H. B. GREENOUGH.

APPLYING APPARATUS.

APPLICATION FILED MAY 10, 1920.

1,407,026. Patented Feb. 21, 1922.

Fig. 1.

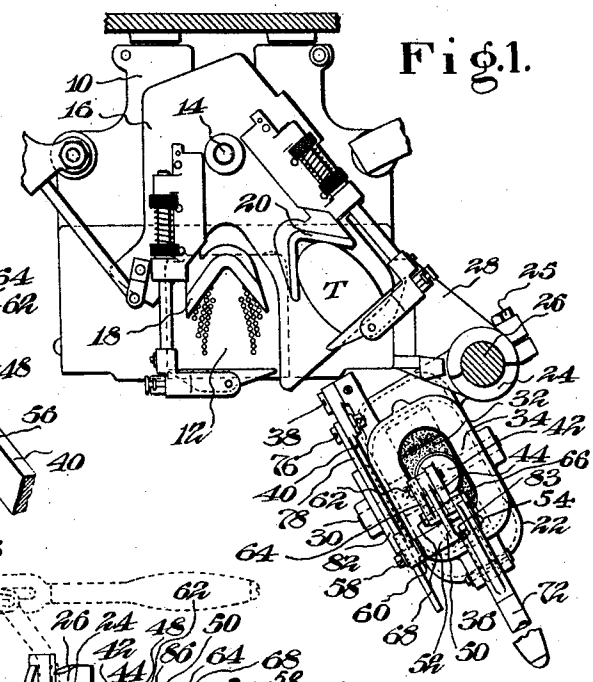
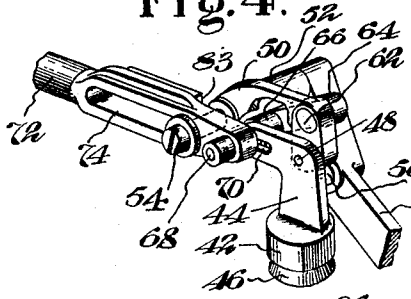


Fig. 4.



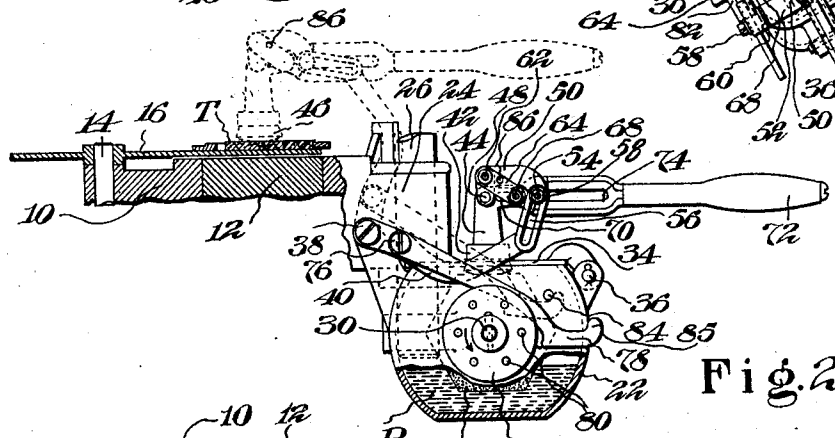


Fig. 2.

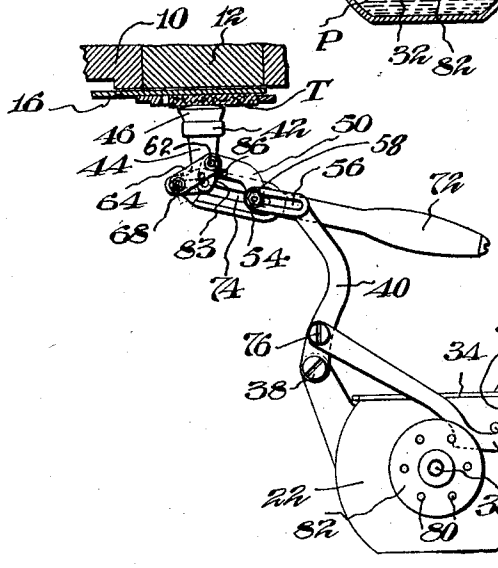


Fig. 3.

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APPLYING APPARATUS.

1,407,026. Specification of Letters Patent. Patented Feb. 21, 1922.

Application filed May 10, 1920. Serial No. 380,239.

To all whom it may concern:

Be it known that I, HENRY B. GREENOUGH, a subject of the King of Great Britain, residing at Beverly, in the county of Essex and State of Massachusetts, have invented certain Improvements in Applying Apparatus, 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.

My invention relates to applying apparatus, being especially adapted for the placing of paste or like adhesive substances upon such work as shoe parts.

The invention has as an object the provision of a simple, unitary apparatus for applying the substance from a holder to work supported in a chosen one of a plurality of positions, the particular position in which the application is made at any time depending upon conditions under which the work is being done, as the type of machine to which the apparatus is an auxiliary, or the manner in which the machine operates. One advantageous utilization of the invention is in connection with heel-attaching machines of the character of that disclosed in the application of Benjamin F. Mayo, filed June 3, 1918, Serial No. 237,951. This heeler is so designed that it may be arranged to drive the attaching nails in opposite directions, either up or down, and the work, as a top-lift which is to be spanked upon the heel, is correspondingly oppositely positioned, with the inner surface up in the first instance and down in the second. Upon this inner surface it is customary to place, before attachment to the body of the heel is effected, a coating of paste to render the union more secure. The apparatus of the present invention is adapted, without reorganization, to accomplish this pasting of the top-lifts in both relations and from a supply of the adhesive maintained in a constant position. For the attainment of such an object, I employ an applying member capable of movement from a source of the substance to be applied in different directions for co-operation with differently placed work. Preferably, there is a movable support for the applying member, together with means acting during the movement of the support to selectively determine the position of the applying member upon said support, as by reversing it. Thus the applying member may travel into contact with a top-lift held above or below the heel to which it is to be attached.

In the accompanying drawing, illustrating one of the several embodiments which my invention may assume,

Fig. 1 is a top plan view of my improved applying apparatus, associated with a heel-attaching machine in which the top-lift is situated with the side to be pasted turned upwardly;

Fig. 2 is a broken side elevation of the same apparatus, looking from the left in Fig. 1;

Fig. 3 is a side elevation, illustrating the apparatus in use with an attaching machine in which the inner surface of the top-lift is turned downwardly; and

Fig. 4 is a perspective view illustrating the applying member and its more closely associated elements on a larger scale than the preceding figures.

At 10 appears a portion of the supporting frame of such a heel-attaching machine as that previously mentioned, there being supported upon this frame the customary die-block 12. Pivoted at 14 in proximity to the die-block for movement above it, as illustrated in Figs. 1 and 2 of the drawing, and beneath it, as appears in Fig. 3, is a swing-plate 16, having the usual heel-clamp 18 and top-lift-clamp 20. Mounted adjacent to the swing-plate is a paste-holder, shown as in the form of a receptacle 22 situated preferably just in front and somewhat at one side of the top-lift-clamp when the swing-plate is in the heel-attaching position. It is preferably maintained adjustably in the desired relation to the top-lift-clamp by an arm 24, perforated and divided to permit it to be secured by a screw 25 at the desired height and angle upon a vertical spindle 26 rising or depending from a bracket 28 projecting from one side of the frame. Rotatable in the end walls of the receptacle upon a spindle 30 is an auxiliary paste-holding or presenting member 32 having a body of absorbent material, as felt. This presenting member is shown as hexagonal in section, thus having a plurality of surfaces arranged to successively present the paste carried thereby opposite a somewhat contracted opening in a cover 34 hinged at 36 upon the receptacle.

Pivoted at 38 at the rear of the receptacle is a movable supporting or transferring arm 40, which, as here illustrated, is angular in form, extending in its normal or inactive position first downwardly from the pivotal point below the top of the receptacle, and then upwardly above said receptacle, being arranged to receive at its forward extremity a paste-applying member 42. The applying member is preferably furnished by a bell-crank lever 44, having at the lower end of its normally downwardly projecting arm a yieldable applying surface 46 for contact with the paste-holding member 32 and with the work. The lever 44 is fulcrumed at 48 upon one arm of a bell-crank carrier lever 50, the other arm of which has a laterally extending hub 52 rotatable about a stud 54 fixed upon the supporting arm. Preferably, this arm is slotted at 56 to receive the stud 54, which may be secured in different positions by a nut 58 operating upon a threaded end of the stud, and which draws a collar 60 fast upon said stud against the side of the arm. By means of this connection, the carrier and therefore the applying member may be changed in their relation to the holder and to the work. Fixed at the angle of the bell-crank lever 50 is a stud 62, upon which is mounted to turn a link 64. At the lower end of the link is a short lateral hub 66, through which extends a stud 68 passing through a slot 70 lying along the arm of the bell-crank lever 44 opposite that bearing the applying surface. Pivoted upon the stud 68 outside the lever 44 is an operating member or handle 72, in which is a longitudinal slot 74 to receive the end of the stud 54. Arranged to turn at 76 on the arm 40 near its pivotal point is a pawl 78 adapted to engage a series of pins 80, corresponding in number to the presenting sides of the member 32 and situated about a wheel 82, this wheel being fast upon the spindle 30 outside the receptacle. A pin 84, projecting from the side of the receptacle, co-operates with the upper face of the pawl to maintain it in engagement with the pins 80 as it is moved in the oscillation of the arm 40 and to limit the arm movement.

Considering first the pasting of a top-lift T held with its inner surface up (Figs. 1 and 2), the receptacle being supplied with paste P so that the member 32 is immersed in it, the applying surface 46 normally rests upon one of the faces of said member, and receives therefrom a coating of the paste. In using the apparatus, the operator or operator's helper grasps the handle 72 and swings the arm 40 about its pivot by force exerted upwardly and rearwardly, until the applying member passes a vertical through the arm pivot, when it is allowed to descend, and the applying surface is forced against the top-lift. This last-mentioned position is as appears in dotted lines in Fig. 2. The application having been thus made, the applying member is returned to its initial position, a lifting pull now being exerted upon the handle and the surface 46 allowed to drop upon the presenting member. It at this time comes into contact with the succeeding face bearing a fresh supply of paste, since during the rearward movement of the arm 40 the pawl 78 engaged one of the pins 80, turning the wheel 82 through such an angle as to produce this result. If, on the other hand, the application is to be made to the top-lift positioned as in Fig. 3, the operator, in addition to lifting upon the handle 72, exerts pressure upon it longitudinally, or in the direction of the stud 68, with a tendency to anti-clockwise rotation (Fig. 2) about the stud 54. Since the stud 68 is limited by the link 64 to move through the arc of a circle, it bears upon the lower wall of the slot 70 in the bell-crank lever carrying the applying surface, turning this lever about its fulcrum, and reversing the position of the applying member until the surface 46 is turned upwardly, as shown in Fig. 3. At this time the applying member is held against further rotation by contact with a stop-shoulder 83 at the side of the handle. During the reversing action the handle travels over the stud 54 to effect this movement by virtue of the slot 74. Simultaneously force is exerted as before to carry the supporting arm about its pivot, and when the surface 46 reaches its highest point, it may be pressed by movement of the carrier lever 50 about the stud 54 against the downwardly turned top-lift. If the reversal of the applying member is not accomplished during its travel, when the parts reach the position illustrated in dotted lines in Fig. 2, at the limit of rearward movement of the arm 40 about the center 38 determined by contact of an upturned end 85 of the pawl 78 with the pin 84, continued pressure upon the handle with a downward tendency of its inner end will positively turn the applying member so that its surface 46 is as appears in Fig. 3. In the return of the arm 40 to its initial position, the pull upon the handle rotates the bell-crank lever 44 upon its fulcrum in the opposite direction, so that the surface 46 is caused to face down and return to contact with the presenting member 32. The rotation of the lever 44 in this direction may be limited by the contact of the stud 68 with the end of the slot 70. In the pasting of the upturned surface previously described, there was lacking the longitudinally applied force upon the handle to cause travel of the stud 68 through the slot 70 and the movement of the slot 74 along the stud 54, which produces the reversal of the applying surface. But, if the operator finds any difficulty in manipulating the applying

member without reversal, it may be locked in its downward applying position by a pin inserted through alined openings 86 in the link 64 and the lever 50.

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

1. In an applying apparatus, a holder for the substance to be applied, and an applying member arranged for movement from a position within the holder in different directions for co-operation with differently placed work.

2. In an applying apparatus, an applying member, a movable support therefor, and means arranged to selectively determine the position of the applying member upon the support and acting during the movement of the support.

3. In an applying apparatus, an applying member, a movable support therefor, operator-controlled means arranged to move the applying member, and means for limiting the movement to predetermined directions.

4. In an applying apparatus, an applying member, a movable support therefor, reversing means arranged to act upon the applying member, and means for limiting the reverse movement to predetermined paths.

5. In an applying apparatus, an applying member, a movable support therefor, an operating member arranged to move the support to bring the applying member into co-operation with the work, and connections between the operating member and applying member arranged to change the position of the applying member upon the support.

6. In an applying apparatus, an applying member, a movable support therefor, an operating member arranged to move the support to bring the applying member into co-operation with the work, and connections between the operating member and applying member arranged to change the position of the applying member upon the work, there being provision for rendering said connections ineffective.

7. In an applying apparatus, a movable support, an applying member pivoted thereon, and a member connected to the applying member and being arranged to move the support, there being in the connections provision for lost motion.

8. In an applying apparatus, a movable support, an applying member pivoted thereon, and an operating member connected to the support and to the applying member.

9. In an applying apparatus, a movable support, an applying member pivoted thereon, and an operating member joined to the support and applying member by slotted connections.

10. In an applying apparatus, a movable support, an applying member pivoted thereon, an operating member connected to the support and to the applying member, and means arranged to limit the path of movement of said operating member.

11. In an applying apparatus, a receptacle, an arm pivoted adjacent thereto, a carrier pivoted upon the arm, and an applying member pivoted upon the carrier and being movable into and out of co-operation with the receptacle.

12. In an applying apparatus, a receptacle, an arm pivoted adjacent thereto, a carrier pivoted upon the arm, an applying member pivoted upon the carrier and being movable into and out of co-operation with the receptacle, and a handle connected to the applying member.

13. In an applying apparatus, a receptacle, an arm pivoted adjacent thereto, a carrier pivoted upon the arm, an applying member pivoted upon the carrier and being movable into and out of co-operation with the receptacle, and a handle connected to the applying member and carrier.

14. In an applying apparatus, a receptacle, an arm pivoted adjacent thereto, a carrier pivoted upon the arm, an applying member pivoted upon the carrier and being movable into and out of co-operation with the receptacle, and a handle having slotted connections with the applying member and carrier.

15. In an applying apparatus, a movable member for holding the substance to be applied, an applying member movable between the holding member and work, and means arranged to move the holding member and limit the movement of the applying member.

16. In an applying apparatus, a rotatable member for presenting the substance to be applied, an applying member, a movable support therefor, reversing means arranged to act upon the applying member and carried upon the support, and a member for rotating the presenting member, said rotating member being mounted upon and arranged to limit the movement of the support.

17. In an applying apparatus, a receptacle, a presenting member rotatable therein, an arm pivoted adjacent to the receptacle, a pawl mounted upon the arm and co-operating with the presenting member to rotate it, said pawl being provided with a stop portion arranged to limit its movement, and a reversible applying member carried by the arm and co-operating with the presenting member.

In testimony whereof I have signed my name to this specification.

HENRY B. GREENOUGH.