Sept. 4, 1934. R. J. O'BRIEN ET AL 1,972,457

DEVICE FOR SPREADING LATEX AND THE LIKE

Filed July 28, 1930

Fig. 1.

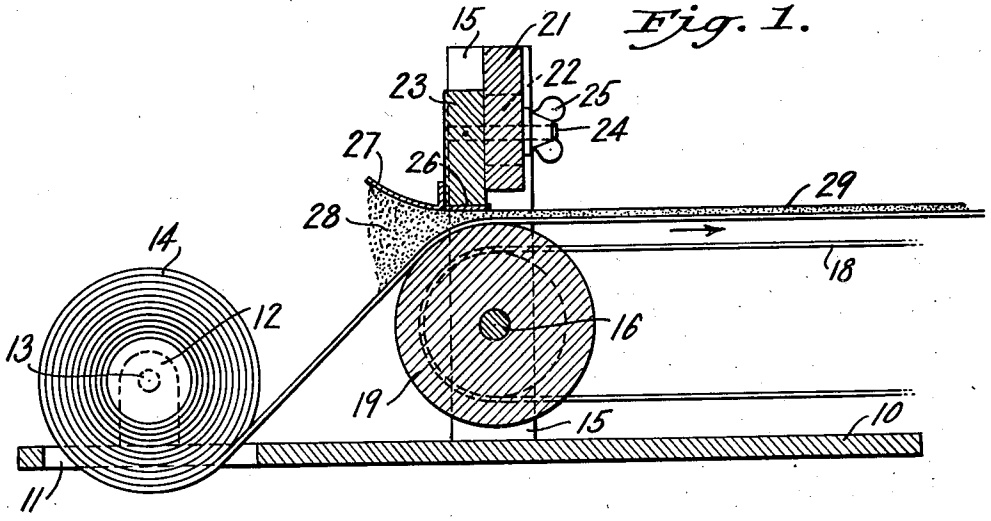
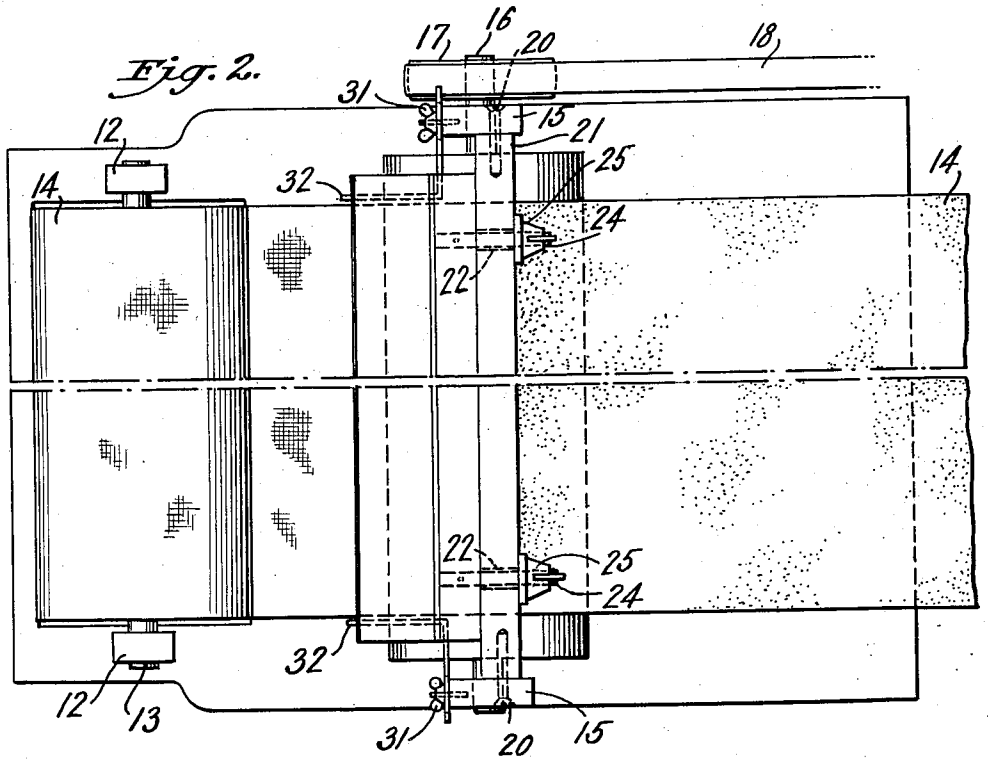


Fig. 2.



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Patented Sept. 4, 1934 1,972,457

UNITED STATES PATENT OFFICE

1,972,457

DEVICE FOR SPREADING LATEX AND THE LIKE

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Application July 28, 1930, Serial No. 471,230

6 Claims. (Cl. 91—53)

Our present invention relates to coating devices and more particularly to an improved device for spreading latex or dispersion pastes on fabric or other base.

In the formation of certain classes of articles from latex or dispersion pastes it has heretofore been necessary to apply to the base of fabric or other material a plurality of successive layers of latex. Latex or dispersion compounds tend to produce an imperfect surface when spread in thick layers in the ordinary way. In practice the layers spread must be thin enough to produce a satisfactory surface and the number of layers used is determined by the maximum thickness which can be applied in a single layer with a satisfactory surface and the total thickness of stock required. No previous device for applying thick layers of latex or dispersion compounds has been entirely satisfactory. Particularly, it has been impossible to obtain a smooth surface and a sufficiently thick coating.

In our present invention, we have devised an improved means for spreading and smoothing a thick viscous dispersion compound containing up to 70% of total solids on a web fabric and on belting as well as in other situations and in carrying out our invention we may move the fabric to be coated continuously past our improved spreading device or may move the spreading device over a base fabric held rigidly in position. With this improved device we are able to obtain a coat of thick viscous dispersion compound having a large percentage of total solids and obtain a smooth surface thereon. Further, we are able to obtain a corrugated surface if desired by proper modifications of the spreading shoe forming the essential portion of our spreading device. The object of our invention, therefore, is an improved spreading device for thick viscous dispersion compounds containing relatively large percentages of total solids.

In the accompanying drawing, illustrating a preferred embodiment of our invention:

Figure 1 is a longitudinal vertical section, and Fig. 2 is a plan view.

Referring to the drawing, 10 designates a base of any suitable character provided at one end with an opening 11 and at such end is arranged a bearing member 12. In these bearing members is rotatably mounted a shaft 13 on which is adapted to be placed a roll 14 of fabric or other base material on which it is desired to place a thick smooth coating of rubber, latex or other thick viscous dispersion compounds.

On the base 10 at a point removed from the roll 14 of fabric and on each side thereof are arranged bearings 15 and in these bearings is rotatably mounted a shaft 16 lying parallel to the shaft 13. Secured to one end of the shaft 16 is a pulley 17 and over which runs a belt 18 from any suitable source of power and adapted to rotate the shaft 16 in the direction of the arrow shown in Fig. 1. Secured to the shaft 16 intermediate the bearings 15 is an anvil roller 19 and over which the fabric from the roll 14 is adapted to be fed as clearly shown in the drawing. Above the roller 19 and extending between the bearings 15 and secured to such bearings by screws 20 is a cross bar 21 and extending transversely through the bar 21 and parallel to each other are vertical slots 22. On the front face of the bar 21 is arranged a transversely extending bar 23. This bar being provided with threaded bolts 24 which extend through the vertical slots 22. Screwing on to the ends of the bolts 24 are thumb nuts 25 and by means of which the bar 23 may be held in any desired adjusted position, relative to the bar 21. The lower edge of the bar 21 lies above and parallel to the roller 19 and by means of the screws 24 and thumb nuts 25 is adjustable toward and from such roll.

Secured to the lower edge of the bar 23 in any suitable manner is a plate 26 and formed integral with the plate 26 and extending rearwardly or to the left as viewed in Fig. 1, is a curved plate 27.

Adjustably mounted on the bearings 15 by thumb nuts 31 and at each end of the curved plate 27 are end plates 32. The curved plate 27, end plates 32 and the portion of the fabric from the roll 14 extending from the roll to the roller 19 forms a substantially V-shaped elongated chamber and into which may be fed by any suitable means the thick viscous dispersion paste 28 or the material that is to be applied to the surface of the fabric material from the roll 14. The plate 26 and the opposing surface of the fabric from the roll 14 that rests on the roller 19 defines a passage or opening through which the material 28 is fed and the width of such opening determines the thickness of the coating 29 that is to be placed on the face of the fabric from the roller 19. This width may be varied by means of the block 23, screws 24 and nuts 25. The lower face of the curved plate 27 and plate 26 are preferably made smooth and, therefore, apply the material 28 to the fabric base in a smooth even coat. If desired, the lower surface of the plate 26 may be provided with a plurality of parallelly arranged corrugations extending transversely to the length of the shaft 16 in which

event there will be formed on the upper surface of the material 29 a plurality of parallelly arranged smoothly formed corrugations.

The material on the roller 19 and the curved plate 27 together with the plate 26 form practically an extruding nozzle through which the coating material 28 is forced by the movement of the fabric material from the roll 14; it being understood that suitable means (not shown) is provided for moving the fabric material to the right as shown in Fig. 1. Also, it will be apparent that the rate of flow of the material 28 is positively determined by the speed of travel of the fabric material. This type of spreading tool or device may be used to advantage wherever a sufficiently soft paste is to be spread either upon a flexible material suitably spread as upon the roller 19 or upon a rigid material. This type of device spreads latex and dispersion pastes with an action similar to an extruding nozzle and the device is also adjustable so as to provide a coating 29 of any desired thickness and with a smooth, even surface thereon.

Having thus described our invention, what we claim and desire to protect by Letters Patent is:

1. In a device for spreading latex or dispersion pastes, the combination of a rotary supporting member over which material to be coated may be fed and a stationary spreading tool positioned above said support and extending appreciably in the direction of feed of the material to be coated and forming with it an extruding nozzle through which the coating material is extruded.

2. In a device for spreading latex or dispersion pastes, the combination of a base, an anvil roller rotatably mounted above said base, a stationary spreading device mounted above and extending appreciably in the direction of rotation of said anvil roller and constituting therewith an extruding nozzle and means for varying the width of such nozzle.

3. In a device for spreading latex or dispersion pastes, the combination of a base, a material holding roll mounted thereon, an anvil roller also mounted on the base and cooperating with the material holding roll to feed material to be coated over said anvil roller, a stationary spreading device adjustably mounted above said anvil roller and extending appreciably in the direction of feed of the material to be coated and forming with the material to be coated an adjustable extruding nozzle, and a coating material chamber formed at the entrance of said extruding nozzle.

4. In a device for spreading latex or dispersion pastes, the combination of a base, an anvil roller rotatably mounted above said base, and a curved plate above and extending appreciably in the direction of rotation of said anvil roller constituting therewith an extruding nozzle.

5. In a coating device for latex or dispersion pastes, a base, an anvil roller mounted on said base and over which material to be coated is fed, and a stationary spreading surface mounted above said anvil roller and extending outwardly in a direction opposite to the direction of rotation of said roller and the travel of the material and also extending appreciably over said material, said surface forming a substantially V-shaped chamber with the material fed over said roller terminating in an extruding nozzle.

6. In a coating device, a base, an anvil roller mounted on said base and over which material to be coated is fed, a spreading surface mounted above said anvil roller and extending outwardly in a direction opposite to the direction of rotation of said roller and the travel of the material and also extending appreciably over said material, said surface forming a substantially V-shaped chamber with the material fed over said roller terminating in an extruding nozzle, and means for varying the distance between the surface and the roller to vary the thickness of the coating material as it is fed.

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