

O. D. HOGUE.
SHOE FILLING MACHINE.
APPLICATION FILED OCT. 11, 1916.

1,329,407.

Patented Feb. 3, 1920.

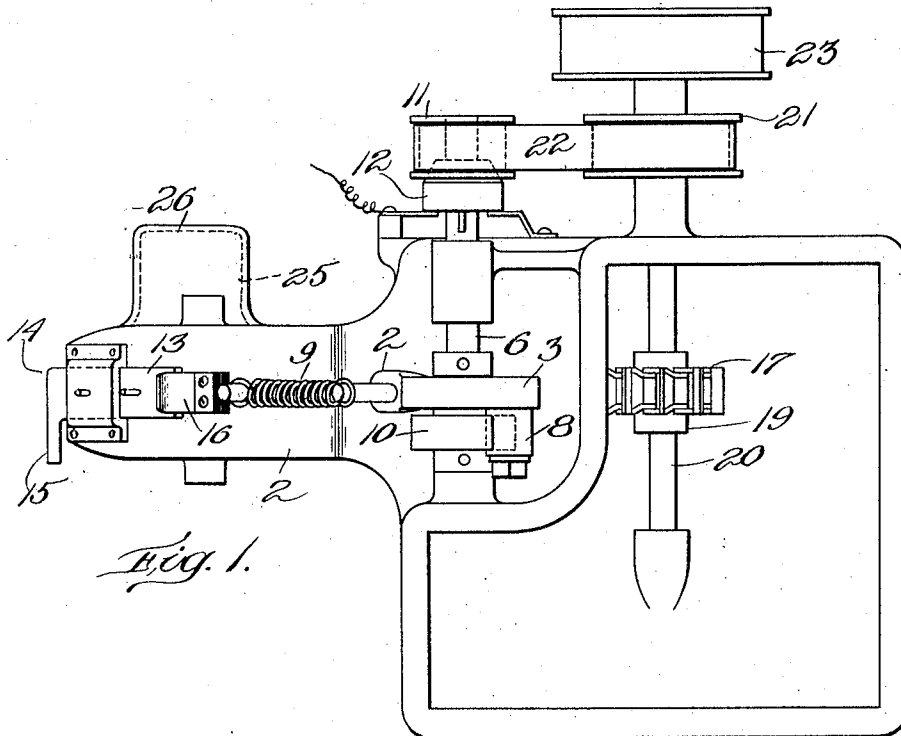


Fig. 1.

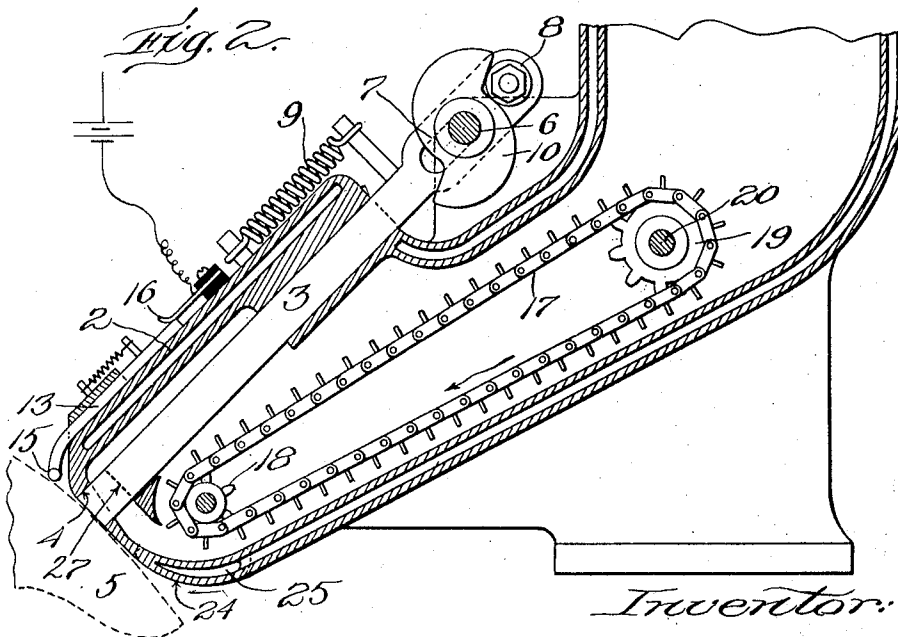


Fig. 2.

Inventor:
Oliver D. Hogue,
by Geo. S. Maxwell,
att'y.

UNITED STATES PATENT OFFICE.

OLIVER D. HOGUE, OF BROOKLINE, MASSACHUSETTS, ASSIGNOR TO GEORGE H. MAXWELL, OF BOSTON, MASSACHUSETTS.

SHOE-FILLING MACHINE.

1,329,407.

Specification of Letters Patent.

Patented Feb. 3, 1920.

Application filed October 11, 1916. Serial No. 125,099.

To all whom it may concern:

Be it known that I, OLIVER D. HOGUE, a citizen of the United States, and a resident of Brookline, county of Norfolk, State of Massachusetts, have invented an Improvement in Shoe-Filling Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

From my study of the subject of filling shoe bottoms with hot filler, I consider that it is impracticable, under modern factory requirements of speed, accuracy and low cost, to fill shoes by wholly automatic power machine and accordingly my present invention aims to come as near to an automatic machine as is practicable. To this end I provide means which is partly automatic and partly dependent upon the skill of the operator. The problem of filling shoes with the peculiar filler mentioned (which is exceedingly difficult to manage) requires not merely the simple depositing of the filler into a shoe bottom cavity, but the initial sticking of the filler in the cavity so that it will stay where placed and then, when the filler has chilled or partially set upon contact with the cold and usually damp leather, a final condensing, spreading, leveling and preferably extra-heating and all this filling operation must take place with extreme rapidity, in fact I estimate that to attain a marked success, my machine must enable the operator to accomplish all these filling movements in about two seconds as an average throughout the day, (aside from the two or three seconds additional required to get the shoe from the rack and replace it on the rack). Skilled operators working entirely by hand (aided by the Besto machine of Patent 808,227) require only about eight seconds per shoe, of which between two and three seconds are consumed in movements to and from the shoe rack leaving only about five or six seconds for the hand filling operations. In attaining the desired result, I provide a filling machine having a supply chamber in one portion and a very small, slender or narrow snout or nose extending forwardly and downwardly to receive a shoe bottom against its lower end in an oblique plane, said nose being sufficiently small so that the operator

can easily see around it and so that the nose will not interfere with the operator's easy view of the shoe bottom as it is being filled and manipulated against the extremity of this nose. Within the nose is a plunger-like filler ejector which operates rapidly to remove small portions of filler from the mass of filler and forcibly stamp or propel these small portions onto the shoe bottom, preferably with sufficient force to compress them somewhat and stick them thereon. This ejector has an intermittent motion under the control of the shoe or the operator; and a continuously operating feed device serves to maintain an abundance of filler ready at all times to be ejected. Immediately adjacent the ejector at the delivery orifice of the machine is a condensing and leveling device which is preferably heating and is so positioned that the operator can instantly perform the leveling, spreading and condensing operation on the ejected and deposited filler while the shoe is still in place against the nose of the machine.

In the accompanying drawings in which I have shown the preferred embodiments of the invention, Figure 1 is a top plan view of the machine and Fig. 2 is a view thereof in side elevation partly broken away and sectioned.

From the lower end of the upper hopper of the filler supply chamber 1 extends a small, narrow nose or extension 2, both being preferably jacketed for steam and hot water in order to maintain the filler in a uniform, plastic, melted condition. Mounted to reciprocate in the front portion of the nose is a plunger-like ejector 3 whose lower end operates in an orifice 4 through which the filler is delivered to the shoe bottom. A shoe is indicated in position to be filled at 5, Fig. 2. This ejector 3 is arranged for intermittent motion and intended to reciprocate rapidly when it does operate. To this end I have herein shown its upper end as guided on the shaft 6 which passes through a slot 7 in said upper end and the latter is provided with a laterally extending friction roll 8 held by a spring 9 in engagement with a lifting cam 10 fast on said shaft, driven by a pulley 11 and any suitable clutch mechanism, a magnetic clutch 12 being herein indicated, under the control of a contact maker 13 whose lower end 14 projects pref-

erably into the path of the shoe bottom and also preferably laterally at 15 in position to be raised by the finger or thumb of the hand which holds the shoe. This contact maker when moved upwardly engages a contact 16 to complete the circuit for energizing a magnetic clutch, which being well known, I will not describe in further detail. At one side of the ejector I provide a feed device for maintaining a continuous supply of filler in constant readiness to be ejected at the ejecting end of the plunger 3. Any suitable feeding device may be employed, but I have preferred to show a sprocket feed chain 17 mounted on sprocket wheels 18, 19 as best shown in Fig. 2. The drive sprocket 19 has its shaft 20 provided with a pulley 21 and belt 22 for driving the pulley 11 and is itself shown as driven by a pulley 23. Immediately adjacent the orifice 4 and just below the same at the end of the nose or extension 2 in position to engage the shoe bottom as the latter is filled, I provide a flat, smooth, curved surface 24 preferably steam heated at 25 and preferably projecting at one side 26 of the machine. This member 24 constitutes a leveling and condensing means and is made wider than the nose simply in order that the operator may press the shoe bottom against the same more carelessly than he would if restricted to the narrow width of the nose. The transverse lower end of the ejector is small, an inch or less being sufficient for my purpose, although for the larger sizes of shoes a slightly larger ejector may be employed. However, it is not intended to have the ejector span the shoe bottom nor a considerable portion thereof, but rather to depend upon the rapid repetition of its ejecting movements to secure the delivery of the required amount of filler for a shoe bottom.

In operation, the operator presses the toe end of a shoe bottom against the end of the nose thereby simultaneously engaging and lifting the contact maker (or other tripping device) which instantly clutches the cam shaft 6 to the driving pulley 11 and by means of the cam 100 roll 8 and spring 9 instantly reciprocates the plunger 3 and the latter deposits each time a spot or small button-like portion of filler and as these portions of filler are rapidly moved onto the shoe bottom, the operator with corresponding rapidity moves the shoe bottom to receive them. His skill enables the operator to thus plaster the entire shoe bottom full of filler by a single sweep or zigzagging forward movement of the shoe. The filler in its highly heated condition has no tendency to stick to the hot, smooth lower or depositing end of the plunger, but is slightly stuck onto the grained surface of the shoe bottom by the pressure of the plunger. The plunger retreats each time to a point 27

sufficiently above the orifice to permit fresh filler to be moved instantly into place beneath the plunger and into the orifice to be ejected. The feeding mechanism operates continuously and maintains a body of filler at the lower end of the nose-chamber always ready to get in place at the orifice whenever the plunger 3 rises. As soon as the shoe bottom has thus received a proper amount of roughly or crudely spread filler, the operator lowers the heel end thereof so as to disconnect the plunger actuating clutch 12 and, at the same time, so as to bring the shoe bottom into better contact with the leveler and condenser 24 over which the operator then quickly moves the shoe bottom in such manner as may be required in order to spread and condense the filler properly into the shoe bottom cavity so as to fill all the crevices or corners and the entire space of the area desired to be filled. If he observes any spot not properly filled, he simply strikes that portion of the shoe bottom against the orifice thereby simultaneously starting the ejector and receiving a dab of filler therefrom.

My object is to provide this finger-like or nose-like tool against which the operator simply presses the shoe bottom with proper skill and the machine does the rest.

I aim to provide a machine or tool to move rapidly and perform certain operations now slowly performed by the hand operator. The leveling of the shoe bottom will be a brief operation when the operator has attained proficiency in accurately spotting or placing the little pats or buttons of filler in the shoe bottom cavity as they are discharged with great rapidity by the ejector. It is intended that the skill of the operator, supplemented by the speed of the machine, shall result in enabling the operator rapidly and accurately to place and stick just enough filler, and no more, in the shoe bottom cavity to make a good bottom. This makes the subsequent heating and leveling of the bottom an operation that can be accomplished with a very slight movement of the shoe under the heating and leveling device. My object is to provide a tool with which the operator can, with one short, rapid zig-zag movement fill the shoe bottom cavity and with another movement level the bottom so that by reducing the motions of the operator and making most of the operations power-applied, the operator is thereby able to fill twice as many shoes with the same or fewer motions than he now uses in the operation of the Besto machine 808,227 (it being my opinion that this rate of speed and saving over the present hand method will be to supplant the said hand method as a commercial proposition).

My invention is capable of a wide variety of mechanical embodiments as will be clearly

apparent from the breadth of the appended claims.

My invention is accordingly further described in the form of claims as follows:

5 1. A shoe filling machine, comprising a filler supply chamber, having a delivery orifice, constructed and arranged to permit a shoe to be freely moved into position at said orifice for receiving filler therefrom and
10 mechanism in said chamber for maintaining the filler moving continuously in a loose stream past said orifice, combined with mechanism for delivering filler in separated amounts from said stream into the shoe bot-
15 tom at said orifice in rapid succession.

2. A shoe filling machine, comprising a filler supply chamber, having a delivery orifice positioned to accommodate a shoe with its bottom at said orifice, combined with
20 filler delivering mechanism for delivering the filler in successive separate small amounts less in width than the shoe bottom cavity under pressure to the same shoe-bot-
25 tom as the latter is moved at the will of the operator to receive said separate amounts here and there as required.

3. A shoe filling machine, comprising a filler supply chamber, having a delivery orifice positioned to accommodate a shoe with
30 its bottom at said orifice, combined with delivering mechanism including an ejector arranged and operating to spot the filler here and there widthwise and lengthwise on the shoe bottom at the will of the operator as
35 the shoe is moved over the orifice.

4. A shoe filling machine, comprising a filler supply chamber, having a delivery orifice positioned to accommodate a shoe with its bottom at said orifice, said machine being
40 constructed and arranged to permit the shoe to be moved freely by the operator widthwise and lengthwise while being filled, combined with means for positively pressing a delivery of filler into the shoe cavity and
45 hard down onto the bottom thereof at spots according to the will of the operator as the shoe is held in filler receiving position at the orifice and manipulated by the operator before said orifice.

50 5. A shoe filling machine, comprising a filler supply chamber, having an orifice positioned to deliver filler into a shoe bottom held at said orifice, filler-moving means for maintaining the filler in a loose and sub-
55 stantially non-compacted condition at said orifice, and a filler ejector for separating a portion of said loose filler and instantly packing said portion in the shoe bottom, said machine being constructed and arranged to
60 permit the shoe to be moved freely by the operator widthwise and lengthwise with relation to said orifice while being filled.

6. A shoe filling machine, comprising a filler supply chamber, having a delivery or-
65 fice for delivering filler into a shoe bottom

held at said orifice, combined with means for delivering the filler in successive sep-
arate small portions less than the width of the shoe bottom in extent and packing each
70 portion in the shoe bottom, said machine being constructed and arranged to afford free space below and at each side and at front and rear of said orifice to permit the shoe to be freely moved vertically and horizontally
75 in all directions with relation to the orifice, for receiving said portions here and there widthwise in the shoe bottom at the will of the operator.

7. A shoe filling machine, comprising a filler supply chamber having a delivery or-
80 fice and constructed and arranged to permit a shoe bottom to be moved freely lengthwise and widthwise with relation to the orifice, combined with filler delivering means for spotting the filler on the shoe bottom in sep-
85 arate deliveries, each narrower than the width of the shoe bottom.

8. A shoe filling machine, comprising a filler supply chamber, having a delivery orifice positioned to accommodate a shoe with
90 its bottom at said orifice, combined with filler depositing mechanism for delivering filler from the orifice and means adjacent the orifice for starting said depositing mechanism into operation upon the presentation
95 of a shoe in position to be filled, said starting means being subject to the control of the operator at all times during the filling of the shoe.

9. A shoe filling machine, comprising a
100 filler supply chamber having an orifice positioned to deliver filler into a shoe bottom as the shoe is moved forward over said orifice, combined with filler depositing mechanism for delivering filler from the orifice
105 into the shoe bottom, and means adjacent the orifice adapted and arranged for starting said depositing mechanism into operation upon the presentation of a shoe in position to be filled, said starting means being
110 operable to stop said depositing mechanism when the shank-end of said bottom has reached said orifice in said forward movement of the shoe.

10. A shoe filling machine, comprising a
115 filler supply chamber, having a delivery orifice to deliver filler into a shoe bottom held at said orifice, combined with filler depositing mechanism for delivering filler from the orifice in different spots viewed widthwise
120 of the shoe at the will of the operator, and means adjacent the orifice for starting and stopping said delivery of filler upon the movement of the shoe toward and from the orifice irrespective of the lengthwise posi-
125 tion of the shoe with relation to the orifice.

11. A shoe filling machine, comprising a filler supply chamber, having a delivery or-
fice positioned to accommodate a shoe with
130 its bottom at said orifice, said machine being

constructed and arranged to permit the shoe to be moved freely by the operator widthwise and lengthwise while being filled, combined with an intermittently operating
 5 plunger ejector for ejecting filler from said orifice into a shoe bottom here and there widthwise and lengthwise as the shoe is moved according to the will of the operator.

12. A shoe filling machine, having a filler
 10 supply chamber, and a relatively slender nose-like delivery-projection therefrom, provided with a delivery orifice in its end positioned to receive a shoe bottom to be filled, and constructed and arranged to leave a
 15 free, open space about said nose-projection to enable the operator to move the shoe bottom widthwise and lengthwise and to see a portion of the shoe bottom adjacent and at each side of said orifice during the delivery
 20 of filler thereinto, combined with means for delivering said filler through said orifice.

13. A shoe filling machine having a delivery nose through which the filler passes into the shoe bottom and about the end of
 25 which an operator may freely move a shoe bottom in all directions while being filled with its bottom at said end, said nose having an orifice in said end, combined with means for delivering filler through said orifice into
 30 said shoe bottom, and said machine being constructed and arranged with a free space about said end for said movement of the shoe and free from obstruction to the vision, whereby the operator can readily see the
 35 shoe bottom close to the nose as it is being filled.

14. A shoe filling machine, having a slender delivery nose with a small narrow end provided with a delivery orifice, said
 40 end being sufficiently small and narrow and the machine affording an unobstructed view so that the operator can readily see a portion of the shoe bottom at the side of the nose as the filler is being delivered into said
 45 bottom, combined with a filler ejector operable at the will of the operator for deliver-

ing filler at any point desired into the shoe bottom as the operator shifts the shoe bottom widthwise or lengthwise according to his inspection of its needs during the filling
 50 operation.

15. A shoe filling machine, comprising a filler receptacle, having a nose-like projection terminating in an externally smooth end containing an orifice, filler delivering
 55 mechanism for delivering filler through said orifice, and tripping mechanism adjacent said orifice for operating said delivering mechanism, whereby the operator is permitted by the presentation of a shoe to cause
 60 said delivering mechanism to deliver filler into the shoe bottom while the latter is held against said smooth end, said smooth end having a portion thereof adjacent said orifice shaped and arranged to constitute a
 65 spreading and condensing means for spreading and condensing the filler thus delivered into the shoe bottom.

16. A shoe filling machine, comprising a filler receptacle, having a nose-like projection terminating in an externally smooth end containing an orifice, filler delivering mechanism for delivering filler through said orifice, and tripping mechanism adjacent said
 70 orifice for operating said delivering mechanism, whereby the operator is permitted by the presentation of a shoe to cause said delivering mechanism to deliver filler into the shoe bottom while the latter is held against
 75 said smooth end, said smooth end having heating means and a portion thereof adjacent said orifice shaped and arranged to constitute a heated spreading and condensing means for spreading and condensing the
 80 filler thus delivered into the shoe bottom.

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

OLIVER D. HOGUE.

Witnesses:

GEO. H. MAXWELL,
 HAROLD J. CLARK.