

April 30, 1940.

J. F. STANDISH

2,198,638

ADHESIVE APPLYING APPARATUS

Filed Nov. 10, 1938

2 Sheets-Sheet 1

Fig. 1.

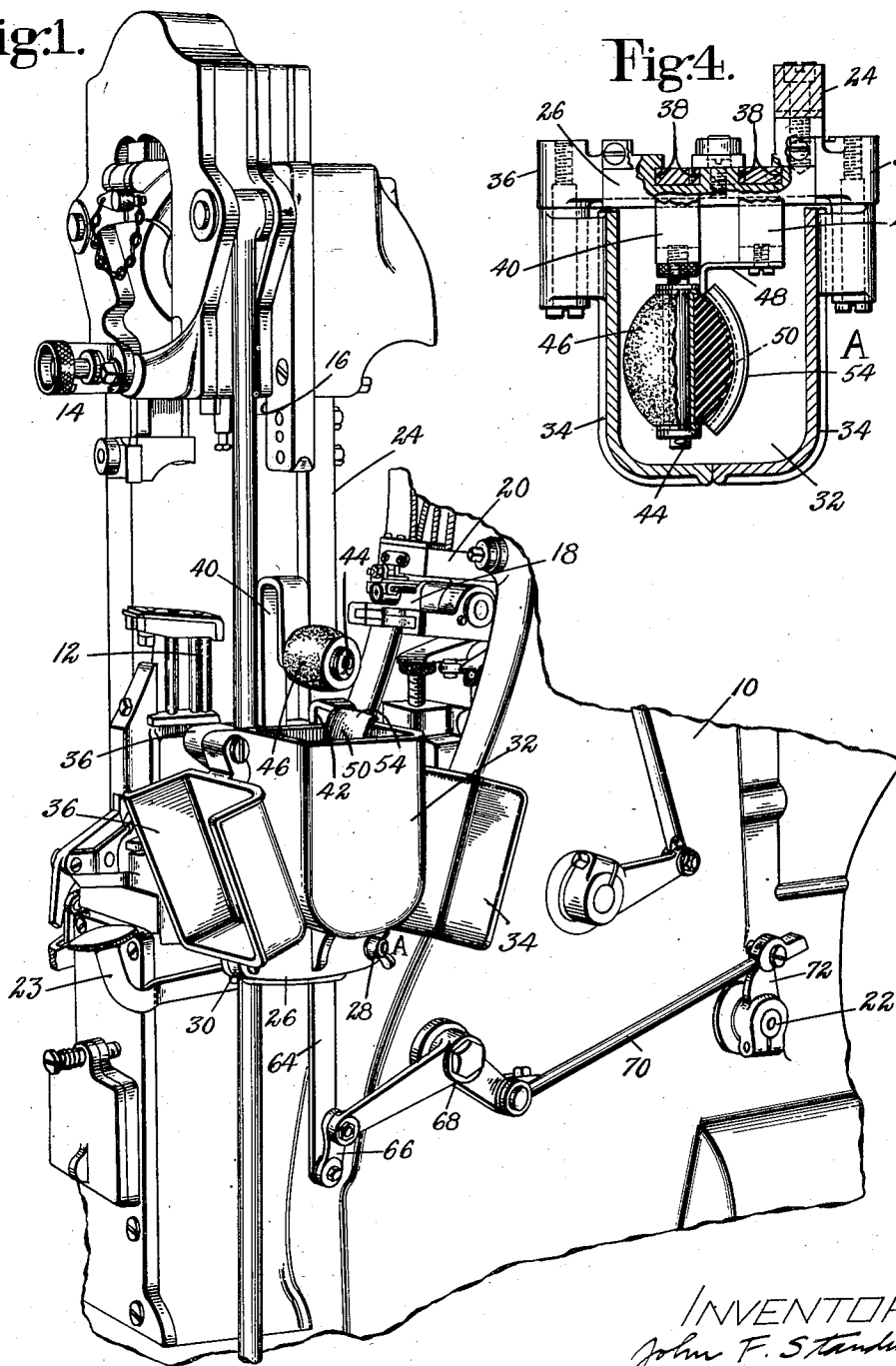
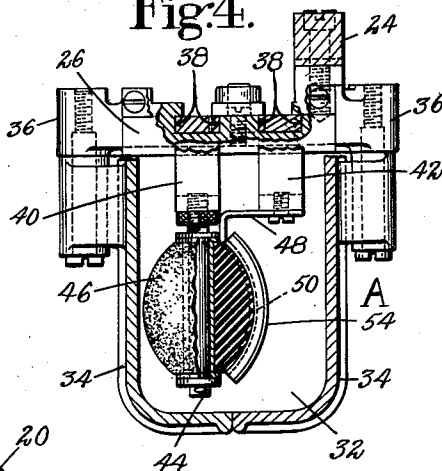


Fig. 4.



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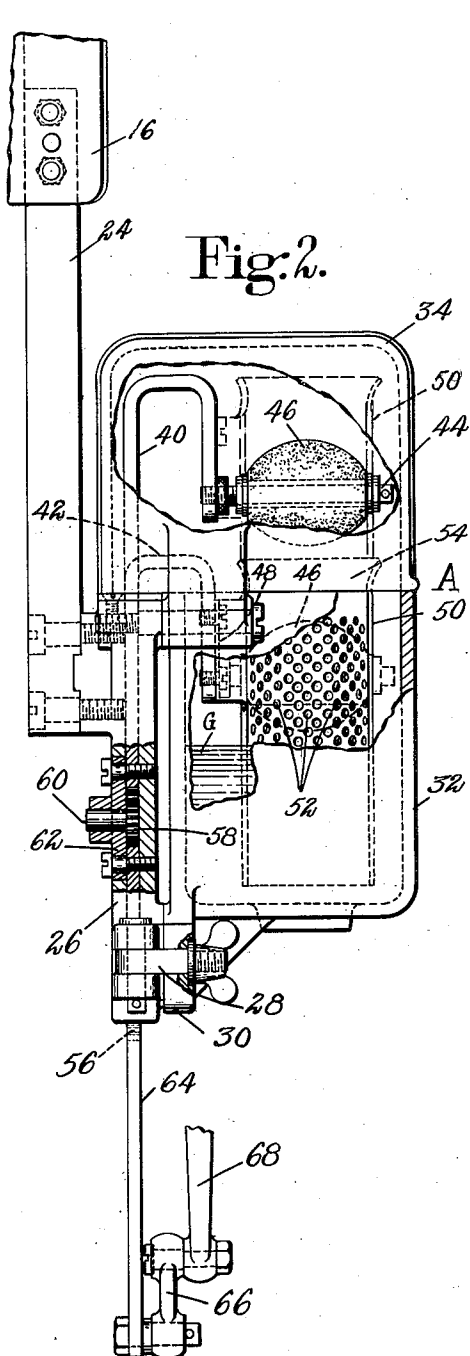
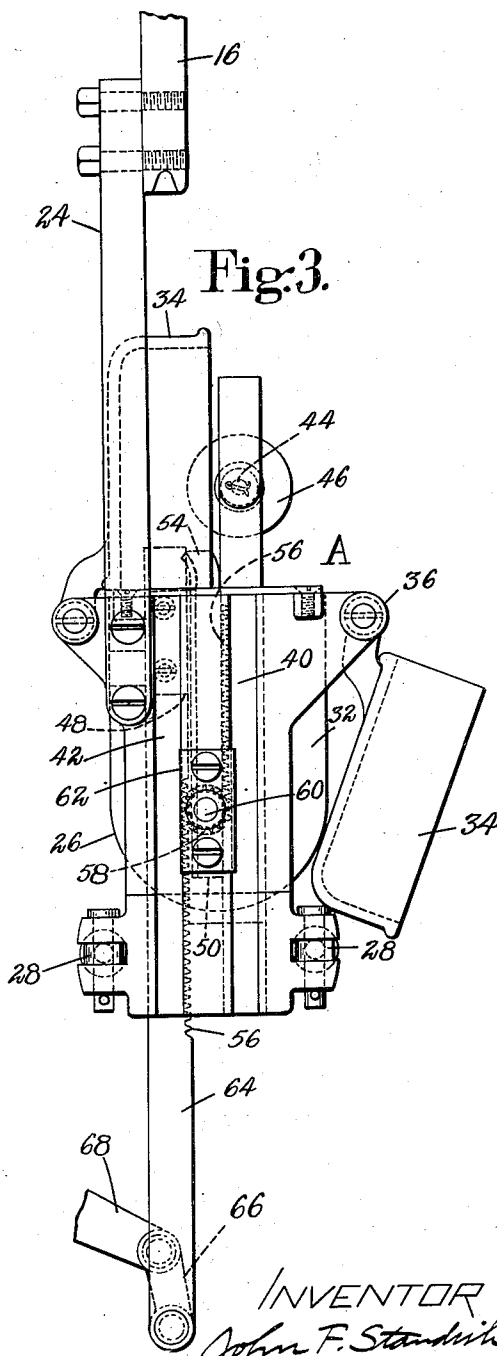
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ADHESIVE APPLYING APPARATUS

Filed Nov. 10, 1938

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,198,638

ADHESIVE-APPLYING APPARATUS

John F. Standish, Winthrop, Mass., assignor to
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of Flemington, N. J., a corporation of New
Jersey

Application November 10, 1938, Serial No. 239,843

18 Claims. (Cl. 12—42)

My invention relates to apparatus by which glue, or other adhesive, may be applied to workpieces, it being especially adapted for use in connection with the gluing of heel-portions, as heel-bases or lifts, to prepare them for nailing to shoes. Herein it is disclosed as an attachment for the heeling machine which is the subject of an application for Letters Patent of the United States, filed in the names of John F. Standish and Lester S Macdonald on May 28, 1937 and bearing the Serial No. 145,320.

In gluing attachments for heelers, there is commonly provided a roll rotatable in a glue-receptacle and turned sufficiently during each operating cycle of the associated machine to present a freshly coated surface to which the operator may apply the cup of the next heel to be attached. As the glue is lowered in the receptacle by its use, the roll brings up varying quantities. When the receptacle is first filled, the application to the heels may be excessive, but, as the work proceeds and the charge upon the roll diminishes, the heels may receive too little glue. It is an object of this invention to present for application, in a manner convenient for the operator, substantially unvarying quantities of an adhesive regardless of its depth in the receptacle. This object I attain by combining with the receptacle an adhesive-supplying member, which may consist of a plate, and an applying member, preferably a roll, the supplying member being arranged to lift the adhesive from that in the receptacle, while the applying member moves toward and from the receptacle to take it from the supplying member. By this arrangement, as the members travel along each other, there may be produced a delivery to the applying member, which, within working limits, is independent of the depth of the adhesive in the receptacle and which is distributed uniformly upon said applying member. To avoid an unduly heavy coating upon the applying member, the supplying member is preferably perforated, so, upon engagement between the two members, the excess of the adhesive may escape under the pressure from the path of the applying member. For the gluing of the cups of heels, the applying member preferably has a transverse contour approximating that of the heel-cups and the contacting surface of the supplying member is best complementally formed. As herein disclosed, the apparatus has a glue-pot with which are associated slides carrying the supplying member and the applying member and oppositely reciprocated to establish contact between said members. This movement may be effected by reciprocating one

of the slides and connecting the other to it by racks and an intermediate pinion. The applying member is preferably in the form of a rotatable, convex roll and the supplying member a concave plate, the latter being perforated. The pot, together with the plate and roll or other glue-supplying and -applying members, are shown as covered by sections hinged at opposite sides of the pot and meeting above it. Such heel-attaching machines as that previously referred to have elements operating through definite cycles successively controlled by the operator, and, to insure the correct presentation of the applying member with a fresh coat of the adhesive ready to receive contact of the heel to be attached, I so reciprocate the members of the applying apparatus from an element of the machine, that their movement stops at the end of an operating cycle with the applying member raised from its receptacle and the supplying member lowered therein.

The accompanying drawings illustrate a particular embodiment of the invention,

Fig. 1 being a perspective view of my improved adhesive-applying apparatus attached to a heeling machine, of which but a portion appears;

Fig. 2 an enlarged broken elevation of the apparatus itself;

Fig. 3 a rear elevation of said apparatus; and
Fig. 4 a top plan view with portions broken away.

As fully set forth in the previously-mentioned application, a heeling machine, to which this applying apparatus may be attached, has a frame 10 (Fig. 1) carrying nailing mechanism 12 and an opposed heel-engaging pressure-head 14 movable toward and from the nailing mechanism in guides 16. Successive loads of nails are transferred by a reciprocatory loader-block 18 to the nailing mechanism, for insertion in the work, from a foot-plate 20 through which they are delivered. The actuating mechanism for the loader-block includes a spindle 22, oscillating in the frame under the control of a hand-lever 23 once during each operating cycle of the machine.

It is usually desired to apply to each heel, before it is nailed, a coating of an adhesive over the cup. My improved applying apparatus for this purpose is shown at A. Secured to one of the guides 16 is a bracket consisting of a depending bar 24 carrying at its lower extremity a mounting plate 26. Pivoted at opposite sides of the lower portion of the plate to swing horizontally are bolts 28, 28, arranged to enter slots in spaced lugs 30, 30 projecting from the bottom of a receptacle 32 for glue or other adhesive. This glue-pot 55

has a cover preferably comprising opposite sections 34, 34, each of which is pivoted upon a lug 36 at one side of the top of the plate 26. The cover-sections meet at the center to furnish a complete closure for the pot and rise considerably above it to give a space, the purpose of which will later appear. By loosening thumb-nuts upon the bolts 28, 28 and swinging aside said bolts, the pot may be removed readily for cleaning, leaving the cover undisturbed. Guided in spaced vertical ways 38, 38 in the plate 26 are slides 40, 42 having their opposite ends bent inwardly and downwardly toward the interior of the pot. Projecting horizontally from the down-turned end of the arm 40 is a spindle 44, which is normally situated above the pot. About the spindle is freely rotatable an applying roll 46, best of some such yieldable material as soft rubber, and with its convex periphery approximating in contour the transverse contour of the heel-cups which are to be coated. By having the form of the roll-surface a mean between the extremes of the heel-cups, the yield of the roll will allow it to conform properly to the entire range of work. Fixed to the overhanging end of the slide 42 is a horizontal arm 48 projecting from a plate 50, which in the lower position of the slide preferably reaches from a point somewhat above the top of the pot nearly to the bottom thereof. Horizontally the plate is concave, its contour being substantially complementary to that of the roll. It is provided with numerous perforations 52, through which glue may pass, and at its upper extremity 54 is flared outwardly to permit the reception of the roll by the concavity without interference. The adjacent edges of the slides 40 and 42 carry rack-teeth 56 and these are connected by a pinion 58, the outwardly projecting spindle 60 of which is free to rotate in a plate 62 attached to the bracket-plate 26 between the slides.

One of the slides, as that carrying the plate 50, is extended downwardly at 64 below the plate 26. At its lower end, it is joined by a link 66 to a bell-crank-lever 68 fulcrumed upon the frame. The lever is connected by link 70 to an arm 72 fast upon the end of the spindle 22 outside the frame. Normally, or when the heeling machine is at rest with the loader-block 18 in its rearward position beneath the foot-plate 20, the roll 46 is raised to the extreme of its upward travel above the pot 32, and the plate 50 is correspondingly lowered, a considerable portion being immersed in the glue, which is indicated at G in Fig. 2. The operator depresses the lever 23, causing oscillation of the spindle 22. As a result of this, the loader-block 18 containing a load of nails advances and delivers them to the nailing mechanism 12. By the connection between the spindle and the depending portion 64 of the slide 42, this raises said slide and through the pinion 58 simultaneously lowers the slide 40. The roll 46 is thereby carried toward and into the pot 32 above the glue-level, while the plate 50 rises bringing up a coating of glue upon its concave face. This relation is indicated in dotted lines in Fig. 2. In these opposite movements of the roll and plate, they travel relatively in contact with each other, transferring glue from the plate to the entire periphery of the roll. Any excess of the adhesive, which with an imperforate plate might be pushed before the roll and gather in a ridge upon its surface, is permitted to escape through the perforations 52. The coating upon the roll will be smoothed upon it by the travel along the plate and when the nail-supplying mechanism stops with the loader-

block again beneath the foot-plate, the roll will be again in the position illustrated in Fig. 1 and carrying a substantial uniform coating of the adhesive about its entire periphery. It is so located above the pot, that, with the cover-sections opened (Fig. 1), it will be convenient for the operator to draw the cup of the heel over it to receive a coating. By the simultaneous opposite reciprocation of the applying and supplying elements, the extent of movement and the time required to deliver to the roll its coating of adhesive are reduced, and, while the applying member is raised to give the operator ready access to it, the supplying member is lowered so a considerable portion is within the glue. This, together with the distribution of the adhesive by the rolling of the applying member over the perforated plate, gives a substantially uniform coating in spite of lowering of the adhesive level during the use of the apparatus. The heel thus coated is placed upon the heel-seat of a shoe at the nailing mechanism 12, the head 14 lowered to apply pressure to the work and the machine started for a single operating cycle, during which the nails are driven into the heel. Thus, successive nail-delivering, heel-cup-gluing and heel-nailing operations are performed. When the apparatus is not in use, the pot 32, together with the glue-applying and -supplying elements, may be completely enclosed by swinging up the cover-sections 34, 34. This reduces evaporation from and spoiling of the adhesive. The pot is removed for cleaning by simply releasing the bolts 28, all the other elements of the apparatus remaining in place upon the

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

1. In an adhesive-applying apparatus, a receptacle for the adhesive, a supplying member movable in the receptacle to lift the adhesive therefrom, and an applying member movable toward the receptacle to take the adhesive from the supplying member, the two members traveling along each other in their movement.

2. In an adhesive-applying apparatus, a receptacle for the adhesive, an adhesive-supplying member, an adhesive-applying member, and means arranged to reciprocate said members simultaneously in opposite directions to effect delivery of the adhesive by the supplying member from the receptacle to the applying member.

3. In an adhesive-applying apparatus, a receptacle for the adhesive, an adhesive-supplying member, an adhesive-applying member, means for normally supporting the supplying member in the receptacle and the applying member outside the receptacle, and means arranged to reciprocate the members to bring them into engagement with the applying member in the receptacle.

4. In an adhesive-applying apparatus, a receptacle for the adhesive, a movable supplying plate dipping in the adhesive, a movable adhesive-applying roll situated above the adhesive, and means arranged to move the plate and roll relatively and to rotate the roll to transfer adhesive from the plate to the roll.

5. In an adhesive-applying apparatus, a receptacle for the adhesive, a supplying member provided with perforations and movable in the receptacle to receive adhesive therefrom, and an applying member between which and the supplying member there is relative movement to transfer the adhesive from the supplying mem-

ber and to distribute said adhesive about said applying member.

6. In an adhesive-applying apparatus, a receptacle for the adhesive, a movable supplying plate provided with perforations lying in the adhesive, a movable adhesive-applying roll situated above the adhesive, and means arranged to move the plate and roll relatively to cause contact of the roll with the adhesive upon the plate and its distribution about the roll.

7. In an apparatus for applying glue to the cups of heels, a receptacle for the glue, a member having a curved applying surface approximating in contour that of the heel-cups to be glued, means for holding said member normally outside the receptacle, and a supplying member raising glue from that in the receptacle and traveling along the applying member to distribute the glue over its curved surface.

8. In an apparatus for applying glue to the cups of heels, a receptacle for the glue, a member having a curved applying surface approximating in contour that of the heel-cups to be glued, means for holding said member normally outside the receptacle, a supplying member raising glue from that in the receptacle and traveling along the applying member to distribute the glue over its curved surface, and means for simultaneously reciprocating the applying and supplying members oppositely.

9. In an apparatus for applying glue to the cups of heels, a receptacle for the glue, an applying-roll having its periphery formed to approximate the contour of the heel-cups to be glued, means for holding said roll normally outside the receptacle, and a plate having a contour complementary to that of the roll for contact therewith and movable to raise glue from that in the receptacle and apply it to the roll.

10. In an apparatus for applying adhesive to the attaching-surfaces of heel-portions, a glue-pot, slides guided to reciprocate vertically adjacent to the pot, a glue-supplying member carried by one slide in the pot, a glue-applying member carried by another slide, and means arranged to move the slides oppositely to establish contact between the members.

11. In an apparatus for applying adhesive to the attaching-surfaces of heel-portions, a glue-pot, two slides guided to reciprocate vertically adjacent to the pot and provided with rack-teeth upon their adjacent edges, a pinion rotatable between the slides and meshing with the rack-teeth, a glue-supplying member carried by one slide in the pot, a glue-applying member carried by another slide, and means arranged to reciprocate one of the slides.

12. In an apparatus for applying adhesive to the attaching-surfaces of heel-portions, a glue-pot, slides guided to reciprocate vertically adjacent to the pot and having ends turned downwardly toward the pot, a glue-supplying plate carried by one of the slide-ends in the pot, and

a glue-applying roll rotatable upon another of the slide-ends for co-operation with the plate.

13. An apparatus for applying adhesive to the attaching-surfaces of heel-portions, a glue-pot, slides guided to reciprocate vertically adjacent to the pot, a concave glue-supplying plate carried by one slide in the pot, a convex glue-applying roll carried by another slide, and means arranged to move the slides oppositely to establish contact between the convex surface of the roll and the concave surface of the plate.

14. An apparatus for applying adhesive to the attaching-surfaces of heel-portions, a glue-pot, slides guided to reciprocate vertically adjacent to the pot, a concave plate carried by one slide in the pot and provided with glue-receiving perforations, a convex glue-applying roll carried by another slide and contacting with the plate over the perforations, and means arranged to move the slides oppositely to establish contact between the convex surface of the roll and the concave surface of the plate.

15. In an apparatus for applying adhesive to the attaching-surfaces of heel-portions, a glue-pot, slides guided to reciprocate vertically adjacent to the pot and having ends turned downwardly toward the pot, a glue-supplying member and a co-operating glue-applying member carried by the slide-ends, and cover-sections hinged at opposite sides of the pot and meeting above it to enclose the slide-ends and the members carried thereby.

16. In an apparatus for applying adhesive to the attaching-surfaces of heel-portions, a bracket, a glue-pot separably secured thereto, a glue-supplying member and a co-operating glue-applying member guided upon the bracket and extending above the pot, and opposite cover-sections hinged upon the bracket and resting above the pot to enclose the members.

17. In an apparatus for applying adhesive to the attaching-surfaces of heel-portions, a bracket, a glue-pot separably secured thereto, two slides guided in the bracket, a glue-supplying member carried by one slide and movable in the pot, and a glue-applying member carried by the other slide and co-operating with the supplying member.

18. A combination with a heel-attaching machine provided with elements operating through definite cycles successively controlled by the operator, of a receptacle for an adhesive, an adhesive-supplying member and a co-operating adhesive-applying member mounted to reciprocate vertically toward and from the receptacle, and means for reciprocating the members from an element of the heel-attaching machine and arranged to stop the reciprocation at the end of an operating cycle with the applying member raised from the receptacle and the supplying member lowered into the receptacle.

JOHN F. STANDISH.

CERTIFICATE OF CORRECTION.

Patent No. 2,198,638.

April 30, 1940.

JOHN F. STANDISH.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 3, first column, line 1, claim 5, before "and" insert --to the applying member--; 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 17th day of September, A. D. 1940.

(Seal)

Henry Van Arsdale,
Acting Commissioner of Patents.