

No. 645,556.

Patented Mar. 20, 1900.

W. H. DOWNS.
MACHINE FOR POLISHING LEATHER.

(Application filed Apr. 15, 1899.)

(No Model.)

2 Sheets—Sheet 1

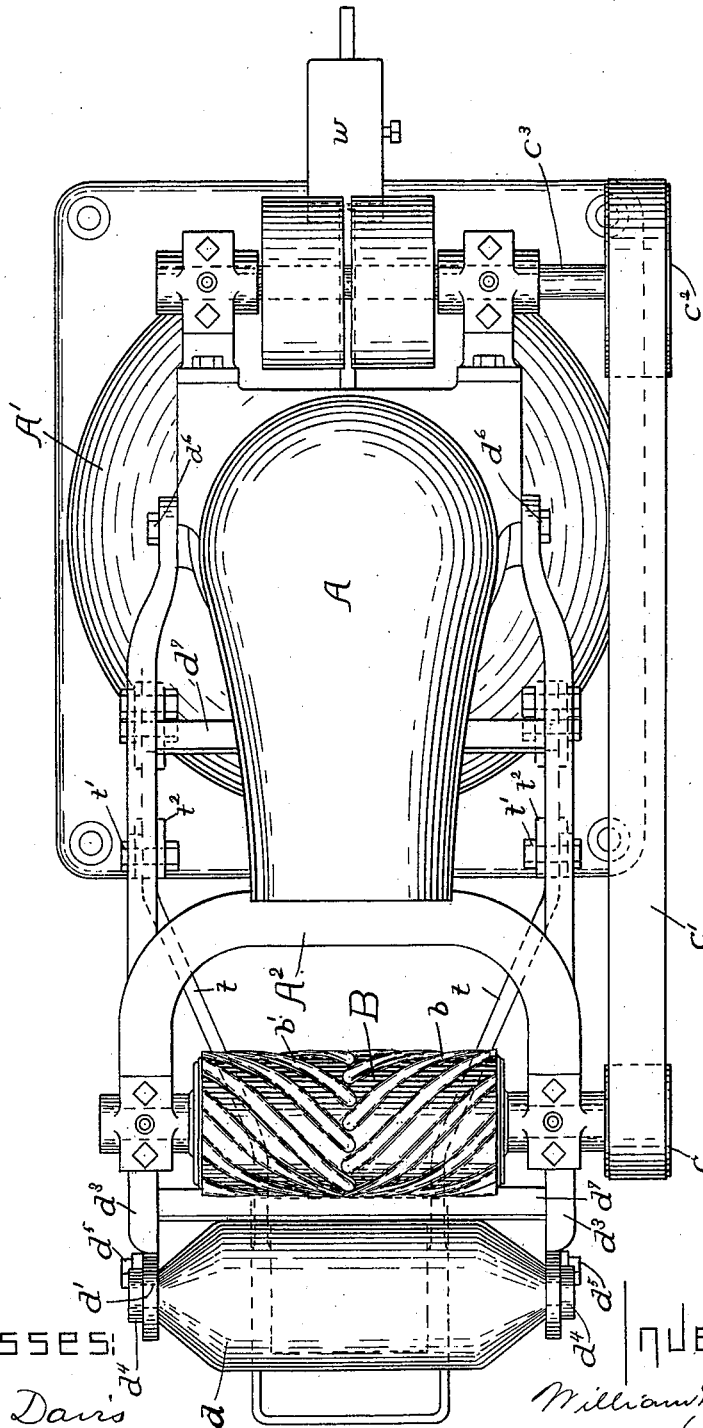


Fig. 1-

Witnesses:

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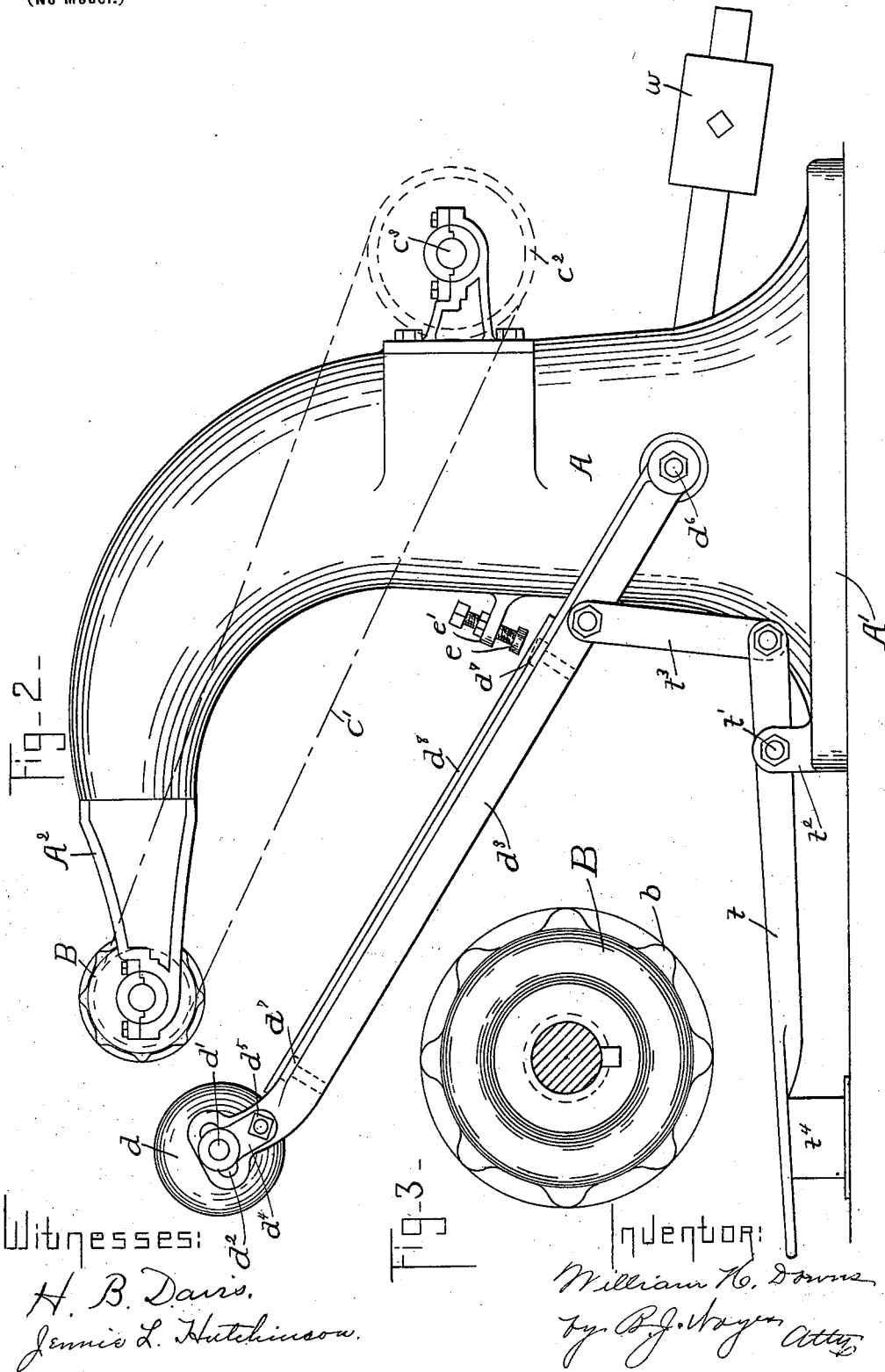
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(Application filed Apr. 15, 1899.)

(No Model.)

2 Sheets—Sheet 2.



UNITED STATES PATENT OFFICE.

WILLIAM H. DOWNS, OF SALEM, MASSACHUSETTS, ASSIGNOR TO EDWARD H. BROWN, OF SAME PLACE.

MACHINE FOR POLISHING LEATHER.

SPECIFICATION forming part of Letters Patent No. 645,556, dated March 20, 1900.

Application filed April 15, 1899. Serial No. 713,163. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DOWNS, of Salem, county of Essex, and State of Massachusetts, have invented an Improvement in Machines for Polishing Hides or Skins, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention has for its object to improve the construction of polishing-machines for hides or skins, whereby the quality of the work done may be improved and the capacity of the machine materially increased.

15 Heretofore, so far as I am aware, polishing-machines for polishing hides or skins have comprised, essentially, a glass block (sometimes made cylindrical) having a plane polishing-surface, said block being secured to the 20 extremity of a swinging arm, and while held in fixed position it is adapted to act upon the hide or skin, which is laid upon a table and manipulated by the operator. Such polishing-blocks have usually been made very short; 25 but even when the hide or skin is manipulated by a skilled workman plaits are frequently formed, particularly adjacent the shanks.

In accordance with this invention a polishing-roll is provided, as contrasted with a fixed 30 block, which is made quite long, and said roll is journaled in a stationary frame, and means are provided for positively rotating said polishing-roll, and said roll is composed of a cylinder having arranged on it two adjacent sets 35 of helically-arranged "polishing-ribs," extended in opposite directions. A bed-roll is provided upon which the hide or skin to be polished is placed, and said bed-roll is journaled to a swinging arm and is freely revolvable in its bearings. The bed-roll cooperates 40 with the polishing-roll when brought into proper position relative thereto, and the hide or skin placed thereon is held and manipulated by the operator.

45 Figure 1 shows in plan view a polishing-machine embodying this invention for polishing hides or skins; Fig. 2, a side elevation of the polishing-machine shown in Fig. 1; and Fig. 3, a cross-section of the polishing-roll, 50 showing particularly the shape of the polishing-ribs thereon.

The main framework consists, essentially, of an upright column A, rising from a base A' and turned at an angle at its upper end, as represented in Fig. 2, and at the extremity 55 of the bent portion of said column a yoke or frame A² is secured by bolts or otherwise.

The polishing-roll B is provided at its ends with journals which rest in journal-bearings of any usual or suitable kind, which are provided at the extremities of the arms of the 60 yoke or frame A².

The polishing-roll B is made of glass, (or it may be a metallic frame having thereon a glass shell, as usual in the manufacture of 65 glass rolls,) and said glass roll is composed of a cylinder having formed thereon two adjacent sets of helically-arranged polishing-ribs *b b'*, extended in an opposite direction from a point or points at or near the middle of the 70 cylinder. These polishing-ribs are formed with rounded edges, as represented in Fig. 3, so as to present smooth polishing-surfaces. The ribs on the cylinder being thus made of glass and formed with smooth rounded edges 75 especially adapted for polishing hides or skins are herein termed "polishing-ribs," and so far as I am aware no polishing-roll has ever been made having two adjacent sets of polishing-ribs arranged helically on a cylinder and 80 extended in opposite directions.

By arranging the polishing-ribs helically the hides or skins will be spread and stretched more or less and all the wrinkles incident to the natural fullness of the hides or skins will 85 be laid flat as the hide or skin is acted upon.

A belt-pulley *c* is secured to one of the journals of the polishing-roll, over which passes a belt *c'*, which passes over a belt-pulley *c''*, secured to a main driving-shaft *c'''*, having its 90 bearings in the frame, said main driving-shaft having on it the usual fast and loose pulleys.

A bed-roll *d* is provided, which consists of a cylinder having its ends reduced in diameter 95 in the form of a cone and having journals *d'* at its ends, and said journals *d'* pass through elongated slots *d² d²*, formed or provided in the upper ends of arms *d³ d³*, and have their bearings in short arms *d⁴ d⁴*, which are 100 justably secured to said arms *d³ d³* by bolts *d⁵ d⁵*, the elongated slots *d²* permitting the bed-

roll to be adjusted in the arc of a circle on the bolts d^5 as an axis, and consequently toward and from the polishing-roll. The arms $d^3 d^3$, bearing the bed-roll, form the essential parts or members of a swinging frame, which is pivoted at its lower end at d^6 to the column A, near the base, and said arms are joined together at several points by cross-bars d^7 .

On the swinging frame and supported by it is a table d^8 , which is adapted to receive and support any portion of the hide or skin which may be placed thereon. The swinging frame is operated by a treadle composed of two arms t , pivoted at t' to stands t^2 and having their rear ends loosely connected by links t^3 with the arms of the swinging frame, the parts being arranged so that a toggle is formed between the pivot of the treadle and the connection of the link t^3 with the frame. The treadle has its foot-piece formed with an opening which receives the stand t^4 . The downward movement of the swinging frame is limited by the rear ends of the treadle and links striking upon the column A near the base, and the upward movement of said frame is limited by the adjustable stop e , held in an ear e' , projecting from the column. A counterbalanced weight w is attached to the swinging frame. The hide or skin to be polished is laid over the bed-roll, and the swinging frame is then raised to bring the hide or skin into engagement with the polishing-roll. The polishing-roll is rotated at a high speed, and the bed-roll is freely revoluble in its bearings; but the hide or skin will be held taut by the operator, so as to be fed forward only as fast as it may be desired.

It will be seen that by adjusting the bed-roll as shown its relative angle to the polishing-roll may be slightly changed in order that the helical polishing-ribs may act upon the hide or skin, which is laid over and supported by the bed-roll.

I claim—

1. In a machine for polishing hides or skins, a positively-rotated polishing-roll having thereon two sets of helically-arranged "polishing-ribs" extended in opposite directions, such polishing-ribs being formed of hard unyielding material, and having smooth rounded engaging or contacting faces, substantially as described.

2. In a machine for polishing hides or skins, a bed-roll and a positively-rotated polishing-roll having thereon helically-arranged "polishing-ribs," said ribs being formed of hard non-absorbent material, substantially as described.

3. In a machine for polishing hides or skins, a bed-roll, a polishing-roll having thereon two adjacent sets of helically-arranged "polishing-ribs" extended in opposite directions, said ribs being formed of a hard and substantially-unyielding material, and means for positively rotating said polishing-roll, substantially as described.

4. In a machine for polishing hides or skins, a freely-revolving bed-roll, a swinging frame bearing it, a polishing-roll having thereon helically-arranged "polishing-ribs," said ribs being formed of hard material and having smooth rounded engaging or contacting faces, substantially as described.

5. In a machine for polishing hides or skins, a freely-revolving bed-roll, a swinging frame bearing it, a polishing-roll having thereon two adjacent sets of "polishing-ribs" extended in opposite directions, said ribs being of hard non-absorbent material, and means for positively rotating said polishing-roll, substantially as described.

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

WILLIAM H. DOWNS.

Witnesses:

WARREN H. ATWOOD,
JAMES W. GILDAY.