

(No Model.)

3 Sheets—Sheet 1.

A. E. WHITNEY.
HIDE FLESHING MACHINE.

No. 467,216.

Patented Jan. 19, 1892.

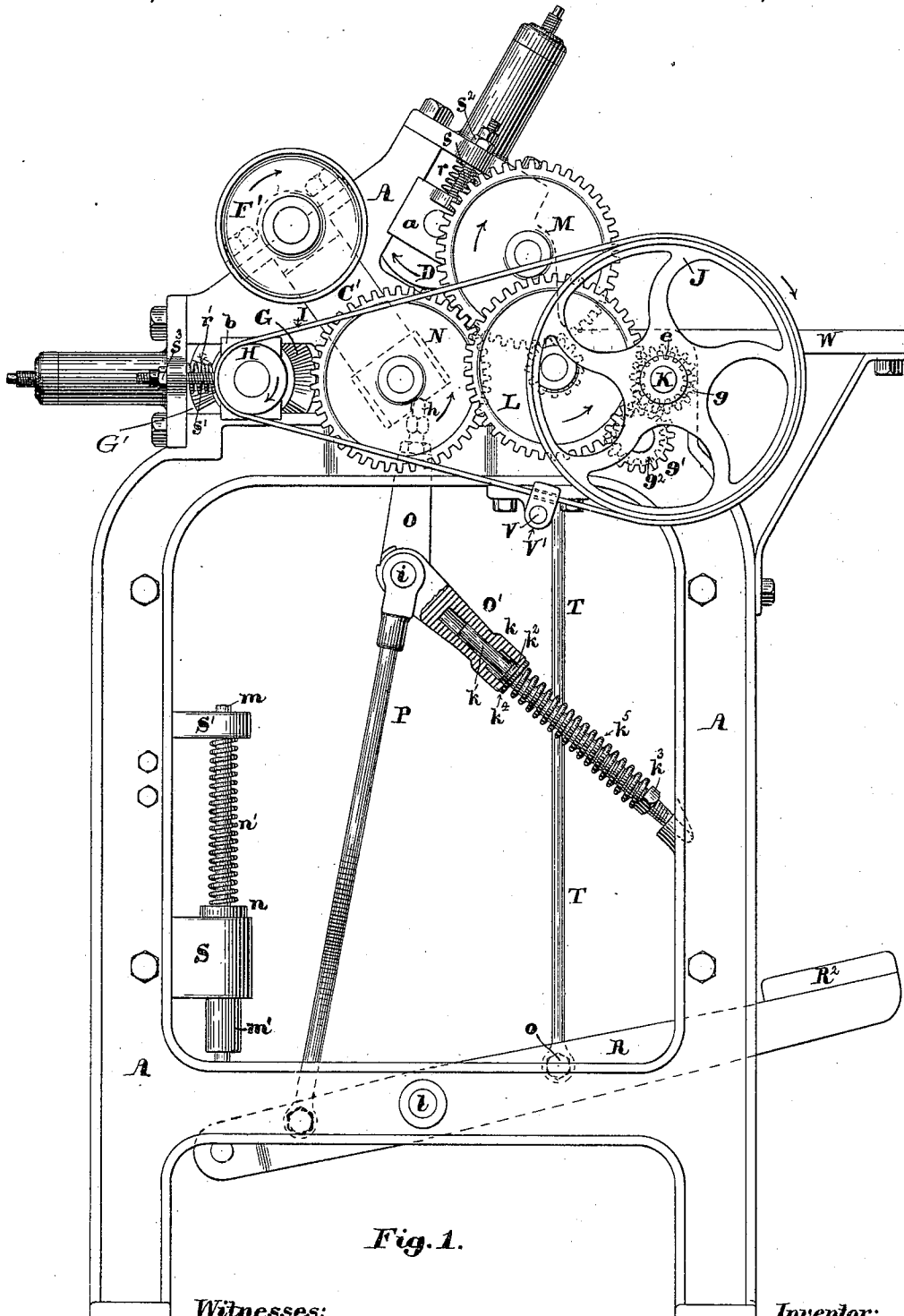


Fig. 1.

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

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

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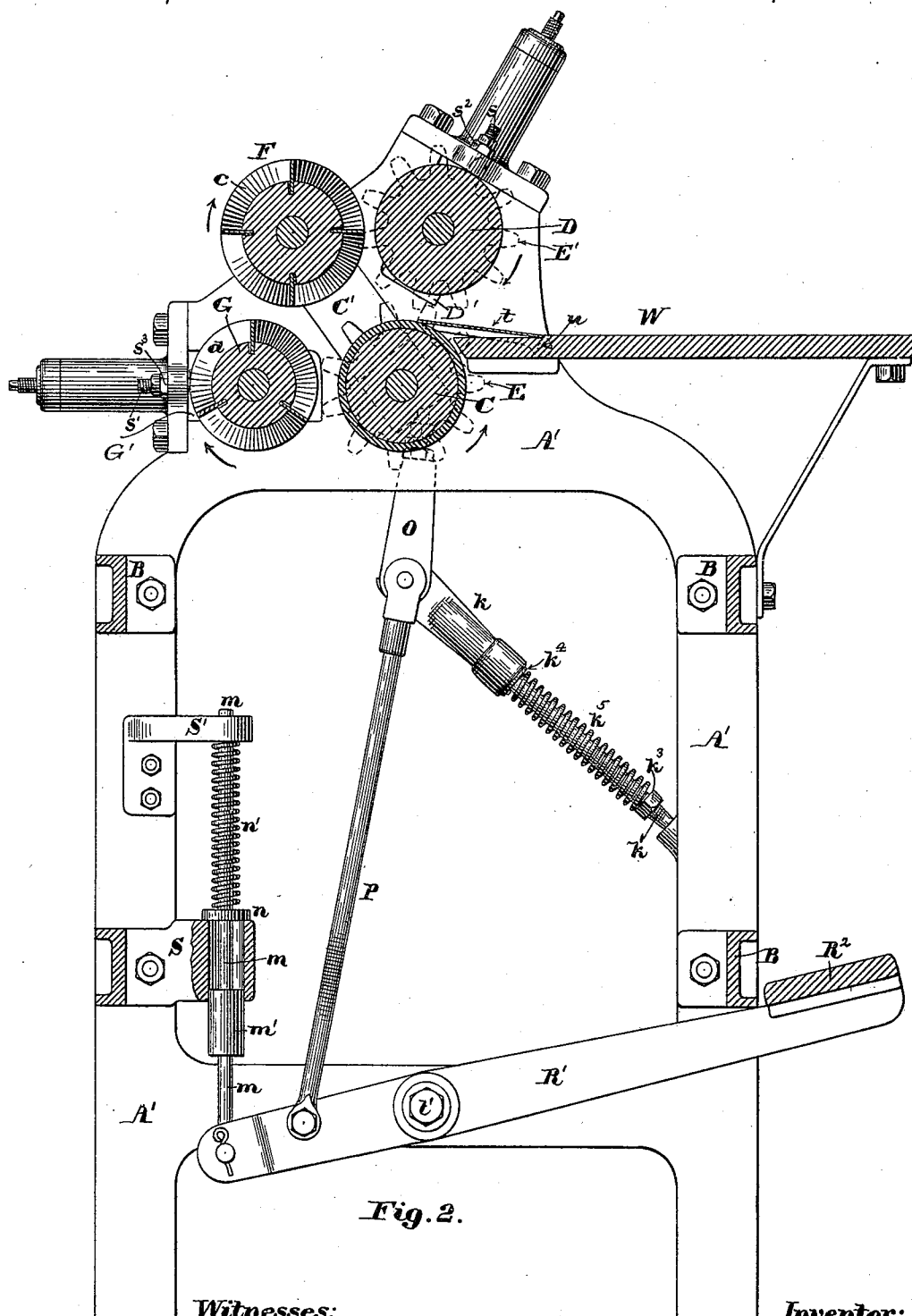


Fig. 2.

Witnesses:
Walter C. Lombard.
Robert B. Edes.

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

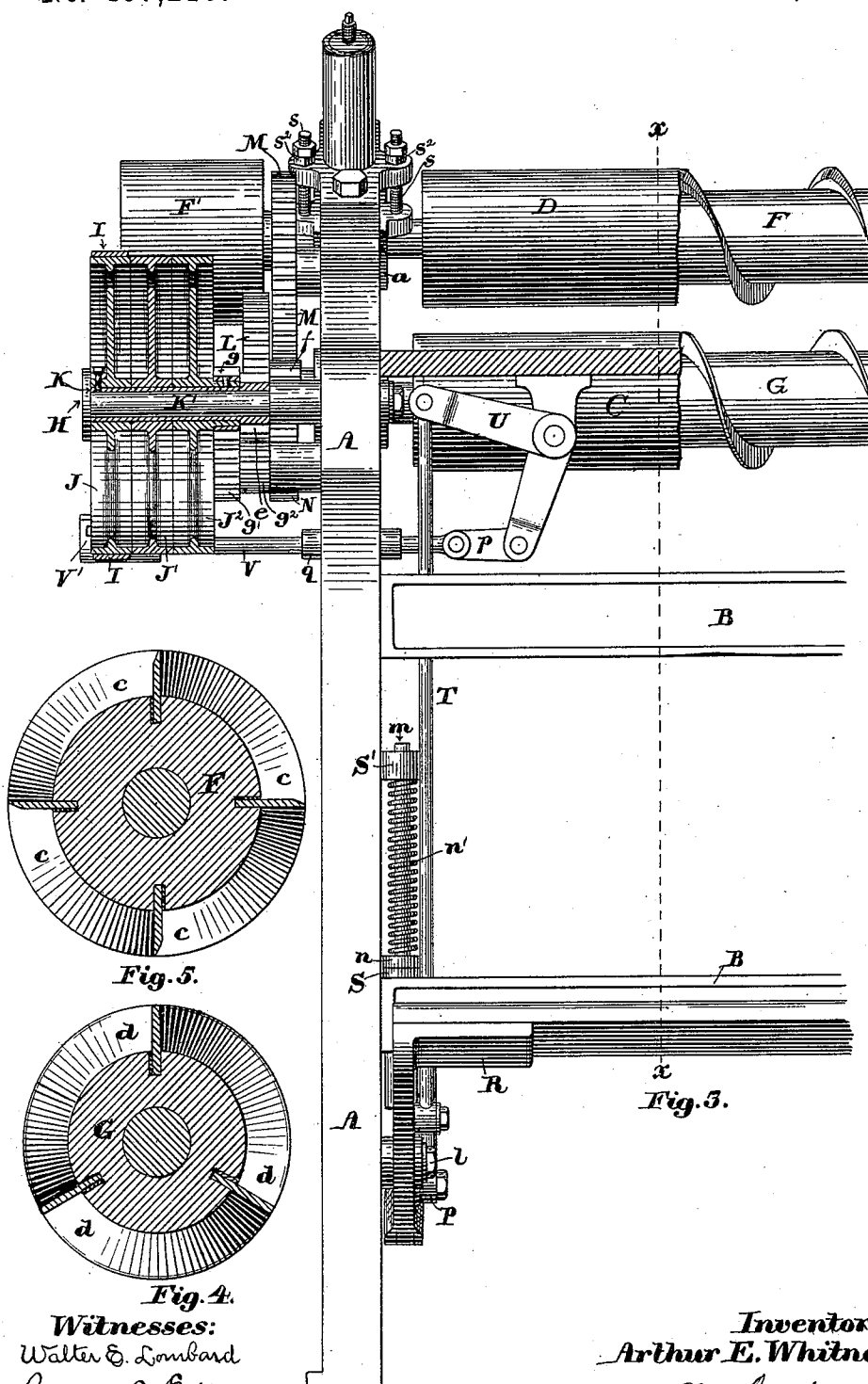
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UNITED STATES PATENT OFFICE.

ARTHUR E. WHITNEY, OF WINCHESTER, MASSACHUSETTS.

HIDE-FLESHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 467,216, dated January 19, 1892.

Application filed March 17, 1891. Serial No. 385,371. (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, in which my invention is clearly pointed out.

Figure 1 of the drawings is an end elevation of a machine embodying my invention, with a portion of the toggle cut in section. Fig. 2 is a vertical transverse section on line *xx* on Fig. 3 with the treadle-rod-guiding bearing cut in section on a different plane. Fig. 3 is a front elevation of the left half of the machine, with the table and the loose and reversing pulleys shown in section. Fig. 4 is a transverse section of the spirally-bladed hide-spreading cylinder drawn to an enlarged scale, and Fig. 5 is a similar view of the spirally-bladed fleshing-cylinder.

In the drawings, A and A' are the end frames of the machine, which are connected together by the tie-girts B B in a well-known manner.

C is the bed and lower feed-roll, mounted in bearings in boxes fitted to and movable obliquely in the slot C' of the frames A and A'. D is the upper feed-roll, mounted in like manner in boxes *a*, which are movable in the slots D' of said frames. The rolls C and D are geared together, so as to revolve in unison, by the gear-wheels E and E', (shown only in dotted lines in Fig. 2,) said gear-wheels being provided with extra-long teeth, so that said rolls may be separated, as shown in the drawings, without being thrown out of gear.

F is a cylinder provided with knife-edged blades *c* arranged spirally thereon in opposite directions from the center of its length, substantially like the hide-working knife-cylinder described in the Letters Patent No. 341,976, granted to me May 18, 1886. The

knife-cylinder F is mounted in fixed bearings secured to the frames A and A' at the upper ends of the slots C', as indicated by dotted lines in Fig. 1, the blades of said cylinder serving to cut away and remove the superfluous flesh from the hide or skin.

G is a cylinder mounted in movable boxes *b*, fitted to the slot G', and provided with a plurality of blades *d*, having their outer edges rounded, as shown in Fig. 4, and arranged spirally in opposite directions from the center of its length, so as to serve to spread the hide or skin laterally and remove all wrinkles therefrom.

The fleshing-cylinder F is revolved at a high rate of speed by means of the pulley F', secured upon one end of its shaft, as shown in Figs. 1 and 3, and a suitable belt leading therefrom to a main or counter shaft, (not shown,) and the spreading-cylinder is driven in a similar manner through the medium of a pulley similar to F', secured upon its shaft at the opposite side of the machine, and not shown in the drawings.

The shaft of the cylinder G has secured thereon at the left of the frame A the pulley H, from which the belt I leads to and around one or the other of three pulleys J, J', and J², arranged side by side on the sleeve K, mounted and revoluble on the stud K', set in the frame A. The pulley J is firmly secured to the sleeve K, so as to revolve therewith, while the pulleys J' and J² are fitted to revolve freely upon said shaft between said pulley J and the pinion *e*, which is formed in one piece with the sleeve K, so as to revolve therewith. The teeth of the pinion *e* engage with the teeth of the spur gear-wheel L, upon the hub of which is secured the pinion *f*, the teeth of which engage the teeth of the spur gear-wheel M, which is mounted upon a stud set in the frame A and engages with and imparts motion to the gear-wheel N, secured upon the shaft of the lower feed or bed roll C, as shown. The hub of the pulley J² has secured thereon the pinion *g*, the teeth of which are in engagement with the teeth of the pinion *g'*, loosely mounted upon a stud set in the frame A and having secured there- to another pinion *g*², which engages with the teeth of the gear-wheel L, so as to be revolved

thereby when the belt I is on the pulley J, as shown, or to impart motion to said gear L in a direction the reverse of that indicated by the arrow thereon when the belt I is shipped upon the pulley J². The boxes in which the roll C has its bearings have formed in their under surfaces recesses or sockets to receive the upper end of the adjustable pintle *h*, set in the toggle-link O, which is pivoted at *i* to the toggle-link O' and the treadle-rod P, as shown in Figs. 1 and 2. The toggle-link O' is made up of the socketed upper section *h*, the rod *k*', provided with the collar or shoulder *k*² and a male screw-thread at or near its lower end, the nut or adjustable collar *k*³, fitted to said thread, the washer or disk *k*⁴, and the spring *k*⁵, and the lower ends of said toggle-links O' are stepped in sockets in the frames A and A', as shown in Figs. 1 and 2.

R and R' are two treadle-levers pivoted at *l* and *l'* to the frames A and A', respectively, and connected together at their front ends by the treadle-board R², and each of said levers has pivoted thereto at the rear of its fulcrum the lower end of one of the treadle-rods P and at its rear end has pivoted thereto the lower end of a rod *m*, which has formed thereon or secured thereto the long collar *m*', fitted to and movable vertically in a bearing in the stand S, said rod *m* extending upward and through a bearing in the stand S' and has fitted loosely thereon the collar *n* and the spring *n*', as shown in Figs. 1, 2, and 3. The treadle-lever R also has pivoted thereto at *o* the lower end of the rod T, the upper end of which is pivoted to one arm of the elbow-lever U, the other arm of which is connected by the link *p* to the shipper-rod V, which is fitted to and movable endwise in a bearing *q*, secured to the frame A, and has secured to its outer end the shipper loop or fork V', all as shown in Figs. 1 and 3.

The upper feed-roll D and the spreading knife-cylinder G are pressed toward the bed-roll C by the springs *r* and *r'*, respectively, and the movements of said roll and cylinder are limited by the stop-rods *s* and *s'* and nuts *s*² and *s*³, all so constructed that said roll and cylinder may yield against the tension of their springs to accommodate themselves to the varying thickness of the hide or skin being acted upon.

W is a fixed feed-table arranged nearly upon a level with the upper surface of the bed-roll C when in its lowest position, and *t* is a supplementary table-leaf, made, preferably, of sheet metal and pivoted at *u* to the table W, and resting at its inner edge upon the upper surface of the roll C, and adapted to be moved about its pivotal connection to the table W as the roll C is moved upward. The bed-roll C is provided with a covering of rubber or other suitable elastic material in any well-known manner.

The operation of my invention is as follows. The several parts of the machine being in the

positions shown in the drawings, a hide or skin to be fleshed is placed upon the table W, with its inner end resting upon the upper surface of the roll C, with the flesh side up, when the machine is set in motion with the belt I upon the pulley J, when the several rolls and cylinders will be revolved in the directions indicated by the arrows on Fig. 2, and the skin will be drawn inward and downward by the rotation of the roll C until about one-half of the skin hangs down between the bed-roll and the spreading-cylinder G, when the operator places his foot upon the treadle-board R² and depresses it until the toggles O O' are straightened, the result of which is that the bed-roll, with the skin thereon, is moved upward into contact with the upper feed-roll D, the fleshing-cylinder F, and the spreading-cylinder G, and at the same time the belt I is shipped upon the pulley J² and the motions of the feed-roll D and bed-roll C are reversed, so as to feed the skin back upon the table, while at the same time the spiral blades on the cylinder G are spreading the skin laterally and the blades of the cylinder F are removing the superfluous flesh from the skin. When the skin is withdrawn from beneath the fleshing-cylinder, the operator removes his foot from the treadle-board and the bed-roll drops to its normal position again, the set of the toggle being broken by the tension of the springs *n' n'*, which were compressed during the last part of the upward movements of the rear arms of the treadle-levers R and R' by the shoulder or collar *m'* coming in contact with and raising the collar *n* and thus compressing said spring. The skin is then turned end for end and the operation is repeated.

By the use of my invention a perfect spreading of the skin is obtained, the wrinkles are completely removed, and the fleshing is accomplished without danger of injury to the skin and at a comparatively small cost.

The construction of the toggle-link O' is in two main parts, with the spring *k*⁵ tending to force said parts asunder, said spring being of sufficient stiffness to hold the weight of the roll C and its boxes, but adapted to yield if an extra pressure or load is applied to said roll, as sometimes happens when the skin becomes doubled or folded between said roll and the feed-roll D.

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 the fleshing-cylinder F, provided with spirally-arranged blades *c*, having cutting-edges and mounted in fixed bearings, the feed-roll D, the spreading-cylinder G, provided with spirally-arranged blades *d*, having blunt or rounded edges, said feed-roll and spreading-cylinder being mounted in yielding bearings, the bed-roll E, mounted in movable bearings, and mechanism having provision for moving said bed-roll bodily toward and from the fleshing-cylinder and into contact there-

with and with the feed-roll and the spreading-cylinder, substantially as described.

2. The combination of the fleshing-cylinder F, mounted in fixed bearings, the feed-roll D and spreading-cylinder C, mounted in yielding bearings, the bed-roll E, mounted in movable bearings, gears connecting said feed and bed rolls, a treadle connected to the bearings of said bed-roll for moving said roll toward the fleshing-cylinder, the pulley H on spreading-cylinder shaft, the sleeve-shaft K, carrying at one end the pinion *e* and revoluble on the stud K', the pulley J, firmly secured on said sleeve, the pulleys J' and J², mounted loosely on said sleeve, the pinion *g*, formed upon or secured to the hub of the pulley J², suitable gear-wheels connecting the pinions *e* and *g* with the bed and feed rolls, the shipper V V', and suitable rods and lever connecting said shipper to the treadle, whereby a depression of said treadle not only raises the bed-roll, but at the same time reverses its rotation, substantially as described.

3. The combination, in a hide-fleshing machine, of a spirally-bladed fleshing-cylinder mounted in fixed bearings, a feed-roll and a spirally-bladed hide-spreading cylinder, each mounted in yielding bearings, but upon opposite sides of said fleshing-cylinder, a bed-roll mounted in movable bearings and geared to said feed-roll, so as to revolve in unison therewith, a treadle-frame, a pair of toggles, each having one of its links made yielding in the direction of its length and arranged to act upon the boxes in which is mounted said bed-roll to move said roll into contact simultaneously with said feed-roll and the fleshing and spreading cylinders, a pair of links or rods connecting the knuckles of said toggles to said treadle, suitable gears and pulleys for revolving the fleshing and spreading cylinders

uniformly in the same direction and the feed and bed rolls in either direction, and a reversing or shipping mechanism connected to and operated by said treadle for reversing the rotation of said bed-roll, substantially as described.

4. The combination, in a hide-fleshing machine, of a spirally-bladed cylinder F, having chisel-shaped cutting-edges to its blades and mounted in fixed bearings, the spreading-cylinder G, provided with spiral blades having blunt or rounded operating edges and mounted in yielding bearings, the feed-roll D, mounted in yielding bearings, the bed-roll C, mounted in bearings movable toward and from the fleshing-cylinder F, gears connecting said feed and bed rolls, a pair of toggles each composed of links O and O', the links O' being composed of the parts *k* and *k'* and the spring *k*², the treadle R' R², the links P, the gear-wheels L, M, and N, the pinions *e*, *f*, *g*, *g'*, and *g*², the pulleys J, J', and J², the sleeve-shaft K, the stud K', the shipper V, the elbow-lever U, and the link T, all constructed, arranged, and operating substantially as described.

5. The combination of the bed-roll C, mounted in movable bearings, the toggles O O', the treadle R' R², the links P, the rod *m* *m'*, the stands S and S', the collar *n*, and the spring *n'*, all constructed and arranged to operate substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 14th day of March, A. D. 1891.

ARTHUR E. WHITNEY.

Witnesses:

N. C. LOMBARD,

WALTER E. LOMBARD.