Jan. 19, 1937. A. KRAMER ET AL 2,068,141

COATING APPLICATOR

Filed June 11, 1934

Fig. 1

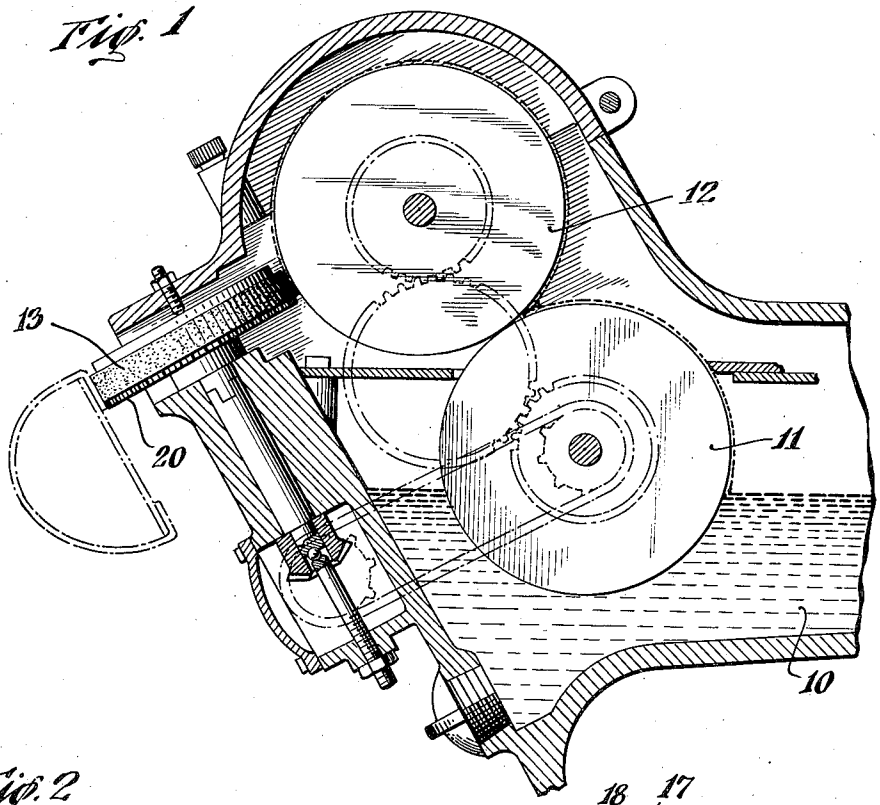


Fig. 2

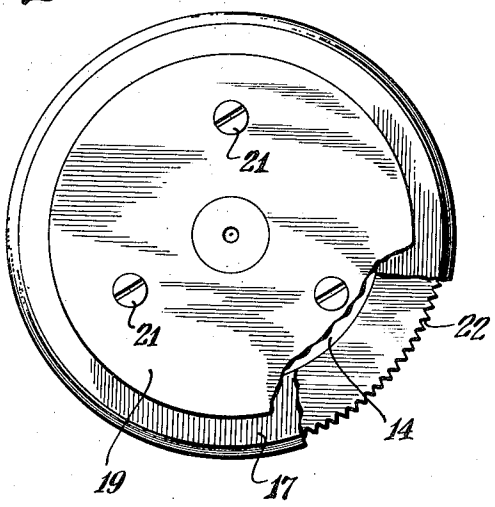
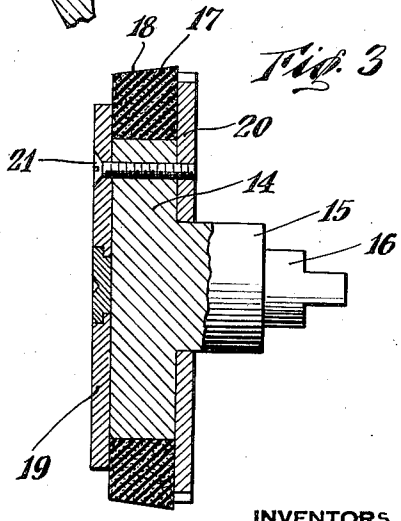


Fig. 3



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COATING APPLICATOR

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Application June 11, 1934, Serial No. 729,992

4 Claims. (Cl. 91—50)

This invention relates to coating applying machines generally and is particularly useful in the application of cement coatings to lasted uppers during the manufacture of shoes.

A general object of the invention is to provide a coating applicator having improved characteristics conducive to longer service life, better operation and better coating results.

In a copending application of William C. Card, Jr., Serial No. 705,180, there is shown an applying machine which is primarily adapted to lay a coating of cement over the lasting allowance at the bottom of a lasted upper. A particular object of the present invention is to provide an improved form of applicator for use with a machine of the type shown in such Card application.

Further objects of the invention are to provide a coating applicator of improved construction wherein cooperative feeding movement between work and the roller is accurately controlled, the service life of the roller is materially increased, and the amount of manual control required on the part of the operator is materially reduced, with consequent enhanced cement applying results.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the features of construction, combination of elements, and arrangement of parts, which will be exemplified in the construction hereinafter set forth, and the scope of the invention will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention reference should be had to the following detailed description taken in connection with the accompanying drawing, in which:

Fig. 1 is a fragmentary vertical sectional view showing some of the working parts of an applying machine embodying features of the present invention;

Fig. 2 is a plan view of the applicator roll used in the machine of Fig. 1, parts thereof being broken away better to show their construction; and

Fig. 3 is a sectional view taken along a diameter of the applicator as shown in Fig. 2.

Referring more particularly to the drawing, and first to Fig. 1, there is shown a cement reservoir 10 within which are operably mounted rotatable fluid transferring wheels 11 and 12, the lower of which is adapted to dip into a body of cement or other fluid contained in the reservoir and has its upper periphery juxtaposed in fluid transferring relation with the periphery of the upper wheel. The upper wheel in turn is disposed in fluid transferring relation with respect to an applicator generally designated 13 which is adapted to transfer fluid from wheel 12 to the work to be coated.

This applicator 13 constitutes the chief subject matter of the present invention, it being understood that the other parts cooperating therewith, such as the transfer wheels, suitable driving mechanisms, etc., may take any suitable form, preferably that described in the above mentioned Card application, Serial No. 705,180.

Referring to Figs. 2 and 3 for the construction of the applicator per se, there is provided a central disk-like body 14 having projecting centrally from its lower side a hub 15 which in turn has extending therefrom a short shaft portion 16 which is adapted to be rotated by suitable driving means. The cement applying portion of the applicator comprises a work engaging annulus 17 which rims the disk 14. This annulus is formed of readily compressible material, such as sponge rubber having a rather fine porous formation. The applying surface, designated 18, therefore, is of rough porous texture and is readily compressible. This applying surface preferably is conical as illustrated, and is so mounted with respect to the transfer wheel 12 that a wedge-shaped space is provided between the two wheels (Fig. 1) in which the supply of fluid can build up during movement of the working parts of the machine. While a conical applying surface is preferred, use of a cylindrical surface also is contemplated.

The annulus is confined between a holding plate 19 and a combined feed wheel and work support 20 which latter constitutes an important feature of the device. Parts 19 and 20 are held in seated relation against disk 14 by means of screws 21. The smaller diameter of the conically surfaced annulus is located at the upper part of the applicator, and the plate 19 overlaps the annulus but does not approach this smaller diameter very closely. The feed wheel and support 20 is provided with peripheral teeth 22, or with some other suitable work gripping surface. These teeth underlie the annulus adjacent its larger diameter and are substantially flush with the periphery of the annulus at this point, being preferably disposed slightly inwardly therefrom. The distance of this inward offset may be on the order of $\frac{1}{32}$ of an inch for an applicator having a three-inch maximum diameter. It will be noted that the combined feed wheel and support 20

is movable with the applicator, since it is attached for movement with the central hub and disk.

In operation, assuming that the device is to be used for bottom cementing lasted uppers, a quantity of cement is transferred by wheels **11** and **12** from reservoir **10** to the periphery of applicator **13**, the several cement bearing wheels and the applicator being rotated at a desired rate by suitable power mechanism, all as will be readily understood. The operator manually holds a lasted shoe against the applying surface of applicator **13** with its lasting allowance in co-operative contact therewith. The presence of the feed wheel and support **20** gives him a positive support against which to rest the work, and materially assists him in accurately guiding the course of the shoe as the cementing operation proceeds. Also, the feeding teeth grip the work and cause it to move along at a rate of speed identical with the peripheral speed of the applicator roller. In other words, the feed wheel affords a positive feeding speed and prevents relative rubbing contact between the applicator and the shoe, thus greatly reducing wear on the rubber applicator roll. The presence of the rigid plate **20** also affords a positive control as to the amount of pressing tension between the shoe and the compressible rubber roller, the inward movement of the shoe against the roll being arrested by the wheel **20**. Without such a positive support the operator is under considerable muscular tension while maintaining proper pressure between the shoe and the roller, and this leads to rapid fatigue and loss of efficiency. In addition, since the movement of the shoe is controlled by the feeding speed of the applicator, the application of a uniform coating of cement along all parts of the treated surface is insured. For such reasons, markedly improved results are obtained with the present applicator as compared with those in previous use.

Since certain changes may be made in the above construction and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Having described our invention, what we claim as new and desire to secure by Letters Patent, is:

1. A shoe bottom cementer comprising, a fluid reservoir, a rotatable applicator, and a transfer wheel for conveying fluid on its periphery from said reservoir to said applicator, said applicator being located in a plane at right angles to said transfer wheel and having a yieldable rim of a width commensurate with that of the band of cement to be applied to the bottom of a lasted upper for sole affixing purposes, the lower edge of said rim being located in contact with the periphery of said wheel and the upper edge thereof being slightly spaced from said wheel periphery to provide a narrow tapered fluid receiving space in which cement is adapted to build up across substantially the entire extent of the applicator rim.

2. A shoe bottom cementer comprising, a fluid reservoir, a rotatable applicator, a transfer wheel for conveying fluid on its periphery from said reservoir to said applicator, said applicator being located in a plane at right angles to said transfer wheel and having a yieldable rim of a width commensurate with that of the band of cement to be applied to the bottom of a lasted upper for sole affixing purposes, the lower edge of said rim being located in contact with the periphery of said wheel and the upper edge thereof being slightly spaced from said wheel periphery to provide a narrow tapered fluid receiving space in which cement is adapted to build up across substantially the entire extent of the applicator rim, and a work supporting disk adjacent the lower edge of said rim and movable with said applicator, said disk being of slightly less diameter than the adjacent rim portion whereby it is out of contact with said wheel periphery but is adapted to support work rested manually thereagainst upon slight compression of said rim.

3. A shoe bottom cementer comprising, a fluid reservoir, a rotatable applicator, and a transfer wheel for conveying fluid on its periphery from said reservoir to said applicator, said applicator being mounted with its periphery movable transversely across the periphery of said wheel and having a rim of a width commensurate with that of the band of cement to be applied to the bottom of a lasted upper for sole affixing purposes, the lower edge of said rim being located in contact with the periphery of said wheel and the upper edge thereof being slightly spaced from said wheel periphery to provide a narrow tapered fluid receiving space in which a relatively thin coat of cement is adapted to build up across substantially the entire extent of the applicator rim.

4. A shoe bottom cementer comprising, a fluid reservoir, a rotatable applicator, a transfer wheel for conveying fluid on its periphery from said reservoir to said applicator, said applicator being mounted with its periphery movable transversely across the periphery of said wheel in cement receiving relation therewith and having a yieldable rim and a work supporting feed disk adjacent one edge of said rim and movable with said applicator, said disk being of slightly less diameter than the adjacent rim portion whereby it is out of contact with said wheel periphery but is adapted to support work rested thereagainst upon slight compression of said rim.

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