J. SCHMIDT.

LEATHER WORKING MACHINE.

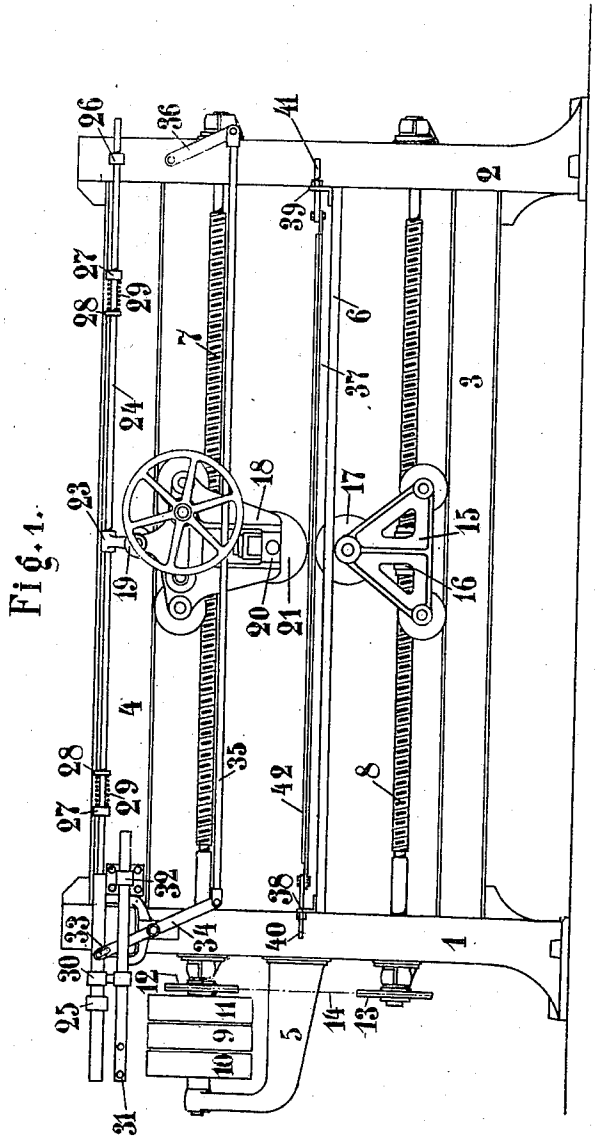
APPLICATION FILED JULY 26, 1910.

995,575.

Patented June 20, 1911.

2 SHEETS—SHEET 1.

Fig. 1.



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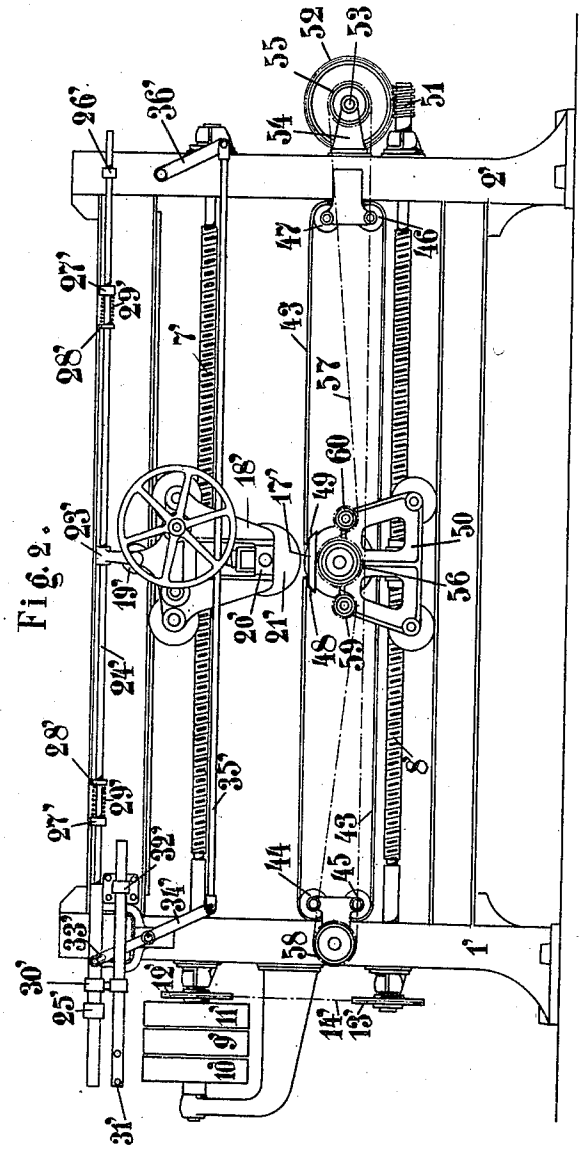

Fig. 2.

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LEATHER-WORKING MACHINE.

995,575. Specification of Letters Patent. Patented June 20, 1911.

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To all whom it may concern:

Be it known that I, JAKOB SCHMIDT, a citizen of the Empire of Germany, residing at Durlach, Grand-Dukedom of Baden, in the Empire of Germany, have invented a new and useful Leather-Working Machine, of which the following is a specification.

My invention relates to a machine for working leather, in which the pressing member and the supporting member are both rolls. The two rolls are mounted in two separate carriages, which are adapted to move together in one or the other direction within a stationary frame. The two carriages are moved by screw-spindles, which are mounted in the stationary frame to turn and are both driven from the same driving gear. The leather may be placed on a table and the upper roll is caused to roll on the leather for pressing on it during the motion of the upper carriage, while the lower roll is caused to roll on the underside of the leather for pressing during the motion of the lower carriage. The table may be a band or the like which is stretched between the two side parts of the stationary frame. Or the table may be a band, which passes from an upper point on the lower carriage near the uppermost side of the lower roll over guiding rollers at one frame side part and thence over guiding rollers at the other frame side part to another upper point on the lower carriage opposite to the first upper point. Or the table may be an endless band or belt passing between the two rolls over guiding rollers at one frame side part, then under the lower roll and over guiding rollers at the other frame side part. Means are provided for raising and lowering by hand the upper roll, so that the leather can be placed on the table. Means are provided for reversing the rotation of the two screw-spindles on the two carriages arriving at either frame side part. Where so preferred, either or both of the rolls may be positively driven.

I will now proceed to describe my invention with reference to the accompanying drawings, in which—

Figure 1 is a front elevation of the new machine with a stationary table, the two rolls being at liberty to turn, and Fig. 2 is a front elevation of a modification of the machine, in which the table is a band running over rollers and fastened with its two ends on the lower carriage, while the lower roll is positively driven.

In Fig. 1 I have shown a machine, which is adapted to work leather. The frame may consist of two side parts 1, 2, two parallel rails 3, and 4 and a bracket 5, these parts being connected together in any known manner. Two parallel table plates 6 of wood may be inserted between the two side parts 1 and 2, if so preferred. Two parallel screw-spindles 7 and 8 are mounted in the two side parts 1, 2 to turn and the upper one 7 of them carries between the side part 1 and the end of the bracket 5 three pulleys 9, 10, 11, by means of which it is possible to turn the upper screw-spindle 7 in one or the other direction or to stop it in any known manner. As the two screw-spindles 7 and 8 are connected together by means of chain wheels 12, 13 and an endless chain 14 or the like, of course the lower screw-spindle 8 is obliged to partake in the motion of the upper screw-spindle 7. A lower carriage 15 of any known construction adapted to roll on the lower rail 3 engages the lower screw-spindle 8 by means of a nut 16 or its equivalent and carries a lower roll 17. An upper carriage 18 of any known construction adapted to roll on the upper rail 4 and suspended therefrom by means of wheels 19 engages the upper screw-spindle 7. It forms two guides for the two bearings 20 of an upper roll 21 and is provided with an arm 23, which moves on a horizontal rod 24 guided in the frame at 25 and 26 and provided with two collars 27, 27, two loose disks 28, 28 and two helical springs 29, 29 inserted between them. The rod 24 is rigidly connected by an arm 30 with a belt shifter 31 guided in the frame at 32. It will be understood that on the upper carriage 18 coming near either frame side part 1 or 2, its arm 23 will strike the elastic stop 27, 28, 29 and by the parts 24 and 30 shift the belt shifter 31 for reversing the rotation of the two screw-spindles 7 and 8. The rod 24 is further shown to be pivotally connected by a two-armed lever 33, 34 with a horizontal rod 35 the right end of which is pivotally connected with a lever 36 rocking on the frame. The rod 35 is within easy reach of the operator and can be moved by hand for shifting the belt. The table is shown to consist of a belt or the like 37, which is stretched between two

angle pieces 38, 39 at the side parts 1, 2 by means of adjusting screws 40, 41 and nuts.

The rolls 17 and 21 require to be made for the work which they are to perform. For rolling, satining, hot-pressing or glazing leather they require to be smooth, while for producing shagreen or embossed leather the upper roll 21 requires to be engraved or formed with projections and recesses in any known manner. The length of the rolls 17, 21 will have to depend upon the work they are to perform. They may work the leather at once over the whole width or successively in parallel juxtaposed strips, the leather being shifted each time, that the rolls have passed over it in the longitudinal direction of the machine.

After the above explanations the manner of operating the machine is obvious. When the machine is at rest, a piece of leather 42 may be placed on the table 6, 37, after which the upper roll 21 is lowered and pressed on the leather and by moving the rod 35 the machine is started in either direction, the two carriages 15, 18 at first occupying an initial position near either frame side part 1 or 2. Then the two rolls 17, 21 which rotate in opposite directions at the same speed will roll on the leather 42 and the table 37 respectively under the adjusted pressure. It depends upon the kind of the work, whether the two carriages 15, 18 are permitted to repeatedly move in both directions or once in one direction only. It also depends upon the circumstances whether the hand-wheels 22 require to be turned in either direction several times or once only until the work on the leather 42 is finished. As the two rolls 17 and 21 are compelled to roll on the leather 42 and the table 37 under the action of the two screw-spindles 7 and 8 pushing the carriages 15, 18 from right to left or from left to right, the leather 42 adhering to the belt 37 will be prevented from shifting. The two screw-spindles 7 and 8 are given the same pitch and are driven at the same speed, so that the two carriages 15 and 18 do not displace themselves with regard to one another and as the two rolls 17 and 21 have the same diameter, they will have both the same peripheral speed.

Fig. 2 shows a modified machine, which differs from that shown at Fig. 1 chiefly in that the table consists of a band or belt 43 passing over suitable guiding rollers 44, 45 at the left frame side part 1^1 and over guiding rollers 46, 47 at the right frame side part 2^1 and fastened with its two ends at 48 and 49 on suitable projections of the lower carriage 50, the upper surface of the upper part of the band or belt 43 being on the same level as the uppermost side of the lower roll 17^1. The lower screw-spindle 8^1 is lengthened beyond the right frame side part 2^1 and carries a worm 51, which meshes with a worm wheel 52 keyed upon a shaft 53, that turns in a suitable bracket 54 at the frame side part 2^1 and carries a chain wheel 55. The shaft of the lower roll 17^1 carries a chain wheel 56, which is connected with the said chain wheel 55 by an endless chain 57 passing over a guiding wheel 58 at the left frame side part 1^1 and over two guiding wheels 59 and 60 disposed on the lower carriage 50. All the remaining parts of this machine corresponding to those of the preceding machine shown at Fig. 1 carry the same characters of reference, only that the latter are primed. From an examination of Fig. 2 it will be clear, that during the movement of the two carriages 18^1, 50 in either direction the rolls 17^1, 21^1 will rotate in opposite directions at the same speed so that the leather does not alter its position with regard to the two frame side parts 1^1, 2^1. Otherwise the operation of this modified machine may be the same as that described above with reference to Fig. 1.

The leather working machine can be varied in many respects without departing from the spirit of my invention.

I claim:

1. In a leather working machine, the combination with a frame, of two carriages guided in said frame one above the other, a roll in each of said two carriages, a table in said frame between said two rolls, means for raising and lowering the roll in the upper carriage and for pressing it on the leather placed on said table, and means for moving said two carriages together at the same speed in either direction, said two rolls being adapted to roll during the motion of said two carriages without shifting the leather.

2. In a leather working machine, the combination with a frame, of two carriages guided in said frame one above the other, a roll in each of said two carriages, a table in said frame between said two rolls, means for raising and lowering the roll in the upper carriage and for pressing it on the leather placed on said table, means for moving said two carriages together at the same speed in either direction, and means for positively driving one of said two rolls so that its peripheral speed slightly differs from the speed of said two carriages.

3. In a leather working machine, the combination with a frame, of two carriages guided in said frame one above the other, a roll in each of said two carriages, a table in said frame between said two rolls, means for raising and lowering the roll in the upper carriage and for pressing it on the leather placed on said table, means for moving said two carriages together at the same speed in either direction, and means for positively

driving said two rolls so that their peripheral speed slightly differs from the speed of said two carriages.

4. In a leather working machine, the combination with a frame, of two carriages guided in said frame one above the other, a roll in each of said two carriages, guiding rollers in said frame on opposite sides, an endless band passing between said two rolls and over said guiding rollers and beneath the lower roll, its upper part serving as a table for the leather, means for raising and lowering the roll in the upper carriage and for pressing it on the leather, means for moving said two carriages together at the same speed in either direction, and means for positively driving the lower roll so that its peripheral speed slightly differs from the speed of said two carriages.

5. In a leather working machine, the combination with a frame, of two carriages guided in said frame one above the other, a roll in each of said two carriages, guiding rollers in said frame on opposite sides, a band passing from said two rolls over the guiding rollers on one side, then beneath the lower roll and afterward over the guiding rollers on the other side to said two rolls, its two ends being fastened on the lower carriage and its upper part serving as a table for the leather, means for raising and lowering the roll in the upper carriage and for pressing it on the leather, means for moving said two carriages together at the same speed in either direction, and means for positively driving the lower roll so that its peripheral speed slightly differs from the speed of said two carriages.

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Witnesses:
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CARL SCHILBERTH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."