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DEWOOLING MACHINE

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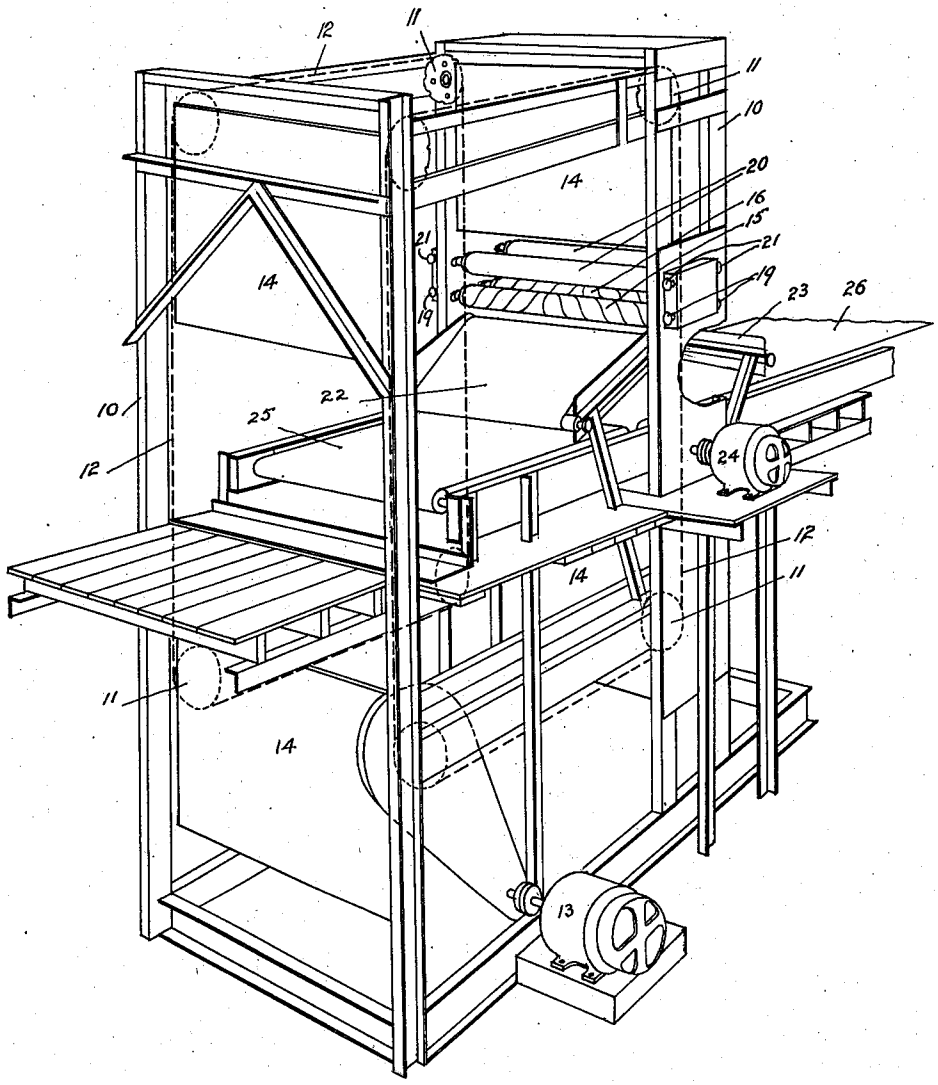


FIG. 1

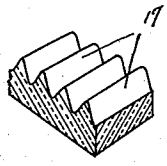


FIG. 3



FIG. 2

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DEWOOLING MACHINE

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7 Claims. (Cl. 149—25)

This invention relates to improved means for removing wool or hair from skins which have been treated with depilatory solutions or the like, and has been devised to lower the time and cost of operation, to obviate damage to the pelt, to obtain greater efficiency of operation, and to deliver automatically the whole of the fleece as a unit to a classing table.

In this invention we provide a series of skin-carrying boards, suitably secured at spaced intervals to a travelling member, and adapted to be drawn vertically in succession at any desired rate between a pair of rotating pulling rollers. These rollers are fitted with series of resilient wool or hair pulling strips, and each skin is carried by its board so that the wool or hair is exposed on each side of the board.

In the accompanying drawing which illustrates one form of the invention:—

Fig. 1 is a perspective view of a complete machine;

Fig. 2 is a front elevation of a pulling roller;

Fig. 3 is an enlarged perspective view of portion of the strips on the pulling rollers.

A stout metal framing **10**, suitably reinforced and stiffened, is fitted with sprocket wheels **11** for endless chains **12**, **12**, which are adapted to be driven at any desired speed by means of a motor **13**, preferably fitted with reduction bearing.

Uniformly spaced skin-carrying flat boards **14** are pivoted at their upper ends to the chains **12** and at all stages of travel lie in vertical planes.

Bearings on the framing **10** carry a pair of parallel oppositely disposed wool or hair pulling rollers **15**, **16** the outer faces of which may be provided with a rubber or resilient sheath and are fitted with sets of oppositely wound helical strips **17**, **18** of soft rubber or the like resilient material. As shown in Fig. 3 each strip is of approximately triangular cross section. By means of set screws **19** these rollers may be adjustably spaced from each other to permit of variation of pressure of the strips **17**, **18** on the faces of the skin passing between them.

Above each of the pulling rollers is mounted in parallel a pinching roller **20** which is adapted to hold the skin in place on the board **14** until the wool or hair is pulled. These pinching rollers may be surfaced with canvas or be fitted with soft rubber or other resilient material, and are adjusted relatively to each other by means of set screws **21**.

Adjustable belt conveyors **22**, **23** are positioned below the pulling rollers and adjacent thereto, a motor **24**, having reduction gearing, serving to rotate the rollers **15**, **16** in opposite directions to each other and to drive the conveyors.

Conveyor **22** is arranged to deliver its load to a second conveyor **25** which carries the load to the space under the roller **15** and, by means of a spring-controlled hinged flap or bridge over the passageway for the boards or other known means, delivers the load to a discharging conveyor **26** and thence to a classing or sorting table on the right hand end of the machine. The conveyor **23** is adapted to deliver its load directly to the discharging conveyor. The fleece is thus delivered to the classing or sorting table as a unit and in the same relative position as it was on the skin.

In operation, as applied to sheep skins which have been treated with depilatory material, an operator places the skin on the top rail of a board **14** so that portion of the skin hangs downwardly on each side of the board with the wool exposed. The chains **12** and the rollers **15**, **16** are set in motion and each board in succession travels upwardly between the pulling rollers.

When the wool contacts with the rollers the apices of the strips **17**, **18** exert a squeezing pressure and draw the fibres from their follicles in such a manner that the hyaline or glassy layer is not removed from the pelt thus tending to improve the quality of leather when the pelt is tanned. During the pulling operation the skin is retained in position on the board by the pinching rollers **20**.

The pulled wool is delivered from the rollers **15**, **16** to the conveyors **22**, **23**, the speed of which is adjusted and controlled to give any desired spread of the staple. From the conveyors **22**, **23** the two parts of the fleece are delivered to the discharging conveyor **26** during the intervals between successive entry of boards **14** to the gap below the rollers **15**, **16**.

Provided that suitable depilatory means have been used to loosen the fibres and hairs in their follicles, the operation of de-wooling or de-hairing, as carried out by this machine, is hygienic, the skins do not require painting or sweating, no noxious fumes are produced or liberated, the spinning qualities of the wool are retained, and the pelts are in improved condition for tanning.

We claim:—

1. A dewooling machine comprising a pair of parallel oppositely disposed pulling rollers provided with helical strips of rubber on the surface of each of said rollers, spaced boards each adapted to carry a skin with the wool exposed on each

face of the board, and driven means adapted to draw the boards in succession between the said rollers.

2. A dewooling machine comprising a pair of parallel oppositely disposed pulling rollers provided with helical strips of rubber on the surface of each of said rollers, a pinching roller positioned above each of said pulling rollers, spaced skin-carrying boards each adapted to carry a skin with the wool exposed on each side of the board, and driven means adapted to draw each of said boards in succession vertically between said pulling rollers and between said pinching rollers.

3. A dewooling machine comprising a pair of parallel oppositely disposed and oppositely rotatable wool-pulling rollers provided with series of helical rubber strips on the surface of each roller, spaced boards each adapted to carry a skin with the wool exposed on each side of the board, power driven mechanism pivotally attached to the upper ends of the boards and adapted to draw the boards in succession vertically between said rollers, and belt conveyors adapted to receive wool from said pulling rollers.

4. A dewooling machine comprising a pair of parallel oppositely disposed and oppositely rotatable wool-pulling rollers provided with series of helical rubber strips on the surface of each roller, spaced boards each adapted to carry a skin with the wool exposed on each side of the board, power driven mechanism pivotally connected with the upper ends of the boards and adapted to draw the boards in succession vertically between said rollers, a belt conveyor adapted to receive and discharge wool pulled from one side of each board, and an independent belt conveyor adapted to receive and discharge wool pulled from the other side of each board.

5. A dewooling machine comprising a pair of parallel oppositely disposed and oppositely rotatable wool-pulling rollers provided with series of helical rubber strips on the surface of each roller, spaced boards each adapted to carry a skin with the wool exposed on each side of the board, power driven mechanism adapted to draw the boards in succession vertically between the pulling rollers, a belt conveyor adapted to receive and discharge wool pulled from one side of each board, an independent belt conveyor adapted to receive and discharge wool pulled from the other side of each board, and a belt conveyor adapted to receive the whole of the wool pulled from both sides of the boards.

6. A dewooling machine comprising a pair of parallel oppositely disposed and oppositely rotatable wool-pulling rollers provided with series of helical rubber strips on the surface of each roller, spaced boards each adapted to carry a skin with the wool exposed on each side of the board, power driven mechanism adapted to draw the boards in succession vertically between the said rollers, a belt conveyor adapted to receive and discharge wool pulled from one side of a board, an independent belt conveyor adapted to receive and discharge wool pulled from the other side of the board, a belt conveyor adapted to spread the staple received from the pulling rollers, and a belt conveyor adapted to deliver as a unit the fleece pulled from the skin on the board.

7. A dewooling machine comprising a pair of parallel oppositely disposed and oppositely rotatable wool-pulling rollers each provided with series of helical rubber strips on its surface, spaced boards each adapted to carry a skin with the wool exposed on each side of the board, power driven mechanism adapted to draw the boards in succession vertically between the pulling rollers, belt conveyors adapted to receive and discharge the wool pulled from each side of the board, and a belt conveyor adapted to deliver as a unit the pulled wool in the same relative order as on the original skin.

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