

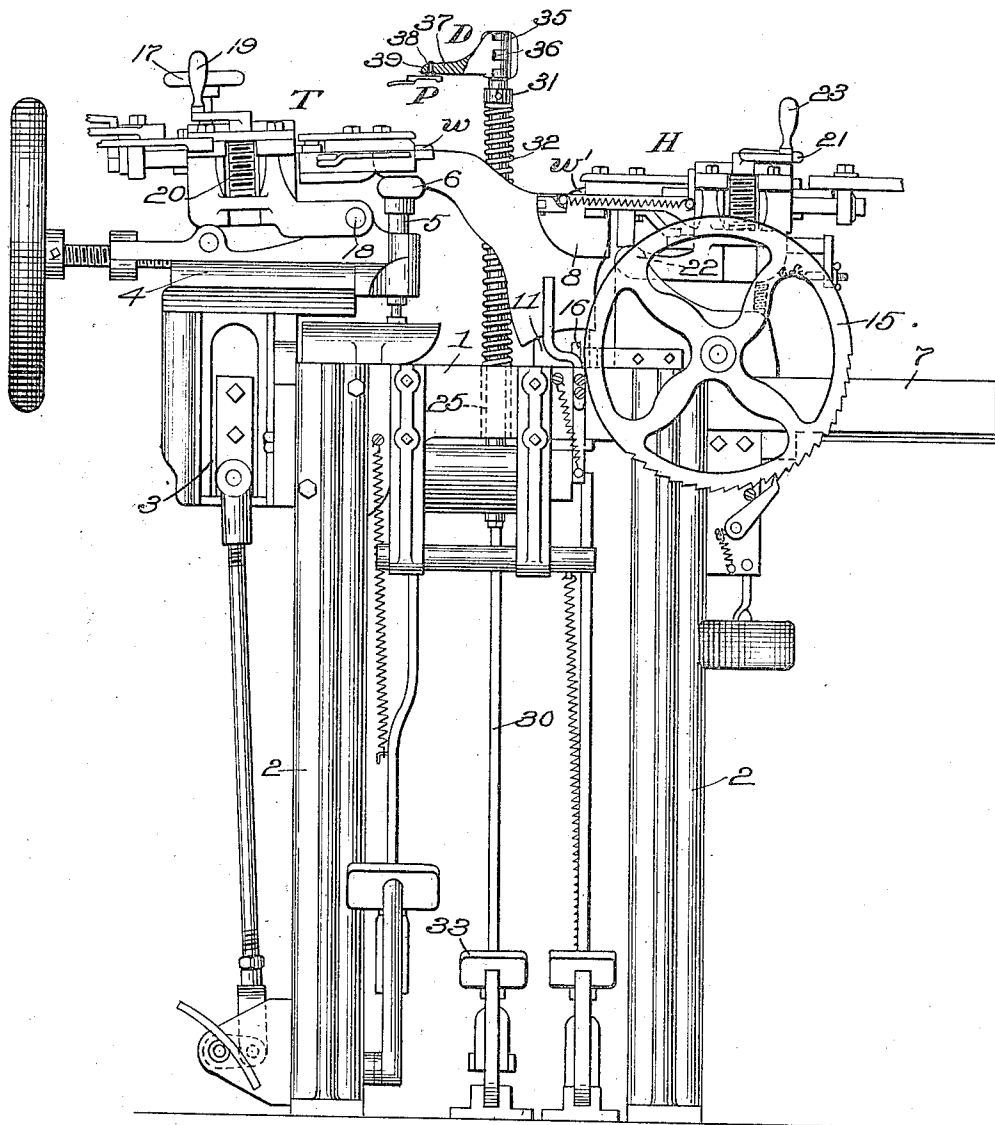
N. C. BOHR.
 HOLDDOWN FOR LASTING MACHINES.
 APPLICATION FILED APR. 26, 1907. RENEWED NOV. 22, 1909.

958,083.

Patented May 17, 1910.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses.

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2 SHEETS—SHEET 2.

Fig. 2.

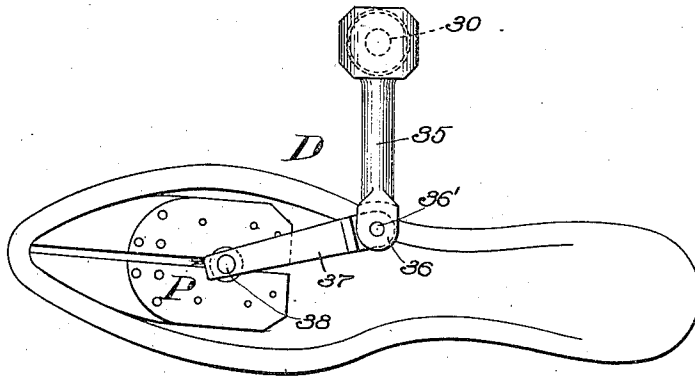


Fig. 3.

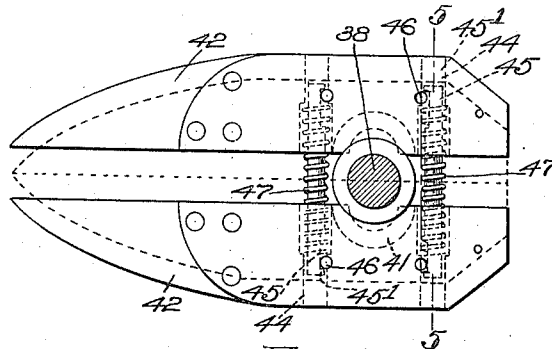


Fig. 4.

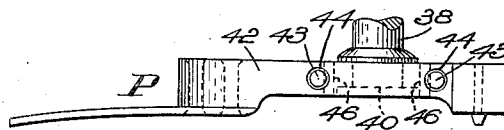
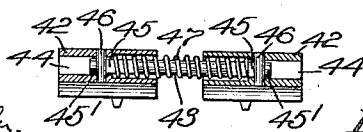


Fig. 5.



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UNITED STATES PATENT OFFICE.

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HOLDDOWN FOR LASTING-MACHINES.

958,083.

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To all whom it may concern:

Be it known that I, NICHOLAS C. BOHR, a citizen of the United States, residing at Boston, in the county of Suffolk, State of Massachusetts, have invented an Improvement in Holddowns for Lasting-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

My invention relates to lasting machines of the type known as "bed machines" and more particularly to hold-down devices for such machines. In using this type of machine the assembled shoe is placed upon a last and then jacked, sole uppermost, upon the machine. It is customary to provide the machine with some form of hold-down device to bear upon the sole at substantially the ball thereof and firmly clamp the shoe upon the heel and toe posts to prevent vertical movement during the lasting operation.

In order to obtain the best results the contacting portion, or foot, of the hold-down should bear substantially upon the ball of the sole and substantially centrally of the width of the shoe, which point, it is obvious, will change with different sizes or styles of shoes in its relation to a fixed part of the machine, as, for instance, the support for the hold-down. In order to adapt the hold-down to this change of location of the proper bearing point with relation to its support, it has been customary heretofore to mount the hold-down upon a single pivot to swing in a horizontal plane and so shape or crook it that its range of movement over the soles of the various shoes to be lasted will bring its bearing portion, with some degree of approximation, in proper relation to each. It has been found in practice, however, that the hold-down if confined to movement about a single fixed center, cannot be shaped so that its bearing portion will rest upon the proper point on all shoes to be lasted.

The object of this invention is to improve the construction of hold-down devices so as to increase their efficiency of operation and render them capable of properly bearing upon the sole of any size or style of shoe to be lasted that may be placed in the machine.

To the accomplishment of this object and such others as may hereinafter appear, as will be readily understood by those skilled in the art, the invention comprises the features and combination of parts hereinafter described and pointed out in the appended claims.

The various features of my invention will be best understood from a description of one embodiment thereof, such, for instance, as illustrated in the accompanying drawings, in which,—

Figure 1 is a front elevation of one type of bed lasting machine to which my hold-down has been attached; Fig. 2 is a plan of my hold-down detached from the machine, the figure being designed to illustrate its relation to the sole of a shoe being lasted; Fig. 3 is a plan of a form of bearing foot cooperating with the hold-down, a part being in section; Fig. 4 is a side elevation of parts shown in Fig. 3; and, Fig. 5 is a section on the line 5—5 of Fig. 3.

Referring to the drawings, the lasting machine in connection with which I have chosen to illustrate my improvement comprises the parallel ties 1, which are supported by the legs 2 at the correct height for the operator and to these ties is secured at one end a suitable slideway 3, in which is mounted and moves a support 4, which carries the toe lasting head T and the support 5 for the toe rest 6. To the opposite end of the parallel ties 1, there are secured the bars 7, which form a track upon which the jacking and heel lasting mechanism is supported and on which track it moves to and from the toe rest when the machine is operated.

Mounted on the bars 7 is the heel head H, which directly supports the heel lasting mechanism, including the heel band 8. The jack-post 11 is moved toward and from the heel band by means of a hand wheel 15 and a suitable form of catch is provided to maintain the heel head H in operative position.

The toe head T is mounted for both longitudinal and lateral tipping adjustments. The former adjustment is obtained by means of the hand wheel 17, which is secured to the support 4 and moves the toe head about the pivot pin 18 and the latter adjustment through a crank 19, which op-

erates a worm gear 20' and through connection with a worm wheel turns that portion of the carriage carrying the lasting devices laterally about a longitudinal pivot pin 5 (not shown). The heel head is similarly adjusted through similar devices. The longitudinal adjustment occurs through movement of the hand wheel 21 turning the head about the pivot 22, and the lateral adjustment occurs through the crank 23 turning the lasting devices carried by the head about a longitudinal pivot (not shown). Both the toe and heel heads are provided with suitable lasting devices in the form of wipers 15 *w* and *w'* and operating means therefor. The parts above described are those generally found in the type of bed lasting machine known in the art as the "Ideal" lasting machine and do not need further description, since it is a type well known to those skilled in the art.

I will now describe the particular features of my invention, it being understood, of course, that they are adapted for use in any appropriate character of lasting machine.

At the back of the supporting frame for the lasting devices there is provided a lug 25, through which passes a hold-down supporting rod 30, the upper end of which is provided with a collar 31, beneath which and surrounding the rod is a coiled spring 32 extending between said collar and the upper end of the lug 25. To the lower end of the rod is attached any convenient form of treadle 33 for imparting to the rod vertical movement, depression thereof causing the rod to descend and compress the spring 32. Release of the treadle will allow the spring 32 to act to raise the rod 30.

The hold-down, designated generally by the letter D, is connected to the upper end of the supporting rod 30 and in the form herein illustrated comprises an arm 35, one end of which is swiveled, for movement in a horizontal plane, in any convenient manner on the supporting rod 30, and to the other end of which there is articulatedly connected, as by a hinged joint 36, a second arm 37. The free end of the arm 37 may be shaped to form a bearing foot of sufficient proportions to properly hold the shoe in place when the foot is brought into contact with the sole, or, it may be provided, as herein shown, with a separable bearing foot. With such a construction the operative is enabled to move the bearing portion of the hold-down universally in a horizontal plane, the movement being obtained, as is obvious, by reason of said bearing portion being mounted for movement about a fixed and a movable fulcrum, the fixed fulcrum herein being the hold-down supporting rod 30, and the movable fulcrum the pin 36' of the hinge 36. Thus, no matter what the posi-

tion, with relation to the hold-down supporting rod 30, of the heel pin of the jack-post 11 or the toe rest of the toe support 5, in supporting any particular size or style of shoe the operative is enabled to position the bearing portion of the hold-down in just the desired position upon the sole, that is, substantially upon the ball thereof and midway the width of the shoe or nearer the toe, if desired. This wide range of movement is also available in cooperation with the adjustment of the toe head for varying styles of shoes. With any of the hold-downs heretofore in use, provided with but a single fulcrum point, such complete adjustment was impossible, for the reason that the hold-down support being stationary, the bearing end of the hold-down could move only in the arc of a circle. If the old style of hold-down were formed to properly rest upon a certain size of shoe and a smaller shoe were then placed in the machine, when the hold-down foot was placed in bearing position upon the new sole it would rest too near the instep to obtain the best clamping results, and vice versa if a larger shoe than that to which the hold-down was originally fitted were to be lasted.

It is extremely important that the pressure point of the bearing foot upon the sole be in a particularly selected position with relation to the shoe as a whole, otherwise the shoe will not be held as firmly as is desired and the lasting cannot be accomplished so skilfully, hence the appearance of the finished shoe will accordingly suffer.

The jointed hold-down illustrated, more particularly in lasting Goodyear shoes, permits the use of a bearing plate of sufficient proportions to extend over substantially the entire space within the upturned channel lip at the toe portion of either a leather or a "Gem" insole. A bearing plate of such proportions aids the lasting of the shoe in that it maintains the channel lips in their proper relation to the sole at the time the wipers *w* are wiped in in the lasting operation.

To enable the jointed hold-down D to be used with advantage a hold-down plate, preferably of the form and construction of the plate P (Figs. 3 to 5), is used. The hold-down plate P is made of two side plates 42, which are connected together by one or more pins 43 extending through transverse holes 44 in the two portions of the plate, which pins are provided near each end with a recess or slabbed off portion 45. Small, vertically arranged, pins 46 pass from top to bottom of the plates 42, one for each recess 45. The pins 43 are prevented from escape by the projecting walls 45' at the outer ends of the recesses 45. Each of the holes 44 is enlarged at its inner end, in meet-

ing faces of the plates 42, and seated in said enlargements are the ends of coil springs 47, surrounding the pins 43 and normally maintaining the plates 42 in open relation, as shown in Figs. 3 and 5. The plate P is preferably connected to the arm 37 by a headed pin 38 extending loosely through an opening 39 in the arm 37 (Fig. 1) to provide flexibility of action or universal rocking movement with respect to said arm. The connection between the plate P and the supporting pin 38 is by means of a flange 40 on the lower end of the pin extending at either side into recesses 41 formed in the meeting faces of the plates 42. It is readily seen that with this construction the bearing plate P is conformable to varying widths of last, or to varying widths within the channel lip at the toe of an insole, and therefore the plate being sustained by the arm 37 of the jointed hold-down it can readily be brought to proper position over the insole and then conformed by the operative to fit the space within the channel lip of the sole of the particular shoe lasted. Time is thus saved, the output of the machine being thereby increased, and because of the employment of the jointed hold-down, the efficiency of the machine is also increased.

Obviously, my hold-down may be used with other styles of bearing plates, as will be readily understood by those skilled in the art.

While the particulars of construction herein set forth are well suited to one form of the invention, it is not to be understood that these particulars are essential since they may be variously modified within the skill of the artisan without departing from the true scope of the actual invention as defined by the following claims.

What I claim as new is:—

1. In a lasting machine a hold-down support, a hold-down arm swiveled thereon to swing horizontally, a second arm jointed to the first arm, a bearing foot carried by the second arm, and means for moving said parts vertically in unison.

2. In a lasting machine, a hold-down device, and a self expanding bearing foot sustained thereby.

3. In a lasting machine, the combination of a hold-down supporting rod, a hold-down arm connected thereto to swing in a horizontal plane, a bearing foot adapted to contact with the sole of a shoe supported by the machine and mounted for universal movement on said hold-down arm to enable the bearing foot to conform to the surface of the shoe sole, and treadle operated means for moving the bearing foot toward and from the sole of the shoe.

4. In a lasting machine, the combination of a hold-down supporting member, a hold-

down arm jointed thereto to swing in a horizontal plane, a second arm mounted to swing on the hold-down arm, a bearing foot, yielding connections between the second arm and bearing foot to permit the latter to adapt itself to the sole of a shoe supported by said machine, yielding means acting normally to raise the bearing foot, and treadle operated means for moving said bearing foot toward the shoe sole.

5. In a lasting machine, the combination of a hold-down supporting rod, an arm mounted to swing horizontally thereon, a second arm mounted on the first named arm to swing horizontally with respect thereto, a bearing foot to bear upon the sole of a shoe supported by said machine, connections between the second arm and bearing foot permitting the latter to adjust itself to the shoe sole, and means for raising and lowering said parts in unison.

6. In a lasting machine, the combination of a hold-down supporting member, a swinging arm carried thereby, a plurality of bearing plates yieldingly connected to said arm, and means tending normally to separate said plates, said yielding connections and separating means causing the bearing plates to conform to the shape of the shoe sole.

7. A hold-down device comprising the bearing foot having side plates 42 arranged for movement toward and from each other in substantially the plane of the work, and the jointed hold-down arm D.

8. In a lasting machine of the class described, a hold-down having a bearing foot shaped to fit within and against the upturned lip on the sole and to bear upon an extended area of the sole face, a treadle, and connections between the treadle and hold-down for operating the latter from the former.

9. In a lasting machine of the class described, a hold-down comprising an arm movable over the shoe and a bearing foot loosely mounted for universal rocking movement in the free end of said arm.

10. A hold-down device comprising a bearing foot having separable side plates shaped to bear upon the surface of a shoe sole within the upturned channel lip and springs mounted in said plates and arranged to normally maintain the same in extended position.

11. In a lasting machine of the class described, the combination of a hold-down supporting member, a swinging hold-down arm sustained thereby, hold-down plates connected to said arm, and a spring normally acting to separate said plates to cause them to conform to the shape of the shoe sole, and treadle means to force the bearing plates upon the shoe sole.

12. In a lasting machine, the combination
of a hold-down supporting rod, a hold-
down arm sustained thereby, a plurality of
hold-down plates, and connections between
5 said plates and arm permitting rocking
movement of each of said plates to sep-
arately conform to the sole of a shoe sup-
ported by said machine.

In testimony whereof, I have signed my
name to this specification, in the presence 10
of two subscribing witnesses.

NICHOLAS C. BOHR.

Witnesses:

ROBERT H. KAMMLER,
ROBERT D. BAXTER.