

J. C. McVEAN.

LEATHER FINISHING-MACHINE.

No. 173,487.

Patented Feb. 15, 1876.

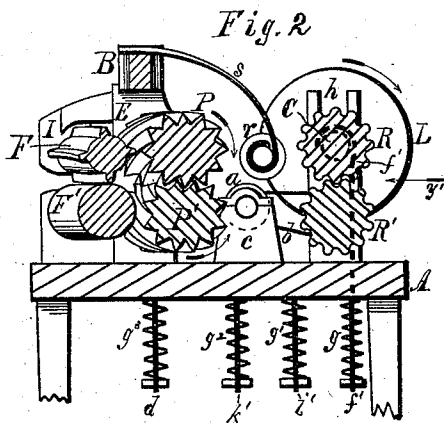
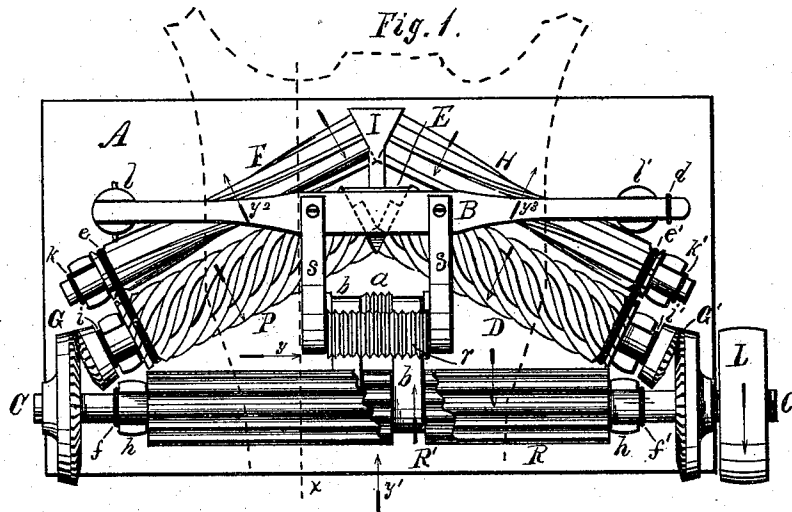


Fig. 3.

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IMPROVEMENT IN LEATHER-FINISHING MACHINES.

Specification forming part of Letters Patent No. **173,487**, dated February 15, 1876; application filed December 29, 1875.

To all whom it may concern:

Be it known that I, JOHN C. McVEAN, of Caledonia, in the county of Livingston and State of New York, have invented a new and useful Improvement in Leather-Staking Machines, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

The object of my invention is to stretch and rapidly form a nap and finish upon the surface of leather, by passing it between one or more pairs of revolving rollers, the angles formed by the same and relative speed of which being so arranged, and their surfaces grooved or corrugated in such a manner, as to act upon the leather with the desired effect. The machine is intended more particularly to operate upon tanned skins of the sheep, goat, dog, &c., used in the manufacture of gloves, mittens, &c.

In the drawings, Figure 1 is a plan view of my invention, the dotted outline representing a hide passing through the same. Fig. 2 shows a vertical section of the same upon the dotted line *x* in Fig. 1, viewed in the direction of the arrow *y*. Fig. 3 shows a modification of the manner of hanging the various rollers.

R and R' are a pair of feed-rollers, having their axes parallel and in a vertical plane, with their surfaces grooved longitudinally and rolling together similar to cog-wheels. P and P' are a pair of parallel "napping" rollers placed one over the other, Fig. 2, having their surfaces cut into spiral grooves winding in opposite directions. D, Fig. 1, is the upper roller of a similar pair. The rollers P and D, with their mates under them, are set so as to form an angle with the rollers R and R', and with each other. The said rollers P and D are driven from the shaft C by means of the gearing shown at G and G', the three rollers P, D, and R revolving in the same direction, and each turning its mate in a direction opposite. F and F' are a pair of finishing-rollers, the latter having a plain cylindrical surface while the former is provided with several longitudinal ribs made slightly spiraling. H, is the top roller of a similar pair, and the said rollers F and H are driven by the belts *e* and *e'*, respectively, running from P and D. The roller F', and the corresponding one under H,

are revolved by the friction of the leather passing over them. B is a horizontal bar, supported in standards *l* and *l'*, at some distance above the oblique rollers, from which extend the spring-hangers *s s*, supporting the journals of the transversely-grooved roller *r*. The similarly-grooved roller *a* rests nearly under the said roller *r* in the standard *c*, and is revolved by the carrier-belts *b* running from the roller R'. The spring-hangers *s* are intended to press the roller *r* firmly down upon the leather as it passes through. The sharp edges left by the grooves cut in the surfaces of the said rollers *r* and *a* guide the leather through centrally, and prevent it being drawn to one side by the action of the outwardly-inclined rollers P and D, and their mates. The shaft C rests between the forks of the bifurcated standards *h*; and *f* and *f'* are rods hooked or bent over the said shaft, passing down through the bench or table A, the lower projecting ends of which each enters a nut, between which and the under surface of the bench are confined springs *g*. This allows the roller R to have a slight vertical movement and to rise against the action of the springs *g*, as a "side" of leather is fed in between the rollers R and R'. The ends of the rollers P, D, F, and H, nearest the gears G and G', are similarly hung in bifurcated standards and held down by the rods *i*, *i'*, *k*, and *k'*, respectively, which allows said ends to rise and fall as the leather crowds through. The other ends of the rollers P, D, F, and H are journaled in the triangular blocks E and I, respectively, both of which blocks are fastened rigidly to the bar B. The said bar B is pivoted at one end in the standard *l*, the other end of which moves up or down between the forks of the bifurcated standard *l'*, and is held down by the rod *d* and spring *g*³. From the foregoing it will be understood that the top roller of each of the several pairs is held down upon the upper surface of the leather, when the same is passing through, by spring action, in addition to its own weight. The sides of leather, first made damp, are fed in between the feed-rollers R and R', in the direction indicated by the arrow *y*¹; and the rollers P and D, with their mates, being set at an angle, tend to draw the leather in the directions indicated by the arrows *y*² and *y*³,

respectively. This results in stretching the leather laterally; and as the said rollers P and D revolve more rapidly than the feed-rollers, the leather is stretched longitudinally or in the direction indicated by the arrow y^1 . Again, the leather being held firmly between the feed-rollers R and R', and only moving forward as they move, the sharp edges of the more rapidly revolving napping-rollers P and D scrape or abrade the upper surface of the leather, raising the fiber into a nap. The nap, when raised, is laid and finished by the strokes of the spiral ribs of the yet more rapidly revolving finishing-rollers F and H. It is intended to form the nap on the hair side of the leather, which side must be uppermost while passing through the machine.

I design to have other pairs of rollers with coarser or finer grooves cut in their surface, and of different twist and diameter to substitute for the napping and finishing rollers above described, for doing varieties of work, and to operate upon skins differing in texture and hardness; also, to use rollers in place of the one shown at P', and the corresponding one under D, having the threads or ribs upon their surface well rounded and smooth on their edge, for the purpose of pressing and compacting the fibers on the under surface of the leather, while the sharp-edged rollers P

and D form a nap on the upper surface of the same.

It may be desirable to cushion the bottom roller of each pair upon a spring or other yielding substance, similar to the manner shown at Fig. 3, instead of the upper rollers, as above described.

I claim as my invention—

1. The combination, in a leather-staking machine, substantially as described, of grooved napping rollers, with rollers for feeding the leather.

2. In combination with feed-rollers in a leather-staking machine, napping-rollers set to form an angle with said feed-rollers, substantially as described.

3. In a leather-staking machine, in combination with napping-rollers, finishing-rollers to lay and finish the nap formed upon the surface of the leather, substantially as described.

4. Spring-hangers $s s$, in combination with bar B, and guide-roller r , in a leather staking machine, substantially as described.

5. In a leather-staking machine, guiding-rollers r and a , in combination with feed-rollers, substantially as described.

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Witnesses:

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