

June 19, 1962

J. H. MAINS

3,039,429

SWABBING DEVICE FOR TREATING LEATHER

Filed April 26, 1957

6 Sheets-Sheet 1

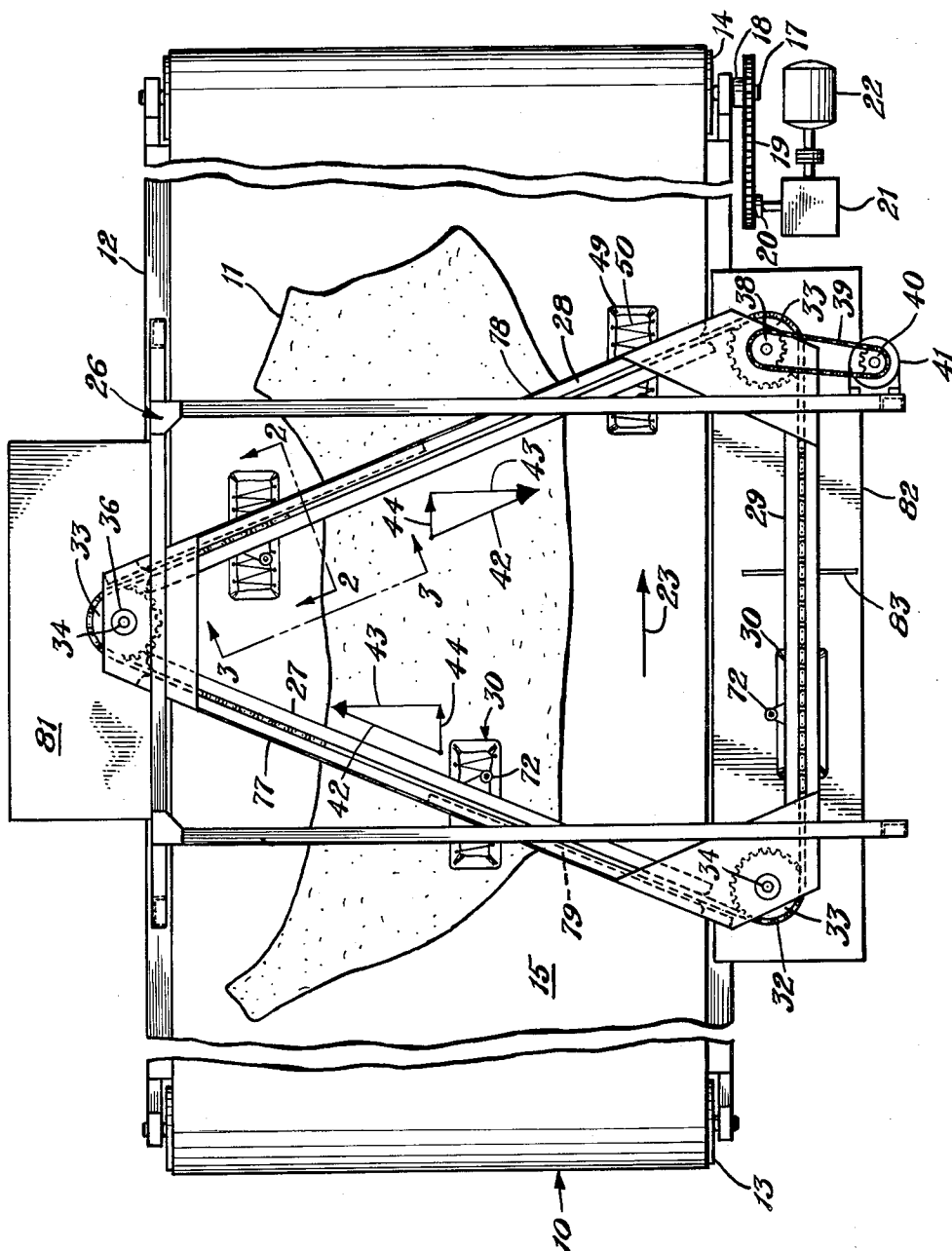


Fig. 1

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6 Sheets-Sheet 2

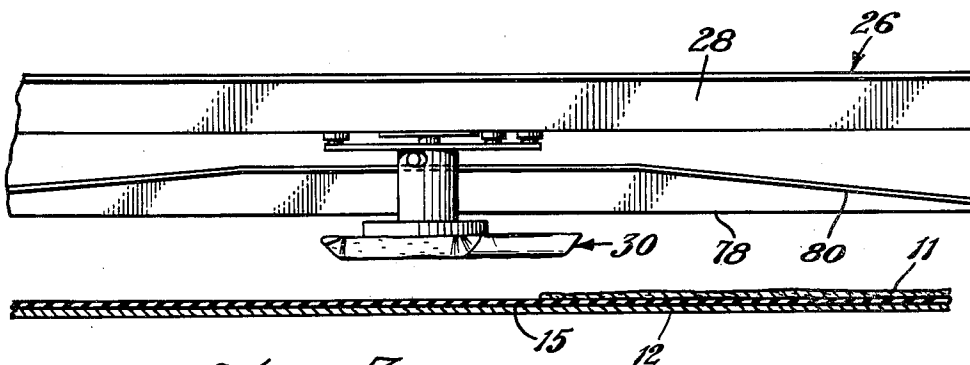
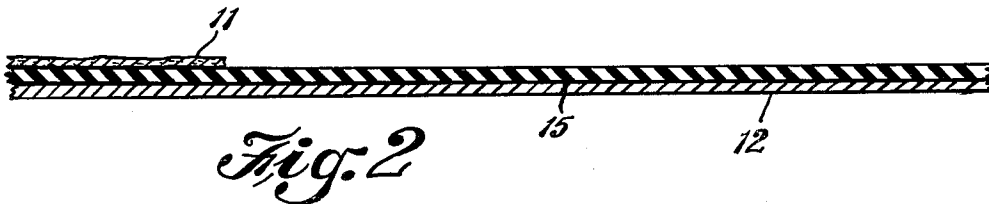
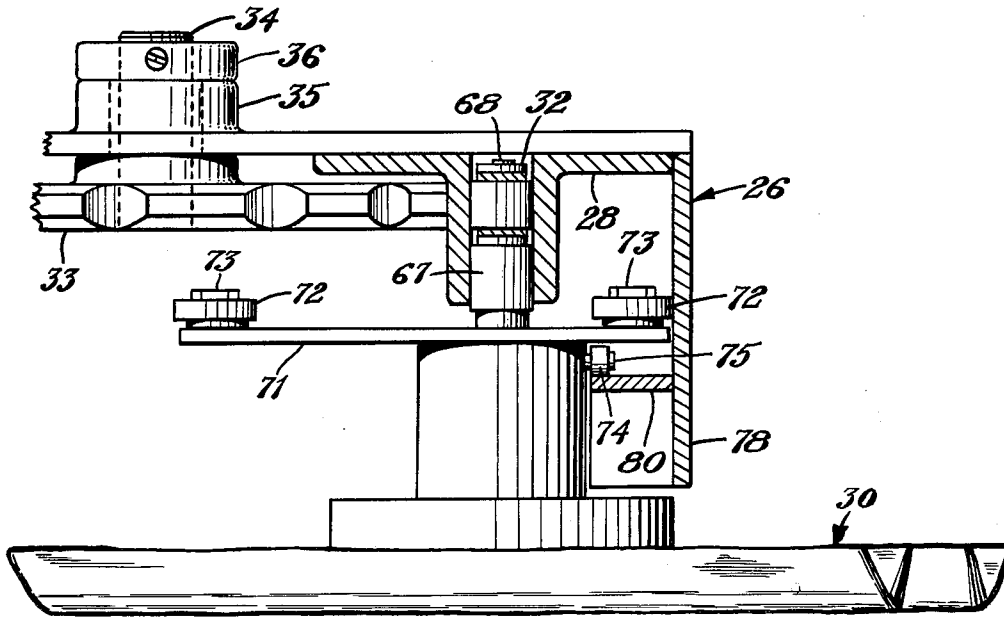


Fig. 3

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6 Sheets-Sheet 3

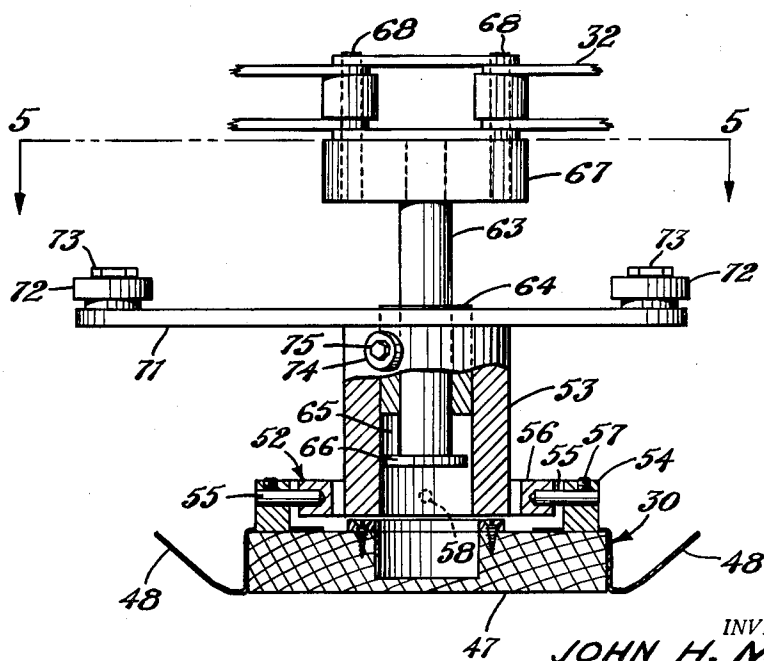
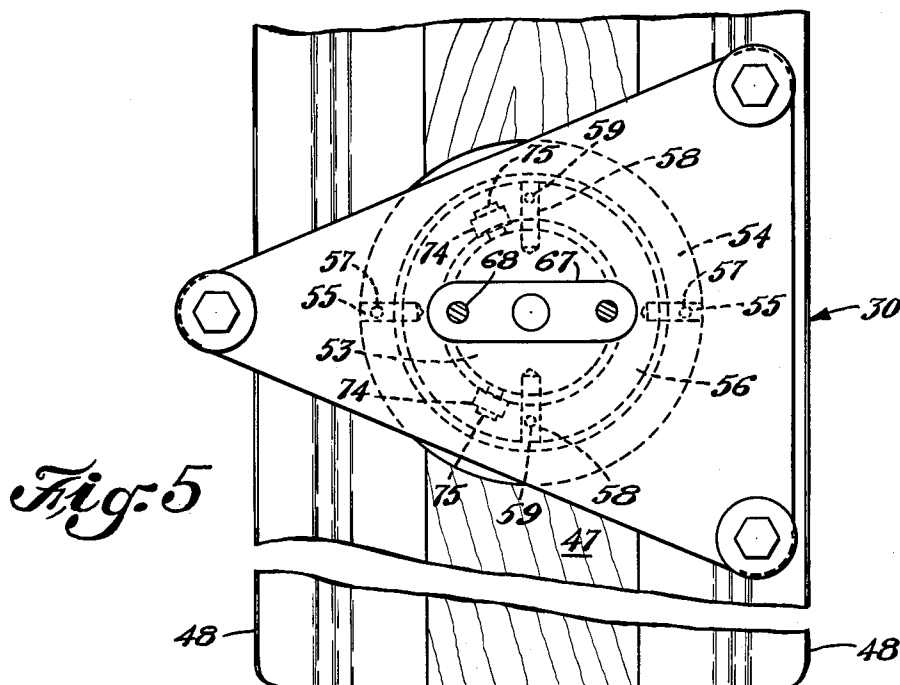


Fig. 4

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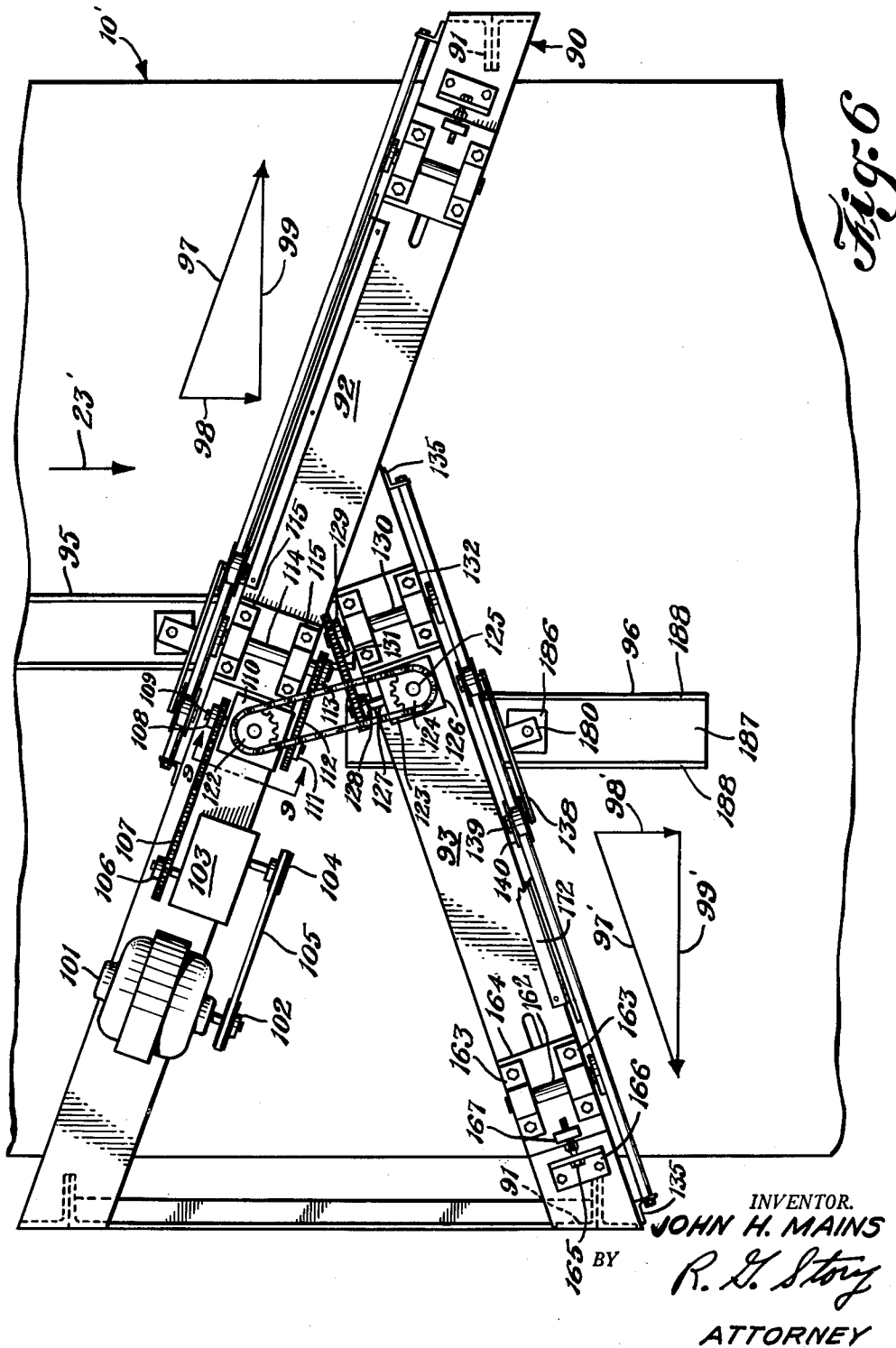
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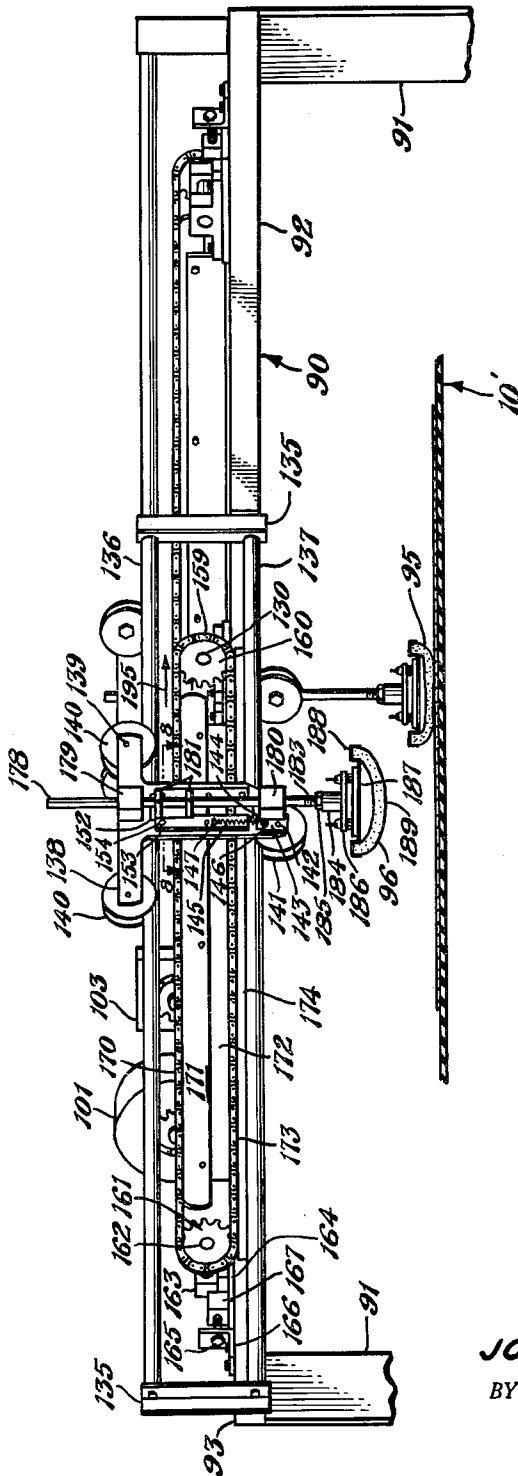


Fig. 7

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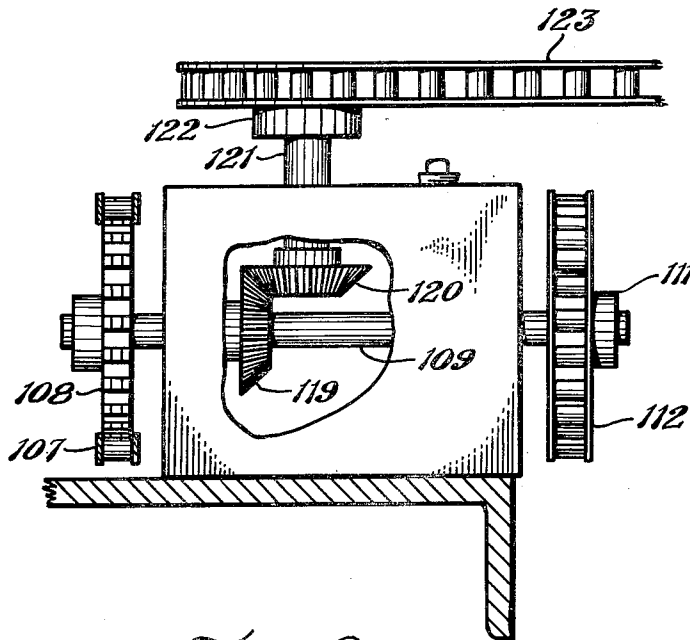
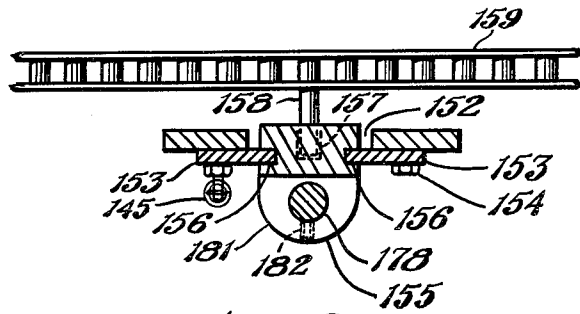
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SWABBING DEVICE FOR TREATING LEATHER

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6 Sheets-Sheet 6



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SWABBING DEVICE FOR TREATING LEATHER
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Filed Apr. 26, 1957, Ser. No. 655,352
14 Claims. (Cl. 118—109)

The present invention relates to a swabbing device.

While the invention was devised for use in the course of the manufacture of leather, it will be apparent that the principles thereof may be employed in many fields where in a swabbing or wiping of articles is desired. The term "swab" as employed herein is intended to apply to structures for performing a wiping or redistributing process. In addition to the specific form of swab disclosed herein, it will be apparent that other forms of swabs, such as one having the appearance of the squeegee, may be employed, and the term "swab" is intended to cover such other forms of structure.

In the manufacture of leather it is common to apply a number of coats of finishing material to the tanned hides. Usually the sides of tanned leather are laid out flat on a conveyor with the finishing material being applied to the upper face of the leather by brushes, sprays, etc. When finish is applied to the surface of leather, a nonuniform absorbent material, some areas will absorb the liquid more readily than others; therefore, the wiping operation must redistribute and rub the finishing material into the surface of the leather to provide an essentially uniform coating over the entire surface. In some instances the finishing material is applied sufficiently heavy so that the upper surface of the side of leather has the liquid finishing material standing thereon. Subsequently this excess liquid is either redistributed or wiped off with a swab. The usual practice in the industry is to have men standing at each side of the conveyor with a swab in one hand which they employ to wipe the excess liquid from the surface of the leather. Since the side of leather and the conveyor on which it rests is fairly wide, it necessitates the men reaching a substantial distance over the conveyor from each side so as to wipe all of the leather. This is not only a tiring occupation, but involves the cost of providing a substantial amount of manpower to perform this operation.

In the past various machines have been tried to perform this operation, but to my knowledge none of such machines have been successful. Many of the machines have taken the form of rotating brushes but these have proved to be unsatisfactory because they do not distribute the material evenly across the surface of the material. Further uneven removal of excess material and spattering occur as a result of such brush devices. These faults result in a nonuniform appearance of the leather because of the varying amounts of finishing material left on the side of leather.

The present invention has for its primary object the providing of an apparatus that will duplicate the present hand performance in the swabbing of leather. No operators are required and the cost of the hand labor found in present operations is eliminated with a corresponding reduction in the cost of leather manufacture. The machine operates without skips or streaks. There is no unevenness in the redistribution and removal of the finishing liquid such as the spattering, etc., that occurred in connection with prior machines which sought to perform the same function.

Additional objects and advantages include the fact that the machine is simple, not only from the standpoint of construction which provides a machine with relatively small expenditure, but also provides a machine that requires little maintenance. What maintenance is required can be performed by plant mechanics since the structure is

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formed of relatively conventional components readily available and ones with which plant maintenance men are already acquainted. Power requirements are low.

Further objects and advantages will become apparent from the following description taken in conjunction with the drawings, in which:

FIGURE 1 is a plan view of an embodiment of the invention mounted over a conveyor on which the sides of leather are positioned;

FIGURE 2 is an enlarged partial section taken at line 2—2 of FIGURE 1;

FIGURE 3 is an enlarged partial section taken at line 3—3 of FIGURE 1;

FIGURE 4 is an enlarged view, partially in section, of the swab (without the covering) and the mounting structure therefor;

FIGURE 5 is a section taken at line 5—5 of FIGURE 4;

FIGURE 6 is a plan view of an alternative embodiment of the invention;

FIGURE 7 is an elevation of the embodiment of FIGURE 6;

FIGURE 8 is a partial section taken at line 8—8 of FIGURE 7; and

FIGURE 9 is a partial section taken at line 9—9 of FIGURE 6.

The present invention was devised for use in conjunction with a conveyor generally 10 on which a side of leather 11 is laid. The specific structure of conveyor 10 is not significant with respect to the present invention and will correspond to conveyors presently used in leather manufacture upon which the swabbing of leather is performed. The conveyor 10 comprises a pair of rolls 13 and 14, the axles of which are suitably journaled in frame 12. About rolls 13 and 14 is a conveyor belt 15 which carries the side of leather 11. In a conventional manner the belt 15 may have various supports intermediate rolls 13 and 14. One of the axles of the rolls, as for example axle 17 of roll 14, carries a sprocket 18 which is driven by a chain 19 from a sprocket 20 on the output shaft of a speed reducer 21. The input shaft of a variable speed reducer 21 is connected to and driven by a motor 22. In the illustrated embodiment belt 15 is driven in the direction indicated by arrow 23.

Crossing above conveyor 10 is a frame generally 26 which includes three guides 27, 28 and 29 for the guiding and supporting means of a plurality of swabs generally 30. Guides 27, 28 and 29 are arranged generally in the form of a triangle with two of the legs of the triangle, guides 27 and 28, crossing the conveyor 10 at an angle with respect to the path of movement of the hide 11 along the conveyor. The structure of the guides is best seen in FIGURE 2 where it will be apparent that the guides are formed of a pair of angle irons facing back to back to form a way for a roller chain 32. Chain 32 passes about three sprockets 33, one of which is mounted at each corner of the triangle at the intersections of pairs of legs 27, 28 and 29. Each sprocket 33 is mounted on a shaft 34 which is suitably journaled in a boss 35 forming a part of frame 26. A collar 36 fastened to shaft 34 rides on boss 35 and supports the shaft and sprocket. One of shafts 34 (the one on the lower right-hand sprocket 33 in FIGURE 1) has a sprocket 38 attached to the upper end thereof which sprocket is driven by a chain 39 from a sprocket 40 on the output shaft of gear head motor 41. Motor 41 drives chain 32 in a direction indicated by arrow 42. It will be apparent that the direction of movement 42 when related to the conveyor 10 is formed of two components, one, 43, which is at right angles to the path of movement of the hide 11 on the conveyor 10, and a second, 44, which is parallel to the path of movement of the hide 11 on conveyor 10.

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Swabs 30 comprise a wooden body 47 on which are metal wings 48. A suitable padded fabric covering 49 is held about the bottom of body 47 and over wings 48 by lacing 50 across the top of the body.

The mounting means for attaching swabs 30 to chain 32 is illustrated in FIGURES 4 and 5. A gimble generally 52 connects body 47 to a cylindrical lift body 53. The outer ring 54 of gimble 52 is attached to body 47. A pair of pins 55 connect ring 54 with the center ring 56. Pins 55 are held in ring 54 by means of set screws 57 and are pivotally received in openings in ring 56. A second pair of pins 58 connect middle ring 56 with lift body 53. Pins 58 are held in ring 56 by means of set screws 59 and are pivotally received in openings in lift body 53.

A link pin 63 is journaled in a plug 64 secured at the upper end of a central opening 65 of lift body 53. Pin 63 has a shoulder 66 at its lower end to limit its movement through plug 64. At its upper end link pin 63 is secured to a link bar 67 which link bar also has a pair of spaced pins 68 projecting upwardly therefrom. Pins 68 are spaced apart the proper distance to form the connecting pins in one link of roller chain 32 and are held therein by the link which seats in notches in pins 68 in a conventional manner or by such other suitable means as may be desired.

Attached to the upper end of lift body 53 is a bearing plate 71. Three guide bearings 72 are attached to bearing plate 71 by means of cap screws 73 threaded into plate 71. Bearings 72 are conventional ball bearing assemblies wherein the outer surface rotates freely with respect to the cap screws 73. On two sides of lift body 53 are cam followers 74 which are again a pair of ball bearing assemblies held in place by means of cap screws 75.

Referring to FIGURE 2, side plates 77 and 78 on guide legs 27 and 28, respectively, support cams 79 and 80, respectively. As will be seen in FIGURE 1, cam 79 commences just prior to the edge of conveyor 10 at leg 27, at which edge the swabs 30 commence crossing the conveyor, and ends just shortly before the middle of the conveyor. Similarly, cam 78 commences on the portion of the leg 28 just prior to the point at which the swab 30 enters above the conveyor and ends just prior to the point at which the swab reaches the middle of the conveyor. Referring to FIGURE 3, the two ends of cams 79 and 80 slope downwardly from the middle area of the cam.

To operate, the machine is started and the speed of operation of conveyor 10 and the speed of movement of the chains 32 are adjusted so that the component 44 of the movement of swabs 30, which movement is represented by arrow 42, is substantially equal to the speed of movement of the conveyor 10 as represented by arrow 23. When this adjustment is made, the movement of the swab 30 with respect to the hide 11 is represented by arrow 43 and this resultant movement will be at right angles to the moving conveyor surface, or directly across the hide 11. As a swab commences to enter leg 27 of its triangular path of movement, one of cam followers 74 engages cam 79 to lift the swab above the conveyor. Just prior to the time that the swab reaches the center of the conveyor the cam allows the cam follower to move downwardly and to lower the swab so that it rests on the hide 11. This movement is a movement of bearing plate 71 and lift body 53 with respect to link pin 63. The amount of pressure that is applied by the swab is adjusted by varying the weight of the swab. The swab then moves directly across at right angles to the hide because of the fact that both the swab and the hide 11 are moving to the right in FIGURE 1 at substantially the same rate of speed. The position of the swab is maintained by means of guide bearings 72 bearing on side plate 78 as the swab crosses leg 27

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(see FIGURE 2). As the swab reaches the end of leg 27 it moves out on a platform 81.

Similarly as the swab starts across leg 28 cam 80 lifts the swab above the conveyor to deposit it on the hide 11 just ahead of the center of the conveyor so that the swab then wipes the other half of the hide by a movement in a direction at right angles to the width of the hide.

The swabs are positioned sufficiently close together so that the wiping movement of succeeding swabs overlaps the wiping made by the preceding swab. While four swabs are shown in FIGURE 1, this is for the purpose of illustration only and it is a relatively simple matter to mount additional swabs at desired points in chain 32 or to lessen the number of swabs employed by removing pins from chain 32 and replacing them by ordinary pins for the chain employed.

Upon reaching the end of leg 28 the swab again moves out on a platform 82 to move along leg 29. One or more doctor blades 83 may be mounted across platform 82 to squeeze off any excess build-up of finishing material on the bottom of the swabs 30.

The mounting of swabs 30 by means of gimble 52 allows the swabs to at all times rest flat on the hide 11 to assure a good even wiping action of the hide. With the swab being deposited on the hide after crossing over the entering edge of the hide there is no tendency for the swab to roll up the entering edge of the hide. These features are important in the obtaining of the uniform results of which the present invention is capable.

FIGURES 6, 7, 8, and 9 illustrate another embodiment for use with a conveyor 10' moving in the direction indicated by arrow 23'. In this embodiment the frame generally 90 includes supporting legs 91 and two portions 92 and 93, respectively, positioned generally horizontally above the conveyor 10' and angularly disposed with respect to the line of conveyor travel, which line is represented by arrow 23'. In the illustrated embodiment the two portions 92 and 93 are at an angle of 70° with respect to the path of conveyor travel. The specific angle will vary with different embodiments. Factors to be considered in deciding what angle to employ are the range of speed of conveyor travel employed, the range of swab speed to be employed, and the extent of overlap of the swab strokes.

In this embodiment, as in the embodiment previously described, I wish to adjust the speed of movement of swabs 95 and 96, which speed of movement is represented by arrows 97 and 97', respectively, so that the component 98 and 98', respectively, parallel to the line of conveyor travel as represented by arrow 23', will equal the speed of conveyor travel. The resultant component 99 and 99', representing the movement of the swabs 95 and 96, respectively, with respect to the surface of the conveyor and the upper surface of any articles traveling along the conveyor, will be generally directly across those upper surfaces.

The structure for mounting and moving each of swabs 95 and 96 is identical for all practical purposes, and a description of one will serve to illustrate the structure of the other. Each of the two swabs is driven by a common power means including a motor 101 having a sheave 102 on the output shaft thereof. A speed reducer 103 has a sheave 104 on the input shaft with a belt 105 connecting the two sheaves 102 and 104. A sprocket 106 on the output shaft of speed reducer 103 is connected by a chain 107 to a sprocket 108 on shaft 109 of a gear box 110. Shaft 109 protrudes at the opposite side of gear box 110 (see FIGURE 9) and carries a second sprocket 111. A chain 112 about sprocket 111 drives a sprocket 113 on shaft 114. Shaft 114 is suitably mounted in bearings 115 and is the shaft that drives the movement of swab 95.

Within gear box 110 is a bevel gear 119 on shaft 109, which bevel gear engages a second bevel gear 120 on a shaft 121. Shaft 121, as will be seen, is positioned vertically and is suitably journaled in gear box 110. On the upper end of shaft 121 is a sprocket 122 driving a chain

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123. Chain 123 in turn drives a sprocket 124 on a vertical shaft 125 of a second gear box 126. Like gear box 110, gear box 126 has a pair of bevel gears therein, one gear being attached to shaft 125 and the other being attached to a horizontal output shaft 127. A sprocket 128 on shaft 127 drives a sprocket 129 on shaft 130 through a chain 131. Shaft 130 is suitably journaled in bearings 132 and drives swab 96 corresponding to the drive of swab 95 by shaft 114.

Referring to FIGURES 6 and 7, a pair of angle irons 135 are attached in a vertical position to the channel that makes up portion 93 of the frame. A top rail 136 and a bottom rail 137 are secured between angle irons 135. The carriage for swab 96 includes a T-shaped member 138. Bolts 139 serve as axles for and attach a pair of wheels 140 to the upper end of member 138. Wheel 140 rides on upper rail 136. The lower wheel 141 that rides on rail 137 is similarly mounted on a bolt 142 to a floating block 143. A pair of milled slots in the sides of block 143 from ways to hold the block in the bifurcated bottom portion of member 138, i.e. the portion surrounding a slot 144 in member 138 in which slot block 143 rides. A spring 145 between pin 146 on block 143 and pin 147 on member 138 urges the block 143 upwardly to hold wheel 141 in contact with bottom rail 137.

The vertical portion of member 138 has a slot 152 therein. At each side of slot 152 is a guide plate 153 secured to member 138 by bolts 154. A traveler 155 has a milled slot 156 in each side thereof to receive guide plates 153. A cylindrical bushed opening 157 in traveler 155 is provided to receive a pin 158 attached to and projecting from one of the side plates of a chain 159. One end of chain 159 is mounted on a sprocket 160 attached to shaft 130 and the other end is mounted on a sprocket 161 on a shaft 162. Shaft 162 is journaled in bearings 163 attached to a movable mounting plate 164. A bolt 165 passing through an angle 166 attached to member 93 is threaded into an abutment 167 on mounting plate 164 to serve as a chain tightener. The upper, generally horizontal, run 170 of chain 159 is supported by a bar 171 on which the rollers of the chain ride and which is received between the side plates of the chain. Support bar 171 is mounted on an angle 172 attached to member 93. The lower run 173 of chain 159 is supported on a guide bar 174 attached to and spaced from frame portion 93.

A vertical rod 178 is mounted for vertical movement in a pair of bearings 179 and 180 attached to T-shaped member 138. Rod 178 passes through a pair of ears 181 forming a part of traveler 155 and is attached to the traveler by means of set screws 182. The lower end of rod 178 is threaded as seen at 183 and a boss 184 is similarly threaded to receive rod 178. A lock nut 185 wedges boss 184 against rotation on threads 183. Boss 184 is attached to a mounting plate 186 of swab 96. Swab 96 comprises a pad holding member 187 secured to plate 186 and having concave portions 188 at the end thereof to secure and hold a pad 189.

As previously mentioned the structure operating pad 95 corresponds to that described with respect to the mounting and operation of the swab 96. However, they are timed so that at any instant the two swabs will be at different points in their paths of movement. In each instance the endless chain rotates in a direction such that the swabs are raised when they get to the portion of their travel adjacent the sides of conveyor 10' and are lowered after they pass in the opposite direction just beyond the center line of the conveyor (so that the wiping will overlap in the center of the conveyor).

For example, with respect to swab 96, chain 159 moves in the direction indicated by arrow 195. Pin 158 secured to chain 159 holds traveler and swab 96 upwardly (in the position illustrated in FIGURE 7) as the swab moves from adjacent the edge of conveyor 10 towards the center of the conveyor (from left to right in FIGURE 7). As the portion of chain 159 that mounts pin 158 reaches

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sprocket 160, the pin commences descending, lowering traveler 155 and swab 96. When the pin reaches the bottom of sprocket 160 the swab is down against the upper surface of the article on conveyor 10' to be wiped.

The amount of pressure of the contact of swab 96 against the upper surface of the article may be adjusted by loosening lock nut 185 and moving swab 96 up and down on the threads 183 of rod 178. After the position has been adjusted, lock nut 185 is again tightened to hold the swab in place. For the swabbing of leather, the purpose for which the embodiment was devised, the weight of the swab and chain is adequate to provide all the pressure that is desired. However, if additional pressure were desired, an additional guide could be mounted along the lower run 173 of chain 159 to prevent the chain from being pushed upwardly by the pressure of the swab 96 on the article.

The movement of the pin 158 along the lower run 173 (to the left in FIGURE 7) draws the carriage and the swab to the left with the wheels 140 and 141 of the carriage moving along the respective rails 136 and 137. When the carriage arrives at the left end of its travel in FIGURE 7, that is the end adjacent the edge of the conveyor 10', the pin 158 commences moving upwardly about sprocket 161. This raises traveler 155 and lifts the swab 96 away from the conveyor 10'. The pin 158 then moves along the upper run 170 to the right in FIGURE 7 in the direction illustrated by arrow 195 drawing the carriage and swab with it.

In the meantime the movement of swab 95 has corresponded to, but is not identical in time to, the movement of swab 96. The swab 95 moves to the outward edge of the conveyor 10', raises, moves back to the left in FIGURE 6 just beyond the center line of conveyor 10', lowers, and then again moves towards the outer edge of the conveyor 10'.

For wiping leather it is desirable that the speed of movement of the swabs be such that each stroke of a swab overlaps the preceding and following stroke of the swab on the surface of the leather being wiped. At the same time the relative motion of the swab with respect to the article should be substantially across the article as indicated by the movement components 99 and 99'. This is achieved by the angular adjustment of the portions 92 and 93 of the frame 90 and the speed at which the conveyor and swabs are operated.

The foregoing detailed description is only for clearness of understanding and for the purpose of complying with 35 U.S.C. 112, and I do not desire to be limited to the exact details of construction shown and described for obvious modifications will occur to a person skilled in the art.

This application is a continuation-in-part of my prior application, Serial No. 611,836, filed September 25, 1956, now abandoned.

I claim:

1. Apparatus for wiping excess liquid from the upper surface of an article moving along a conveyor in a given direction, said apparatus including a frame having a portion thereof extending across at least a portion of said conveyor at an acute angle to said direction toward a side of said conveyor, movable means extending along said portion of said frame, a swab connected to said movable means, power means connected to said movable means to move said swab along a path aligned with said portion of said frame to a point over said article and thence toward a side of said article, and means associated with said swab to hold said swab above said article until said swab reaches said point above said article and to lower said swab onto said surface.

2. Apparatus for wiping excess liquid from the upper surface of an article moving along a conveyor in a given direction, said apparatus including a frame having a first portion thereof extending across at least a portion of said conveyor at an acute angle to said direction toward a

first side of said conveyor, said frame having a second portion thereof extending across at least a portion of said conveyor at an acute angle to said direction toward the other side of said conveyor, movable means extending along said portions of said frame, swab means connected to said movable means, power means connected to said movable means to move said swab means along a first path aligned with said one portion of said frame to a point over said article and thence toward said first side of said conveyor and along a second path aligned with the second of said portions of said frame to a point over said article and thence toward the other side of said conveyor, and means associated with said swab means to hold said swab means above said article until said swab means reaches said points above said article and to lower said swab means onto said surface.

3. Apparatus for wiping excess liquid from the upper surface of an article moving along a conveyor in a given direction, said apparatus including a frame having a first portion thereof extending across at least a portion of said conveyor at an angle to said direction toward a first side of said conveyor, said frame having a second portion thereof extending across at least a portion of said conveyor at an acute angle to said direction toward the other side of said conveyor, movable means extending along said portions of said frame, swab means connected to said movable means, power means connected to said movable means to move said swab means along a first path aligned with said first of said portions of said frame to a point over said article and thence toward said first side of said conveyor and along a second path aligned with the second of said portions of said frame to a point over said article and thence toward the other side of said conveyor, the point from which the swab means moves toward one of said sides being closer to the opposite side of said conveyor than is the other of said points whereby said swab means in moving from said points to said sides will traverse overlapping portions of said surface of said article, and means associated with said swab means to hold said swab means above said article until said swab means reaches said points above said article and to lower said swab means onto said surface.

4. Apparatus for wiping excess liquid from the upper surface of an article moving along a conveyor in a given direction at a given rate of speed, said apparatus including a frame having a first portion thereof extending across at least a portion of said conveyor at an acute angle to said direction toward a first side of said conveyor, said frame having a second portion thereof extending across at least a portion of said conveyor at an acute angle to said direction toward the other side of said conveyor, movable means extending along said portions of said frame, a swab means connected to said movable means, power means connected to said movable means to move said swab means along a first path aligned with one of said portions of said frame to a point over said article and thence toward said first side of said conveyor and along a second path aligned with the other of said portions of said frame to a point over said article and thence toward the other side of said conveyor whereby the movements of said swab means toward said sides have components in said direction, said power means moving said swab means at a velocity such that said components of the movements of said swab means in said given direction is substantially equal to said given rate of speed, and means associated with said swab means to hold said swab means above said article until said swab means reaches said points above said article and to lower said swab means onto said surface.

5. Apparatus for wiping excess liquid from a surface of an article including a conveyor for transporting said article along a path in a given direction with said surface upwardly, a swab, power means connected to said swab to move said swab in a direction at an acute angle with respect to said given direction and across the width of said

article from beyond one side to beyond the opposite side and to return said swab from beyond said opposite side to beyond said one side, and means to hold said swab above said surface until said swab is over said surface and to thereafter bring said swab into contact with said surface during both of said movements of said swab across said article.

6. Apparatus for wiping excess liquid from a surface of an article including a conveyor for transporting said article along a path in a given direction at a given rate of speed with said surface upwardly, a swab, power means connected to said swab to move said swab along a line in a direction at an acute angle with respect to said given direction and across the width of said article from beyond one side to beyond the opposite side and to return said swab from beyond said opposite side to beyond said one side, said line and said movement of said swab along said line being such that the movement of the swab has a component in said given direction during each of said movements of said swab across said article, said swab being moved at such a rate of speed that said component of movement of said swab is substantially equal to said rate of speed of movement of said article whereby the relative movement of the swab with respect to the article is substantially directly across the article, and means to hold said swab above said surface until said swab is over said surface and to thereafter bring said swab into contact with said surface during both of said movements of said swab across said article.

7. Apparatus for use in the processing of sides of leather or the like, said apparatus comprising a conveyor for supporting said sides laid out flat thereon and moving said sides in a given direction, a frame positioned above said conveyor, a plurality of swabs, swab supporting means connected to said frame and to said swabs and positioned for movement of said swabs along an essentially triangular path with two legs of said triangle crossing said conveyor at acute angles to said given direction, and power means connected to said swab supporting means to move said swabs about said path in a direction such that the swab when moving along each of said two legs will have a component of its movement in the given direction of movement of said sides.

8. Apparatus for use in the processing of sides of leather or the like, said apparatus comprising a conveyor for supporting said sides laid out flat thereon and moving said sides in a given direction, a frame positioned above said conveyor, a plurality of swabs, swab supporting means connected to said frame and to said swabs and positioned for movement of said swabs along an essentially triangular path with two legs of said triangle crossing said conveyor at acute angles to said given direction, power means connected to said swab supporting means to move said swabs about said path in a direction such that the swab when moving along each of said two legs will have a component of its movement in the given direction of movement of said sides, and means to support said swabs above said sides as said swabs start along said legs and to drop the swabs on the sides after the swabs have moved along said legs over said sides.

9. Apparatus for use in the processing of sides of leather or the like, said apparatus comprising a conveyor for supporting said sides laid out flat thereon and moving said sides in a given direction at a given rate of speed, a frame positioned above said conveyor, a plurality of swabs, swab supporting means connected to said frame and to said swabs and positioned for movement of said swabs along an essentially triangular path with two legs of said triangle crossing said conveyor at acute angles to said given direction, and power means connected to said swab supporting means to move said swabs about said path in a direction such that the swab when moving along each of said two legs will have a component of its movement in the given direction of movement of said sides and at a rate of speed such that the movement of said swab

in said given direction is substantially the same rate as the rate of movement of said side in said given direction.

10. Apparatus for wiping excess liquid from the upper surface of an article moving along a conveyor in a given direction, said apparatus including a frame means having a first portion thereof extending across at least a portion of said conveyor at an acute angle to said direction toward a side of said conveyor, said frame means having a second portion extending across at least a portion of said conveyor at an acute angle to said direction toward the other side of said conveyor, a first movable means extending along said first portion of said frame means, a second movable means extending along said second portion of said frame means, swabbing means connected to said first and said second movable means, power means connected to said movable means to move said swabbing means along paths aligned with said portions of said frame, and means associated with said movable means to raise and hold said swabbing means above said article until said swabbing means reach a point inwardly of the area of said article and to lower and to hold said swabbing means against said surface of said article while said swabbing means are moved from said point outwardly toward the side of said conveyor.

11. Apparatus for redistributing liquid finishing material across the surface of a side of leather and for wiping the excess of such liquid therefrom, said apparatus comprising, conveying means for moving said leather with said surface disposed upwardly, a supporting structure extending across at least a portion of said conveyor, endless means associated with said structure and having at least one run thereof disposed at an acute angle to the direction of motion of said conveyor, a swab means connected to said endless means, said swab means including an absorbent material contactable with said surface of the leather and reciprocable in a plane generally perpendicular to said surface, and means to raise and lower said swab means along said run whereby said swab will be maintained in contact with said surface only as said swab moves outwardly from about the middle of said conveying means toward a side thereof.

12. Apparatus for redistributing liquid finishing material across the surface of a side of leather and for wiping the excess of such liquid therefrom, said apparatus comprising, an endless conveyor for moving said leather with said surface disposed upwardly, a supporting structure extending across at least a portion of said conveyor, endless means associated with said structure having upper and lower runs with respect to said conveyor and extending thereover at an acute angle to the direction of motion of said conveyor, a carriage disposed to run along the supporting structure parallel to said endless means, a member vertically reciprocable on said carriage, said member being connected to a point on said endless means whereby it will be raised and lowered as said point passes between the upper and lower runs of said endless means, and a swab means attached to the lower portion of said member for contacting the surface of said leather while said point

moves along the lower run of said endless means, said swab means including a pad of an absorbent material for wiping the surface of said leather.

13. Apparatus for use in the processing of sides of leather or the like, said apparatus comprising a conveyor for supporting said sides laid out flat thereon and moving said sides in a given direction, a frame positioned above said conveyor, a plurality of swabs, swab mounting means connected to said swabs, swab transporting means connected to said frame and to said mounting means and positioned for movement of said swabs along an essentially triangular path with two legs of such triangle crossing said conveyor at an acute angle to said given direction, power means connected to said swab, transporting means to move said swabs about said path in a direction such that the swab when moving along each of said two legs will have a component of its movement in the given direction of movement of said sides, cams mounted on said frame and positioned along the entering end of each of said legs to contact said mounting means to support said swab above said sides as said swabs enter said legs, and means cooperating with said mounting means to orient the position of the swab with respect to said conveyor.

14. Apparatus for wiping and evenly distributing liquid finishing material on leather or like material comprising conveying means for transporting the leather along a path in a given direction at an established speed, moving means disposed above said conveying means at an angle to said path whereby at least a portion of said moving means may move from a point at about the center of said conveying means toward a side of said conveying means with a component of motion in said given direction substantially equal to said speed, swabbing means carried by said moving means engageable with the upper surface of said leather beneath said portion of said moving means at a pressure dependent upon the weight of said swabbing means, said swabbing means including an absorbent material in contact with said leather whereby the liquid finishing material thereon will be evenly distributed across the surface of said leather, and means to remove excess liquid finishing material from said absorbent material at a point beyond an edge of said conveying means.

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