caused by the shearing action above referred to will soon cause the objectionable condition described.

To the end that the parts above mentioned may be prevented from assuming the above condition, an important feature of the present invention consists in the provision of means for applying a lubricant to the contacting surfaces of the former and the breast plate. The abrasion caused by the rubbing contact of said surfaces is thus reduced to a minimum so that said parts may be maintained for a considerable period in a condition adapted to secure the quality of work desired.

It will be understood that various mechanical devices for lubricating the contacting faces referred to may be devised. While any means for this purpose is considered to lie within the scope of the present invention, I prefer to employ a construction comprising a lubricating device, arranged to be moved automatically over one of said contacting faces during each operation of compressing a heel. The arrangement shown includes a lubricating pad held normally in contact with the breast end of the former. In the approaching movement of the former and the mold, the holder for said pad is engaged by the upper surface of the mold and moved upwardly into an operative position removed from the acting surface of the former, thus permitting the former to enter the mold cavity.

In the drawings,—Figure 1 is a view in elevation with parts in section of a portion of a heel compressing machine provided with a preferred form of lubricating means; Fig. 2 is a view in perspective of the heel seat former shown in Fig. 1; Fig. 3 is a view in longitudinal vertical section of said former; Fig. 4 is a view in side elevation with parts in section of the former and the

mold, showing the position of the parts in the final stage of a compressing operation.

The heel compressing machine, a portion of which is shown on the drawings equipped with a preferred construction embodying the present invention, is substantially the same in its construction and its mode of operation as heel compressing machines in common use. A machine of this type is disclosed in Letters Patent of the United States, No. 776,875, dated December 6, 1904, and a detailed description of said machine is therefore unnecessary. It will be understood, however, that the present invention may be embodied in heel compressing machines of a different type from that shown.

Referring to the drawings, 1 represents the heel seat former of a heel compressing machine, mounted upon a stationary base 2, said former being shaped to hold the heel seat surface of a heel, and provided at its breast edge with a downwardly inclined lip for beveling the breast edge of the heel. Upon a vertically movable head are arranged side dies 3 and a breast plate 4. It will be understood that in the upward movement of the head the side dies and the breast plate close laterally upon the heel and subject it to lateral pressure. The vertical compression of the heel is thereafter produced by further upward movement of the head, the heel being pressed between the former 1 and a top lift plate 6. It will be seen from Fig. 4 that during the final portion of the operation of subjecting a heel to pressure, the breast end of the former has rubbing contact with the surface of the breast plate 4.

Arranged for vertical movement at the breast end of the former 1 is a holder 8 to which is secured, in any suitable way, a lubricating pad 10. Said holder is mounted upon a stem 12, having a headed portion arranged for movement in a bore in the base 2 of the former. Said holder 8 is also provided with two pins 14, which enter bores in the base of the former and guide the holder in its vertical movement. Springs 16 are arranged about the pins 14 to maintain the holder normally in its lowermost position. In this position shown in Fig. 3, the breast end of the former 1 is engaged and covered by the pad 10.

The operation of the mechanism shown will be readily understood from the above description. In the upward movement of the head as the former enters the mold cavity, the holder 8 is engaged by the upper surface of the breast plate 4, and the pad carried by said holder is removed from the end of the former. Said pad being of absorbent material and being saturated with a lubricating agent, it will be observed that the end of the former will be covered over substantially its entire area with the lubri-

cant. The contacting surfaces of the former and the breast plate being thus lubricated, the abrasion resulting from their rubbing contact is minimized. In the downward movement of the head, the holder 8 is returned by the springs 16 into its initial position covering the end of the former 1, so that said end is normally engaged by the lubricating pad 10.

As the lubricating pad 10 is brought in contact with the end of the former, during each cycle of operations of the machine, lubrication of the contacting surfaces of the former and the breast plate is insured and, at the same time, on account of the absorbent nature of said pad the amount of lubricant applied is small and is evenly distributed over the end of the former. As will be obvious, the construction shown may be applied to existing machines without material alteration of any part of said machines.

Having described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:—

1. A heel compressing machine having, in combination, a mold provided with a heel-receiving cavity, a heel seat former arranged to enter the mold and to have rubbing contact with the breast wall of the mold and a lubricating device arranged for automatic movement over the breast end of the former prior to the entrance of the former into the mold cavity.

2. A heel compressing machine, having, in combination, a heel-receiving mold, a former arranged to enter the mold and to have engagement with the breast wall of said mold, and a lubricating device of absorbent material arranged to cover normally the breast end of the former and constructed to be removed from contact with said end by engagement with the mold.

3. A heel compressing machine, having in combination, a heel-receiving mold, a heel-seat former arranged to enter said mold, and means whereby the mold in its movement causes lubricant to be delivered across the breast end of the heel-seat former.

4. A heel compressing machine, having in combination, a heel-receiving mold, a former arranged to enter said mold and to have frictional contact with the breast wall of said mold, and means movable independently of said former for lubricating the contacting faces of said former and breast wall.

5. A heel compressing machine, having in combination, a heel-receiving mold, a heel-seat former arranged to enter said mold, and means for intermittently applying lubricant to the breast end of the heel-seat former.

6. A heel compressing machine having, in combination, a stationary former, movable dies constituting a mold adapted to embrace said stationary former and a lubri-

cator mounted to slide upon a face of said former and actuated by one of said movable dies.

- 5 7. A heel compressing machine having, in combination, a mold comprising stationary and movable parts and movable means, actuated by a movable part of the mold, for applying lubricant to a stationary part thereof.
- 10 8. In a heel compressing machine, a mold, a former arranged to enter said mold and to have engagement with the breast wall of said mold, a lubricating device adjacent to the breast end of the former for applying
- 15 lubricant thereto, means for guiding said

lubricating device for movement parallel to the breast end of the former, and a spring tending to maintain said device in position to lubricate the breast end of the former, said lubricating device being arranged to be moved over the breast end of the former by relative movement of the former and mold.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS LUND.

Witnesses:

BERNARD BARROWS,
H. DORSEY SPENCER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

It is hereby certified that in Letters Patent No. 1,030,739, granted June 25, 1912, upon the application of Thomas Lund, of Beverly, Massachusetts, for an improvement in "Compressing-Machines," an error appears in the printed specification requiring correction as follows: Page 1, line 96, for the word "operative" read *inoperative*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office

Signed and sealed this 24th day of September, A. D., 1912.

[SEAL.]

C. C. BILLINGS,

Acting Commissioner of Patents.