

(No Model.)

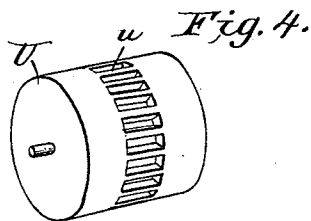
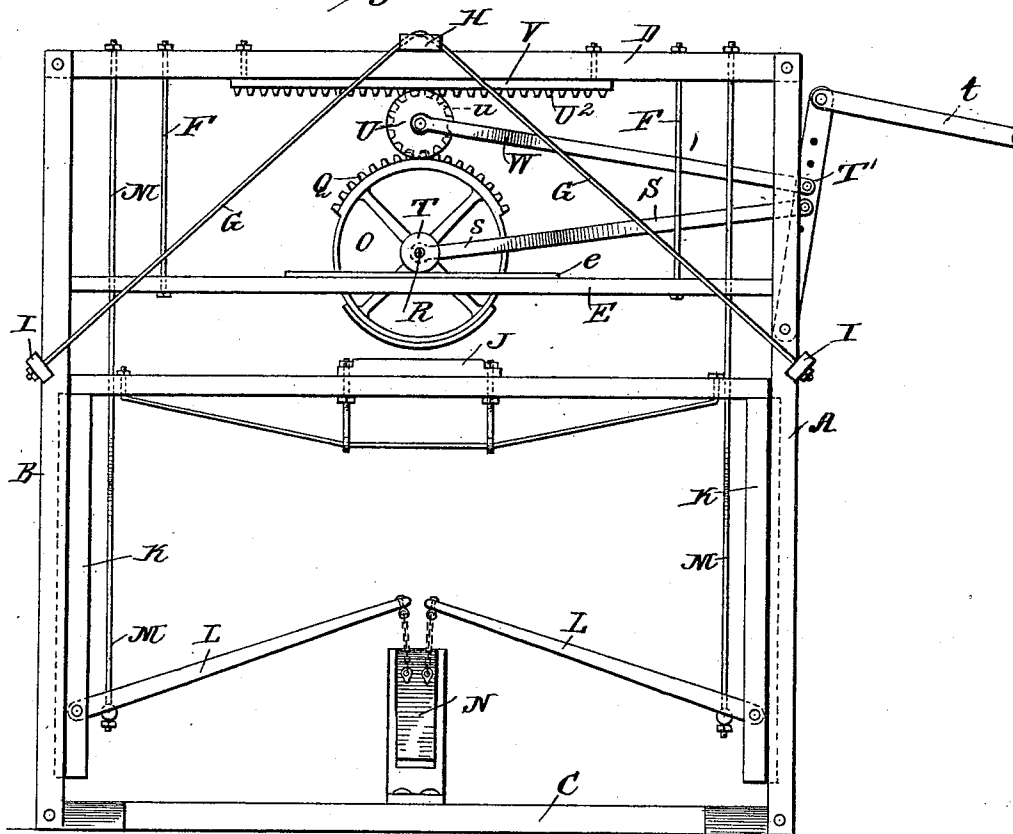
2 Sheets—Sheet 1.

E. C. NORTROP.
LEATHER FINISHING MACHINE.

No. 466,182.

Patented Dec. 29, 1891.

Fig. 1.



WITNESSES:

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O. B. Turpin,

INVENTOR:

E. C. Northrop.

BY

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

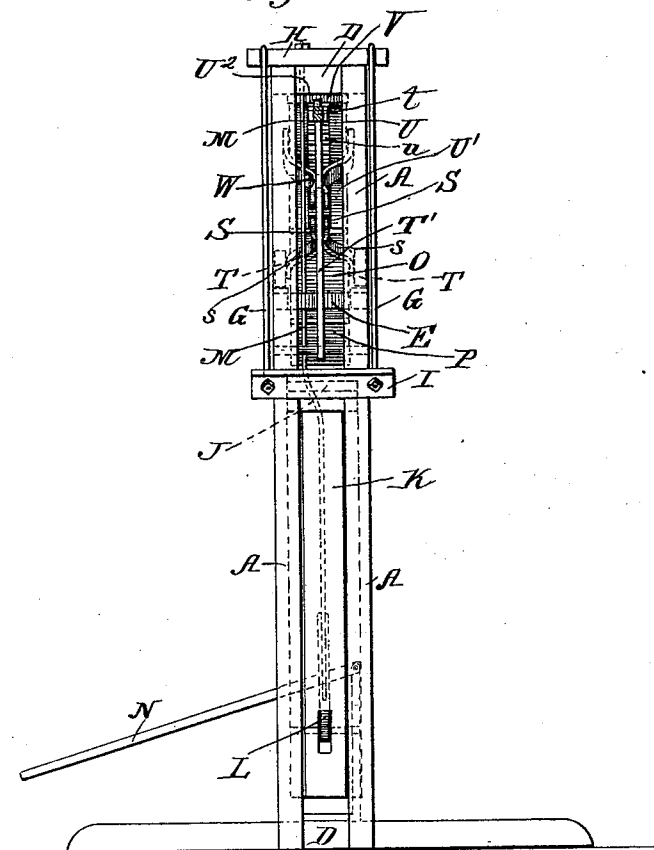
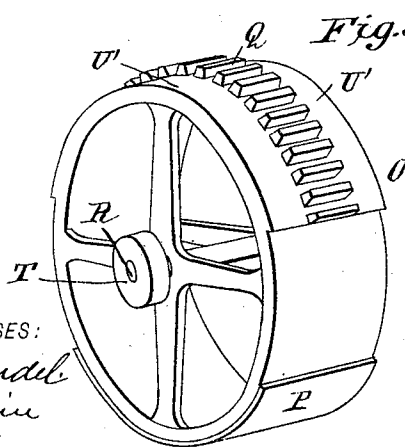


Fig. 3.



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UNITED STATES PATENT OFFICE.

ELIHU C. NORTHPROP, OF BODINES, ASSIGNOR OF ONE-HALF TO JOHN A. INNIS, OF CANTON, PENNSYLVANIA.

LEATHER-FINISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 466,182, dated December 29, 1891.

Application filed May 19, 1891. Serial No. 393,350. (No model.)

To all whom it may concern:

Be it known that I, ELIHU C. NORTHPROP, of Bodines, Lycoming county, State of Pennsylvania, have invented a new and useful Improvement in Leather-Finishing Machines, of which the following is a specification.

My invention is an improved leather rolling or finishing machine; and it consists in certain novel constructions and combinations of parts, as will be described, seeking, among other improvements, to provide a novel construction of the rolling-wheel and of the means for supporting and operating the same, as will be hereinafter described.

In the drawings, Figure 1 is a side and Fig. 2 an edge elevation of my machine. Fig. 3 is a detail view of the rolling-wheel, and Fig. 4 is a detail view of the pinion-wheel.

The main frame of the machine may be suitably formed to support the several operating parts, and comprises, in the construction shown, the uprights A A and B B, the sill C, and top beam D. The rail-beams E are braced by hanger-rods F from the top beam D, and are preferably provided with metal rails or plates *e* to form bearings for the rollers of the wheel-shaft presently described.

In order to give strength and rigidity to the main frame, it is firmly trussed by truss-rods G, extending from the truss-block H at the center of the top beam to the truss-blocks I alongside the uprights, and secured by nuts, so that the truss-rods may be tightened from time to time, as required.

The bed J has its frame supported to slide vertically in the main frame, and is provided with upright or leg portions K, which extend nearly to the lower end of the main frame. These leg portions K are engaged by the outer ends of the levers L, which are fulcrumed to the lower ends of rods M, which are supported from the top beam and secured by nuts, so that the pivots of the levers may be adjusted as desired. At their inner ends the levers L are connected to the treadle N, by depressing which the bed-frame will be forcibly elevated, this operation pressing the bed firmly against the rolling-wheel presently described.

The rolling-wheel O is arranged above the bed and is of a special construction, as shown

most clearly in Fig. 3. On one portion of its circumference the wheel is formed or provided with a contact-surface P, which is preferably of brass and may be a brass plate riveted, bolted, or otherwise secured to the surface of the wheel. Diametrically opposite the contact-surface P the rolling-wheel is provided with a toothed segment Q, which may be formed with or secured on the surface of the wheel, as desired. The axle or shaft R of the wheel extends beyond its ends and receives the arms or tines *s* of the forked pitman S. The said shaft also supports the freely-turning rollers T, which run upon the rail-beams before described and properly support the wheel during operation when it is not pressing against the leather on the bed. The pitman S connects with a lever T', which in turn is pivoted to the frame and may be worked to move the rolling-wheel back and forth over the bed. Manifestly this lever T' may be worked by hand or by connecting it by a pitman *t* with the crank of a motor or by other suitable operating mechanism, as desired. A pinion-wheel U, having gear or cog teeth *u*, is arranged above the rolling-wheel and adapted to mesh the teeth Q and also to mesh the teeth of a toothed plate or rack V, secured to the framing, preferably to the under side of the top beam, as shown. This pinion U braces the rolling-wheel firmly against upward pressure and serves also to insure the rolling of the said wheel as it is moved over the bed. In addition to its gear-teeth the pinion U is preferably provided on opposite sides thereof with smooth surfaces to bear upon similar surfaces U' on the rolling-wheel and surfaces U² on the toothed plate V, such smooth bearing-surfaces operating to relieve the gear-teeth of both wheel and pinion of the upward pressure exerted against the rolling-wheel. This pinion may be held between the wheel and plate V simply by the meshing of its teeth with those of said wheel and plate and operate in such use to insure the turning of the rolling-wheel as the latter is moved over the bed; but it is preferred to provide mechanism for bodily moving such pinion, so that it may be caused to revolve the rolling-wheel at a speed faster than that at which the said wheel may be turned by the bearing of its

surface against the leather on the bed. The effect of such operation is to produce a slipping or sliding of the wheel on the leather, resulting in a burnishing and finishing thereof, as will be readily understood. In so moving the pinion it is preferred to connect it by the extended ends of its shaft with the forked end of a pitman W, the opposite end of which is connected with the lever T', so that as such lever is operated to move the rolling-wheel forward and back it will also move the pinion, and such pinion by meshing with the teeth of plate V will be turned and will operate to turn the rolling-wheel faster than such wheel will turn by the contact of its surface with the leather, this resulting from the difference in diameter of the pinion and wheel. Manifestly the connection of the pitman W with the lever T' may be adjusted to vary the extent of slipping or sliding of the rolling-wheel, as may be desired.

It is manifest that I do not desire to be limited in the broad features of my invention to the particular mechanism shown for moving the wheel and pinion, as they may be moved in various ways without departing from some of the broad principles of my invention. Manifestly, instead of providing two contact-surfaces, one on each side of the gear-teeth, said gear-teeth may be arranged in pairs, with single contact-surfaces between them, without departing from my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The improved leather-rolling machine herein described, comprising the bed, the rolling-wheel having a toothed segment, the rack arranged on the opposite side of said wheel from the bed, and the pinion meshing the said segment and rack, whereby the roller may be positively turned in the direction it would be turned by its bearing upon the bed, all substantially as and for the purposes set forth.

2. In a leather-rolling machine, substantially as described, the combination of the bed, the rack, the rolling-wheel having a toothed segment, mechanism for moving said wheel bodily, the pinion meshing the said rack and segment, and operating devices by which to bodily move such pinion, substantially as set forth.

3. The combination, in a leather-rolling machine, of the bed, the rolling-wheel having a

toothed segment, the rack V, the pinion meshing said segment and rack, the lever T', and pitmen connecting said lever T' with the rolling-wheel and pinion, substantially as set forth.

4. In a leather-rolling machine, the combination of the bed, the rolling-wheel having a toothed segment and a bearing-surface adjacent to the same, the rack and a bearing-surface adjacent thereto, and the pinion interposed between the rack and rolling-wheel and having teeth to mesh those of the segment and rack, and also having a bearing-surface to contact those of the rolling-wheel and rack, whereby the pinion and rack may receive the pressure of the rolling-wheel and the teeth of said wheel, pinion, and rack will be relieved of such pressure, substantially as and for the purposes set forth.

5. In a leather-rolling machine, the combination of the bed, the rolling-wheel provided with a toothed segment and having its shaft provided with rollers, guide-rails on which said rollers move, mechanism by which to move said wheel bodily, the rack, and the pinion interposed between and meshing with the rack and the segment of the rolling-wheel, all substantially as and for the purposes set forth.

6. In a leather-rolling machine, the combination of the rack V, the rail-beams, the bed, the rolling-wheel having a toothed segment and provided with a shaft, the rollers on said shaft arranged to move on the rail-beams, the pinion arranged between and meshing with the rack V and the toothed segment of the wheel, the lever T', and the pitmen connecting the said lever T' with the pinion and the rolling-wheel, all substantially as and for the purposes set forth.

7. In a leather-rolling machine, the combination of the bed, the roller arranged to bear against said bed and provided between its ends with a toothed segment, the rack arranged on the opposite side of said wheel from the segment, and the pinion interposed between and meshing the said rack and segment, all substantially as and for the purposes set forth.

ELIHU C. NORTHROP.

Witnesses:

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SOLON C. KEMON.