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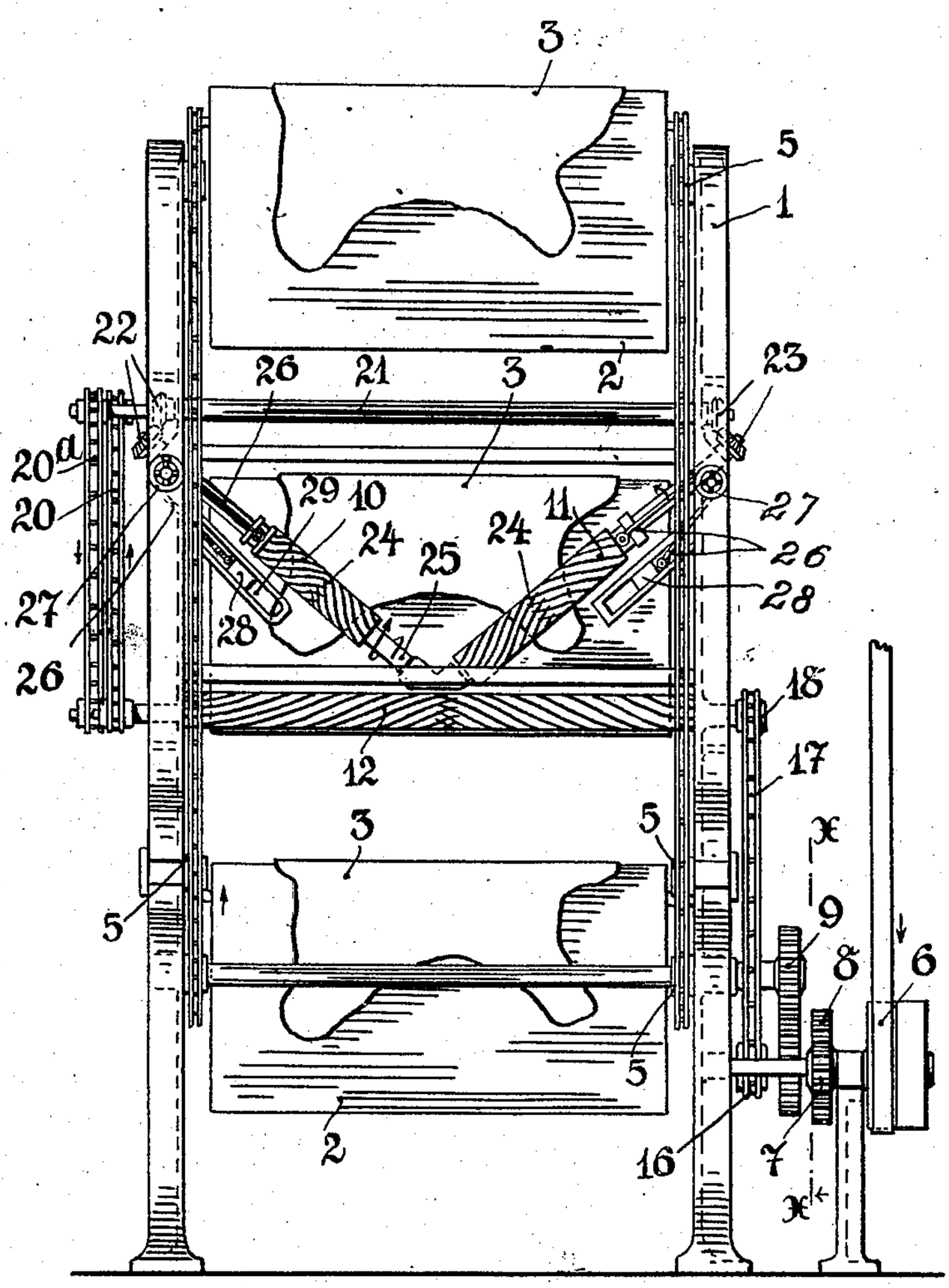
MACHINE FOR DRESSING, STRETCHING, AND OTHERWISE TREATING SKINS, HIDES, LEATHER, AND THE LIKE.

APPLICATION FILED JULY 7, 1909.

978,318. **Patented Dec. 13, 1910.**

2 SHEETS—SHEET 1.

Fig. 1



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2 SHEETS—SHEET 2.

Fig. 2

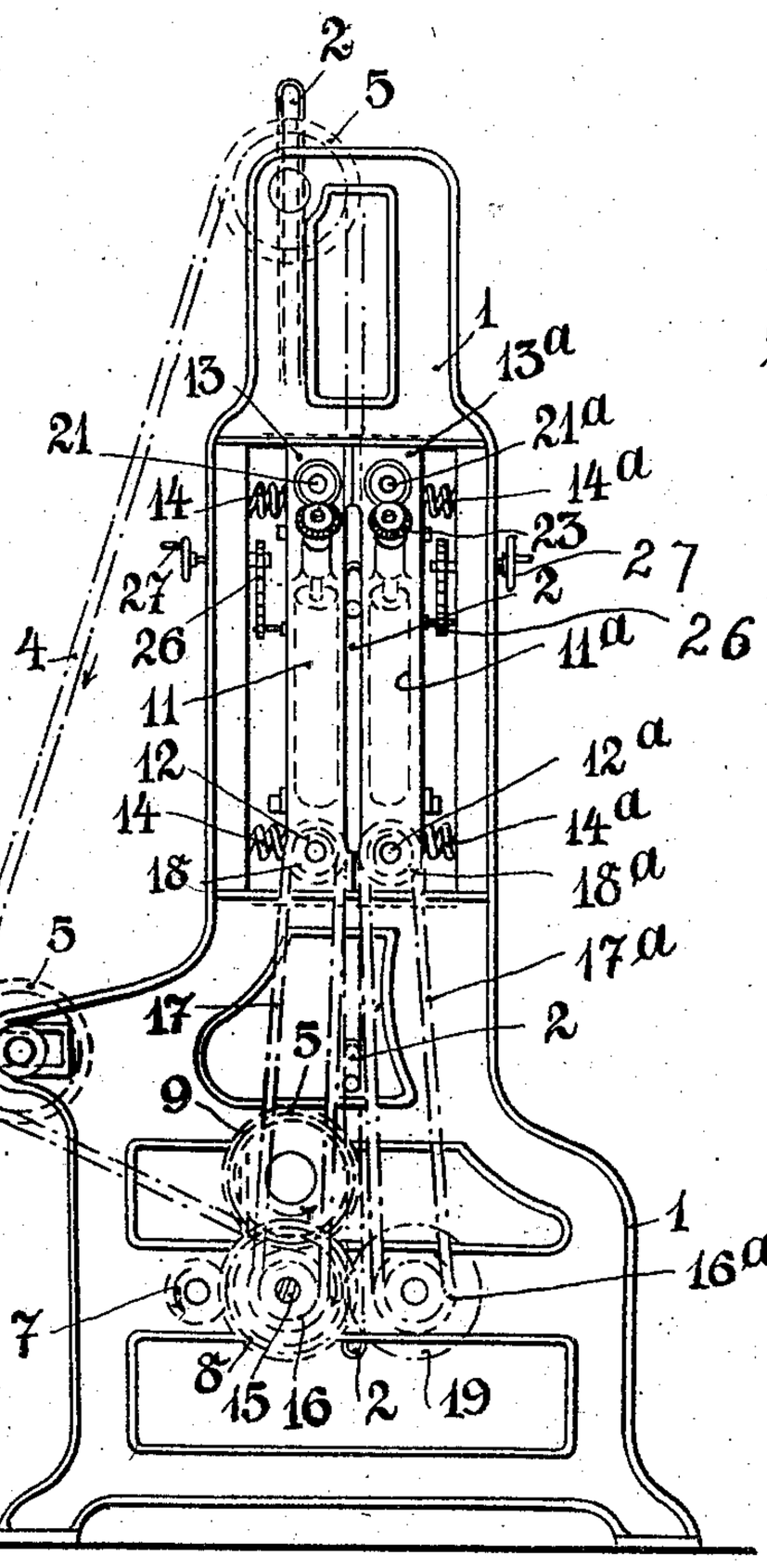
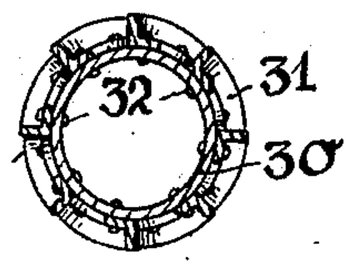


Fig. 3



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UNITED STATES PATENT OFFICE.

ARTHUR MIRTIL MARX, OF FRANKFORT-ON-THE-MAIN, GERMANY.

MACHINE FOR DRESSING, STRETCHING, AND OTHERWISE TREATING SKINS, HIDES, LEATHER, AND THE LIKE.

978,318. Specification of Letters Patent. **Patented Dec. 13, 1910.**

Application filed July 7, 1909. Serial No. 506,391.

To all whom it may concern:

Be it known that I, ARTHUR MIRTIL MARX, citizen of Germany, subject of the King of Prussia and Emperor of Germany, residing at 70 Höchsterstrasse, Frankfort-on-the-Main, in the Kingdom of Prussia and Empire of Germany, have invented a new and useful Machine for Dressing, Stretching, and Otherwise Treating Skins, Hides, Leather, and the Like, of which the following is a specification.

The subject-matter of my invention is an improved machine for dressing, finishing, stretching or otherwise treating skins, hides, leather and the like.

One object of the invention consists in working rollers or cylinders being arranged in planes parallel to the direction of motion of the tables carrying the skins or hides and on the two sides of the tables in symmetrically slanting directions relatively to the direction of the table motion, said slantingly arranged rollers lying in or approximately in the directions of the diagonals between the direction of the motion of the tables and the line perpendicular to this direction, in such a manner that each pair of slantingly arranged rollers forms an angle opening in the direction of the table motion.

A further object of my invention is that the working ribs of each of the slanting rollers run spirally in a manner known in itself toward the ends of the roller from a plane at right angle to the axle of rotation of this roller, this plane being so located in each instance that it lies exactly or approximately parallel to the central line of the appertaining foot portion of the skin hung over the moving table and coincides with this perfectly or approximately when the skin passes. By means of this arrangement it is possible to dress, stretch or otherwise treat the less united, loose or freely pendent parts of the skin, namely the foot and head parts, in their natural directions of growth, so that folding and wrinkling of these parts of the hide during the dressing or stretching operation is avoided. Even when rollers arranged slantwise are employed this cannot be obtained with certainty when the ribs of these rollers do not run spirally toward both ends from a dividing plane in the indicated position. In order to be able to adapt the position of the dividing planes, from which the ribs run spirally toward the ends of the rollers, corresponding to the changing size and shape of the hides or skins which are to be treated it is important to arrange at least the one of each pair of slanting rollers displaceable in the direction of its axis of rotation.

Other objects of my invention will be seen from the following description and claims in connection with the annexed drawings.

One constructional form of the machine is represented by way of example in the accompanying drawings, wherein—

Figure 1 is a front elevation, Fig. 2 is a vertical transverse section in the plane X—X in Fig. 1, whereas Fig. 3 is a cross-section through one of the rollers on a larger scale.

Referring to the drawing, the conveying tables or plates 2, over which the skins or hides 3 are hung, are suspended movably on endless chains 4 in the usual manner in the frame 1; the chains are placed around wheels 5 and are driven with the intermediary of the toothed gearing 7, 8, 9 by the belt-pulley 6. In the illustrated form of the device three conveying tables are arranged driven by the endless chains, but of course four or five or another number of tables may be provided. The direction of motion of the endless chains 4 and conveying tables 2 is indicated by arrows in Fig. 2.

In the illustrated example, four obliquely disposed rollers are provided which are arranged in pairs with the members of each pair on opposite sides of the path of the tables 2. The front rollers 10 and 11 of each pair are seen in Fig. 1, while in Fig. 2 the front and rear members 11, 11^a of one pair are indicated. Each pair of said rollers (10 and 11) is arranged symmetrically slanting nearly in the direction of the diagonals between the direction of the motion of the tables and the line perpendicular to that direction, so that both rollers of each pair form an angle opening in the direction of the motion of tables. Below the slant rollers 10 and 11, which are located at an angle one to the other, are arranged in addition on each side of the path of the plates or tables horizontal rollers 12 and 12^a. The rollers situated at each side of the path of the plates are journaled in a frame 13 and 13^a, respectively, movable in the frame 1. The two frames 13 and 13^a are pressed toward one another *i. e.* toward the path of the plates by springs 14 and 14^a. In the

constructional form illustrated, the roller 12 is rotated by a sprocket wheel 18 on the shaft of the roller driven by means of the chain 17 from a sprocket wheel 16 on the shaft 15 carrying the toothed wheel 8. The roller 12^a is rotated correspondingly by the toothed wheel 19, which meshes with the toothed wheel 8, sprocket wheel 16^a, chain 17^a and the sprocket wheel 18^a, so that the rollers 12 and 12^a rotate in opposite directions as will be readily understood. The slant rollers arranged on both sides of the path of the plates 2 and at an oblique angle to the direction of motion of said plates are driven in this constructional form from the horizontal rollers 12 and 12^a, the slanting rollers located to the rear in the view shown in Fig. 1, of which only the one, 11^a, is visible in Fig. 2, being driven by means of the chain 20 from the shaft of the front roller 12 and the front slanting rollers 10 and 11 being driven by means of the chain 20^a from the rear roller 12^a. The horizontal shafts 21 and 21^a are coupled with the chains 20 and 20^a and impart their motion by means of bevel wheels 22, 23 respectively to the slanting rollers which consequently rotate in the direction of the arrows shown on them. As is clearly shown in Fig. 1, the rollers 11 and 11^a of one pair are longer than the rollers of the other pair because on that side on which the rollers 11 are located, I arrange the head of the hide and consequently the hide extends farther toward that side of the machine than toward the opposite side thereof. Further, as clearly shown in Fig. 1, the ribs on the slant rollers also run spirally from lines or points 24, situated between the ends of the rollers, toward the two ends, or in other words the spirals of the slant rollers or cylinders are divided on a line intermediate their ends, said dividing line being arranged in such a manner that it will be as exactly as possible parallel to the central line of the appertaining foot or claw portion of the skin hung over the table. The smaller rollers 10 are mounted displaceably on their axles 25. For raising and lowering the rollers 10 there is provided a chain 26 guided over a sprocket wheel provided with a hand-wheel or crank 27, whereas the other end of the chain loaded by a counter-weight 28 slides in a guide 29. The construction of the rollers will be readily understood from the enlarged cross-sectional view in Fig. 3. They comprise an ordinary iron pipe 30, on the periphery of which spiral, angular, metallic strips 31 which may consist of iron, brass or the like, are attached by rivets 32. It is preferable to provide near the central lines 24 between the spirally wound strips 31 short cross-pieces in addition, as clearly shown in Fig. 1. Owing to the arrangement of such cross-pieces, by which rhomboidal figures are formed near each central line 24 the action of the rollers is improved. By the rollers being made hollow they are of comparatively small weight, so that their displacement on their axles is facilitated.

When my machine is used the hides or skins 3 are hung in such a position over the tables 2 that the central lines of the claw parts register as exactly as possible with the central lines of the rollers 10, 11 when passing the slanting rollers 10, 11. In order to obtain this according to the different size of the skins to be treated in each instance the rollers are adjusted correspondingly by means of the hand-wheel or crank 27. The machine may also be arranged horizontally. Some or all the slanting rollers may be made displaceable axially by optional means and I have shown them all so displaceable.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. In a machine for dressing, stretching and otherwise working skins, hides, leather and the like a frame, tables for the skins movably arranged in said frame, rollers with working ribs rotatably arranged in said frame on both sides of the path of the tables and parallel to them, said rollers on both sides of said path being arranged in pairs in symmetrically slanting directions relatively to the direction of the motion of the tables, the slanting rollers of each pair forming an angle opening in the direction of said motion, and means for displacing one of each pair of rollers axially.

2. In a machine for dressing, stretching and otherwise working skins, hides, leather and the like a frame, tables for the skins movably arranged on said frame, rollers with working ribs rotatably arranged in said frame on both sides of the path of the tables and parallel to them, said rollers on both sides of said path being arranged in pairs in symmetrically slanting directions relatively to the direction of the motion of the tables, the slanting rollers of each pair forming an angle opening in the direction of said motion, the working ribs of each slantingly arranged roller running spirally from a dividing plane intermediate its ends to said ends, and means for axially displacing said slantingly arranged rollers.

3. In a machine for dressing, stretching and otherwise working skins, hides, leather and the like, a frame, tables for the skins movably arranged on said frame, rollers with working ribs rotatably arranged in said frame on both sides of the path of the tables and parallel to them, one pair of said rollers being located on each side of said table path and arranged in symmetrically slanting directions with relation to the direction of the motion of the tables, the slanting rollers of

each pair forming an angle opening in the direction of said motion, a horizontal roller on each side of said path below the adjacent pair of slanting rollers, the three rollers of each side being rotatably arranged in a common frame slidingly arranged within the chief frame of the machine, and springs for pressing said roller frames with said rollers against the passing tables.

4. In a machine for dressing, stretching and otherwise working skins, hides, leather and the like, a frame, tables for the skins movably arranged on said frame, rollers with working ribs rotatably arranged in said frame on both sides of the path of the tables and parallel to them, said rollers on both sides of said path being arranged in pairs in symmetrically slanting directions relatively to the direction of the motion of the tables, the slanting rollers of each pair forming an angle opening in the direction of said motion, the working ribs of each slantingly arranged roller running spirally from a dividing plane intermediate its ends to said ends, one of each pair of said slanting rollers being shorter than the other, and means for axially displacing the shorter of each pair of slantingly arranged rollers.

5. In a machine for dressing, stretching and otherwise working skins, hides, leather and the like, a frame, tables for the skins movably arranged in said frame, rollers with working ribs rotatably arranged in said frame on both sides of the path of the tables and parallel to them, said rollers on both sides of said path being arranged in pairs in symmetrically slanting directions relatively to the direction of the motion of the tables, the slanting rollers of each pair forming an angle opening in the direction of said motion, the working ribs of each slantingly arranged roller running spirally from a dividing plane intermediate its ends to said ends, and means for axially displacing said slantingly arranged rollers, said movable rollers being made hollow.

6. In a machine of the character described, means for moving the material to be treated, a plurality of horizontally-arranged and diagonally-arranged rollers rotatably mounted to contact with said material during its movement, and means for adjusting the position of the diagonally-arranged rollers longitudinally of their axes.

7. In a machine of the character described, means for moving the material to be treated, a plurality of diagonally-arranged rollers disposed in pairs and rotatably mounted to contact with said material during its movement, and means for adjusting the position of one of each pair of rollers longitudinally of their axes.

8. In a machine of the character described, means for moving the material to be treated, a plurality of rollers rotatably mounted to contact with said material during its movement, and means for manually adjusting the position of some of said rollers longitudinally of their axes, said means including a sprocket wheel, a crank for turning said wheel, and a chain passing over said wheel and secured to the roller adjacent one end.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ARTHUR MIRTIL MARX.

Witnesses:

JEAN GRUND,

CARL GRUND.