(No Model.) 3 Sheets—Sheet 1.

A. F. JONES.

MACHINE FOR WORKING HIDES OR SKINS.

No. 601,808. Patented Apr. 5, 1898.

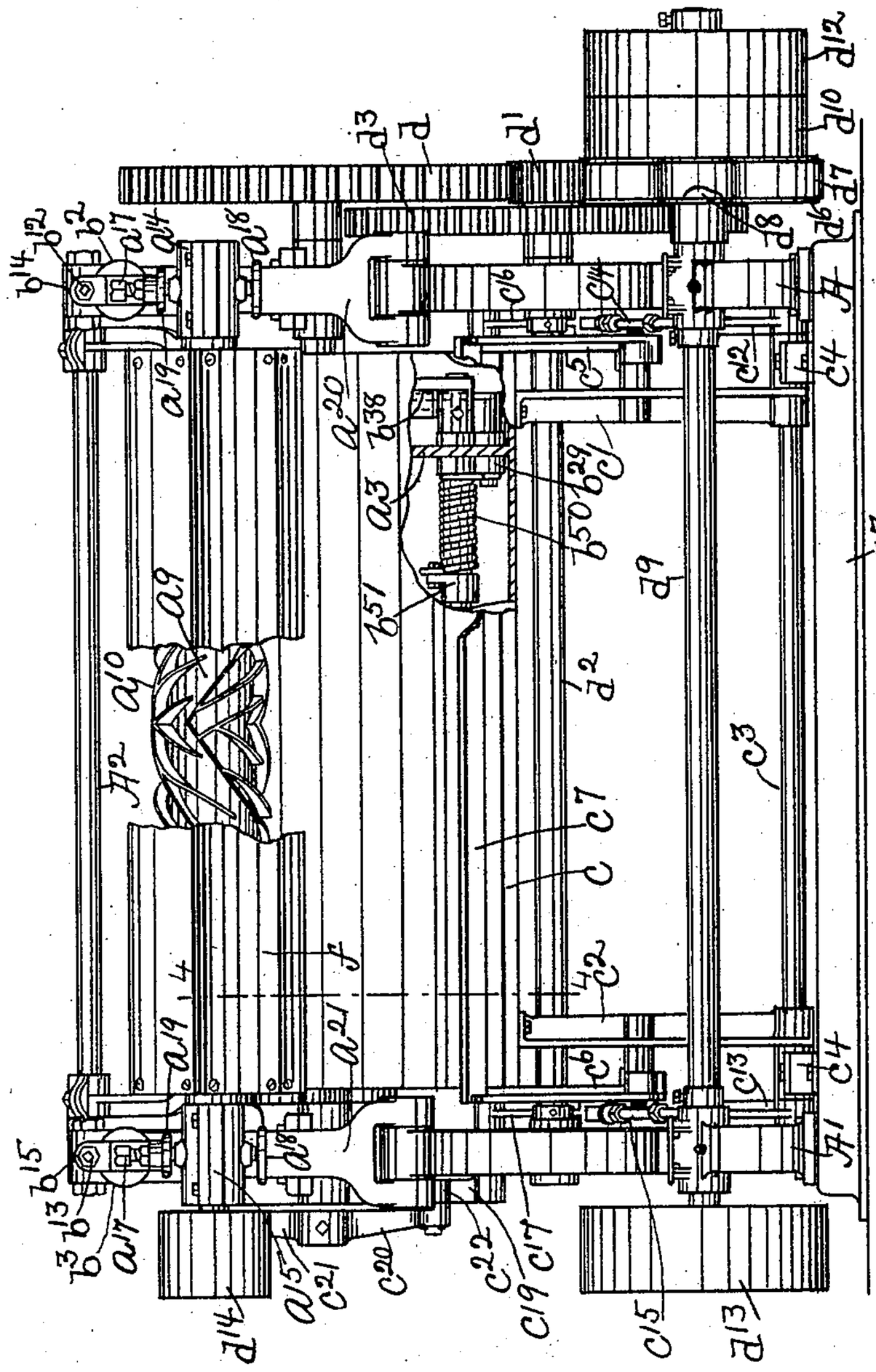

Fig. 1.

WITNESSES.

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(No Model.) 3 Sheets—Sheet 2.

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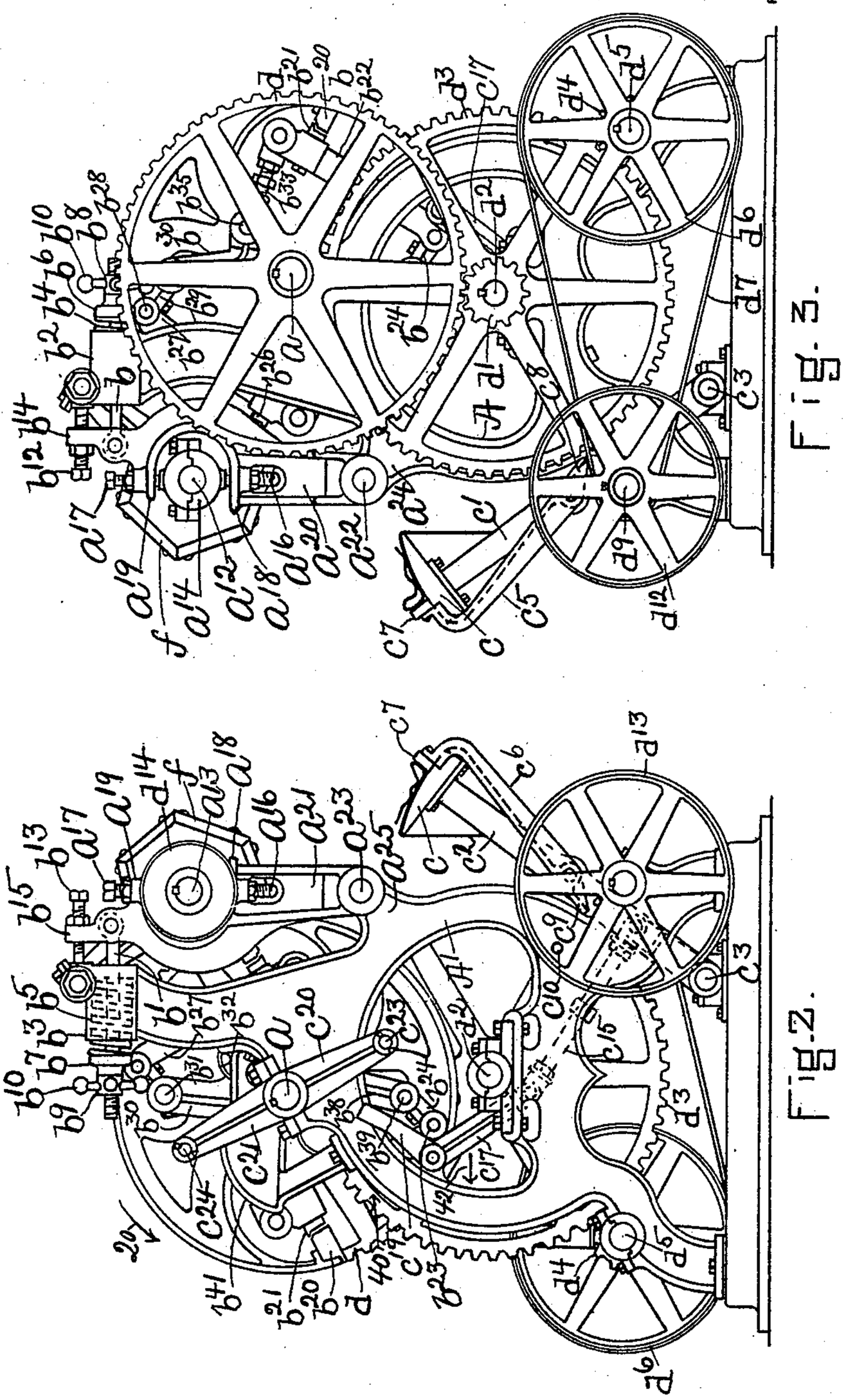

Fig. 2.

Fig. 2.

WITNESSES.

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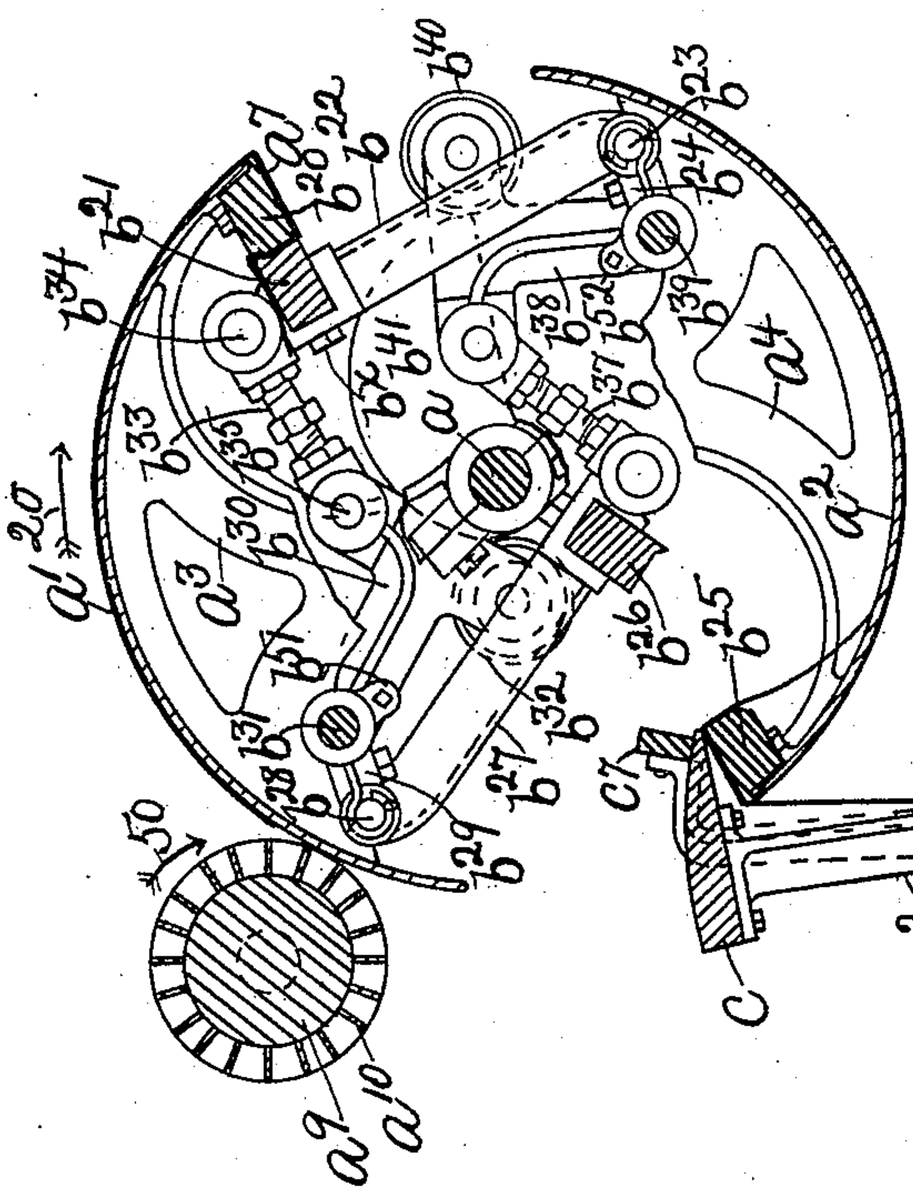

FIG. 4.

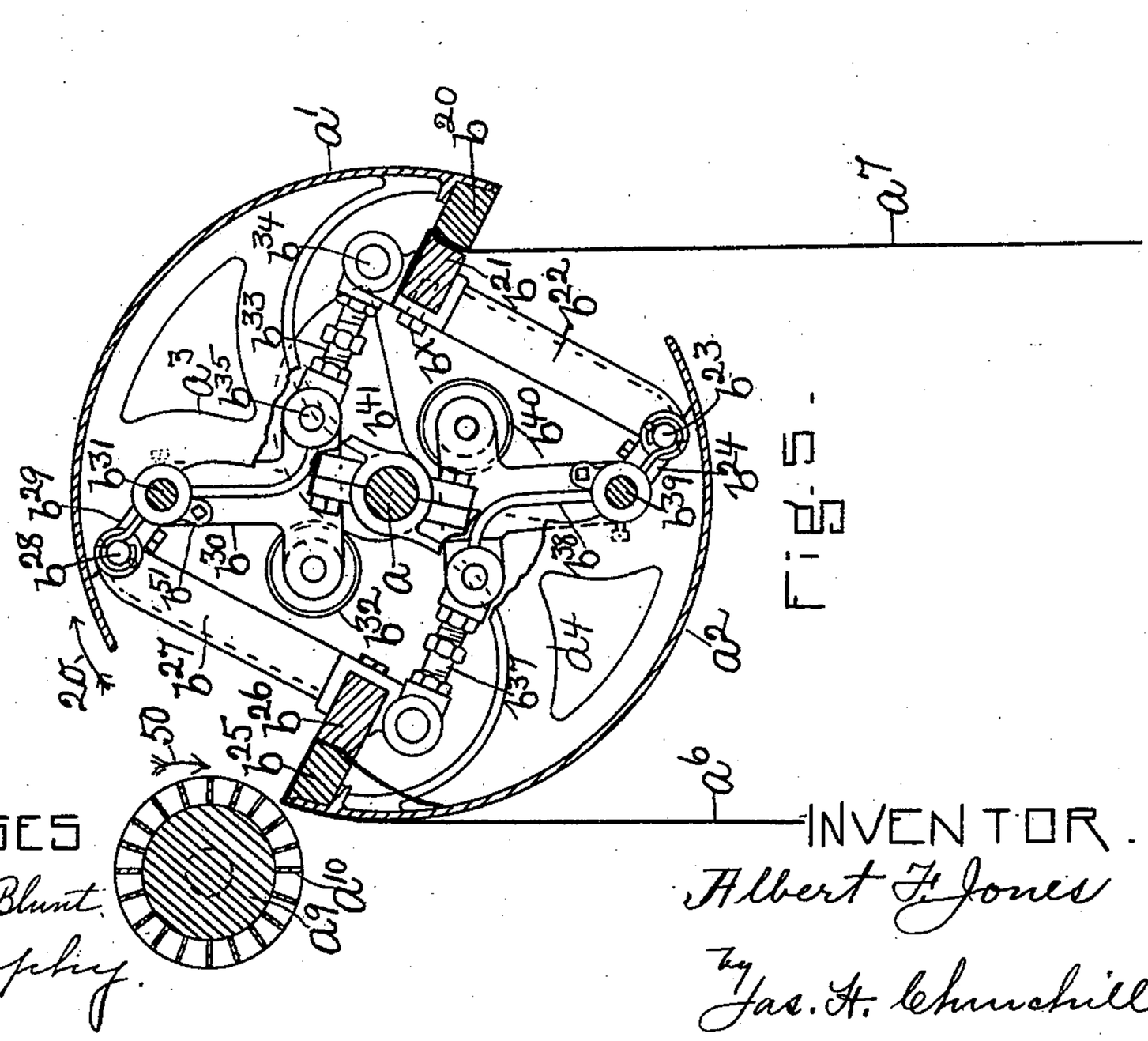

FIG. 5.

WITNESSES

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UNITED STATES PATENT OFFICE.

ALBERT F. JONES, OF SALEM, MASSACHUSETTS, ASSIGNOR TO THE VAUGHN MACHINE COMPANY, OF PORTLAND, MAINE.

MACHINE FOR WORKING HIDES OR SKINS.

SPECIFICATION forming part of Letters Patent No. 601,808, dated April 5, 1898.

Application filed June 4, 1897. Serial No. 639,397. (No model.)

To all whom it may concern:

Be it known that I, ALBERT F. JONES, residing in Salem, in the county of Essex and State of Massachusetts, have invented an Improvement in Machines for Working Hides or Skins, (Case A,) of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to a machine or apparatus for working hides and skins, and is especially adapted, among other uses, for acting upon light material, such as goat and sheep skins.

My present invention has for its object to improve the class of machines referred to, and more especially provide a simple, efficient, and rapid machine with which a maximum number of skins may be treated in a given time.

The machine is provided with an operating roll or cylinder which is automatic in its action, so that the use of treadles may be dispensed with and the treatment of the skin expedited and injury to the skin avoided, as will be described.

The machine may and preferably will be provided with an automatic feed for the work, as will be described.

The machine is further provided with a novel clamping mechanism for the hide or skin, as will be described.

These and other features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 is a front elevation, with parts broken away, of a machine embodying this invention; Fig. 2, a side elevation of the machine shown in Fig. 1, looking toward the right; Fig. 3, a side elevation of the machine shown in Fig. 1, looking toward the left; and Figs. 4 and 5, sectional details to be referred to.

The working parts of the machine herein shown are supported by a framework consisting, essentially, of side pieces or uprights A A′, joined together by one or more tie-rods A^2, the said uprights being herein shown as bolted to a suitable foundation A^8.

The side frames or uprights A A′ support in suitable bearings a shaft *a*, upon which is firmly secured the support for the hides or skins of the machine herein shown, preferably segmental work-supports a' a^2, provided with suitable radial arms or ends a^3 a^4, (see Figs. 4 and 5,) which are clamped or otherwise fastened to the shaft *a*.

The segmental work-supports a' a^2 are located substantially diametrically opposite each other, so as to leave spaces or openings between their edges for the ready insertion and withdrawal of the skins a^6 a^7. The segmental supports a' a^2 practically form segments or sectors of a drum and are designed in the present instance to be continuously revolved, which may be accomplished as will be described.

This invention has for one of its objects to provide a tool or instrument for operating upon the hide or skin which is normally in its operative position with relation to the work-support and which automatically adjusts itself to the thickness of the hide or skin, thereby dispensing with the use of treadle mechanisms, which relieves the work of the operator and enables the output or capacity of the machine to be increased, and which is sensitively supported, so as to respond to slight differences in the thickness of the hide or skin and so as to avoid injurious action of the said roll due to its weight upon the said hide or skin, and especially upon light skins, as will be more specifically described. In accordance with this feature of my invention the tool or instrument, preferably a cylinder or roll a^9, having on its periphery a series of blades a^{10}, arranged to suit the particular work required, and which in practice frequently weighs from four to six hundred pounds, is yieldingly supported with relation to the work-support and is normally held close to the said work-support, so as to engage and act on the hide or skin at its thinnest portion and which automatically yields to the thicker part of the hide or skin, but remains in operative engagement therewith as the thicker portion of the hide or skin is carried by the work-support past the operating cylinder or roll, the hide or skin being relieved from injurious action due to the weight of the roll. This result may and preferably will be accomplished as herein shown and as will now be described.

The operating roll or cylinder a^9 has its journals a^{12} a^{13} (see Figs. 1, 2, and 3) supported in suitable bearing-boxes a^{14} a^{15}, pivotally and adjustably supported by screws a^{16} a^{17} between the arms a^{18} a^{19} of yoke-shaped levers a^{20} a^{21}, pivoted, as at a^{22} a^{23}, to offsets or arms a^{24} a^{25} on the side frames A A'. The supporting-levers a^{20} a^{21} are pivoted at their lower ends, as herein shown, and are vertically arranged, so that in the normal position of the roll a^9 it is substantially on a dead-center in a vertical line with the pivots a^{22} a^{23} of the said supporting-levers, and is thus sensitively supported and requires substantially little power to move it either side of its center, for a purpose as will be described.

The operating roll or cylinder a^9 is adjustably and yieldingly held in operative position with relation to the work-support, and this may and preferably will be accomplished as herein shown and as will now be described. The levers a^{20} a^{21} have pivotally connected to their upper ends rods b b', extended substantially through hollow bosses or cylinders b^2 b^3, secured to or forming part of the side frames A A'.

The rods b b' preferably extend through the cylinders or hollow bosses b^2 b^3 and are encircled within the said cylinders by spiral springs b^4 b^5, having their front ends bearing against the front heads of the cylinders and their rear ends bearing against collars b^6 b^7, retained on said rods by suitable nuts b^8 b^9, which engage the screw-threaded ends of the said rods and which may be provided, as herein shown, with spokes or arms b^{10} to facilitate turning the said nuts on the said rods.

The springs b^4 b^5 are normally compressed and tend to draw the levers a^{20} a^{21} and the operating roll or cylinder a^9 toward the work-support, and this movement may be termed the "inward" movement of the cylinder or roll. In order to properly position the operating-roll with relation to the drum or work-support, so that the said roll will engage the thinnest portion of the hide or skin, the levers a^{20} a^{21} are provided, as herein shown, with set screws or bolts b^{12} b^{13}, which are extended through suitably-threaded holes in extensions or arms b^{14} b^{15} of the levers a^{20} a^{21}, and which set-screws are adapted to engage a fixed portion of the framework, which is represented as a part of the cylinders b^2 b^3, the said fixed portion constituting a stop to limit the inward movement of the operating-roll. The operating-roll a^9 is adapted to yield automatically as the skin varies in thickness, the thicker portions of the skin forcing the roll outward away from the support or drum and compressing the springs b^4 b^5, which as soon as the thick portion of the skin passes beyond or out of engagement with the operating-roll expand and move the cylinder inward, so as to retain it in contact with the thinner portions of the hide or skin. In this manner the operating-roll automatically adjusts itself to the thickness of the hide or skin being acted upon. The operating-roll supported as above described may be used to advantage with other forms of support for the hide or skin—such, for instance, as a segmental drum adapted to carry but a single skin and having a continuous or an oscillating rotation; but to increase the capacity of the machine the operating-roll is preferably employed in connection with a drum or work-support made in two segments a' a^2, and in accordance with this invention each of the said segments has coöperating with it a clamping mechanism for the hide or skin, which is of novel construction and automatically operated, as will be described. The clamping mechanism coöperating with the segment a' is preferably made as herein shown and comprises a stationary jaw b^{20}, (see Figs. 4 and 5,) which is suitably secured to the inner side of the segment at one edge and extends substantially the length of the said segment, and the stationary jaw b^{20} has coöperating with it a movable jaw b^{21}, pivoted off the center of the support or segment, for a purpose as will be described, and in the present instance fastened, as by bolts $b^{\times}$, to levers or arms b^{22}, having at their lower ends pivot-pins b^{23}, which are supported in suitable journal-boxes b^{24}, fastened to the radial arms a^4 of the segment a^2. The clamping mechanism coöperating with the drum-segment a^2 is of like construction, and consists of a stationary jaw b^{25} and a movable jaw b^{26}, fastened to levers b^{27}, having their pivot-pins b^{28} supported in suitable bearing-boxes b^{29}, fastened to the radial arms a^3 of the segment a'.

The movable jaws b^{21} b^{26} are adapted to be positively disengaged from their coöperating stationary jaws b^{20} b^{25} by a cam-operated actuating mechanism, as will now be described. The movable jaw b^{21} is connected, as herein shown, to a cam-operated lever b^{30}, herein shown as T-shaped, with its long arm fast on a rock-shaft b^{31}, extended through the drum and supported to rock in the bearing-boxes b^{29}, the T-shaped lever b^{30} having secured to one of its short arms a roll b^{32} and having its other short arm joined by a preferably adjustable connecting rod or link b^{33} to one of the levers b^{22} carrying the movable jaw b^{21}. The link b^{33} is pivotally connected to the lever b^{22}, as at b^{34}, and is also pivotally connected, as at b^{35}, to the short arm of the T-shaped lever b^{30}, and the said link is made adjustable, so as to vary the distance between the pivots b^{34} b^{35}, and thereby enable the movable jaw b^{21} to be accurately adjusted with relation to the stationary jaw b^{20}. The movable jaw b^{26} is positively connected in a similar manner by an adjustable link b^{37} to a T-shaped lever b^{38}, mounted on a rock-shaft b^{39}, supported to rock in the bearing-boxes b^{24}, the lever b^{38} being provided with a roller b^{40}. The rollers b^{32} b^{40} are adapted to travel about the periphery of a cam-plate or casting b^{41}, fastened to a stationary part of the frame

and in the present instance to the side frame A'. The cam b^{41} is suitably shaped, so as to effect the proper movements of the movable jaws with relation to their stationary jaws, as will be described. The cam-rollers b^{32} b^{40} are maintained in contact with the cam portion of the plate b^{41}, as herein shown, by means of suitable springs b^{50}, (see Fig. 1,) which encircle the rock-shafts b^{31} b^{39} and have one end fastened to collars b^{51} b^{52}, fast on the said rock-shafts and anchored at their other ends and in the present instance fastened to the bearing-boxes b^{29} b^{24}.

In the present instance the cam b^{41} is suitably shaped to open the movable jaws of the clamping mechanisms and to permit the said jaws to be closed by the springs b^{50} on the rock-shafts b^{31} b^{39}.

The operation of the cam b^{41} and springs b^{50} may be readily understood by reference to Figs. 4 and 5.

In Fig. 4 the drum is represented as revolving in the direction indicated by arrow 20 and the skin a^7 is supposed to have been treated to the action of the roll a^9. The jaw b^{21} is still in engagement with the skin a^7, and the roll b^{32} is about to ride up on the cam b^{41}. As the drum-segment a' is moved in the direction indicated by arrow 20 the roller b^{32} is moved onto the upper surface or cam portion of the cam-plate, as shown in Fig. 5, and the jaw b^{21} is commencing to be opened. As the roll b^{32} passes over the cam b^{41} from the position shown in Fig. 5 to that occupied by the roll b^{40} in Fig. 4 the jaw b^{21} is opened wide and maintained in this condition until the roll b^{32} is carried under the cam, which is shaped so as to leave a free space between the roll b^{32} and the under side of the cam, which results in the jaw b^{21} being placed under the control of the spring b^{50} on the rock-shaft b^{31}, so that when the roll b^{32} passes off from or out of contact with the cam b^{41} it is closed by the said spring.

In Fig. 4 the movable jaw b^{26} is shown as wide open, and its controlling-roller b^{40} is shown at the end of the upper surface of the cam-plate b^{41} and about to be carried under and out of contact with the same.

In Fig. 5 the jaw b^{26} is shown as closed, and the said jaw remains closed while the skin is passing under and is being acted upon by the operating-roll a^9. The cam b^{41} is suitably shaped and timed to enable the drum-segments to be moved under the operating-roll a sufficient distance to insure the skin thereon being operated upon before the roller governing the movable jaws for the said segments is brought in contact with the upper surface of the cam. This position is represented by the roller b^{32} in Fig. 4. The movable jaws b^{21} b^{26} are yieldingly engaged with the hide or skin, so as to properly engage the hide or skin irrespective of its thickness.

The hide or skin may be placed in by hand; but I prefer to provide the machine with an automatic feed for the hide or skin, which will automatically place the hide or skin in operative position on the stationary jaw of the clamp when the segment has reached the proper or desired position in the revolution of the drum. The automatic feed mechanism may and preferably will be made as herein shown, and consists, essentially, of a hide-supporting bar c, located outside of the drum and extended substantially the length of the same, the said bar being supported near its opposite ends upon cranks or arms c' c^2, (see Fig. 1,) mounted upon a rock-shaft c^3, having suitable bearings in boxes c^4, secured to the foundation or bed-plate A^3.

The cranks or arms c' c^2 have pivotally secured to them levers or arms c^5 c^6, having bolted or otherwise secured to their upper ends a supplemental feed or push bar c^7, which extends over the top of the feed-bar c and which is designed to be reciprocated back and forth over the top of the said feed-bar.

The top of the feed-bar c is preferably made in the arc of a circle with the pivots for the levers c^5 c^6 as a center. The levers c^5 c^6 are provided with short arms c^8 c^9, (see Figs. 2 and 3,) which are adapted to engage suitable studs, pins, or projections c^{10} on the uprights A A', only one of which is shown in Fig. 2. The rock-shaft c^3 is provided at its opposite ends, as herein shown, with cranks or arms c^{12} c^{13}, (see Figs. 1 and 2,) to which are connected one end of links c^{14} c^{15}, having their opposite ends joined to levers c^{16} c^{17}, pivoted to the side frames A A'. The lever c^{17} is herein shown as provided with an arm c^{19}, (see Fig. 2,) which is adapted to be engaged by arms c^{20} c^{21}, fast on the drum-shaft a and located, as shown, outside of the side frame A'.

The arms c^{20} c^{21} are located substantially diametrically opposite and, as shown, are made in one piece, and the said arms engage the lever-arm c^{19} and operate the feed mechanism twice during each revolution of the drum or work-supports a' a^2.

The arms c^{20} c^{21} may, and preferably will, carry rolls c^{22}, only one of which is shown in Fig. 1, and which rolls are loose on studs or pins c^{23} c^{24}, extended through said arms.

The operation of the automatic feed mechanism may be briefly described as follows: During the rotation of the drum-shaft a in the direction indicated by the arrow 20, Fig. 2, the arm c^{21} engages the lever-arm c^{19} and moves the same in the direction indicated by arrow 40, Fig. 2, thereby moving the lever c^{17} back in the direction indicated by arrow 42, Fig. 2, which movement is communicated to the rock-shaft c^3 through the connecting-rod c^{15} and crank c^{13}, thereby turning the rock-shaft in its bearings and moving the feed-bar c forward toward the drum and into the path of movement of one of the drum-segments—as, for instance, the segment a^2 (see Fig. 5)—and the movements of the parts are preferably so timed that the feed-bar c will be brought into the path of movement of the drum-segment at or just previous to the time

the said segment is brought under and substantially in contact with the said feed-bar, and at or about or just previous to this time the arms c^8 c^9 on the levers c^5 c^6 will engage their stop pins or projections c^{10}, and on the continued movement of the feed-bar c toward the drum the levers c^5 c^6 will be turned on their pivots, so as to move the push-bar c^7 forward over the feed-bar c and push the portion of the hide or skin thereon, as shown in Figs. 2 and 3, off from the feed-bar and over the stationary jaw b^{25} of the clamping mechanism and into the drum, as represented in Fig. 4. At or about the time the hide or skin is pushed off from the feed-bar c the arm c^{21} passes by the lever-arm c^{19}, and the feed-bar c and push-bar c^7 and the parts directly connected to them are returned to their normal position, (shown in Figs. 2 and 3,) which may be effected by gravity alone, as in the present instance, or by gravity assisted by a spring or springs. The action of the feed mechanism is repeated with the drum-segment a' when the arm c^{20} engages the lever-arm c^{19}.

The drum or work-supporting segments and the operating roll or cylinder may be rotated by any suitable mechanism, and in the present instance the said parts are rotated as will now be described.

Referring to Figs. 1 and 3, the drum-shaft a is shown as extended beyond the upright side frame A and has fast on it a large gear-wheel d, which meshes with a pinion d' on a shaft d^2, having bearings, as shown, in the uprights A A'. The shaft d^2 has also fast on it a gear d^3, which meshes with a pinion d^4 on a shaft d^5, having bearings in the upright side frames A A'. The shaft d^5 has mounted on it a pulley d^6, connected by a belt d^7 with a small pulley d^8 on the main or driving shaft d^9 of the machine, which has its bearings in the side frames A A' and has mounted on it at one end a fast pulley d^{10} and a loose pulley d^{12}, and at its opposite end the shaft d^9 has fast on it a pulley d^{13}, which is connected by a belt (not shown) to a pulley d^{14} on the journal a^{13} of the operating cylinder or roll.

By means of the mechanism just described the drum-segments a' a^2 are revolved in the direction indicated by arrow 20, while the operating-roll a^9 is rotated in the opposite direction, (indicated by the arrow 50, Figs. 4 and 5.) By reference to Figs. 4 and 5 it will be seen that one-half or part of two skins are operated upon by the roll or cylinder a^9 during each complete revolution of the drum-segments a' a^2, and, further, it will be seen that the skin being operated upon by the roll or cylinder a^9 is firmly clamped to its segment of the drum—as, for instance, the segment a'—until the said segment has passed by or beyond the operating-roll a^9, and while the segment a' is passing under the operating-roll the segment a^2 is being brought into position to receive a fresh skin, and its clamping mechanism is opened to release the skin which has been operated upon and is held opened until after the segment a^2 has been brought by what may be termed the "feeding" position for the skin and into a position substantially close to the operating-roll, so that by the time the segment a^2 has reached the operating-roll the skin will be firmly clamped between the movable jaw b^{26} and the fixed jaw b^{25}.

By reference to Fig. 4 it will be seen that the operating cylinder or roll a^9 is substantially in contact with the drum-segment a', into which position it is brought by its operating-springs b^4 b^5, as herein shown, which position may be regarded as the normal position of said operating-roll. It will therefore be readily seen that when a segment—as, for instance, a^2—having on it a skin, as a^6, is carried by or past the operating roll or cylinder a^9 the latter will be forced backward away from the path of movement of the said segment by the skin and that the said operating-roll will be held firmly against the skin by its springs b^4 b^5, and consequently the said roll will be automatically positioned operatively with relation to the skin being treated by the skin itself. which latter is operated upon by a pressure due substantially to the springs alone, which spring-pressure may be varied according to the thickness of the hide or skin acted upon and which may be substantially light for treating light or thin skins, such as calf and goat skins, owing to the fact that the weight of the operating-roll is substantially in a vertical line with the pivot of its supporting-levers and practically on a dead-center, and consequently requires but little or substantially little pressure to move it, as there is substantially no friction to overcome. The operating-roll in the machine herein shown does not bear against the hide or skin with a pressure sufficient to cause the knives or blades to cut through the hide or skin, and especially light skins, but only with sufficient pressure to effectively perform the work desired without injuring the skin. Furthermore, by means of this feature of the invention I am enabled to dispense with all treadle mechanisms for moving the operating cylinder or roll, which leaves the operator free to attend solely to the feeding of the skins and also relieves him of considerable work. This feature of my invention may be employed with other forms of work-support than the double drum-segment herein shown. Furthermore, I prefer to provide the machine with an automatic feed mechanism for the skins; but I do not desire to limit my invention in this respect, as this feature may be omitted and a superior machine still obtained, in which case the skins may be placed in position on the work-support by the operator.

By means of the adjusting devices for the springs the pressure of the operating-cylinder upon the skin may be regulated as desired to suit the different kinds of work. So, also, by

means of the set-screws b^{12} b^{13} the operating-roll may be accurately positioned or adjusted with relation to the work-support.

By reference to Figs. 4 and 5 it will be noticed that the movable jaw of each clamping mechanism is pivoted on the opposite sides of the center of the drum from its coöperating stationary jaw and that the said movable jaw coöperates with the inner face of the stationary jaw rather than with the upper face thereof, as in machines of this class as heretofore constructed and known to me and in which the movable jaw is pivotally mounted on the drum-shaft.

With the construction and arrangement of the clamping mechanism herein shown the entire space between the drum-segments is available for the operator to place the hide between the movable jaw and the stationary jaw with a minimum opening of the said jaws. Furthermore, the fleshings or parts removed by the operating-roll are permitted to drop into the drum and do not lodge on the biting-face of the stationary jaw, which in the construction herein shown is the inner face and which is in a substantially vertical position when the said jaw is brought under or in such position with relation to the cylinder a^9 as would enable the fleshings to drop upon its upper surface. Consequently no opportunity is afforded for the fleshings to cling to the inner face of the stationary jaw.

By reference to Fig. 4 it will be seen that part of the fleshings removed from the hide a^7 can drop onto the drum and upon the jaw b^{25} when the latter in the revolution of the drum is brought beneath the roll a^9.

In practice the fleshings deposited on the upper surface of the stationary jaw accumulate and form a soft and slippery layer upon which the hide rests, and when the movable jaw is pivoted on the drum-shaft and cooperates with the upper face of the stationary jaw, as in machines heretofore constructed, the slippery layer of soft fleshings between the hide and the stationary jaw prevents the hide being firmly and securely clamped, whereas in the construction herein shown the stationary jaw is provided at all times with a clean biting-face.

The machine herein shown may be provided with a suitable cover or hood f for the operating cylinder or roll a^9.

It will be noticed that the levers a^{20} a^{21} are pivoted at their lower ends and support the operating-roll a^9 at their upper ends, so that the weight of the said roll is practically supported substantially over the pivots for the said levers, which enables the roll to be moved toward and from the work-support with a minimum power. Furthermore, the operating-roll a^9 is free to move in a substantially horizontal plane to enable it to adapt itself to irregularities in the thickness of the hide or skin by reason of its journal-boxes being pivotally supported by the screws a^{16} a^{17}.

I claim—

1. In a machine of the class described, the combination of the following instrumentalities, viz: a movable work-support upon which the hide or skin to be treated is placed, and an operating roll or cylinder supported by levers whose pivots are in a substantially vertical plane passing through the axis of the roll or cylinder and normally held substantially in the path of movement of the work-support, and means to automatically hold the said cylinder in its normal position and permit it to yield as the skin passes by it and yet automatically maintain the said cylinder in contact with the hide or skin under pressure irrespective of the thickness of the said hide or skin, substantially as described.

2. In a machine of the class described, the combination of the following instrumentalities, viz: a movable work-support, an operating cylinder or roll coöperating therewith, supports for said roll or cylinder movable in the arc of a circle and in which said roll is supported above the center of said circle, and means connected to said supports to normally place the said roll substantially in the path of movement of the work-support and adapted to permit the said roll to be moved by the work away from its normal position and to automatically maintain the said roll in contact with the work irrespective of the thickness of the same, substantially as described.

3. In a machine of the class described, the combination of the following instrumentalities, viz: a revoluble drum or work-support, means to secure the work thereon, a revolving cylinder or roll coöperating with the said drum, pivotal supports for said roll in which said roll is mounted in a substantially vertical line through the pivots for said supports, means to automatically move the said supports and the roll or cylinder toward said drum and maintain the said roll in engagement with the work on the revolving drum, substantially as described.

4. In a machine of the class described, the combination of the following instrumentalities, viz: a revoluble drum or work-support, a revoluble operating-tool coöperating with said drum, substantially vertical pivotal supports for said tool movable toward and from the drum and in which the said tool is supported substantially in a vertical line through the pivots for said supports, means to automatically move said tool toward the said drum, and means to limit the movement of the tool toward said drum, substantially as described.

5. In a machine of the class described, the combination of the following instrumentalities, viz: a movable work-support, an operating roll or cylinder coöperating therewith, pivoted levers supporting said roll, rods connected to said levers, springs to act on said rods and normally position the operating-roll substantially in the path of movement of the work-support, and means to limit the move-

ment of the said operating-roll toward and from the work-support, the said springs automatically keeping the said operating-roll in engagement with the work while the latter is carried by its support past the said roll, substantially as described.

6. In a machine of the class described, the combination of the following instrumentalities, viz: a movable segmental drum, a clamping mechanism coöperating therewith, and an automatic feed mechanism coöperating with the segmental drum and clamping mechanism and actuated by said drum to feed the work onto the drum when the clamping mechanism is open, substantially as described.

7. In a machine of the class described, a segmental rotatable drum, an automatic work-feed mechanism consisting of a support for the work movable toward the drum, and a pusher movable with said support, and means to act on said pusher and push the work off from its support, substantially as described.

8. In a machine of the class described, the combination of the following instrumentalities, viz: a movable work-support, an operating roll or cylinder coöperating therewith, substantially vertical pivoted levers supporting said roll, rods connected to said levers, and springs to act on said rods and automatically keep said operating-roll in engagement with the work while the work is carried by its support past the said roll, substantially as described.

9. In a machine of the class described, the combination of the following instrumentalities, viz: a work-support comprising segments of a drum, clamping mechanisms coöperating with said segments and comprising stationary members or jaws, and movable jaws located within and movable toward the center of the drum to open the said jaws, actuating mechanisms for said movable jaws connected to said jaws to positively move the same, and a cam to operate said actuating mechanisms, substantially as described.

10. In a machine of the class described, the combination of the following instrumentalities, viz: a work-support comprising segments of a drum, an automatically-positioned operating roll or cylinder coöperating with said drum-segments, clamping mechanisms coöperating with said segments and comprising stationary members or jaws, and movable jaws located within and movable toward the center of the drum to open said jaws, actuating mechanisms for said movable jaws connected to said jaws to positively move the same, and a cam to operate said actuating mechanisms, substantially as described.

11. In a machine of the class described, the combination of the following instrumentalities, viz: a rotatable segmental drum, an automatic feed mechanism for the work coöperating with said segmental drum, and means movable with the drum to operate said feed mechanism, substantially as described.

12. In a machine of the class described, the combination of the following instrumentalities, viz: a movable work-support, an operating roll or cylinder, pivoted levers in which said roll is adjustably supported, spring-actuated rods connected to said levers to move the said roll toward the work-support, and adjustable means carried by the said levers to limit the movement of the said roll toward the work-support, and means to regulate the force of the said springs, substantially as described.

13. In a machine of the class described, the combination of the following instrumentalities, viz: a rotatable segmental drum provided with a clamping mechanism comprising a stationary jaw, and a movable jaw pivotally supported within the drum at one side of the center thereof and movable toward the center of the drum to open said jaw, substantially as and for the purpose specified.

14. In a machine of the class described, the combination of the following instrumentalities, viz: a rotatable segmental drum, a stationary clamping-jaw secured to the said drum, a movable clamping-jaw pivoted within the drum at one side thereof to coöperate with the inner face of the stationary jaw and movable toward the center of the drum to open said movable jaw, a cam, and mechanism connected to the free end of the pivoted jaw and operated by said cam, substantially as and for the purpose specified.

15. In a machine of the class described, the combination of the following instrumentalities, viz: a movable work-support upon which the hide or skin to be treated is placed, and an operating roll or cylinder movable in the arc of a circle having its center in a substantially vertical plane extended through said roll and normally held substantially in the path of movement of the work-support, and means to automatically hold the said cylinder in its normal position and permit it to yield as the skin passes by it and yet automatically maintain the said cylinder in contact with the hide or skin under a minimum pressure irrespective of the thickness of the said hide or skin, and means to adjust the pressure of the operating roll or cylinder upon the work, substantially as described.

16. In a machine of the class described, the combination of the following instrumentalities, viz: a movable work-support, an operating roll or cylinder coöperating therewith, substantially vertical levers pivoted at their lower ends and in which the said roll is pivoted to move in a substantially horizontal direction, and means to act on said levers and yieldingly maintain the said roll in operative engagement with the work on the said support, substantially as described.

17. In a machine of the class described, the combination of the following instrumentalities, viz: a movable work-support upon which the hide or skin to be treated is placed, and an operating roll or cylinder movable in the arc of a circle having its center in a sub-

stantially vertical plane extended through said roll and normally held substantially in the path of movement of the work-support, and means to automatically hold the said cylinder in its normal position and permit it to yield as the skin passes by it and yet automatically maintain the said cylinder in contact with the hide or skin under a minimum pressure irrespective of the thickness of the said hide or skin, substantially as described.

18. In a machine of the class described, the combination of the following instrumentalities, viz: a segmental drum, a clamping mechanism coöperating therewith and comprising a stationary jaw and a movable jaw pivoted within the drum off the center thereof and movable toward said center to open said jaw, an operating-roll, substantially vertical levers supporting said roll and pivoted in a substantially vertical plane tangential to said drum, means to move said roll toward said drum, and means to limit said movement of the roll, substantially as described.

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

ALBERT F. JONES.

Witnesses:

JAS. H. CHURCHILL,

J. MURPHY.