

(No Model.)

W. EVANS.

MACHINE FOR TREATING HIDES, SKINS, OR LEATHER.

No. 556,813.

Patented Mar. 24, 1896.

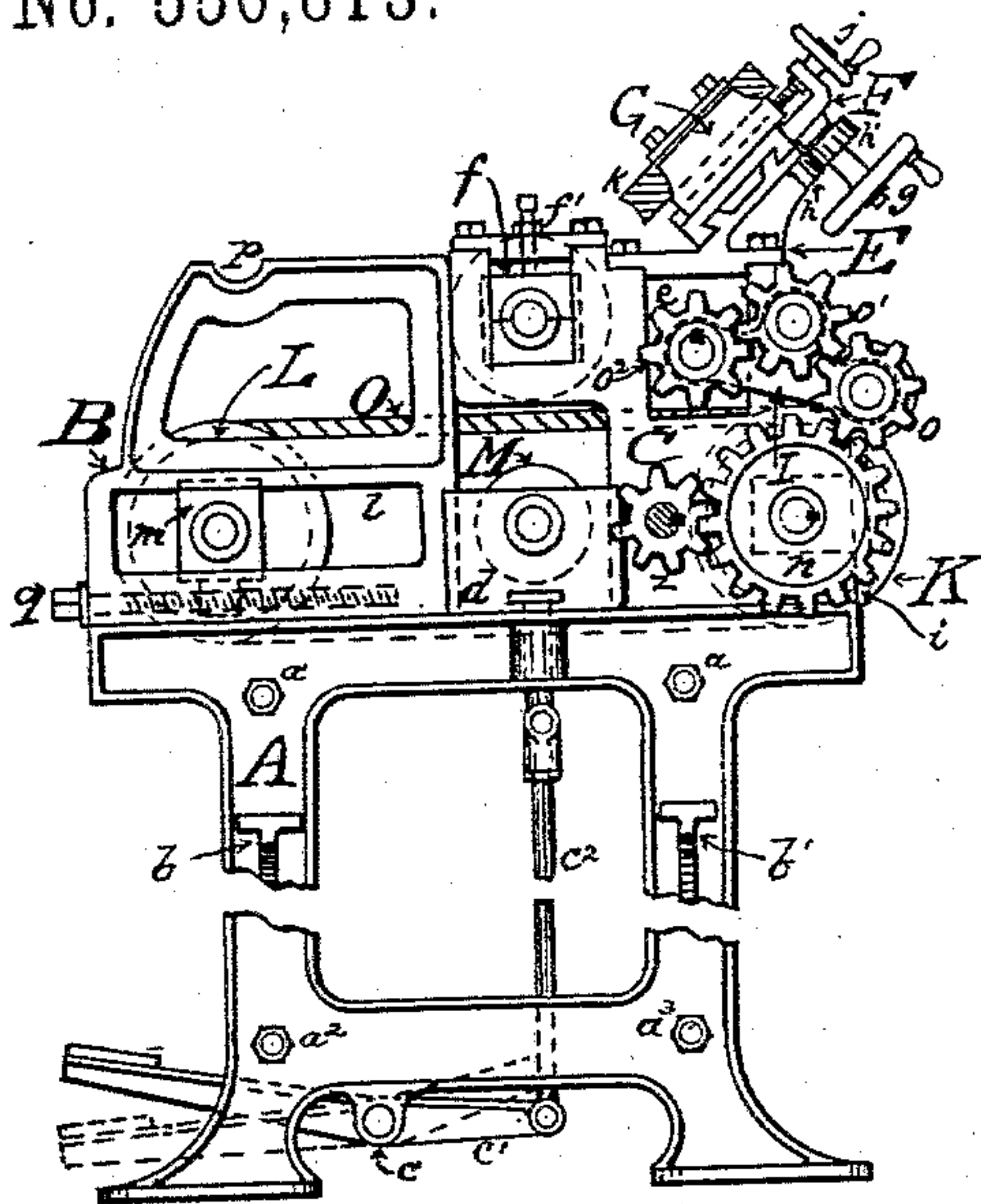


Fig. 1.

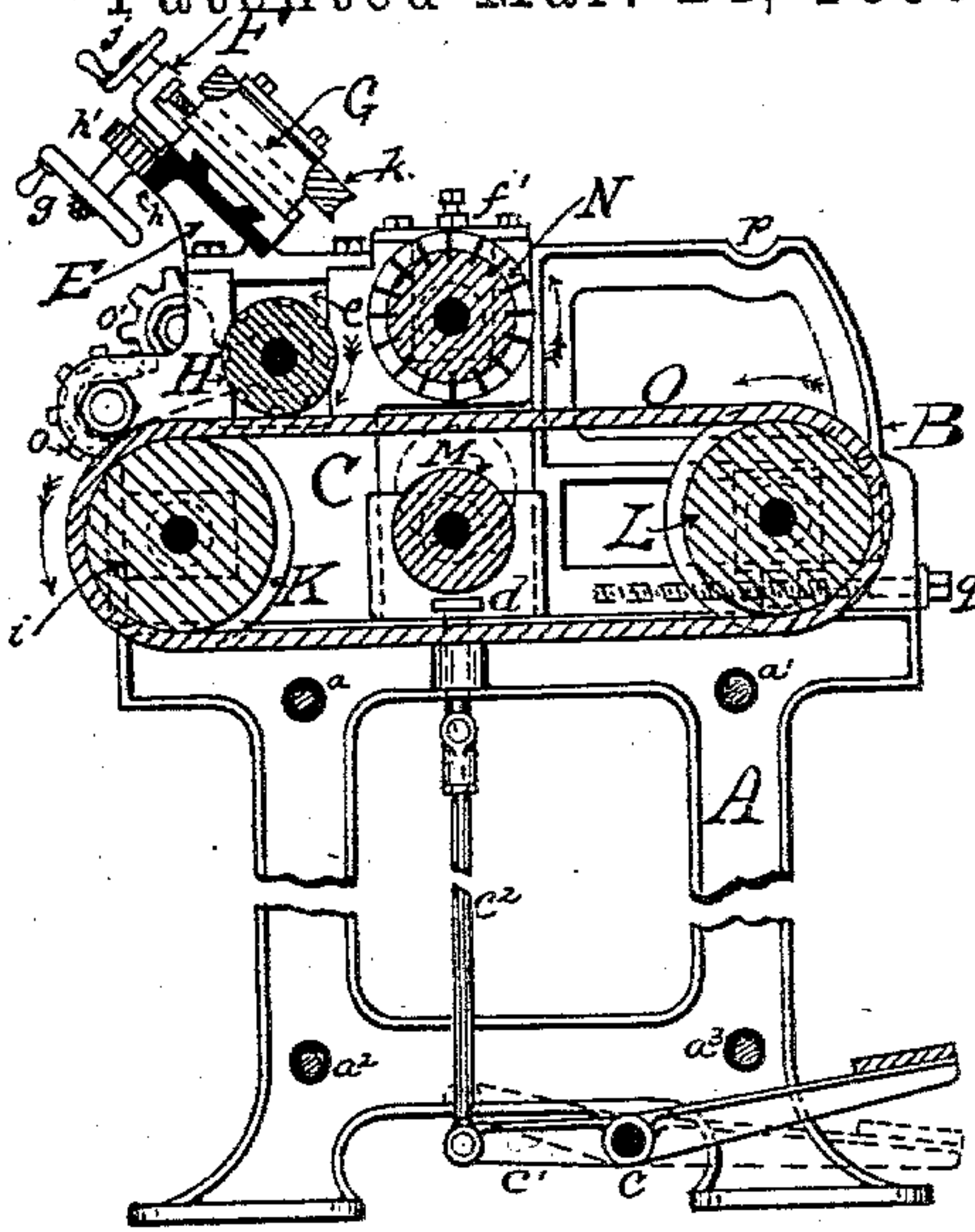


Fig. 2.

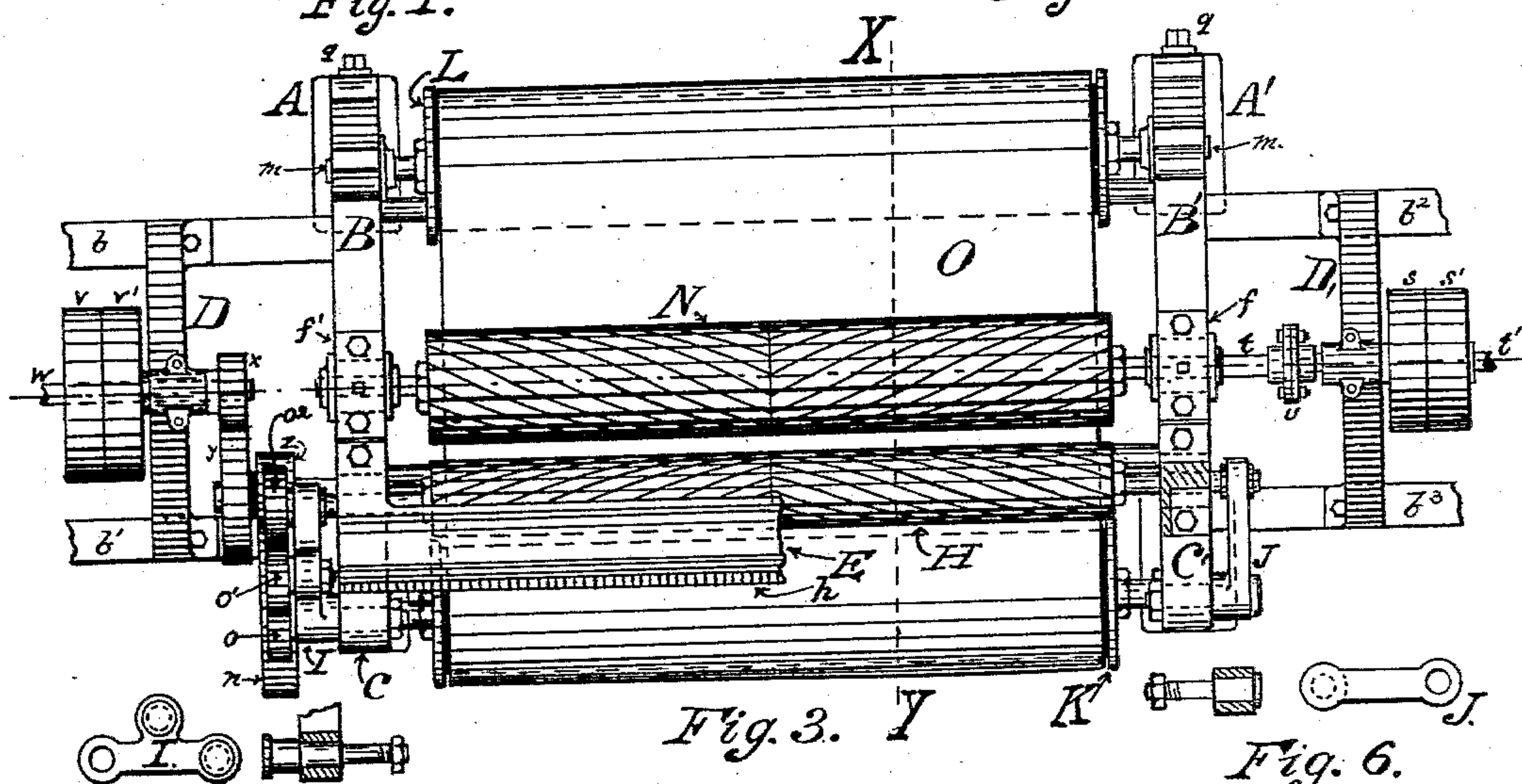


Fig. 5.

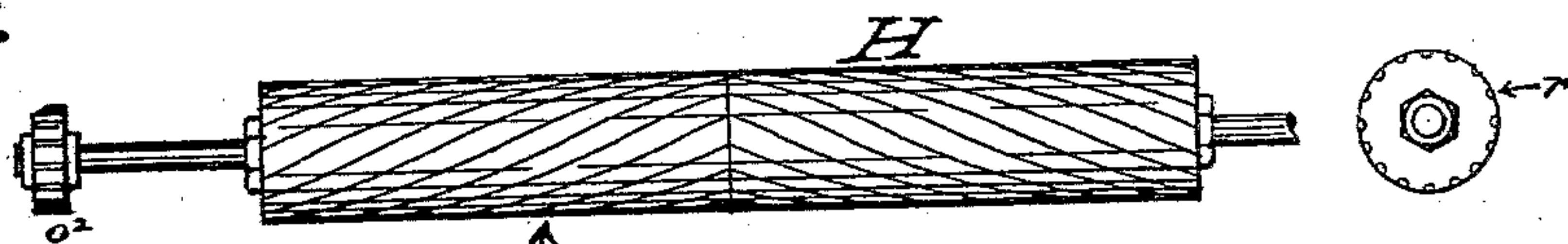


Fig. 4.

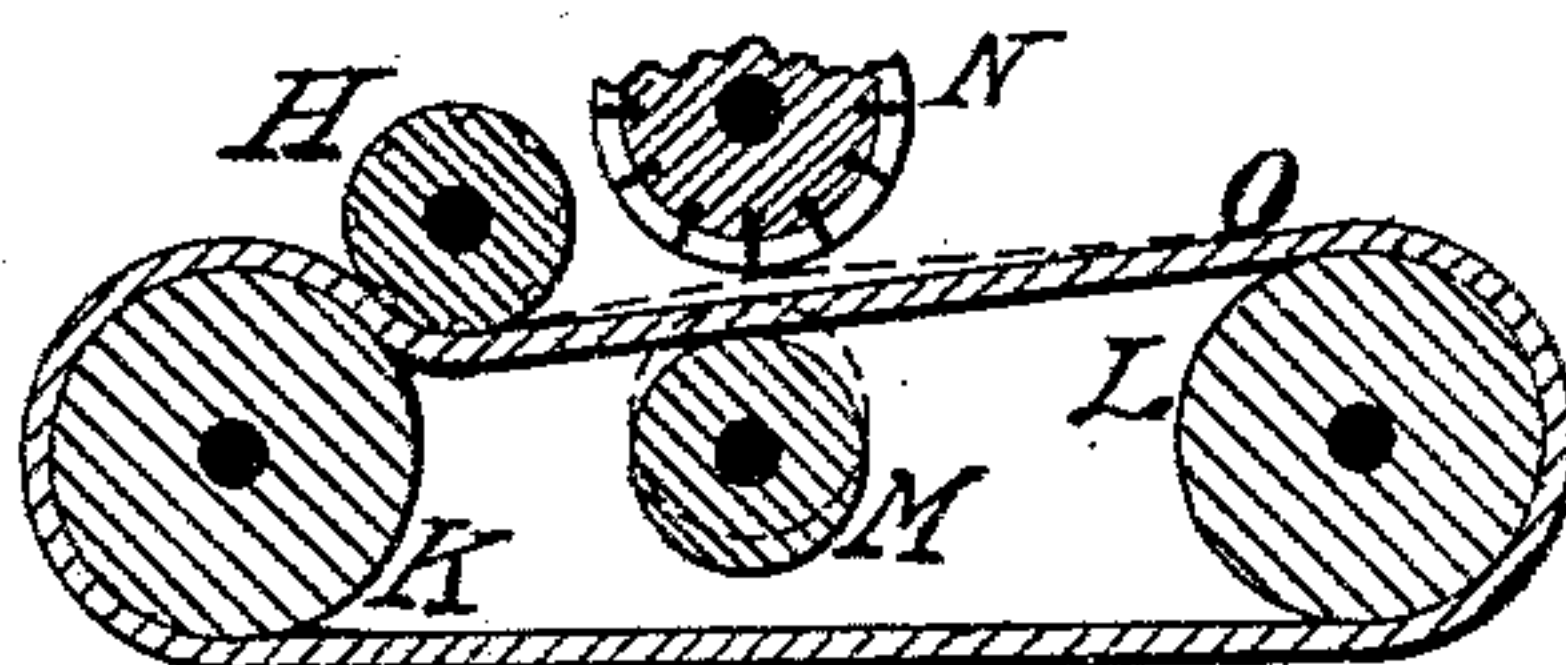


Fig. 7.

WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM EVANS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF, ROBERT EVANS, AND JOHN H. EVANS.

MACHINE FOR TREATING HIDES, SKINS, OR LEATHER.

SPECIFICATION forming part of Letters Patent No. 556,813, dated March 24, 1896.

Application filed April 13, 1893. Serial No. 470,141. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM EVANS, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Treating Hides, Skins, or Leather, of which the following is a specification.

My invention has relation to machines for fleshing, scudding or cleansing, striking out or slicking, skiving or frizzing, unhairing or laying out hides, skins, or leather, and it relates particularly to the construction and arrangement of such a machine.

The principal objects of my invention are, first, to provide in a machine for treating hides, skins, or leather provided with a feeding-band and slate or knife cylinder a spirally-fluted grip-roll located adjacent to said cylinder and adapted to bear by gravity upon the hide, skin, or leather and operating to remove wrinkles therefrom and also to prevent slipping or bagging, and, second, to provide in a machine of the character described a spirally-fluted grip-roll located adjacent to a knife or slate cylinder in adjustable ways and adapted to bear by gravity on the hide, skin, or leather to be treated of variable thicknesses or inequalities to permit of the removal of dirt and impurities therefrom, and also arranged so as to prevent the hide, skin, or leather from being picked up or of being wrapped around the roll.

My invention, stated in general terms, consists of a machine for treating hides, skins, or leather constructed and arranged in 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 part hereof, and in which—

Figure 1 is an end view of a machine embodying the features of my invention. Fig. 2 is a cross-sectional view on the line X Y of Fig. 3. Fig. 3 is a top or plan view. Fig. 4 is a detail elevational view of the spirally-fluted grip-roll. Fig. 5 is a detail of the radial arm I. Fig. 6 is a detail of the radial

arm J, and Fig. 7 is a view showing the relative positions of the grip-roll, belt-rollers, belt, pressure-roller, and knife or slate cylinder.

Referring to the drawings, A and A' are frames or standards held apart by the rods a , a' , a^2 , and a^3 . On the standards are cast lugs c to carry the treadle-levers c' , and on top of the said standards are bolted the frames B and B', each having a slot l , in which works the bearing m for a belt-roller L. This bearing m is adjusted by screws q to afford any desired tension to an endless rubber band O. On top of the said frames B and B' are notches p adapted to receive and retain the knife or slate cylinder N whenever it should become necessary to remove the same. To the said standards A and A' are secured castings C and C', which are provided with detachable bearings i for the reception of a roll K, and with bearings f for the knife or slate cylinder N, and a cap f' .

On a frame between the frame B and the casting C and between the frame B' and the casting C' are sliding bearings d for the reception of a pressure-roller M, whereby it is adapted to be forced against the band O, on which the skin to be treated is carried, to bring the same into contact with the knife or slate cylinder N. The sliding bearing d is moved upward by treadle-levers c' and rods c^2 , as illustrated in Figs. 1 and 2. The castings C and C' are also provided with openings e to allow the shaft of the grip-roller H to pass freely through the same. The cap of these openings is formed by the feet of the grinder-frame E, which is a part of the machine.

The grinder consists of a frame or cross-head E, fastened at either end to the castings C and C', having on its face a dovetail guide on which slides a shoe F, actuated in back-and-forth directions by a hand wheel or lever g , and a pinion h' engages a rack h , which is a portion of the cross-head E. A screw and nut could be substituted for the lever, rack, and pinion; but preference is given to the latter. On the shoe F are dovetail guides working at right angles with those on the cross-head E, on which moves the slide G,

actuated by means of a screw and handle *j*. In the slide *G* is clamped a brick *k*, of emery or other abrasive material.

From the foregoing description it will be observed that in order to sharpen the knife all that is necessary is to feed down the brick *k* by means of the wheel and screw *j* until it contacts with the knife-edge, and the shoe *F* is moved in back-and-forth directions by means of a lever *g*, or, as above stated, the shoe may be actuated by a nut and screw.

The spirally-fluted grip-roller *H*, as illustrated in Fig. 7, is so located that it bears by its own weight or gravity on the rubber band *O*. This grip-roller *H* is adapted to adjust itself to variable thicknesses as well as inequalities in the hide, skin, or leather through the radial arm *I*, as illustrated in Fig. 5, and the radial arm *J*, as illustrated in Fig. 6. By mounting the spirally-fluted grip-roller in the manner illustrated in Fig. 7, the surface brought to bear on the hide, skin, or leather and the rubber feeding-band which carries the same is practically one-third of the entire surface of this grip-roller, whereby the greatest possible play to said grip-roller is insured and a firm hold thus obtained upon the hide, skin, or leather, which prevents it from slipping or bagging, and, moreover, the spiral surface of the said roll is adapted to spread out the skin as it passes between the same, thereby effectually removing all wrinkles from the leather undergoing treatment. As the skin passes from beneath the said roller the spirally-fluted surface has a tendency and does operate to spread and push out and away the dragged skin, thereby preventing it from either wrapping or sticking to the said roller, as is the case where a smooth or straight fluted roll is employed.

On the frame *A* are bolted brackets *b* and *b'*, carrying two standards *D* and mechanism to drive the band *O* and grip-roller *H*—to wit, the shaft *w*, the tight pulley *v*, the loose pulley *v'*, the pinion *x*, the gear-wheel *y*, and on the same shaft with said gear-wheel *y* is a pinion *z*, which engages with the gear *n* on the roll *K*. The gear-wheel *n* engages with the gear-wheel *o*, which in turn engages with the gear-wheel *o'*, imparting motion to the gear-wheel *o''*, which said three gear-wheels *o*, *o'*, and *o''* work on the radial arm *I*, imparting motion to the said grip-roller *H*, which is supported at its opposite end by means of the radial arm *J*.

On the frame *A'* are bolted brackets *b²* and *b³*, which carry two standards *D'*, a shaft *t'*, with fast and loose pulleys *S* and *S'*. The shaft *t'* is connected with the shaft *t* of the knife-cylinder *N* by means of a coupling *u* to permit of the removal of the knife or slate cylinder *N* when necessary without disturbing the belts and the accessories of the machine.

By the use of the radial arms *I* and *J* the grip-roller *H* adjusts itself to any inequalities

in the hide, skin, or leather to be treated, or to the variable thicknesses of the same. Moreover, it works freely and is held against the hide, skin, or leather and the band *O* by gravity.

The operation of the hide and skin machine hereinbefore described is as follows: When the machine is in motion, the knife or slate cylinder *N* revolves in a direction opposite to that of the band *O* and the grip-roller *H*, as indicated by the arrows in Fig. 2. The operator places the hide, skin, or leather to be treated on the band *O*, which carries it until it contacts with and is gripped by the said roller *H*. The pressure-roller *M*, by means of the treadle, is then forced upward under and against the band *O*, and the hide, skin, or leather is brought in contact with the knife or slate cylinder *N*. The said spirally-fluted grip-roller *H*, bearing by gravity on the hide, skin, or leather, binds and takes a firm hold upon the same, drawing it past the knife or slate cylinder *N* and removing all wrinkles and preventing it also from slipping or bagging.

Another advantage obtained by the use of the spirally-fluted grip-roller is that it spreads out the skin, breaks joints therein, and also prevents the roller from picking up the same. It furthermore brings all dirt, impurities, or other extraneous matter to the surface, enabling thereby the operator to readily and effectually cleanse the leather, hide, or skin.

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

1. In a machine of the character described, a feeding-band and a knife or slate cylinder, in combination with a grip-roller located adjacent to said cylinder and adapted to bear by gravity upon the hide or skin after passing under the cylinder and adapted to grip the same during the action of the cylinder thereon and to prevent said hide or skin from wrapping around said cylinder, and means to actuate said grip-roller and band in the same direction and the cylinder in a direction opposite to that of said roller and band, substantially as and for the purposes described.

2. In a machine of the character described, a feeding-band and a knife or slate cylinder, in combination with a spirally-fluted grip-roller located adjacent to said cylinder in adjustable ways and adapted to bear by gravity upon the hide or skin after passing under the cylinder and adapted to grip the same during the action of the cylinder thereon and to prevent said hide or skin from wrapping around said cylinder, and means to positively actuate said roller and band in the same direction and said cylinder in a direction opposite to that of said roller and band, substantially as and for the purposes described.

3. In a machine of the character described, a feeding-band and slate or knife cylinder, in combination with two radial arms, a spirally-fluted grip-roller located adjacent to

said cylinder in connection with said arms and adapted to bear by gravity upon the hide, skin or leather after passing under the cylinder and adapted to grip the same during the
5 action of the cylinder thereon and to prevent said hide or skin from wrapping around said cylinder, and means to positively actuate said roller in a direction opposite to that of the cylinder, all arranged so that said roller when

driven is adapted to draw the hide or skin away from and out of contact with the cylinder, substantially as and for the purposes described.

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Witnesses:

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FRANK M. WOLF, Jr.