J. A. ADAM.

LEATHER CUTTING MACHINE.

APPLICATION FILED MAY 19, 1913.

1,101,377.

Patented June 23, 1914.

2 SHEETS—SHEET 1.

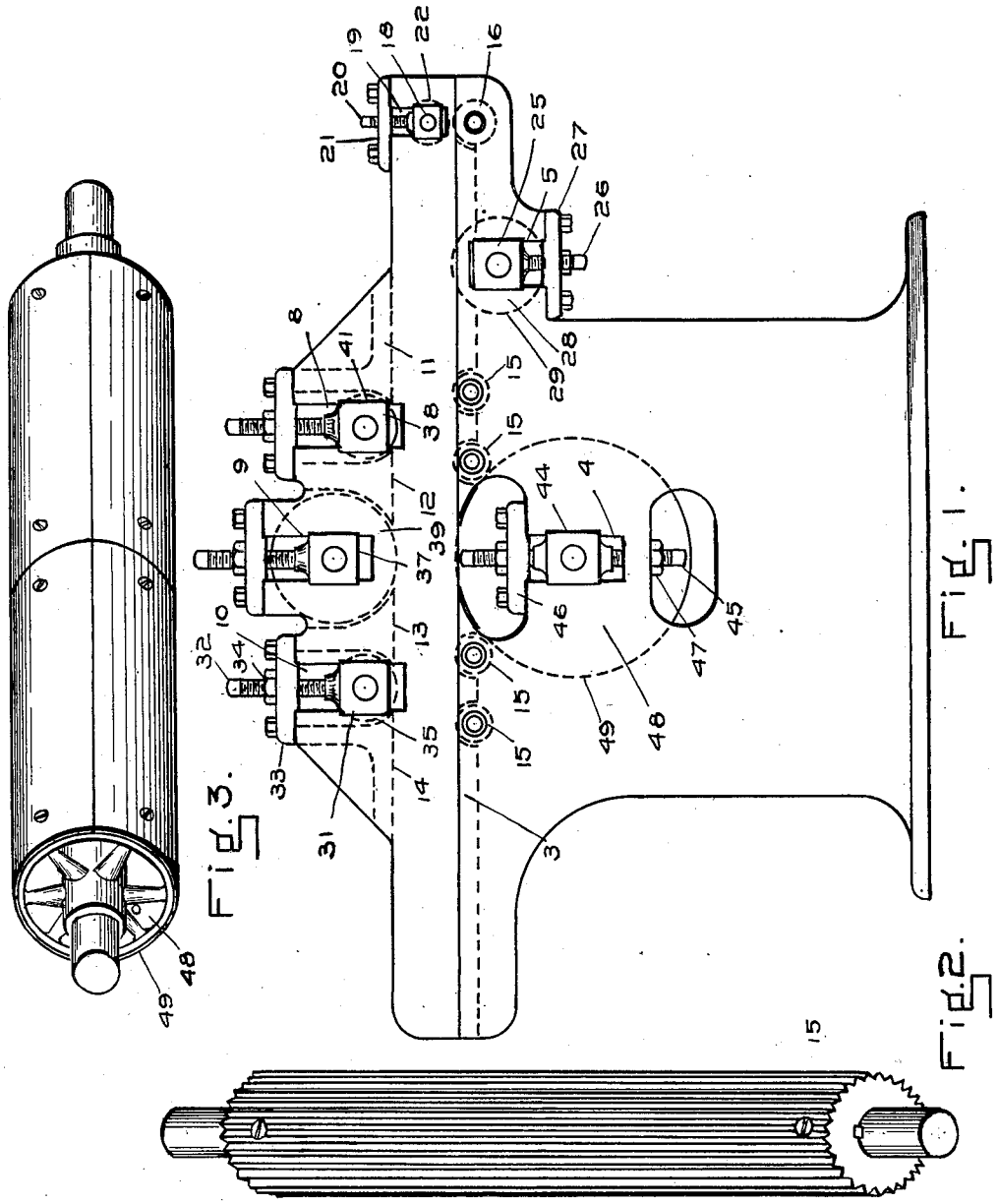


Fig. 1.

Fig. 2.

Fig. 3.

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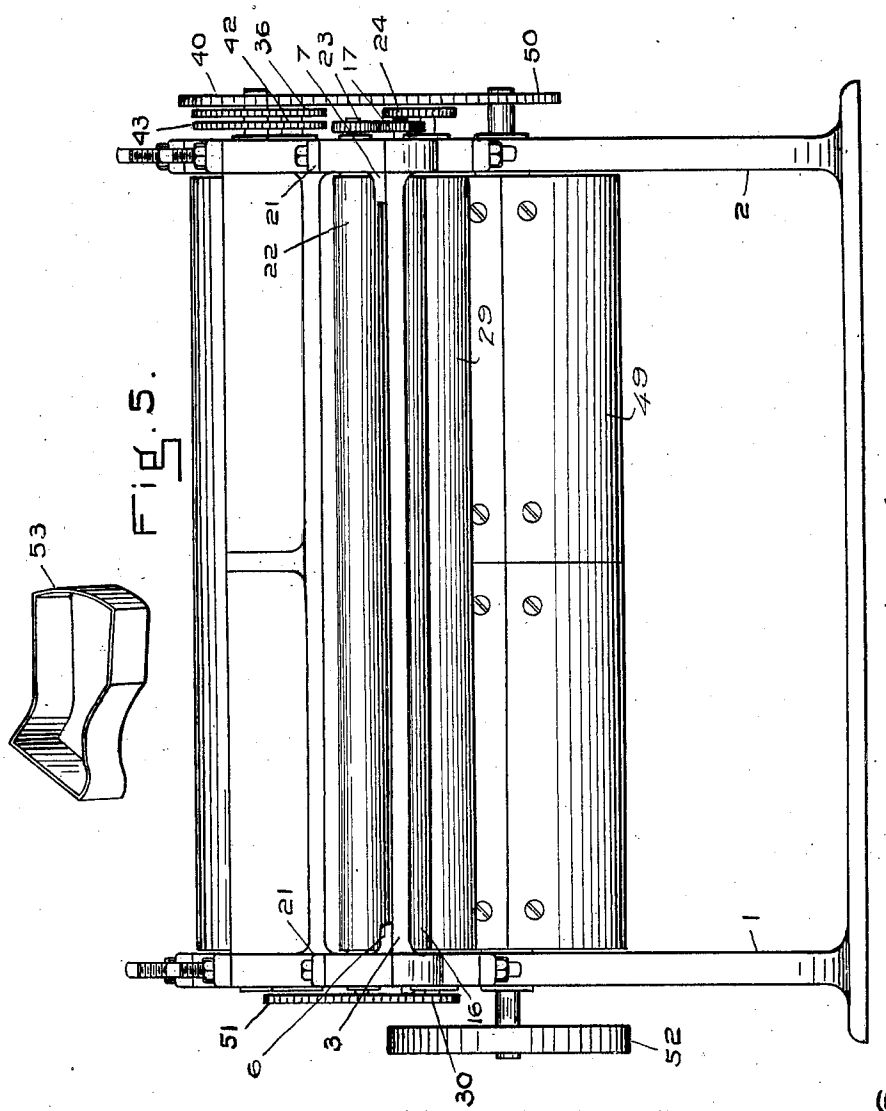


Fig. 5.

Fig. 4.

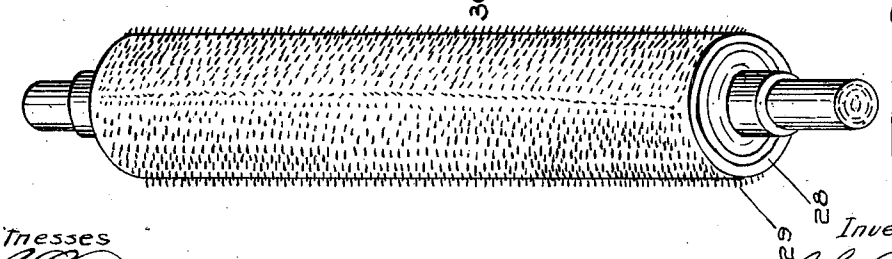


Fig. 6.

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UNITED STATES PATENT OFFICE.

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LEATHER-CUTTING MACHINE.

1,101,377. Specification of Letters Patent. Patented June 23, 1914.

Application filed May 19, 1913. Serial No. 768,495.

To all whom it may concern:

Be it known that I, JOHN ANDREW ADAM, a subject of the King of Great Britain, and resident of 543 Desjardins street, in the city and district of Montreal, Province of Quebec, in the Dominion of Canada, have invented certain new and useful Improvements in Leather-Cutting Machines; and I do hereby declare that the following is a full, clear, and exact description of the same.

The invention relates to improvements in leather cutting machines as described in the present specification and illustrated in the accompanying drawings that form part of the same.

The invention consists essentially of the novel means employed for transporting and cutting shapes out of a skin coincidently with the travel of said skin.

The objects of the invention are to facilitate the manufacture of articles in leather, to reduce the cost of such articles as boots and shoes, to insure a perfect cut in the briefest possible time, and generally to supply a machine for the said purpose of simple, cheap and durable construction.

In the drawings, Figure 1 is a side elevation of the machine showing the positions of the several rollers and the adjustable bearings. Fig. 2 is a perspective detail showing a preferable form of roller over which the impression of the die is made in the skin. Fig. 3 is an enlarged perspective detail of one of the loose transporting rollers. Fig. 4 is an end elevation of the machine. Fig. 5 is an enlarged perspective detail of a die. Fig. 6 is a perspective detail of a driven transporting roller.

Like numerals of reference indicate corresponding parts in each figure.

Referring to the drawings, 1 and 2 are the end standards of the machine supporting table 3, having central bearing slots 4 and the bearing slots 5, the latter being on the under side of the overhang of each standard at the front of the machine.

6 and 7 are the tops of the machine suitably secured to the standards 1 and 2 and having the bearing slots 8, 9 and 10 and the web extensions therebetween, joining said tops and forming the guides 11, 12, 13 and 14, said guides being parallel with the table 3.

15 are loose rollers journaled in bearings in the standards 1 and 2 and extending through corresponding longitudinal slots in the table 3 thereby facilitating the passage of the skin over said table.

16 is a feed roller journaled in the front overhang of the standards and extending upwardly through corresponding longitudinal slots in the table 3, the shaft of said rollers 16 projecting outwardly at one end and carrying thereon the gear wheel 17.

18 are bearings sliding vertically in slots 19 in the front ends of the tops 6 and 7 and having the set screws 20 extending upwardly therefrom through the caps 21, said screws being squared at the top ends for facilitating the adjustment of said bearings.

22 is a feed roller coacting with the feed roller 16 and journaled in the bearings 18, the shaft of said feed roller extending outwardly at one end and carrying the gear wheel 23, the latter coacting with the gear wheel 17.

24 is a sprocket wheel mounted on the shaft of the feed roller 16 for driving purposes.

25 are bearings vertically sliding in the slots 5 and having set screws 26 extending through the caps 27, the latter closing the end of the slots 5, said screws being squared at the outer ends to facilitate the adjustment of said bearings 25.

28 is a roller having a plurality of picks 29 projecting therefrom, said picks being in any suitable form so as to make a rough prickly surface on said roller to facilitate the transportation of the skin fed in through the feed rollers 16 and 22. Roller 28 projects upwardly through a corresponding longitudinal slot in the table 3 and is driven by the sprocket 30 mounted on the shaft of said roller.

31 are bearings sliding vertically in the slots 10, having set screws 32 projecting upwardly therefrom through the caps 33 and squared at their top ends, said bearings being locked in position by the jam nuts 34. 35 is a roller, preferably of rubber, and journaled in the bearings 31, is the shaft of said roller carrying the sprocket 36, one end thereof being suitably driven. 37 are similar bearings in the slots 9, and 38 are similar bearings in the slots 8.

39 is a roller journaled in the bearings 37, preferably formed of hard rubber, and be-

ing the main compression roller engaging the dies as they pass through and performing the cutting by pressure.

40 is a sprocket mounted on the shaft of the roller 39 and driving said roller.

41 is a roller journaled in the bearings 38, shaft of said roller 41 carrying at one end sprocket 42 joined to the sprocket 43 on the shaft of the main roller 39; and also connected outwardly to the sprocket 36 on the shaft of the roller 35, shaft of the roller 28 also being operatively connected to the sprocket 24 on the feed roller shaft 16, and this feed roller shaft operatively connected to the feed roller shaft 22 by the gears 17 and 23.

44 are bearings vertically sliding in the slots 4 having set screws 45 at one end extending through the bottoms of the slots 4 and the other end through the caps 46, both ends being locked by the jam nuts 47.

48 is a roller preferably made in sections 49 of brass facings readily removed and turned up, though this roller may be made in any suitable way. 50 is a sprocket mounted on the shaft of said roller 48 and operatively connected to the sprocket 40.

51 is a sprocket on the shaft of the roller 41 operatively connected to the sprocket 30 driving the roller 28.

52 is a driving pulley mounted on the shaft of the roller 48.

53 is a sample of die used in the operation of the machine.

In the operation of this machine, leather is fed in through said feed rollers and as it reaches the prickly roller it is further carried on. In the meantime dies have been set over its surface by an attendant accustomed to such work and the dies are carried on under the guides 14, then over the loose rollers and under the roller 35, then under the roller 39 where the pressure is made in passing over the roller 48 and the required cut made in the leather. Meantime the dies pass under the guide 13 and after cutting pass under the guide 12 and the roller 41 and under the guide 11 and out, when the dies are removed and the shapes suitably gathered.

The upper rollers are preferably of rubber though they may be of any suitable material. Same may be said as regards the loose rollers and it is a distinct advantage to have one roller of prickly material so that the work of the feed rollers is facilitated immediately the skin reaches the said prickly roller.

The construction of the brass roller has been described herein but it is not important that it should be so made, neither is the exact arrangement of rollers as set forth herein essential to the invention. Furthermore, the means of driving these rollers is only described herein in order to complete the invention, for any belt, gear or chain and sprocket mechanism may be used. Such details are left entirely to the mechanical skill of the builder, and it is only with this novel means of cutting shapes out of leather that this invention has to do, and therefore such changes may be made as come within the scope of the claims for novelty following.

What I claim is:—

1. A leather cutting machine comprising an upper pressure roller, a lower impression roller, bearings adjustably supporting said rollers, means for carrying the leather between and through said rollers, means for advancing the dies on said leather to said rollers, and means for carrying said dies onwardly beyond said rollers.

2. In a machine of the class described, in combination, a frame, adjustable bearings in the upper and lower portions of said frame, a pressure roller journaled in upper adjustable bearings, an impression roller journaled in lower adjustable bearings, feed rollers, one of said feed rollers being journaled in adjustable bearings, a receiving roller between said feed rollers and said pressure roller, a delivery roller beyond said pressure roller, said receiving roller and said delivery roller being journaled in adjustable bearings and means for driving said rollers.

3. In a machine of the class described, in combination, a frame, adjustable bearings in the upper and lower portions of said frame, a pressure roller in upper adjustable bearings, an impression roller in lower adjustable bearings, feed rollers at the front of said frame, a prickly transporting roller between said feed rollers and said pressure roller and journaled in lower adjustable bearings, loose rollers journaled in said bearings in said frame, receiving and delivery rollers coacting with said loose rollers and journaled in upper adjustable bearings, guides between said upper rollers, and means for driving said rollers.

Signed at the city of Montreal, Quebec, Canada, this first day of April, 1913.

JOHN ANDREW ADAM.

Witnesses:
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J. MCGEE.

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