Sept. 17, 1935. W. L. MacKENZIE 2,014,391

APPARATUS FOR APPLYING ADHESIVE TO THE BOTTOMS OF LASTED SHOES

Filed Nov. 13, 1931

Fig. 1.

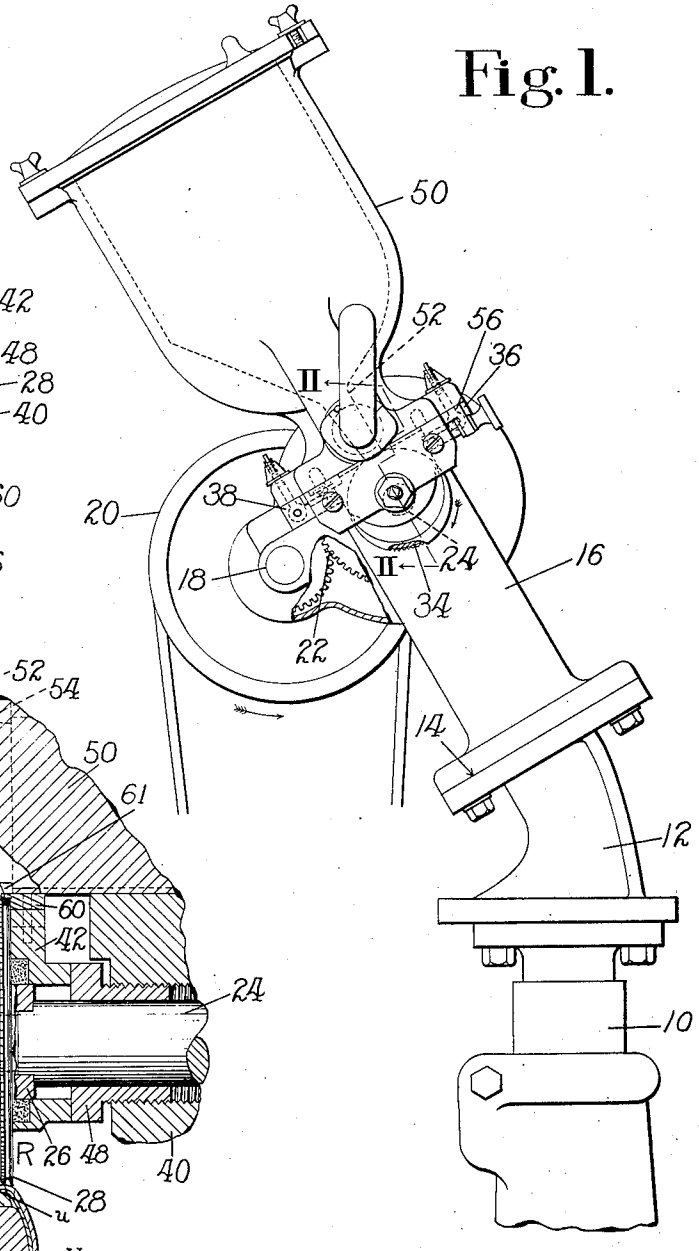
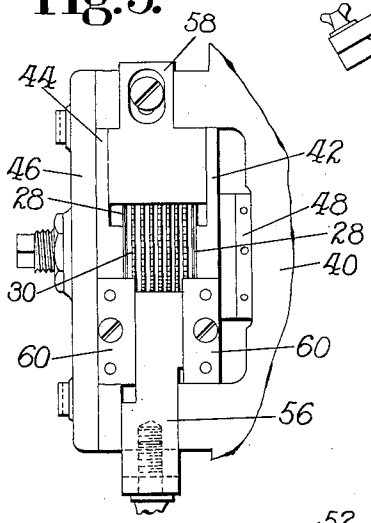


Fig. 3.



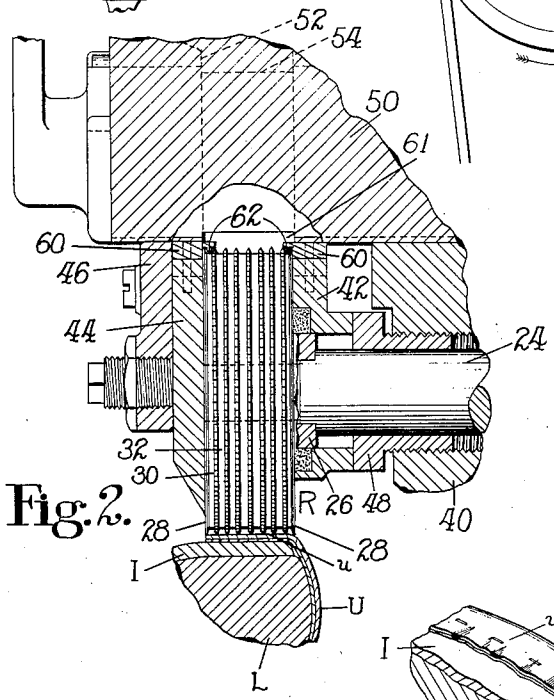


Fig. 2.

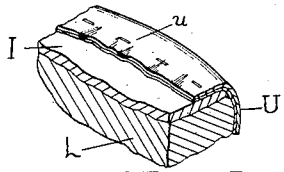


Fig. 4.

INVENTOR
Wilbur L. MacKenzie
By his Attorney
Harlow M. Davis

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APPARATUS FOR APPLYING ADHESIVE TO THE BOTTOMS OF LASTED SHOES

Wilbur L. MacKenzie, Beverly, Mass., assignor to United Shoe Machinery Corporation, Paterson, N. J., a corporation of New Jersey

Application November 13, 1931, Serial No. 574,833

1 Claim. (Cl. 91—49)

This invention relates to coating apparatus, being particularly concerned with the application of the adhesive to such limited areas as the margins of the bottom of shoes in preparation for the attachment thereto of the soles.

When a shoe-sole is to be secured in place by pyroxylin or similar cements, it is preferable to limit the attaching area upon the shoe-bottom to substantially the lasted-over margin of the shoe-upper. At the outside of the band, the line of the coating should be sharply defined, to prevent the adhesive from exuding upon the exposed portion of the upper from beneath the applied sole. Within, it is desired to confine the coating to the upper-material, leaving the surface of the insole free, so its flexibility may not be reduced. Throughout, the applied adhesive is best practically uniform in thickness. It has been customary to perform this coating operation manually, the operator using a brush dipped frequently in a receptacle containing the adhesive. This procedure is necessarily slow, gives an uneven coating, and is particularly unsatisfactory because of the tendency to overrun from the desired band upon the exposed portion of the upper. The change in the condition of the adhesive, because of the evaporation of the solvent from a more or less open body, is also objectionable. An object of my invention is to provide an improved apparatus for applying the coating upon work of this character in a rapid and accurate manner, without requiring skill and with little effort on the part of the operator.

In accordance with this object and embodying features of the invention, the apparatus herein illustrated comprises a receptacle which delivers the adhesive to the upper side of an applying device the under surface of which is exposed for the presentation of work thereto. In this illustrated apparatus, presentation of the work to the applying device is facilitated by a novel arrangement of a support associated with the applying member and carrying the adhesive-receptacle from which the member is supplied. A space is left for the approach of the work to the applying member at a convenient angle, and with an uninterrupted view of the field of contact, by inclining a portion of the support upwardly toward the operator's position and inclining rearwardly the adhesive-receptacle, detachably secured to the upper side of the support. This may be effected, as illustrated, by securing the applying mechanism upon a supporting base having a surface inclined downwardly to the rear.

In the accompanying drawing is illustrated a particular embodiment of the invention, in which drawing,

Fig. 1 is a view in side elevation of my applying apparatus;

Fig. 2, an enlarged section on the line II—II of Fig. 1;

Fig. 3, a broken top plan view of the applying roll and more closely associated elements; and

Fig. 4, a view in perspective of a portion of a shoe-bottom to be coated.

Considering the apparatus of this invention, to the upper extremity of a standard 10, furnishing a base, is attached a horizontal portion of a bracket 12 having an upper end provided with a supporting surface 14 inclined rearwardly and downwardly from the position which the operator is to occupy. Upon this surface is secured the frame 16 of a coating head. Journaled horizontally in this frame is a driving shaft 18 receiving power through a pulley 20 and rotating, through reduction-gearing 22, a parallel shaft 24. Coupled at 26 to the outer end of the shaft 24, opposite the gearing, is an applying roll R. This roll is shown as having at its extremities narrow circumferential projections or flanges 28, 28 with continuous peripheries, and between these are a series of similar projections 30, all these projections being spaced from one another by annular grooves 32 furnishing pockets to receive pyroxylin or a like adhesive to be applied. About edges of the projections 30 are shown series of closely spaced depressions 34, increasing the adhesive-carrying surface of the roll and also forming teeth, which, by their engagement with the work, aid in its advance. The roll R turns within a casing formed in a recess between and beneath portions 36 and 38 of an overhanging frame-arm 40, these portions projecting above the roll respectively at the face adjacent the operator's position and to the rear. The front portion 36 is inclined upwardly, because of the mounting of the applying head upon the inclined surface 14 of the bracket 12, thus bringing toward the operator the portion of the roll to which the work is to be applied and leaving the front of said roll free, the whole applying mechanism being inclined rearwardly upon the base from the operator's position. The casing further includes an inner side-plate 42 and an outer side-plate 44 extending beneath the frame-portions 36 and 38 and forced outwardly against a bar 46 secured to the arm 40 to produce close contact between the vertical ends of the roll and the adjacent walls of the side-plates. This pressure may be produced

by a sleeve **48** surrounding the shaft **24** and threaded into the frame-arm.

The adhesive to be applied by the roll R is delivered upon its upper portion from a pot or receptacle **50**, detachably secured to the upper side of the frame arm **40**, through an opening **52** controlled by a rotatable valve **54** into the recess and upon the roll. The receptacle, through the arrangement of the head upon the inclined bracket-surface, is tilted rearwardly from the vertical, so it will not interfere with the operator. The top of the roll rotates forwardly toward the operator, and, to govern the amount of adhesive carried down to the work held against the opposite portion of the roll, a gate **56** is mounted to slide in ways upon the upper edges of the plates **42** and **44** and above the frame-portion **36**. This gate may be adjusted to the position which gives the desired control of the adhesive. A gate **58** is similarly mounted above the frame-portion **38**. To prevent an undue amount of the adhesive from being carried by the edges of the roll and thus overrunning upon the surfaces of the work which should not be coated, there may be mounted upon the upper edges of the side-plates, at the rear, horizontal plates **60**, **60** extending into the adhesive-supplying chamber **61** formed between the opening from the receptacle **50** and the roll R. Depending from each plate is a projection **62** lying in the first groove **32** between the corresponding roll-projection **28** and the adjacent projection **30**. The under side of each plate **60** removes the excess of the adhesive from the periphery of the projection **28**, while the plate-projection **62** cleans the end-groove to an extent determined by the depth of its entrance.

As shown in Fig. 2 of the drawing, the apparatus may be employed for coating the bottom of a lasted shoe embodying a shoe-upper U carried by a last L and with its lower margin *u* drawn over and secured to an insole I upon the bottom of the last. The deposit of the adhesive is to be limited to this inturned margin of the upper, and the roll R is of a width equal to that of said margin between the inner edge of the upper and a line upon said upper over the outer edge of the insole. Upon this marginal surface the outsole is to be adhesively secured. The operator holds the work against the roll with one of the projections **28** contacting with the upper over the edge of the insole, and, guided by the projection formed by said edge in the upper-material, moves it downwardly from him in an inclined direction. The roll, rotating as indicated by the arrow in Fig. 1 by the toothed engagement of its projections **30** assists the operator in the advance of the work, and, at the same time, brings down the proper supply of adhesive from the chamber **61** beneath the gate **56** and lays it uniformly upon the desired limited area without overrunning at either side. Because of the upward inclination of the arm-portion **36** together with the position of the rearwardly tilted pot **50**, the operator has a clear view of the work at the line of contact of the roll therewith, and can also produce operating engagement largely by the weight of the body, without the necessity for applying much lifting force. The only attention required upon the part of the operator is to apply the shoe-bottom to the roll, with the insole-edge alined with the right-hand roll-projections **28**, as seen in Fig. 2, and move along the work in this relation until the bottom has been encircled over the margin of the upper by a stripe of applied adhesive. There results a coated area substantially confined to the margin *u*, the surface of the applied adhesive being uniform between the edges of the band as fixed by the separation between the roll-projections **28**, **28**. This distance having been made to correspond to the width of the margin, and the projections **28** being smooth, without adhesive-carrying depressions, accuracy and definiteness of application will be assured.

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

In a machine for coating the bottoms of lasted shoes, a standard, an overhanging frame arm supported on said standard the top and bottom surfaces of which are inclined upwardly and forwardly toward one side of the machine, the end of said arm having a recess opening at the top and bottom of the arm, a receptacle detachably secured to the upper surface of said arm arranged to deliver cement through said recess, a horizontal shaft journaled in said arm extending into said recess, an applying member mounted on said shaft, control mechanism including a casing associated with said applying member in said recess to determine the quantity of cement to be applied to the work, said applying member projecting through said recess casing and exposed beneath the arm, whereby the vision of an operator presenting the bottom of a shoe to the under side of said applying member is not interrupted by said arm or receptacle.

WILBUR L. MACKENZIE.

CERTIFICATE OF CORRECTION.

Patent No. 2,014,391. September 17, 1935.

WILBUR L. MacKENZIE.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, second column, line 48, the claim, before "casing" insert the word and; 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 5th day of November, A. D. 1935.

Leslie Frazer
Acting Commissioner of Patents.

(Seal)