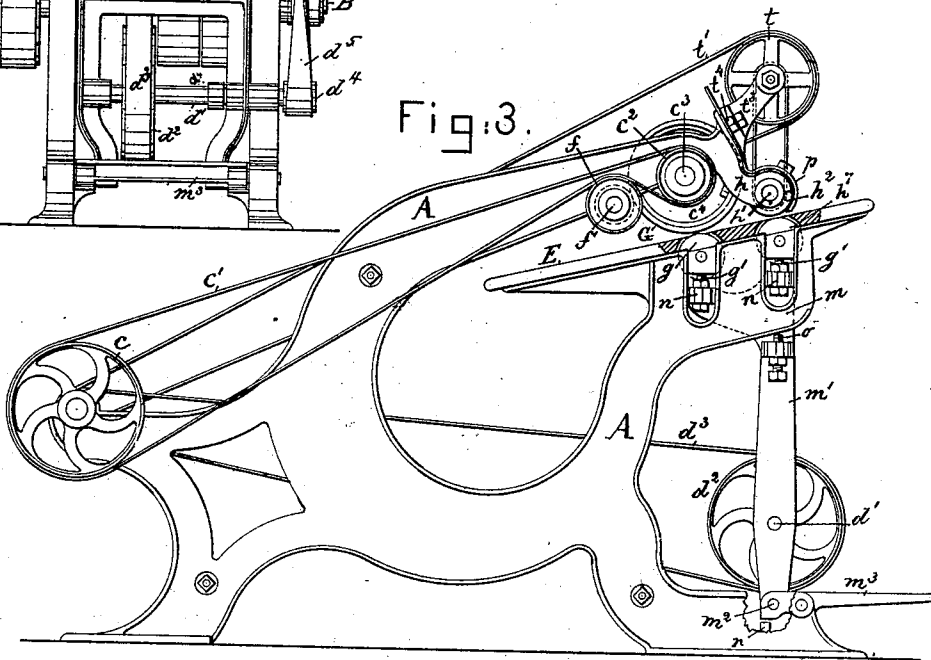
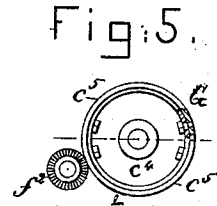
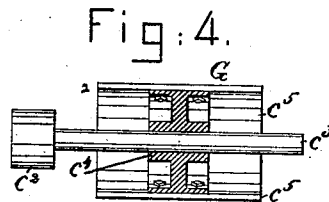
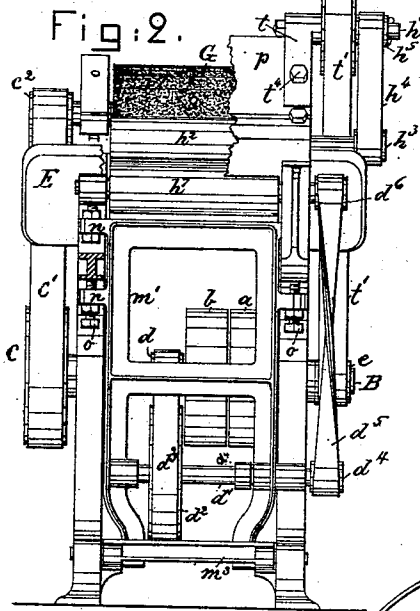
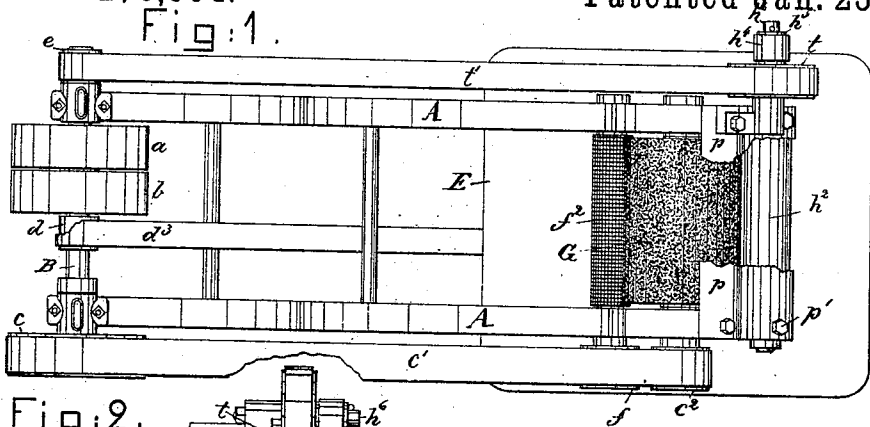


(No Model.)

J. D. McDONALD.
MACHINE FOR TREATING LEATHER.

No. 270,964.

Patented Jan. 23, 1883.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN D. McDONALD, OF WOBURN, MASSACHUSETTS.

MACHINE FOR TREATING LEATHER.

SPECIFICATION forming part of Letters Patent No. 270,964, dated January 23, 1883.

Application filed November 25, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. McDONALD, of Woburn, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Machines for Treating Leather, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In the manufacture of leather, especially such as has been split, it is necessary to level the same or bring it to uniform thickness. This has been done by means of a common knife or shave operated by hand, and after the leather has been stuffed and stretched or smoothed out. This hand operation of shaving is slow and expensive, and to cheapen and simplify this step in the manufacture of leather I have devised a machine containing in its organization a grinding-roller, or a roller having a roughened or file-like surface, and a bed or support for the leather, and a roller-surface or bed-roller thereon under the grinding-roller. This invention is also provided with a pair of detaining or retarding rollers, and the lowermost one of the pair of said rollers is arranged to be moved vertically by means of a treadle or otherwise, so as to depress the said roller with relation to the upper roller of the pair of detaining-rollers and release the leather or side between the two, to permit the side to be moved freely by hand over the bed or support for the leather or side.

Figure 1 represents in plan view a machine embodying my invention; Fig. 2, a front end view thereof; Fig. 3, a side elevation, partially in section; Fig. 4, a longitudinal section of the grinding-roller; Fig. 5, a detail to be referred to.

The frame-work A, of suitable shape to sustain the working parts, has a main shaft, B, provided with usual fast and loose pulleys, *a* *b*, and also with belt-pulleys *c* *d* *e*. The pulley *c* receives a belt, *c'*, which is passed about the pulley *c*² on the shaft *c*³ of the grinding-roller G, supported in suitable bearings on the frame-work A. This grinding-roller is herein shown as composed of a hub, *c*³, having bolted to it cylinder-segments *c*⁵, as best shown in Fig. 5. This grinding-roller is provided at its periphery with a grinding or abrasive surface,

(shown by the heavy line 2, Figs. 4 and 5,) composed of sand or emery cloth or paper suitably attached thereto, or of emery or sand applied directly to the surface of the roller with some suitable cementitious material, or the surface of the roller, made of steel plate, may be cut to present teeth such as made upon steel files. This grinding-roller, rotated very rapidly, acts upon the split face of the side of the leather as it is moved over the support or bed E and reduces the side of leather to uniform thickness, and at the same time gives it a better flesh face. The belt *c'*, in its travel, runs over the pulley *f* at the outer end of the shaft *f'*, carrying the brush *f*², which acts against and cleans the grinding-roller. This brush *f*² may, if desired, be of sufficient diameter to touch both the grinding-roller and the surface of the side of leather being acted upon by the grinding-roller.

The support or table E is slotted immediately below the grinding-roller to receive the supporting-roller *g*, adjustably held in bearings supported upon a frame or yoke, *m*, pivoted at *m*² on the treadle *m*³. This yoke *m* also carries in adjustable bearings the under roller, *h*⁷, of the pair of detaining-rollers *h*² *h*⁷, which act to hold or detain the leather so that it will not be moved by the grinding-roller, and at the same speed, especially when the roller *g* presses the leather upward from the table E against the under side of the grinding-roller. The bearings of the rollers *g* and *h*⁷ are made adjustable by suitable screws, *g'*, so that their peripheries may be projected a little above the surface of the table, which is preferably inclined, or be withdrawn below the said table. The supporting or bed roller *g* forms an anti-friction surface for the under side of the side of leather directly opposite that part of it which is acted upon by the grinding-roller. At the front end of the frame-work, in suitable ears, *h*, I have mounted a shaft, *h*¹, on which I have placed the detaining-roller *h*². This shaft *h*¹ has upon it a pulley, *h*³, which receives a belt, *h*⁴, extended about a pulley, *h*⁵, on the stud *h*⁶. The pulley *h*⁵ has fast to it a larger pulley, *t*, driven by band *t'* on pulley *e*. The stud *h*⁶ is held by a bracket, *t*², attached to the frame-work by a suitable screw, *t*¹.

The ears *n* of the yoke or frame *m*, into which

are inserted the screws g' , are extended through slots in the frame A, the slots serving as guides to direct the yoke or frame m in its movements by the treadle m^3 . When the operator has his foot upon the treadle the frame m will be elevated, and the rollers g and h^1 , and especially the latter will be pressed upward through the slot made in the table E opposite it, and cause the leather between the said roller and the roller h^2 to be pinched or held so tightly that the said rollers, rotated at such time by suitable belts, will act to retard or check the movements of the leather being acted upon and drawn over the bed or table by the grinding-roller, and thus cause the side of leather to be fed under the grinding-roller and over the said table at the desired speed. When the operator removes his foot from the treadle m^3 the rollers h^1 and g fall sufficiently to so release the side of leather from pressure between them and the grinding-roller and roller h^2 that the leather may be freely moved by the operator over the table by hand. As the roller g descends the grinding-roller does not have sufficient action upon the leather to draw it over the table. The yoke m carries a shaft, d' , having a pulley, d^2 , which receives the belt d^3 , extended over the pulley d , before referred to. This shaft d' has a second pulley, d^4 , that drives a cross-belt, d^5 , extended over a pulley, d^6 , on the shaft of the lower roller, h^1 , referred to.

The extent of movement of rollers g and h^1 above the table E by the treadle is regulated by the adjusting device o , shown as a screw, it being turned or adjusted to arrest the upward movement of the yoke m and rollers g and h^1 , according to the thickness of the material being operated upon. The roller g is made independently adjustable in its bearings to regulate its operative distance from the face of the grinding-roller, according to the thickness desired for the finished leather. The shield p , preferably of sheet-metal, and attached to the frame-work by the screws p' , is extended over and across the grinding-roller and roller h^2 at the front of the machine, to prevent dust and dirt from being thrown in that direction. The downward movement of the yoke or frame m will in practice be accelerated by a suitable spring, (not shown,) and the yoke will be checked in its downward movement by a stop, r . The surface speed of the grinding-roller will be

enough faster than that of the detaining-rollers to enable the former to properly level the leather held by the rollers h^2 h^1 . 55

I denominate the rollers h^2 and h^1 "detaining" or "retarding" rollers, as they regulate the speed at which the leather shall pass the grinding-roller, and in practice it will be understood that the said rollers regulate the speed of movement of the leather by reason of that friction thereon which retards or holds the same. 60

I do not claim a roller and bed to support the leather or material on one side and a brush to brush the opposite side of the material, as I am aware that such a combination of elements is old. 65

I claim— 70

1. In a machine for treating leather, the bed or support E and its bed-roller g , combined with the grinding-roller to operate upon and reduce to even thickness a side of leather passed between them, substantially as described. 75

2. A bed or support for the leather and a grinding-roller to act upon one face of a side of leather passed between them to reduce it to uniform thickness, combined with detaining-rollers to hold or retain the leather as it is acted upon by the grinding-roller, substantially as described. 80

3. The rotating grinding-roller and support for the leather and the two retarding-rollers, combined with a movable frame carrying one of the said retarding-rollers, whereby it may be made to bear the leather closely against the other roller opposed to it, to regulate the movement of the leather, or be drawn from the said roller to release the leather and permit it to be moved by hand, substantially as described. 85

4. The rotating grinding-roller and brush to clean its surface, and a support for the leather as it is being reduced to uniform thickness, combined with retarding-rollers, or mechanism to retard the leather, substantially as described. 95

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 100

JOHN D. McDONALD.

Witnesses:

G. W. GREGORY,
B. J. NOYES.