

No. 618,268.

Patented Jan. 24, 1899.

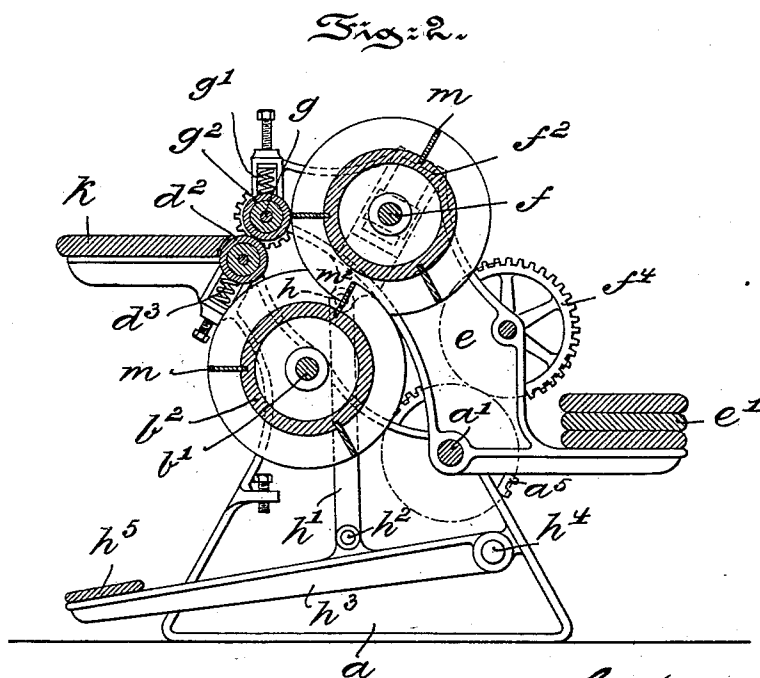
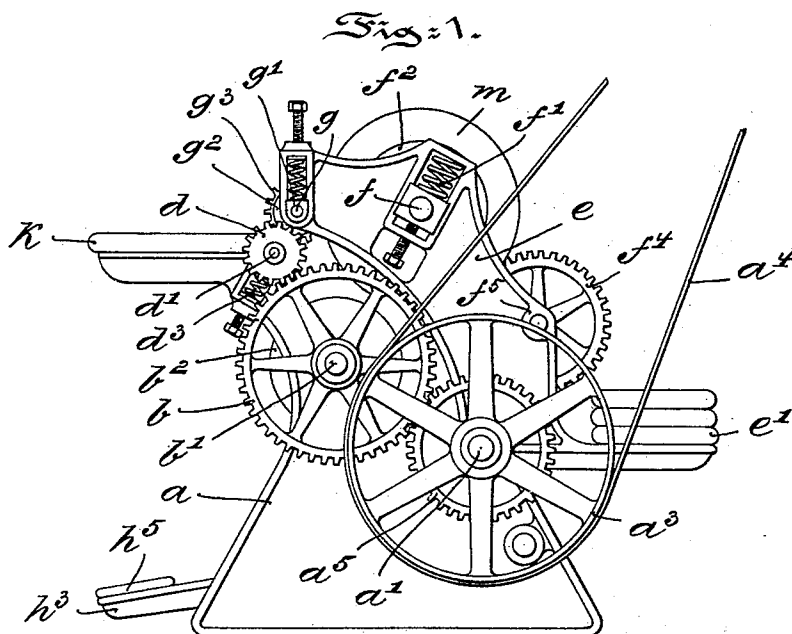
J. HALL.

HIDE, SKIN, OR LEATHER MACHINERY.

(Application filed Aug. 11, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
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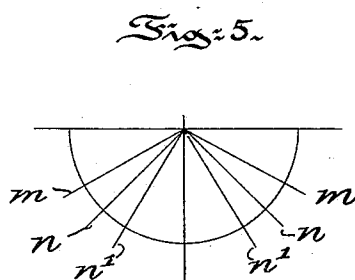
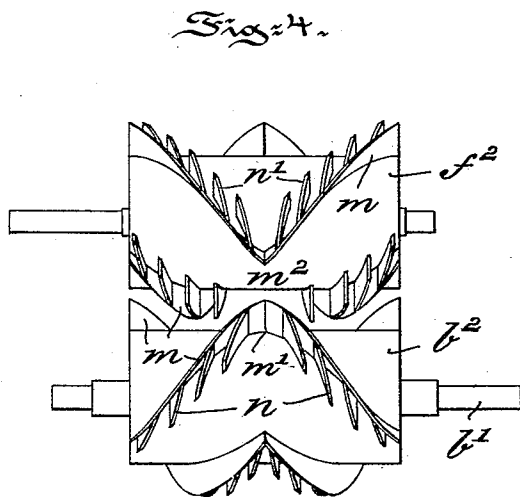
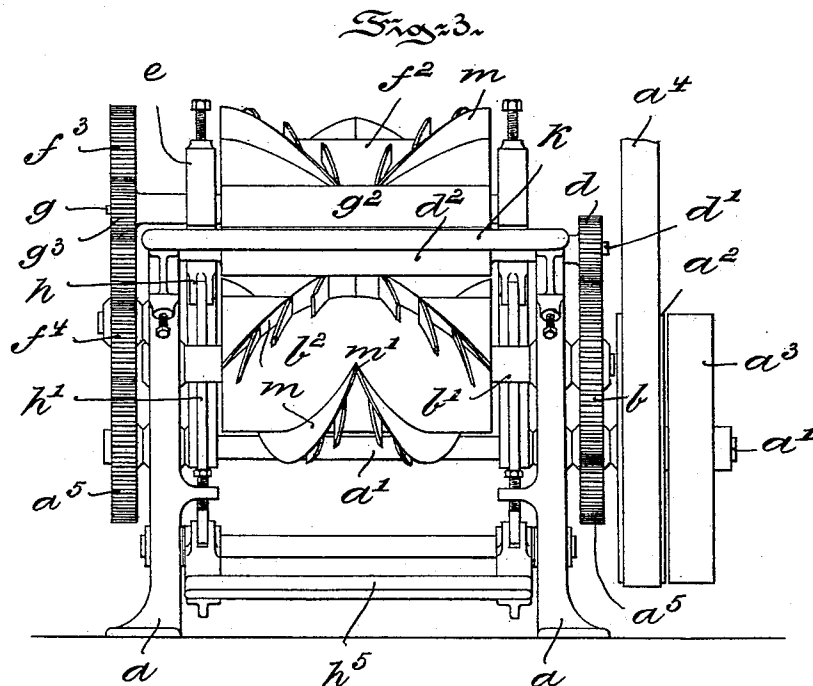
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HIDE, SKIN, OR LEATHER MACHINERY.

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2 Sheets—Sheet 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOSEPH HALL, OF LEEDS, ENGLAND.

HIDE, SKIN, OR LEATHER MACHINERY.

SPECIFICATION forming part of Letters Patent No. 618,268, dated January 24, 1899.

Application filed August 11, 1898. Serial No. 688,360. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH HALL, a subject of the Queen of Great Britain, residing at Leeds, in the county of York, England, have invented certain new and useful Improvements in Hide, Skin, or Leather Machinery, of which the following is a specification.

My invention has relation to a machine for treating hides, skins, or leather, and, as illustrated, it has particular relation to a machine for performing the operation technically known as "softening" hides, skins, or leather, although with suitable modifications the machine may be adapted for similar operations—such, for instance, as unhairing, slating, scudding, and the like.

The principal object of my invention is to provide a machine for treating hides, skins, or leather and having two operating rolls or cylinders provided with blades adapted, when the rolls or cylinders are in operation, to act upon both sides of the hide, skin, or leather to be treated.

My invention, stated in general terms, consists of a machine of the character described constructed and arranged in substantially the manner hereinafter described and claimed.

The nature and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming a part hereof, in which—

Figure 1 is a side elevational view of the machine embodying main features of my invention. Fig. 2 is a vertical sectional view thereof. Fig. 3 is a front elevational view of the machine. Fig. 4 is a front elevational view of the working rolls or cylinders detached from the machine and in operative position with respect to each other, and Fig. 5 is a diagrammatic view illustrating the angular arrangement of the main helical blades and short vanes or blades of the working rolls or cylinders.

Referring to the drawings, *a* represents the main framework of the machine, which forms the bearings for the power-shaft *a'*, on which are located the fast and loose pulleys *a''* and *a'''*, connected by the belt *a'''* with a suitable source of power. On the power-shaft *a'* is keyed or otherwise secured a gear-wheel *a''* in mesh

with a gear-wheel *b*, keyed or otherwise secured to a shaft *b'* of a working roll or cylinder *b''*, which shaft *b'* also has fixed bearings in the framework *a* of the machine. The gear-wheel *b* is also in mesh with a gear-wheel *d*, keyed or otherwise secured to a shaft *d'* of a feed-roller *d''*, the surface of which, by preference, is covered with india-rubber or other suitable material. The shaft *d'* of the roll *d''* is located in adjustable spring-bearings *d'''* in the framework *a*. To the rear end of the framework *a* and preferably with the power-shaft *a'* as a fulcrum is pivoted a movable framework *e*, in which is located a shaft *f*, supported in spring-bearings *f'* in the framework *e* and carrying the second working roll or cylinder *f''*. On the shaft *f'* is keyed or otherwise secured a gear-wheel *f'''* in mesh with a gear-wheel *f''''*, rotating upon a stud *f'''''* of the framework *e*, which gear-wheel *f''''* meshes also with the gear-wheel *a''* on the power-shaft *a'*. In the swinging or movable framework *e* and at or near its front end is located a shaft *g*, supported in spring-bearings *g'* in said framework *e* and carrying a feed-roller *g''*, the periphery of which is preferably covered with india-rubber or similar flexible material. On the shaft *g* is keyed or otherwise secured a gear-wheel *g'''*, meshing with the gear-wheel *f'''* on the shaft of the roll *f''*.

To the swinging or movable framework *e* is pivoted, as at *h*, one end of the treadle-links *h'*, the opposite ends of which are pivotally connected, as at *h''*, to the treadle-arms *h'''*, one end of each of which is pivoted, as at *h''''*, in the fixed framework *a*, while the free ends are connected by a foot-piece *h'''''*. The swinging or movable framework *e* is counterweighted, as at *e'*, so as normally recede from the forward end of the fixed framework *a* and to thereby elevate the working-roll *f''* and feed-roller *g''* from the working roll *b''* and feed-roller *d''*. In front of the feed-rollers *d''* and *g''* is located a fixed table *k*, preferably supported by the framework *a*, on which the work is laid when it is to be presented to the feed-rollers *d''* and *g''* and to the working rolls *b''* and *f''*.

Each working roll is provided on its periphery with a series of helical and oppositely-arranged main blades *m*, which meet or abut,

as at m' , at approximately the longitudinal center of the roll. From these main blades m project a series of short blades or vanes n and n' , the vanes n making with one helical blade m an angle differing from the angle which the vanes n' make with the corresponding main blade m , against which they abut. The angular arrangement of main and short blades is illustrated in diagram in Fig. 5 of the drawings.

When the working rolls b^2 and f^2 are assembled in the machine in operative position, they are placed with regard to the blades, as illustrated in Fig. 4—that is, the rolls are turned with relation to each other so that the points of abutment of the blades in one roll in rotating will enter the space m^2 between the blades of the other roll and will not come opposite to the points of abutment of the blades in the other roll. By this arrangement the blades of one roll will begin to act on one side of the skin or hide before the blades of the other roll will act upon the other side of the skin. This arrangement of the working rolls b^2 and f^2 in conjunction with the operation of the feed-rollers, as hereinafter explained, is particularly advantageous in the manipulation of the hide or skin in what is technically known as the "softening" operation. By reason of their connection, heretofore described, with the power-shaft a' the working rolls b^2 and f^2 rotate in opposite directions and have a tendency to draw the work away from the table k , while the feed-rollers d^2 and g^2 , which rotate also in opposite directions, have a tendency to draw the work toward the table and away from the working rolls.

In the operation of the machine the work is laid on the table k and is passed over the feed-roller d^2 until it reaches the working roll b^2 . The treadle-piece h^5 is now depressed until the feed-roller g^2 and the working roll f^2 are brought down upon the face of the work, when both rolls b^2 and f^2 will operate on opposite sides of the work, which is pre-

vented from being fed into the machine by the feed-rollers d^2 and g^2 .

Having thus described the nature and object of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a machine of the character described, two working rolls, whereof one is fixed and the other movable toward or away from the fixed roll, two feed-rollers, whereof one is fixed and the other is movable with the movable work-roll, means for bringing the movable roll and feed-roller toward or away from the fixed roll and feed-roller, a table located near the feed-rollers, means for rotating the working rolls in opposite directions so as to draw the work away from the table, and means for rotating the feed-rollers in opposite directions so as to draw the work toward the table, substantially as and for the purposes described.

2. In a machine of the character described, two working rolls adapted to operate upon opposite sides of the work, each roll having a series of helical, oppositely-arranged main blades abutting at a sharp angle at approximately the longitudinal center of the roll and each main blade being provided with a series of short blades or vanes projecting at an angle to the main blades, the rolls being so arranged with relation to their main and short blades that the points of abutment of the blades of one roll when the rolls rotate in operative position will enter the space between the blades of the other roll and not register with the points of abutment of the blades of said other roll, substantially as and for the purposes described.

In testimony whereof I have hereunto set my signature in the presence of two subscribing witnesses.

JOSEPH HALL.

Witnesses:

ANNA HEINS,
ETHEL HALL.