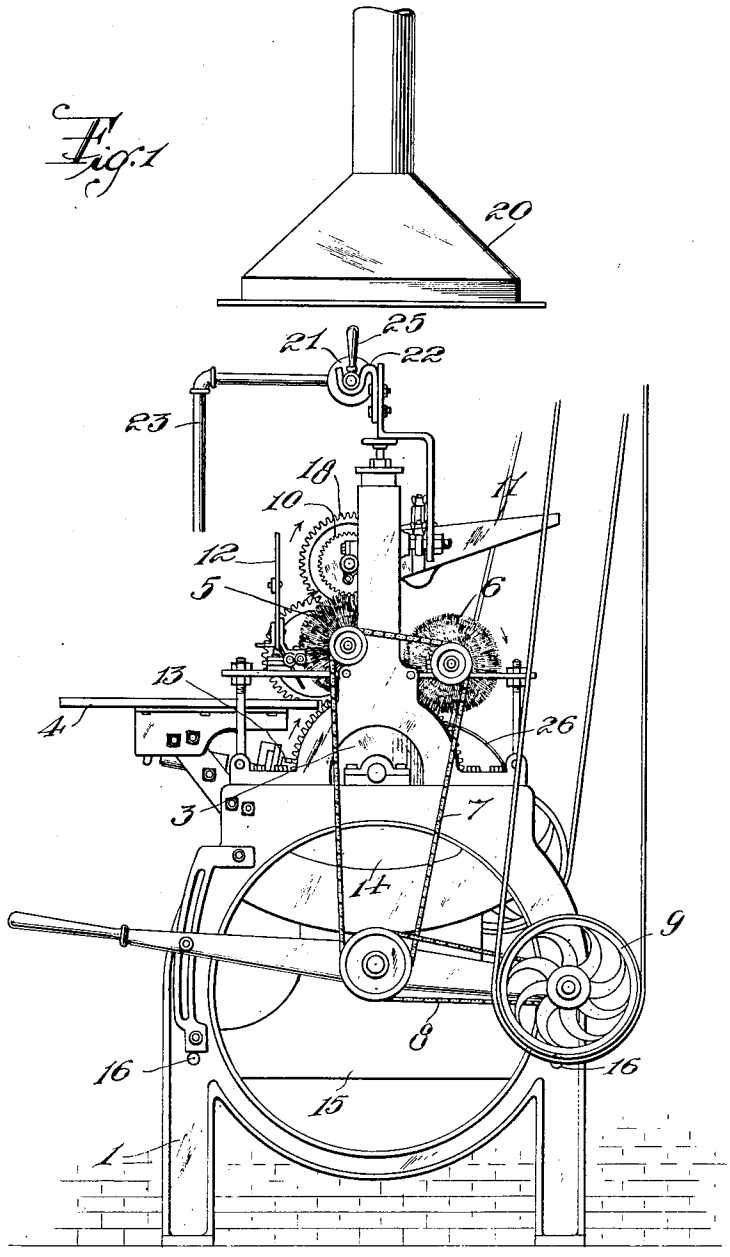
April 19, 1927. 1,625,434

J. T. SMITH

METHOD AND MACHINE FOR COATING LEATHER AND THE LIKE

Filed Aug. 23, 1924 3 Sheets-Sheet 1

Fig. 1



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METHOD AND MACHINE FOR COATING LEATHER AND THE LIKE

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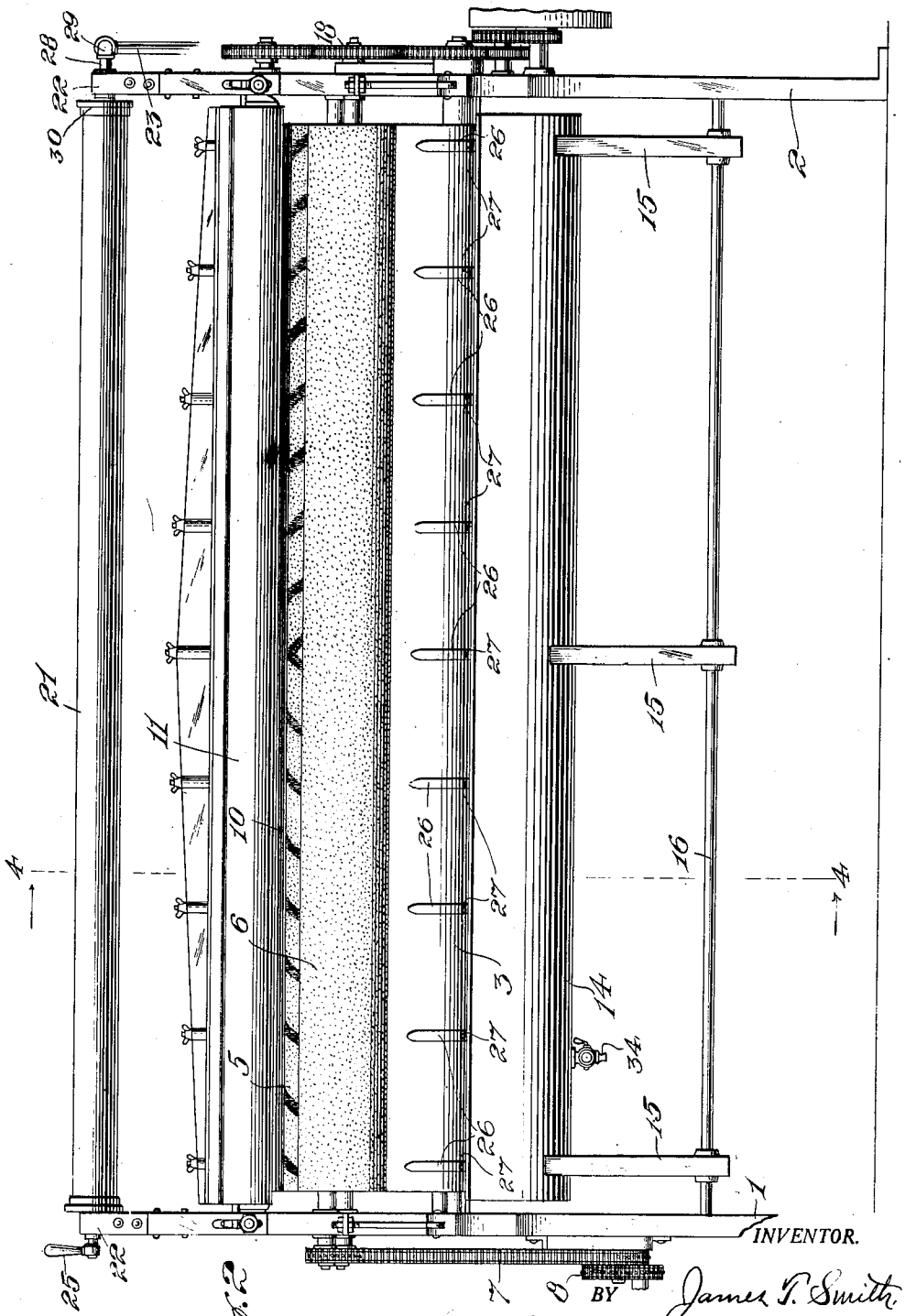


Fig. 2

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April 19, 1927. 1,625,434

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METHOD AND MACHINE FOR COATING LEATHER AND THE LIKE

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Fig. 3

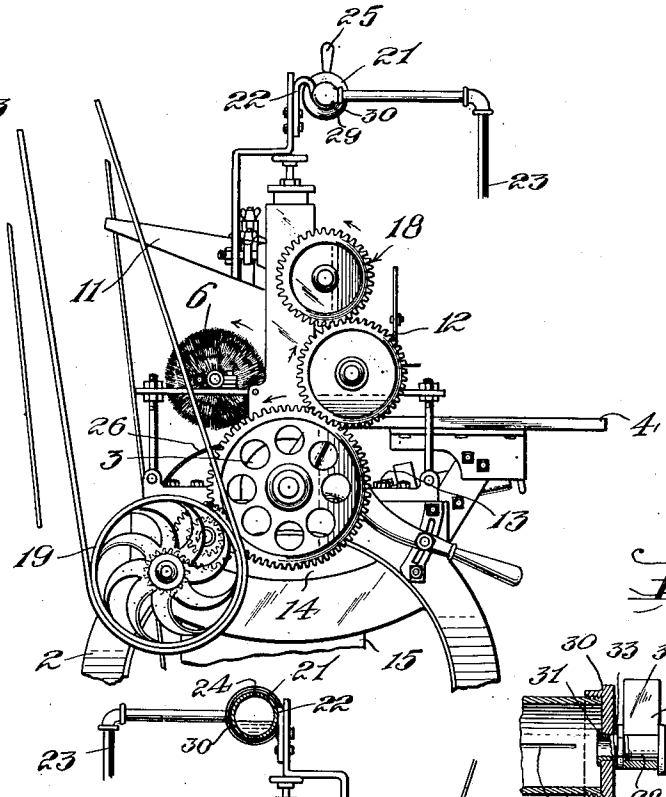


Fig. 5

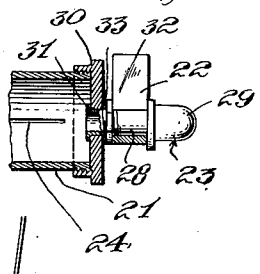
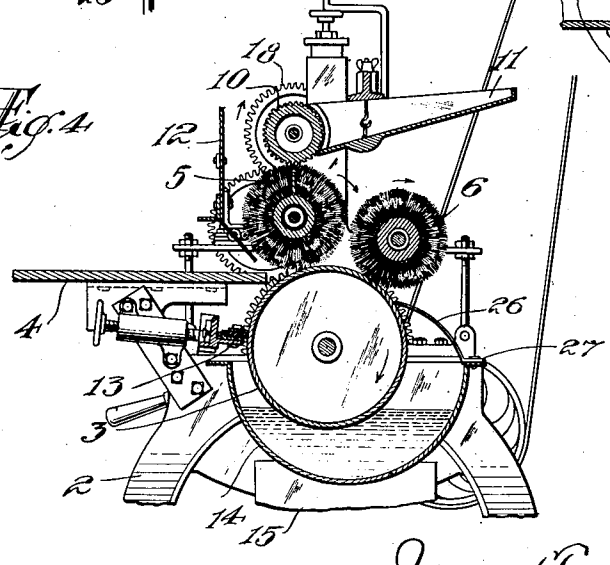


Fig. 4



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Patented Apr. 19, 1927. 1,625,434

UNITED STATES PATENT OFFICE.

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METHOD AND MACHINE FOR COATING LEATHER AND THE LIKE.

Application filed August 23, 1924. Serial No. 733,723.

The general object of this invention is to enable one side of a piece of leather in the course of manufacture to be coated with daub by machine instead of by hand as is now commonly done, the other side being kept clean during such coating. It will be understood that the leather to be coated passes over a supporting and feeding roll, the coating being applied to the side opposite said roll, and that because of the irregular outline of the piece of leather the roll necessarily gets smeared from the coating means which extends longitudinally of the roll beyond the leather and is in circumferential engagement therewith before and after the leather is superposed thereon. Coatings of liquids of a thin consistency have heretofore been applied by machine, to one side of a piece of leather, a scraper being employed against the roll which supports the clean or uncoated side of the leather to remove any of the coating material therefrom before the roll comes into contact with the leather; however, the daub which is applied by my improved machine is of too thick consistency and sets too quickly to be removed by any scraper and will pass such scraper and become smeared upon the underside of the leather which is desired to be kept clean and uncoated. It is the purpose of the present invention to provide a coating machine including means for removing such thick daub from the under part of the roll which supports the uncoated side of the leather; to enable this to be done simply and conveniently; to provide means for doing it which can be applied to coating machines already in use; to secure improved means for feeding the daub to the coating means by which it is applied to the leather; to thus enable the supply of liquid to be quickly and positively controlled, with no waste, and to obtain other advantages and results as may be brought out by the following description.

Referring to the accompanying drawings, in which the same reference numerals designate corresponding and like parts throughout the several views,

Figure 1 is an elevation of the left-hand end of a machine of my improved construction as shown in Figure 2;

Figure 2 is an elevation of the machine from the delivery side thereof;

Figure 3 is an elevation of a portion of the right-hand end of the machine as shown in Figure 2;

Figure 4 is a cross-section of the machine on line 4—4 of Figure 2, looking in the direction of the arrows, and

Figure 5 is a vertical central longitudinal section of the right-hand end of the feeding cylinder as shown in Figure 2.

In said drawings I have shown my improvements applied to a coating machine which is in general of an old and well-known construction, having end frames or housings 1, 2 adapted to stand upon the floor and support between themselves a long roll 3 over which the leather to be coated passes from a table 4 at one side of the machine, it being understood that a couple of workmen push the piece or side of leather inwardly on said table 4 until it is engaged by the supporting roll 3 and other workmen receive the coated piece of leather as it comes from the other side of the machine, which is the side shown in Figure 2. Above the supporting roll 3 are coating brushes 5, 6 which are driven in the direction indicated by the arrows by means of the sprocket chains 7, 8 and driving pulley 9, or other equivalent means. See Figure 1 and the left-hand end of Figure 2. Above the coating brush 5 is a fluted roll 10 which receives the coating material from a pan 11 and feeds it to the brush 5. In front of said fluted roll 10 and brush 5 is a guard plate 12 extending upward from the inner end of the table 4, and it will be understood that said coating brushes 5, 6, fluted roll 10 and pan 11 are all adjustable in any common and well-known manner. They, and the guard 12 and table 4, are all mounted upon the end frames 1, 2 as is old in the art.

The leather passes in over the table 4 and supporting roll 3, beneath the brushes 5 and 6 which coat it with the desired material, and since the edges of a side of leather are very irregular, more or less of the coating is deposited upon the surface of the supporting roll 3 where the leather does not cover it. It is therefore necessary that said coated or smeared surface of the roll be cleaned before it comes around into contact with the leather again, or else the underside of the leather will become smeared and soiled.

This cleaning of the supporting roll has been accomplished heretofore by a scraper

13 located in front of the supporting roll 3 underneath the table 4 and capable of being adjusted into close contact with the surface of the roll to remove therefrom any coating upon the surface of said roll. Such a scraper accomplishes its purpose with coatings of thin consistency, or made with slow drying vegetable oils, but it has been found that with coatings of thick consistency, such as pieces of leather are first daubed with in the course of manufacture with pigment finishes, scrapers will not suffice to remove smears or deposits of coating from the surface of the supporting roll and enough will pass them to still soil or discolor the under surface of the leather. Especially is this so because collodion and similar volatile solvents are used in such heavy thick coatings and such solvents evaporate very quickly. It has therefore been considered necessary to apply such heavy coatings or daubs to pieces of leather by hand, but because of the volatile solvents referred to it is very difficult to do this evenly, smoothly and economically and it requires much labor and large expense. It is the primary purpose of my invention to enable such heavy thick coatings or daubs to be applied by machine, and thus quickly, uniformly and economically.

To this end I place beneath the supporting roll 3 a trough 14, see Figures 4 and 2, which extends longitudinally the full length of the roll and is supported in any stable manner, as by cradles 15 upon the tie rods 16. This trough contains a solvent 17 of the daub or coating to be applied, said solvent standing high enough in the trough 14 to immerse the lower portion of the supporting roll 3, and thus as the supporting roll turns in the direction shown by the arrow, Figure 4, any smears or deposits of the daubing or coating material come around to the solvent 17 in the pan 14 and will be softened sufficiently so that the scraper 13 just above the pan 14 at the front side of the roll can effectively and entirely remove them from the surface of the supporting roll. In this way the surface of the supporting roll 3 as it comes around to be presented to the underside of the leather adjacent the table 4 is always perfectly clean, and said under surface of the leather will not become smeared or soiled so as to render it unsalable.

Preferably I provide at the delivery side of the machine some means for guarding against any possibility of the leather getting into the trough 14 as said leather leaves the supporting roll 3, such as sheet metal fingers 26 extending from the edge of the trough, as at 27, upwardly to a circumferential part of the roll adjacent the coating roll 6, as shown in Figures 2 and 4, and forming an incline to guide the leather until the operatives get hold of it.

In describing the old and well-known features of the machine to which my improvements are applied, it should have been stated that the supporting roll 3 and fluted feed roll 10 are driven from the right-hand end of the machine as shown in Figure 2, by means of a train of gears 18 and driving pulley 19, see Figure 3, in the direction shown by the arrows. The feed of the leather through the machine by the supporting roll 3, and the speed of the coating brushes 5, 6, can thus be varied relative to each other, as desired. Also, because of the use of volatile solvents, from which objectionable vapors arise, a ventilating hood 20, shown in Figure 1, is usually suspended over machines of this type.

In order to more quickly and accurately control the supply of coating or daub to the fluted feed roll 10, I may station above said fluted roll a feeding cylinder 21 which extends longitudinally of the machine and is rotatably supported as by means of brackets 22, 22. Coating material is introduced into this cylinder by any suitable means (not shown) through a pipe 23 which leads into one end of the cylinder, as shown in detail in Figure 5, so as to also form a journal for it to turn on. I have shown the end portion 28 of the pipe 23, beyond the elbow 29, provided inside the cap 30 of the cylinder with a fixed collar 31 and outside said cap with a screw collar 32 which can be tightened against a gasket 33 to prevent leakage, but any other suitable means might be employed. The cylinder has a longitudinal discharge, specifically shown as a slit 24, and when this is turned downwardly the coating or daub will obviously be discharged to supply the fluted roll 10. The cylinder 21 is provided with a handle 25 or other suitably equivalent means for turning it, and by so turning it that the slit 24 is uppermost, discharge of the coating material can be quickly and entirely cut off. This is desirable in order to avoid smearing upon the supporting roll 3 any more of the coating material or daub than is absolutely necessary.

The trough 14 obviously collects and saves all of the coating which does not go onto the leather, and from time to time it can be drawn off, as by the valve 34, Figures 2 and 4.

Various modifications and changes may be made in manufacturing my improvements thus described, by those skilled in the art, without departing from the spirit and scope of the invention, and I do not wish to be understood as restricting myself except as required by the following claims when construed in the light of the prior art.

Having thus described the invention, what I claim is:

1. The herein described method of coating one side surface of leather or the like, which consists in passing the leather or the like over

a supporting roll, applying the coating material to the opposite side of the leather or the like from said roll as it passes thereover, immersing that portion of the roll away from the leather or the like in a solvent of the coating material, and scraping the surface of the roll after it has been so immersed and before it engages the leather or the like.

2. In a machine of the character described, the combination with means for progressively supporting a piece of leather or the like and means for applying coating material to said leather or the like, of a rotatable hollow cylinder having longitudinal discharge means for feeding the coating material to be applied, and means for turning said cylinder to start and stop discharge from it.

3. In a machine of the character described, the combination with a roll over which a piece of leather may be passed, and means for applying a coating to the surface of the leather away from said roll and opposite the same, of a trough beneath the roll adapted to hold a solvent of the coating and positioned with respect to said roll so as to immerse the underpart thereof in the solvent in the trough, and a scraper for engaging the surface of said roll after it leaves said solvent and before it reaches the leather to remove the solvent and coating material therefrom.

4. In a machine of the character described, the combination with means for progressively supporting a piece of leather or the like and means for applying coating material to said leather or the like, of a rotatable hollow cylinder having longitudinal discharge means, means for turning said cylinder to start and stop discharge from it, and means for supplying coating material to said cylinder independent of its turning.

5. In a machine of the character described, the combination with means for progressively supporting a piece of leather or the like and means for applying coating material to said leather or the like, of a rotatable hollow cylinder having a longitudinal discharge slit, means for turning said cylinder to start and stop discharge from it, and means for supplying coating material to said cylinder independent of its turning.

6. In a machine of the character described, the combination with a roll over which a piece of leather may be passed, and means for applying a coating to the surface of the leather away from said roll and opposite the same, of a trough beneath the roll adapted to hold a solvent of the coating in contact with the under part of the roll, a scraper for engaging the surface of said roll after it leaves said solvent and before it reaches the leather to remove the solvent and coating material therefrom, and fingers extending from said trough to the roll to keep the leather out of the trough.

7. In a machine of the character described, the combination with a roll over which a piece of leather may be passed, and means for applying a coating to the surface of the leather away from said roll and opposite the same, of a trough beneath the roll adapted to hold a solvent of the coating in contact with the under part of the roll, a scraper for engaging the surface of said roll after it leaves said solvent and before it reaches the leather to remove the solvent and coating material therefrom, and fingers extending from said trough to the roll and forming an incline to guide the leather from said roll over the edge of the trough as it leaves the machine.

JAMES T. SMITH.