

(No Model.)

5 Sheets—Sheet 1.

A. E. WHITNEY.
HIDE FLESHING MACHINE.

No. 473,039.

Patented Apr. 19, 1892.

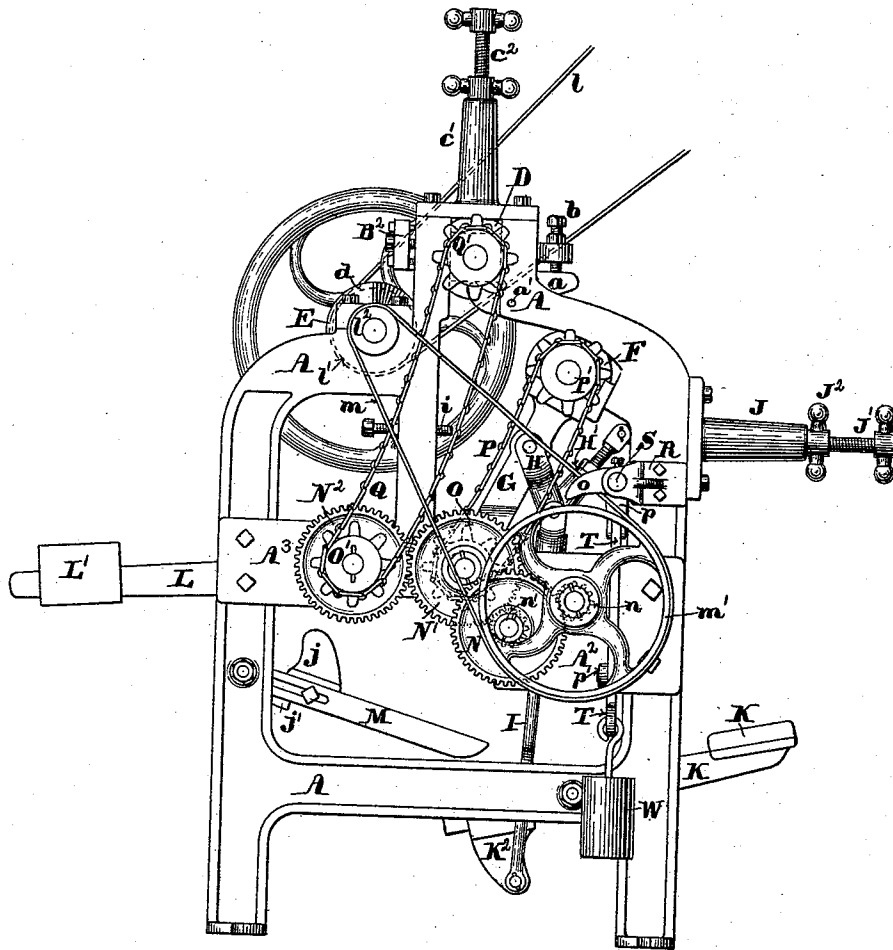


Fig. 1.

Witnesses:

Robert B. Edes.
Walter G. Lombard.

Inventor:

Arthur E. Whitney,
by N. G. Lombard
Attorney.

(No Model.)

5 Sheets—Sheet 2.

A. E. WHITNEY.
HIDE FLESHING MACHINE.

No. 473,039.

Patented Apr. 19, 1892.

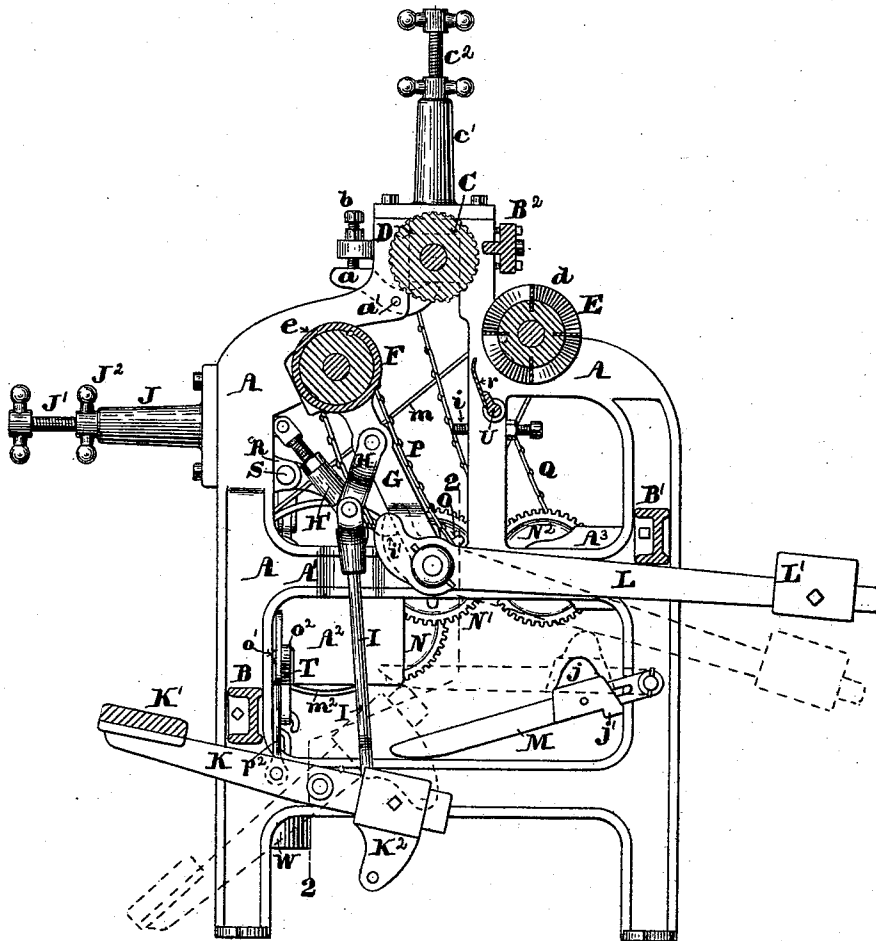


Fig. 2.

Witnesses:
Robert R. Edes.
Walter E. Lombard.

Inventor:
Arthur E. Whitney,
by N. C. Lombard
Attorney.

(No Model.)

5 Sheets—Sheet 3.

A. E. WHITNEY.
HIDE FLESHING MACHINE.

No. 473,039.

Patented Apr. 19, 1892.

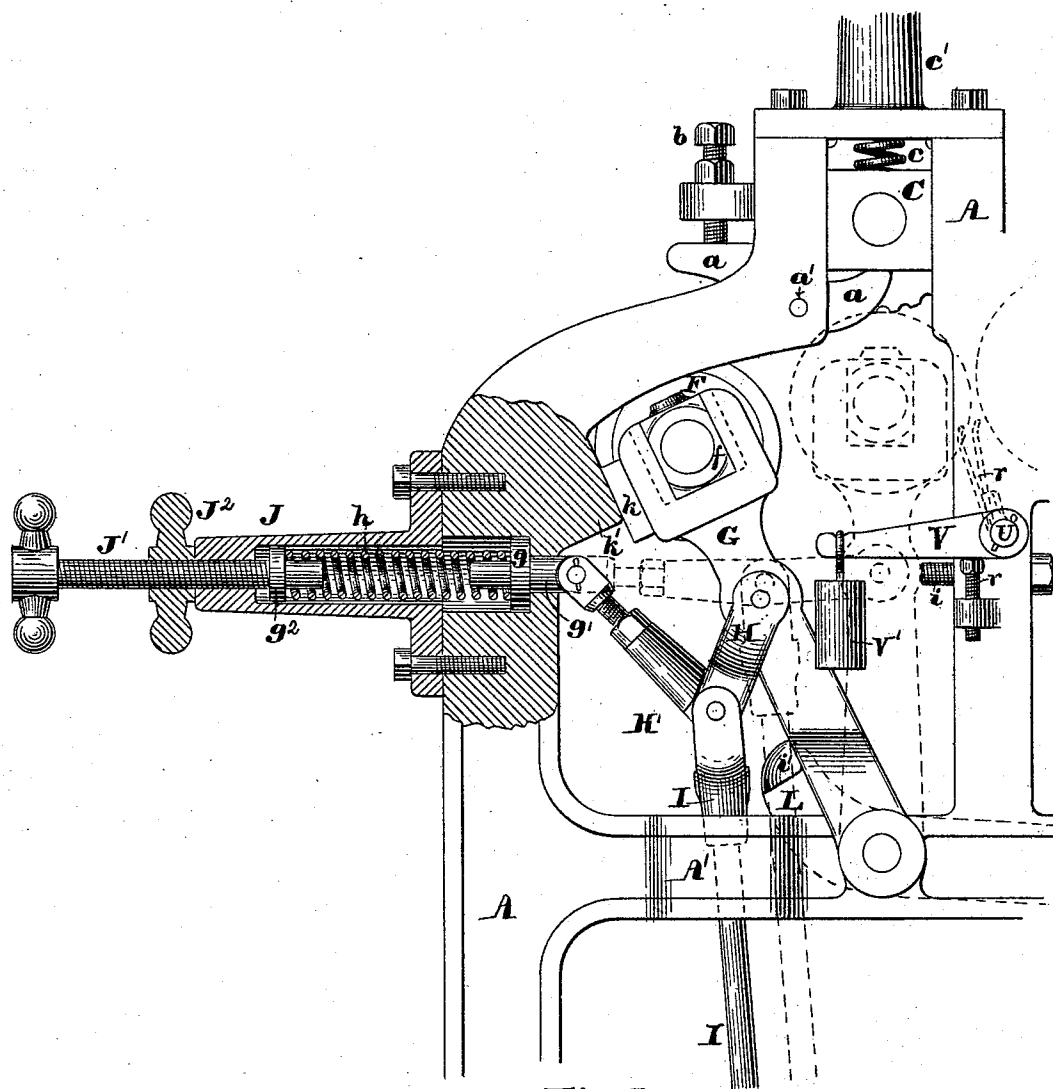


Fig. 5.

Witnesses:

Robert B. Edes
Walter E. Lombard.

Inventor:

Arthur E. Whitney,
by N. C. Lombard
Attorney.

(No Model.)

5 Sheets—Sheet 4.

A. E. WHITNEY.
HIDE FLESHING MACHINE.

No. 473,039.

Patented Apr. 19, 1892.

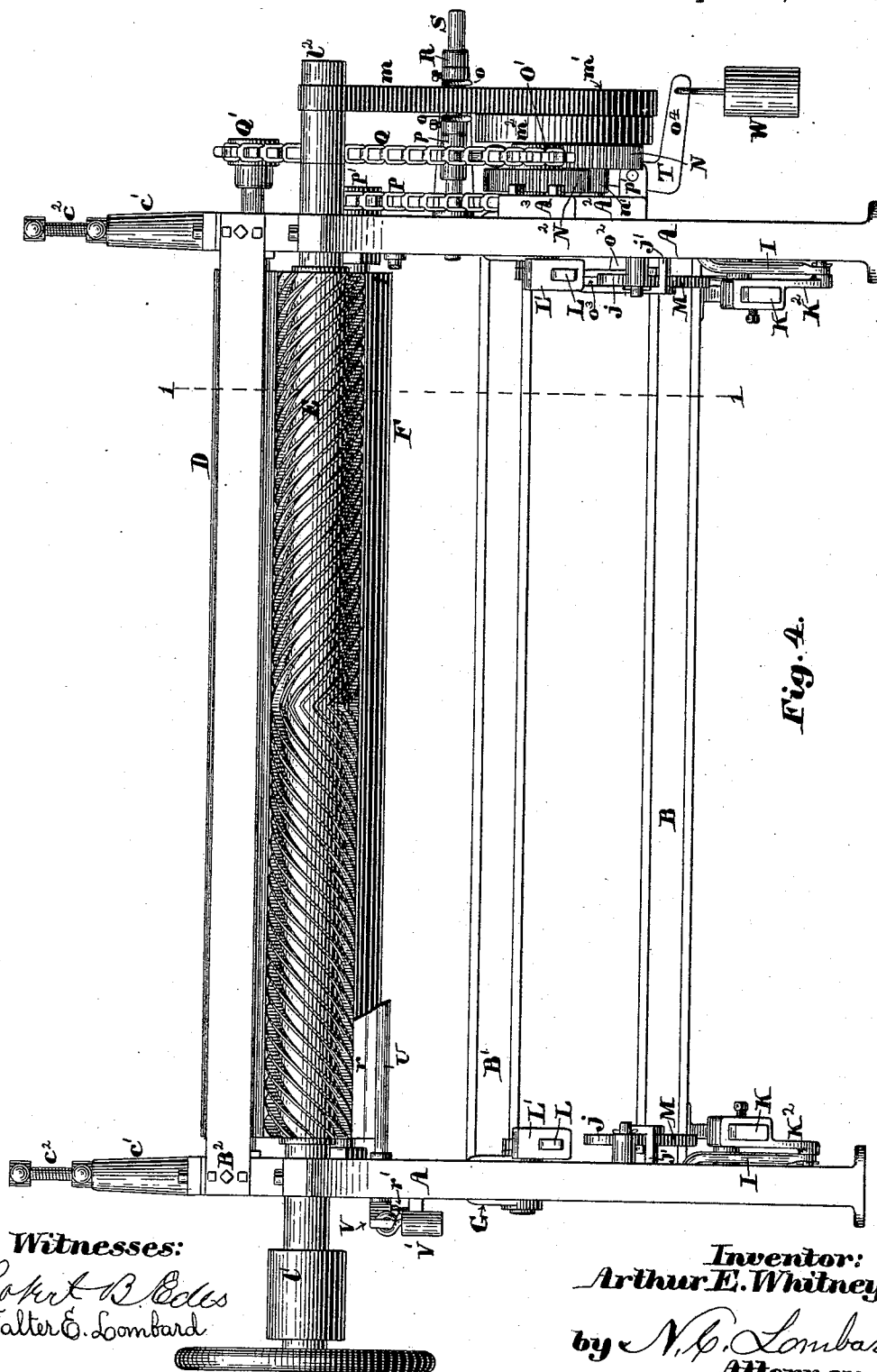


Fig. 4.

Witnesses:

Robert B. Edes
Walter E. Lombard

Inventor:
Arthur E. Whitney,
by N. P. Lombard
Attorney.

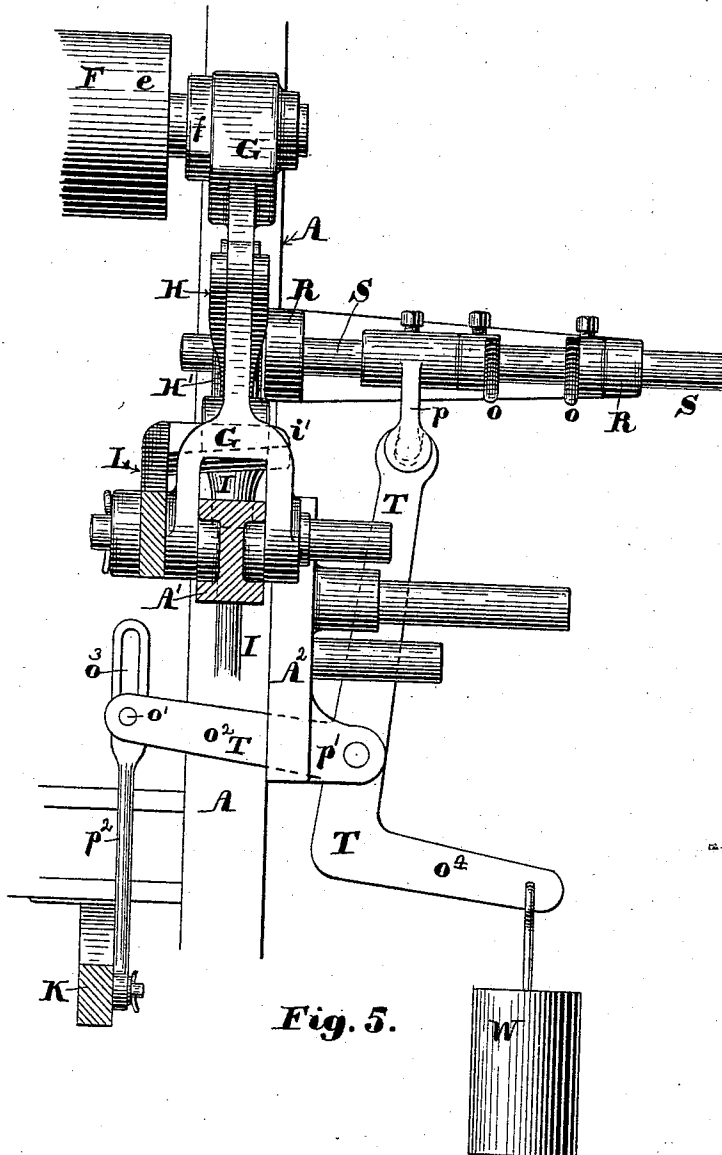
(No Model.)

5 Sheets—Sheet 5.

A. E. WHITNEY.
HIDE FLESHING MACHINE.

No. 473,039.

Patented Apr. 19, 1892.



Witnesses:
Robert B. Edis.
Walter E. Lombard.

Inventor:
Arthur E. Whitney,
by *N. P. Lombard*
Attorney,

UNITED STATES PATENT OFFICE.

ARTHUR E. WHITNEY, OF WINCHESTER, MASSACHUSETTS.

HIDE-FLESHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 473,039, dated April 19, 1892.

Application filed November 14, 1891. Serial No. 411,895. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR E. WHITNEY, of Winchester, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Hide-Fleshing Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to hide-fleshing machines; and it consists in certain novel features of construction, arrangement, and combination of parts, which will be readily understood by reference to the description of the drawings and to the claims hereinafter given, and in which my invention is clearly pointed out.

Figure 1 of the drawings is an end elevation of a machine embodying my invention. Fig. 2 is a vertical sectional elevation, the cutting plane being on line 1 1 on Fig. 4, looking toward the right of said figure. Fig. 3 is a partial sectional elevation of the end opposite to that shown in Fig. 1, drawn to an enlarged scale. Fig. 4 is an elevation of the back side of the machine. Fig. 5 is a partial sectional elevation of one end of the machine, the cutting plane being on line 2 2 on Fig. 3 and drawn to the same scale as Fig. 3.

In the drawings, A A are the two end frames of the machine, connected together by the tie-girts B, B', and B² and having their upper ends slotted to receive the boxes C C, which rest upon and are supported by the inner ends of the levers a, pivoted at a' and adjustable about said pivotal connection by means of the set-screws b b to adjust said boxes and the feed-roll D, mounted therein, to the desired elevation, said roll being pressed down upon said supporting-lever by means of springs c, contained in the casing c' and adjustable to regulate their tensions by the set-screws c², substantially in the same manner as described in the Letters Patent, No. 367,257, granted to me July 26, 1887.

E is the fleshing-cylinder, provided with blades d d, arranged spirally in opposite directions from the center of its length and mounted in fixed bearings in the frames A A, as shown in Figs. 1 and 4.

F is the bed-roll, having its periphery covered with a sleeve or envelope e, of rubber or other elastic material, and mounted in bearings in the boxes f f, fitted to the forked up-

per ends of the two radius-arms G G, the lower ends of which are pivoted to the cross-bars A' of the frames A, as shown in Figs. 3 and 5.

H is a toggle-link pivoted at one end to a radius-arm G and at its other end to the toggle-link H' and to the treadle-rod I. The toggle-link H' is composed of two parts screwed one within the other, so that the length of said link may be readily adjusted to suit different conditions. The outer end of said link H' is pivoted to the stem g' of the piston g, fitted to a cylindrical socket formed in the frame A, in which it is movable toward and from the center of the machine, it being pressed against the abutment at the inner end of said socket and toward the center of the machine by the spring h, inclosed in the housing J, the tension of said spring being adjustable by the set-screw J', acting upon the piston g², said set-screw being clamped in its adjusted position by the check-nut J².

K K are two treadle-levers pivoted one to the inside of each of the frames A and connected together at their outer ends by the treadle-board K', as shown. Each of the treadle-levers K has adjustably secured in its inner end the laterally-projecting arm K², to the lower end of which is pivoted the lower end of a treadle-rod I, as shown in Figs. 1 and 4. A set screw i is fitted to each frame A in such a position and manner as to serve as an adjustable stop to limit the inward movement of the radius-arms G G.

L L are two levers mounted upon the inner ends of the fulcrum-pins of the radius-arms G G and provided at the end of their short arms with laterally-projecting arms or lugs i', with which the front sides of the radius-arms G come in contact to raise the long arms of said lever L to the positions shown in full lines in Fig. 2, when the bed-roll is moved away from the fleshing-cylinder, as shown in Fig. 2. The long arms of the levers L have adjustably mounted thereon the counterweights L', which partially counterbalance the weight of the bed-roll when in its retracted position, and thus reduce the amount of power necessary to be applied to the treadle to move said bed-roll into contact with the feed-roll and fleshing-cylinder when the skin to be fleshed has been placed thereon.

M M are two arms pivoted one to the inside

of each frame A near its back or rear edge and projecting toward the front of the machine to a point above the rear end of the treadle-lever K, and each of said arms has secured thereon the upwardly-projecting arm *j* in the same vertical plane as the long arm of the lever L, and is also provided with the lug *j'*, which engages with the inner edge of the rear upright of the frame A to limit the downward movement of the inner end of the arm M.

Each of the front sides of the upper forked ends of the radius-arms G has secured thereto by any suitable means a cushion *k*, of rubber or other yielding material, which comes in contact with the shoulder *k'* on the frame A to arrest the outward movement of the bed-roll with the minimum of shock or jar to the machine.

Rotary motion is imparted to the fleshing-cylinder by means of the belt *l*, leading from any suitable counter-shaft to the pulley *l'* on the shaft of said cylinder. The opposite end of said shaft has secured thereon the broad-faced pulley *l''*, from which the belt *m* leads to and around the loose pulley *m'* or the tight pulley *m''*, mounted upon a stud set in the plate A², secured to the left-hand frame A. The tight pulley *m''* has formed upon or secured to its hub the pinion *n*, (shown in dotted lines in Fig. 1,) which meshes into and imparts motion to the spur gear-wheel N, also mounted upon a stud set in the plate A² and having connected therewith the pinion *n'*, which meshes into and imparts motion to the spur gear-wheel N', which has secured to its inner face the sprocket-wheel O. (Shown in dotted lines in Fig. 1.) The gear-wheel N' is mounted upon the outer end of the fulcrum-pin, which connects the left-hand radius-arm G to the frame A and meshes into and imparts motion to the spur gear-wheel N², mounted upon a stud set in the plate A³, secured to the outer face of the left-hand frame A, and having secured thereto the sprocket-wheel O'. (Shown in Figs. 1 and 4.) A chain belt P connects the sprocket-wheel O with the sprocket-wheel P' on the left-hand end of the bed-roll F, and a similar chain belt Q connects the sprocket-wheel O' with the sprocket-wheel Q' on the left-hand end of the feed-roll D, said chain belt being sufficiently slack to permit the necessary adjustment of the feed-roll D.

S is a shipper rod or bar mounted in bearings in the stand R, bolted to and projecting outward from the left-hand frame A, and has secured thereon the shipper-fingers *o o* and the pendent arm *p*, with which the forked upper end of the three-armed lever T engages, as shown. The lever T is pivoted to ears *p'* on the plate A² and has a pin *o'* set in the end of the arm *o''* to enter the slot *o'''* in the rod *p''*, the lower end of which is pivoted to one of the treadle-levers K and has suspended from the end of the arm *o''* the counter-weight W, all as shown in Fig. 5.

If desired, plain pulleys may be substituted for the sprocket-wheels O, O', P', and Q' and ordinary belts for the chain belts P and Q without affecting the principles of my invention.

The blades of the fleshing-cylinder are ground concentric to the axis of said cylinder, and I have found by practical test that a cylinder having a large number of spirally-arranged blades arranged as shown and ground as described will spread out the hide upon the bed-roll and remove the surplus flesh without the intervention of a spreading-cylinder distinct from the fleshing-cylinder, except when the cylinder is acting upon the irregular skirts of the hide, which are liable to be at one side or the other of the center of the length of the fleshing-cylinder, in which case the action of the spiral blades tends to bend said projecting portion of the hide too far to one side or the other, thus forming a fold therein, and then the blade will cut the hide so as to injure it. To obviate this difficulty, I mount a stiff rocker-shaft U in bearings in the frames A, secure to said shaft a steel plate *r* of a length equal to the lengths of the bed-roll and fleshing-cylinder, said shaft and plate being so arranged that the upper portion of one side will press upon the hide being acted upon and hold it hard against the surface of the bed-roll when said roll is moved into position to bring the hide placed thereon into contact with the blades of the fleshing-cylinder, and thus prevent the irregular projecting portions of the hide being thrown to one side and injured by the blades of the fleshing-cylinder.

The shaft U has secured to one end thereof the lever V, from the free or movable end of which is suspended the weight V', which serves to hold the lever V in contact with the stop-screw *r'* until the bed-roll is brought into contact with the upper edge of the plate, when said plate will be moved about the axis of the shaft U a limited distance, lifting the movable end of the lever V and the weight V'.

The shaft U and plate *r* are shown best in Figs. 2 and 3, and partly in Fig. 4, where a great portion of these parts are broken away to show the bed-roll beyond. The lever V and weight V' are shown in Figs. 3 and 4.

The operation of my invention is as follows: The parts being in the positions shown in the drawings, and power being applied to the fleshing-cylinder E to rotate it at a high rate of speed, and the bed-roll F being nearly counterbalanced by the weight L', the operator places a skin or hide upon the bed-roll in such position that about one-half its length shall be on each side of said roll. He then places his foot upon the treadle-board and depresses it into the position shown in dotted lines in Fig. 2, which can be done with the exercise of a small amount of power on account of the counterbalance-weight L', and causes the toggle H H' to be nearly straightened, the bed-roll to be moved into the position

shown in dotted lines in Fig. 3, so as to cause the hide placed thereon to come in contact with the upper part of the plate *r* and with the blades of the cylinder E. The first part of the movement of the treadle-board and the forward movement of the bed-roll from its state of rest is further facilitated by the fact that the leverage of the short arms of the treadle-levers is much greater at the start than during the last part of the movement of said treadle, when the toggle is in its most advantageous position for exerting power. The last part of the downward movement of the treadle-board causes the belt *m* to be shipped from the loose pulley *m'* upon the tight pulley *m*² by the upper end of the slot *o*³ in the rod *p*² coming in contact with the pin *o'* in the arm *o*² of the lever T, and at the same time the rear ends of the treadle-levers K K come in contact with and lift the free ends of the arms M M into the position indicated by dotted lines in Fig. 2, whereby the levers J are arrested in their descent or raised to the position shown in dotted lines in Figs. 2 and 3, with their laterally-projecting lugs or arms *i'* removed from contact with the arms G, when the weights L' will serve to somewhat more than counterbalance the treadle-board, so that when the operator's foot is removed therefrom the treadle will automatically assume the position shown in full lines and the arms G G and the bed-roll will assume the position shown in full lines in Figs. 1, 2, and 3.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a hide-fleshing machine, the combination of a revolving fleshing-cylinder mounted in fixed bearings, a feed-roll mounted in yielding bearings, adjustable stops to limit the inward movement of said feed-roll, a bed-roll mounted in bearings in the free ends of a pair of radius-arms, a treadle mechanism connected to and adapted to move said radius-arms about their pivotal connections to move said bed-roll into contact with and away from said feed-roll and fleshing-cylinder, stops to limit the outward movement of said bed-roll, and mechanism having provision for imparting rotary motion to said feed and bed rolls when said bed-roll is moved into contact with said fleshing-cylinder and to arrest said rotary motions of said bed and feed rolls when said bed-roll is moved away from said fleshing-cylinder.

2. In combination with a revolving knife-cylinder mounted in fixed bearings and a feed-roll mounted in adjustable and yielding bearings, the two radius-arms G G, a bed-roll mounted in bearings in the free ends of said radius-arms, the toggle-links H and H', connected at one end to and adapted to move said radius-arms about their axes of motion, the yielding piston-abutment *g g'*, connected to said toggle, the spring *h*, the rod I, and the treadle K K', all constructed, arranged, and operating substantially as described.

3. In combination with a revolving knife-cylinder mounted in fixed bearings and a feed-roll mounted in yielding bearings, adjustable stops to limit the inward or downward movement of said feed-roll, the two radius-arms G G, a bed-roll mounted in bearings in the free or movable ends of said radius-arms, the toggle-links H and H', connected by one end to said radius-arms, the yielding piston-abutment *g g'*, connected to the other end of said toggle, the treadle-levers K K, the rods I, connecting said treadle-levers and toggle-links, the weighted levers L L, provided with the laterally-projecting arms or lugs *i'* to engage said radius-arms, and the arms or levers M M, provided with the arms *j* and lugs *j'*, constructed relative to the levers L L and K K, as set forth, and arranged and adapted to operate substantially as described.

4. In combination with a revolving knife-cylinder mounted in fixed bearings and a feed-roll mounted in adjustable and yielding bearings, the radius-arms G G, a bed-roll mounted in bearings in the free or movable ends of said radius-arms, the toggle-links H H', the treadle-levers K K, the rods I, connecting said treadle-levers to the toggle-links, the tight and loose pulleys *m*² and *m'*, a belt leading from a pulley on the knife-cylinder to said tight and loose pulleys, a train of gears and belts or chains connecting said tight pulley *m*² with pulleys or sprocket-wheels on the feed and bed rolls, a shipper rod and fork, the three-armed weighted lever T, provided with the pin *o'* and connected by its upright arm to the shipper-rod, and the slotted arm *p*², pivoted to the treadle-lever and engaging by its slotted end said pin *o'*, all substantially as described.

5. In a hide-working machine, the combination, with a revolving knife-cylinder mounted in fixed bearings and a feed-roll mounted in adjustable and yielding bearings, of a bed-roll mounted in the movable ends of two radius-arms, the rocker-shaft U, the steel plate *r*, secured to and projecting from said rocker-shaft U in position to be engaged by said bed-roll when it is moved into contact with the fleshing-cylinder carried by said lever, the lever V, mounted on said rocker-shaft, the weight V', carried by said lever V, the stop *r'* to limit the downward movement of said lever V, a treadle mechanism for moving the bed-roll toward and from the knife-cylinder, suitable gearing for rotating said feed and bed rolls, and a shipper mechanism connected to and controlled by the treadle, all arranged and operating substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 10th day of November, A. D. 1891.

ARTHUR E. WHITNEY.

Witnesses:

N. C. LOMBARD,

WALTER E. LOMBARD.