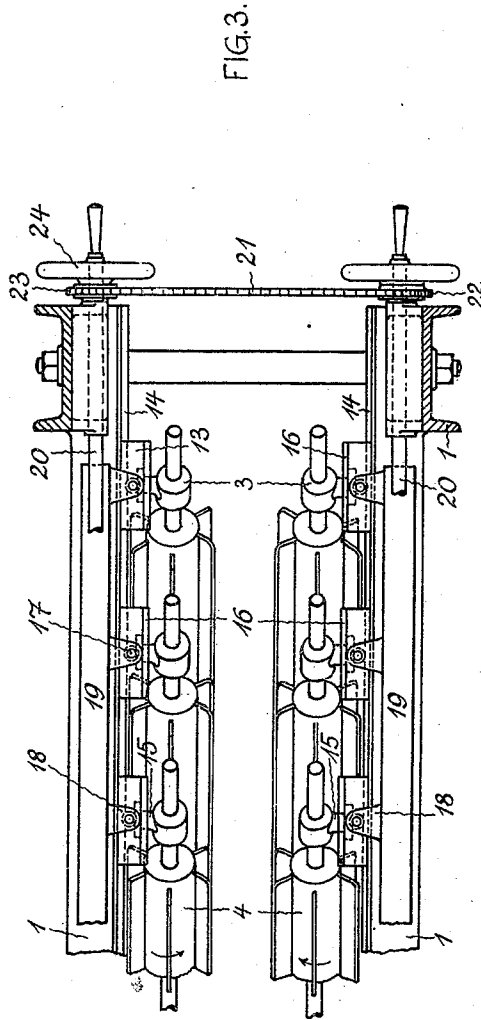
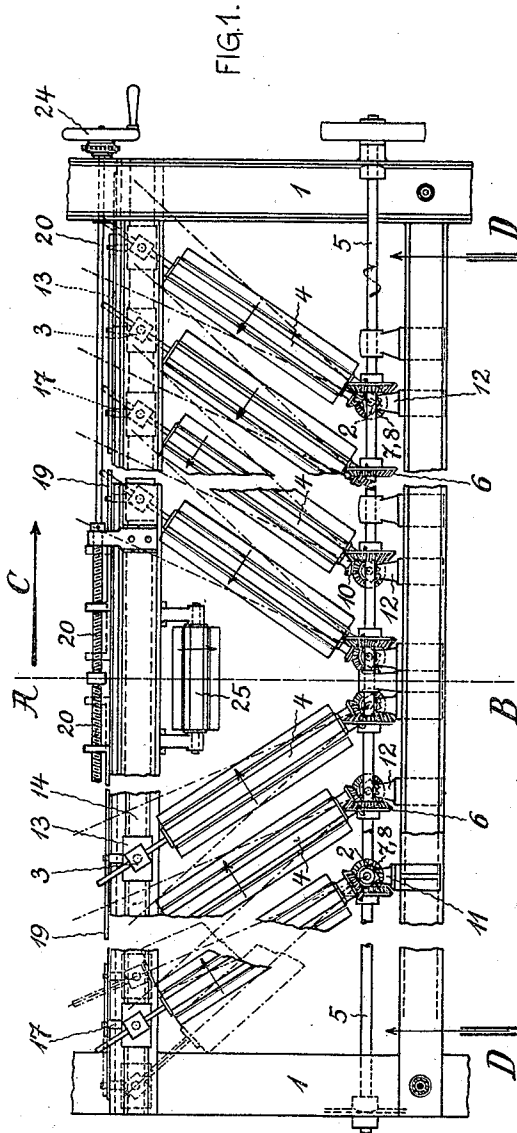


W. A. WÜST.
MACHINE FOR TREATING HIDES, SKINS, OR LEATHER.
APPLICATION FILED DEC. 8, 1908.

953,937.

Patented Apr. 5, 1910.

4 SHEETS—SHEET 1.



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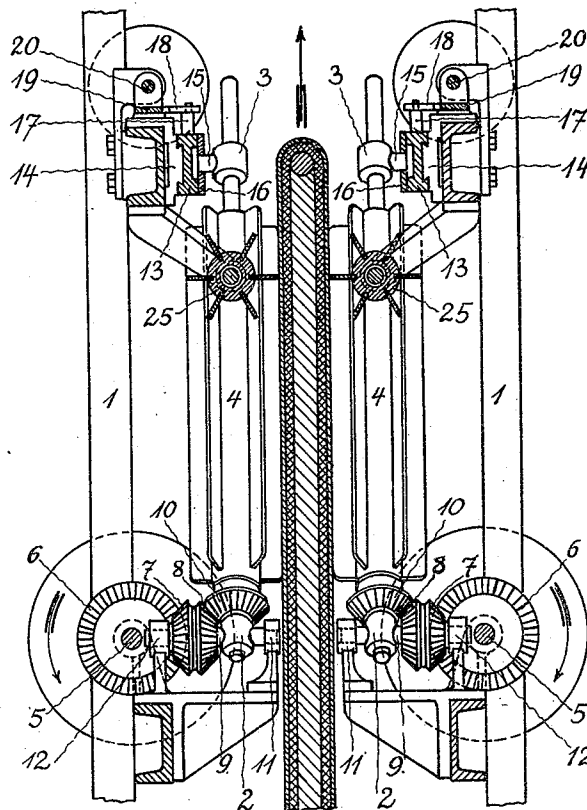
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FIG. 2.



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4 SHEETS—SHEET 3.

FIG. 4.

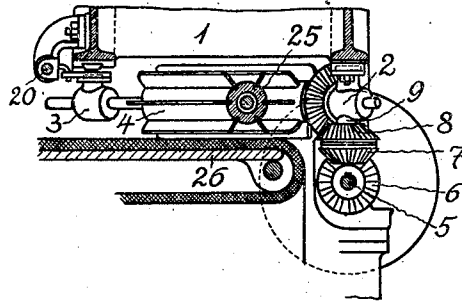


FIG. 5.

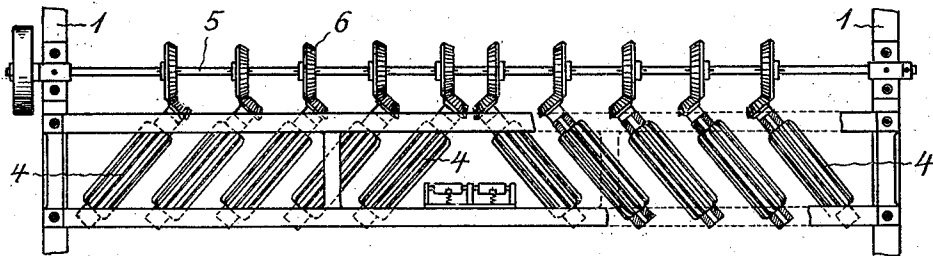
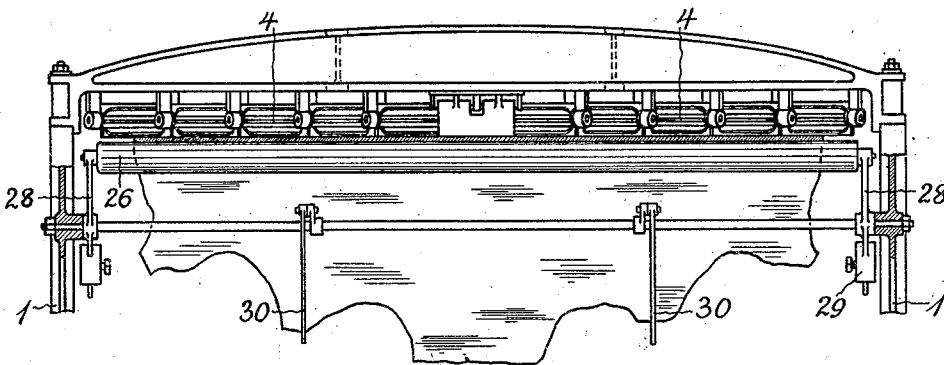


FIG. 6.



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4 SHEETS—SHEET 4.

FIG. 7.

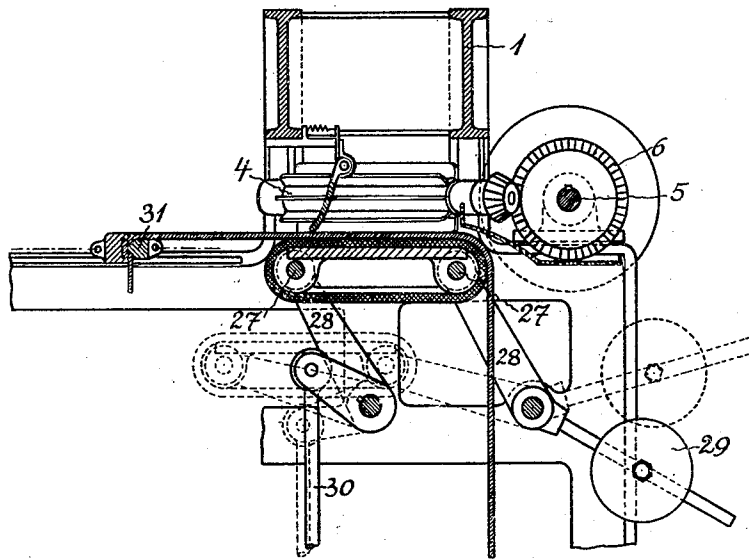
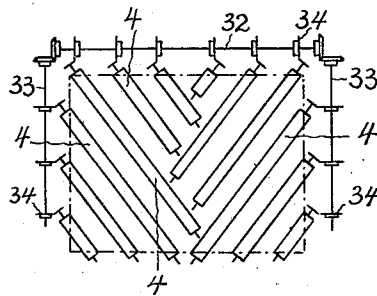


FIG. 8.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR TREATING HIDES, SKINS, OR LEATHER.

953,937.

Specification of Letters Patent.

Patented Apr. 5, 1910.

Application filed December 8, 1908. Serial No. 466,488.

To all whom it may concern:

Be it known that I, WILHELM ADOLF WÜST, a subject of the King of Prussia, residing at No. 166 Kettenhofweg, in the city of Frankfort-on-the-Main, Kingdom of Prussia, and Empire of Germany, have invented new and useful Improvements in Machines for Treating Hides, Skins, or Leather, of which the following is a specification.

My invention relates to machines for treating hides, skins or leather, and comprises a machine in which working rollers are arranged to operate in combination with a table designed for supporting the hide, skin or leather. According to my said invention the working rollers are arranged in two symmetrical groups obliquely to the direction of movement of the hide-supporting table at suitable distances from each other, so that their position may be either fixed or adjustable. By this arrangement of the rollers the hide, skin or leather is to be subjected simultaneously in any desired directions to a uniform treatment, with the object of stretching the same, removing any folds therein, and for similar purposes. If it is necessary to adapt the treatment to the varying extensibility of the hide, skin or leather at different points, several rollers appertaining to the groups may be arranged in a more or less oblique position relatively to the direction of movement of the hide-supporting table. Moreover, provision is made for driving the working rollers of the several groups at circumferential velocities varying with special regard to the extension of the hide, skin or leather which is expanded toward the periphery by the action of the said rollers. By this means such parts of the hide, skin or leather as lie between the several working rollers are subjected to a uniform tension transversely to the direction of movement, thus transmitting, without change, not merely the wave produced in the material by the middle rollers to the outer rollers, such as might possibly be the case with uniform circumferential velocities of the rollers.

In the accompanying drawings I have shown several constructional forms of the invention.

Figures 1, 2 and 3 represent a constructional form of machine in which the hide, skin or leather to be treated is placed upon

a table suspended in the vertical direction and adapted to pass in the same direction between the working rollers; Fig. 1 being an elevation, partly as seen from inside and partly as seen from outside, of the machine having adjustable working rollers arranged in symmetrical groups obliquely to the direction of movement of the hide-supporting table (not shown); Fig. 2 being a section of the machine, drawn to a larger scale than Fig. 1, and taken on the line A—B of said figure as seen in the direction of the arrow C; and Fig. 3 being a partial plan, likewise drawn to a larger scale than Fig. 1, of two oppositely arranged groups of rollers. Fig. 4 shows the arrangement of adjustable groups of rollers in a machine having a horizontal hide-supporting table. Figs. 5, 6 and 7 are respectively a plan, front elevation and section, showing a constructional form of the machine, in which the working rollers are held above a table which is arranged horizontally. Fig. 8 is a diagram showing an arrangement wherein the working rollers are placed one behind the other in relation to the movement of the hide-supporting table.

In the frame 1 of the machine there are bearings 2 and 3 for the axes of the working rollers 4. The bearings of these rollers may also be spring supported. As shown in Figs. 1, 2 and 3, the working rollers provided on both sides of a vertically suspended supporting table are arranged in symmetrical groups obliquely to the direction of movement of the said supporting table. The direction of movement of the supporting table is indicated by arrows D. The working rollers 4 are driven by the aid of shafts 5 held in bearings of the frame 1 of the machine and carrying bevel wheels 6 for driving each working roller. With these bevel wheels 6 gear the bevel wheels 7 which are connected with the bevel wheels 8 so as to form double bevel wheels and are adapted to turn with them upon the journals 9. On the axes of the rollers 4 are fixed the bevel wheels 10 gearing with the wheels 8 and transmitting to the working rollers the rotary movement in the directions indicated by arrows. The journals 9 are made in one piece with the bearings 2 of the working rollers 4, their two ends being held in brackets 11 and 12. By this arrangement the working rollers can be adjusted so as to

enable their oblique position to be changed, without becoming uncoupled from their driving gear, by swinging the rollers to both sides about the journals 9. For the purpose of adjusting the working rollers to the oblique positions required according to the nature of the hides, skins or leather to be treated, the bearings 3 at the other ends of the roller journals are arranged to be displaced, transversely to the direction of movement of the supporting table, by the sole plates 13 upon the guides 14 provided on the frame of the machine. For enabling the bearings 3 to adapt themselves to any of the oblique positions to which the working rollers may be adjusted, they are provided with journals 15 which are held in the sole plates 13 by the aid of the cover plates 16 so that they can turn.

It will of course be understood that the working rollers can be adjusted either singly or in pairs or groups before or, if requisite, also during the treatment of the hide, skin or leather. In Figs. 1, 2 and 3 I have shown by way of example an arrangement for displacing the working rollers 4 in groups. The sole plates 13 of the bearings 3 are provided with carrier pins 17 which extend into projections 18 of slide bars 19. A slide bar 19 is provided for each group of rollers, and each bar receives its proper motion through the intervention of spindles 20 provided with right and left handed screw threads and arranged to be turned in the frame of the machine. In order to obtain the simultaneous adjustment of the four groups of working rollers, the said spindles are connected by means of a chain 21 gearing with sprocket wheels 22, 23 so that this adjustment may be effected by any one of the four hand wheels 24.

Between each two groups of working rollers situated in the same plane, additional working rollers 25 are arranged at right angles to the direction of movement of the hide supporting table, the said additional rollers serving for the treatment of the strip of hide, skin or leather passing between the groups of rollers and which may not have been worked by these rollers. These additional working rollers are adapted to be turned in any suitable manner in the opposite direction to that of the movement of the hide, skin or leather.

In case the groups of working rollers are arranged over a horizontal table, upon which the hide, skin or leather is laid for the treatment, the several groups of rollers being adjustable in their oblique position, some parts of the machine require to be modified as shown for instance in Fig. 4. The table may be so constructed that by the aid of levers and weights or the like it may be removed from the rollers 4 or raised to the same. A constructional form of this kind

is shown in Figs 5, 6 and 7. The horizontally arranged table 26 is normally held in its highest position by counterweights 29 through the agency of arms 28 carried by two rods 27, in which position the table presses the hide, skin or leather lying thereon against the working rollers. One of the shafts 27 is connected through the arms and rods 30 with a pedal, not represented, by the depression of which the downward movement of the supporting table is effected for enabling the hide, skin or leather to be introduced or removed. In the constructional example shown the front end of the hide, skin or leather is clamped in a slide 31, by the forward movement of which it is drawn mechanically under the working rollers. Whereas in the constructional forms described the working rollers 4 are arranged side by side in the transverse direction of the machine, they are placed one behind the other in the modification shown in Fig. 8, with the object of enabling a large surface to be worked at the same time, or the hide, skin or leather to be subjected to several treatments directly following each other either by means of similar or different tools. In this case the working rollers 4 of one group extend in the middle of the machine past the front ends of the rollers appertaining to the other group, thus dispensing with the additional working rollers 25 between each two groups for working the middle strip. The working rollers 4 are driven from transverse and longitudinal shafts 32, 33 by means of bevel wheels 34.

As a rule the working rollers arranged obliquely to the direction of movement of the hide supporting table are provided with rectilinear tools, but these tools may in certain cases present a helical or similar shape.

Despite the oblique position of the working rollers and the treatment of the hide, skin or leather in a level plane, the working zone may be restricted or extended to any desired width. Under these circumstances the treatment of even the largest hide, skin or leather may be effected upon a level surface without requiring the machine to be extended correspondingly in the direction of the working, so that the extension of the machine in this direction is independent of the size of the hide, skin or leather to be treated.

I claim:

1. In a machine of the character described, the combination with a movably-mounted hide-supporting table, of a series of working rollers arranged in symmetrical groups obliquely of the direction of movement of said table, and means for adjusting the oblique position of said rollers.

2. In a machine of the character described, the combination with a movably-mounted hide-supporting table, of a series of working rollers arranged in symmetrical groups ob-

likely of the direction of movement of said table, and means for adjusting the oblique position of said rollers, the rollers of each group being placed in opposite oblique positions upon opposite sides of the longitudinal center of the table.

3. In a machine of the character described, the combination, with a movable hide-supporting table, of working rollers arranged in symmetrical groups, means for adjusting the oblique position of the said rollers, and means for driving the rollers of each group from the middle of the supporting table to the sides.

4. In a machine of the character described, the combination with a movable hide-supporting table, of working rollers arranged in symmetrical groups, and means for adjusting the oblique position of the working rollers.

5. In a machine of the character described, the combination, with a movable hide-supporting table, of working rollers arranged in symmetrical groups, means for adjusting the oblique position of the said rollers, a single driving shaft, and means for transmitting

motion from this driving shaft to all the working rollers.

6. In a machine of the character described, the combination, with a movable hide-supporting table, of working rollers arranged in symmetrical groups, means for adjusting the oblique position of the said rollers, the rollers of each group being placed one behind the other in relation to the movement of the said table.

7. In a machine of the character described, the combination, with a movable hide-supporting table, of working rollers arranged in symmetrical groups, bearings for same, a set of double bevel wheels, journals carrying the double bevel wheels, a driving shaft, a set of single bevel wheels on this shaft, and another set of single bevel wheels fixed on the journals of the said working rollers, these sets of single bevel wheels being adapted to gear with the aforesaid set of double bevel wheels.

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