Sept. 1, 1931. D. E. HARDING 1,821,094

FLESHING MACHINE

Filed Oct. 11, 1928 5 Sheets-Sheet 1

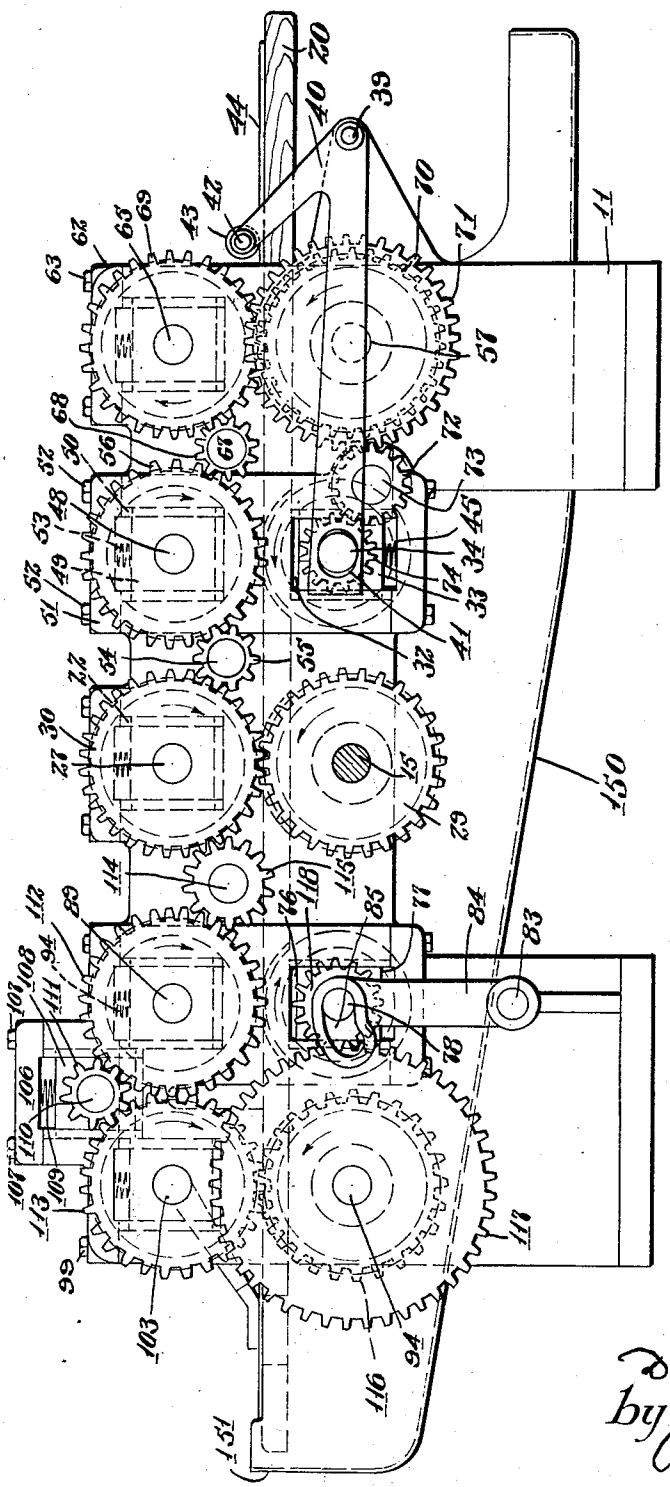


Fig. 1.

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FLESHING MACHINE

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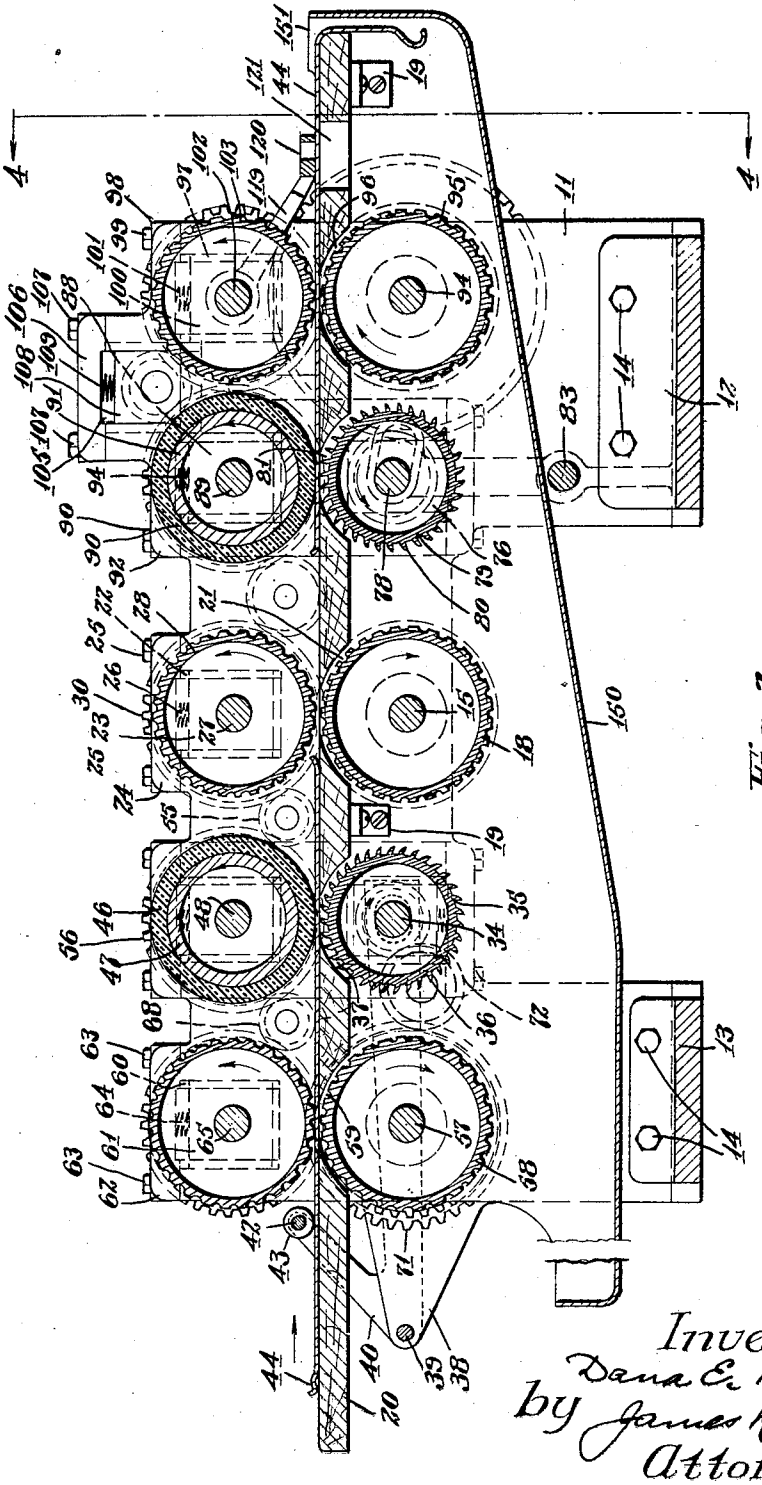


Fig. 2.

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FLESHING MACHINE

Filed Oct. 11, 1928 5 Sheets-Sheet 3

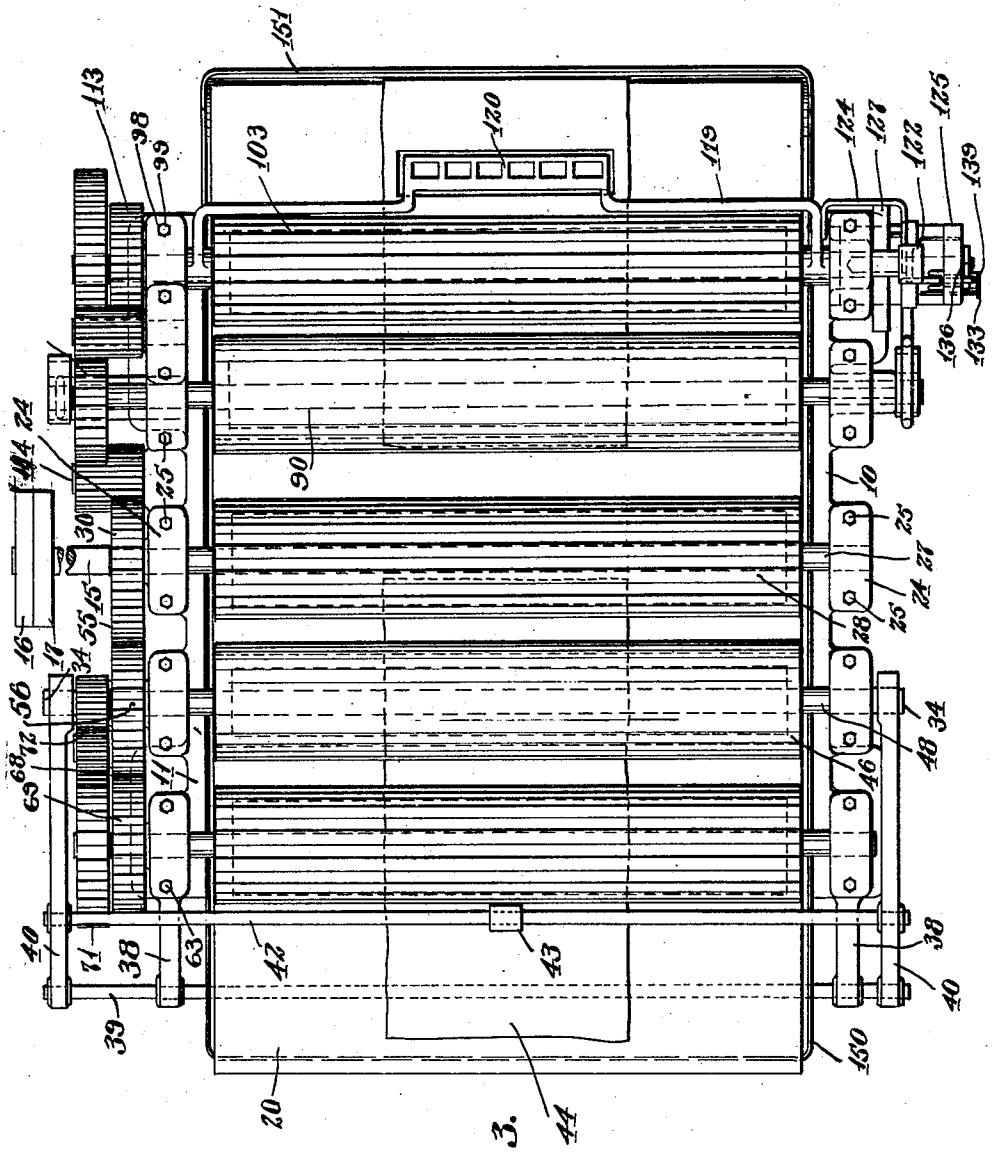



Fig. 3.

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Sept. 1, 1931. D. E. HARDING 1,821,094

FLESHING MACHINE

Filed Oct. 11, 1928 5 Sheets-Sheet 4

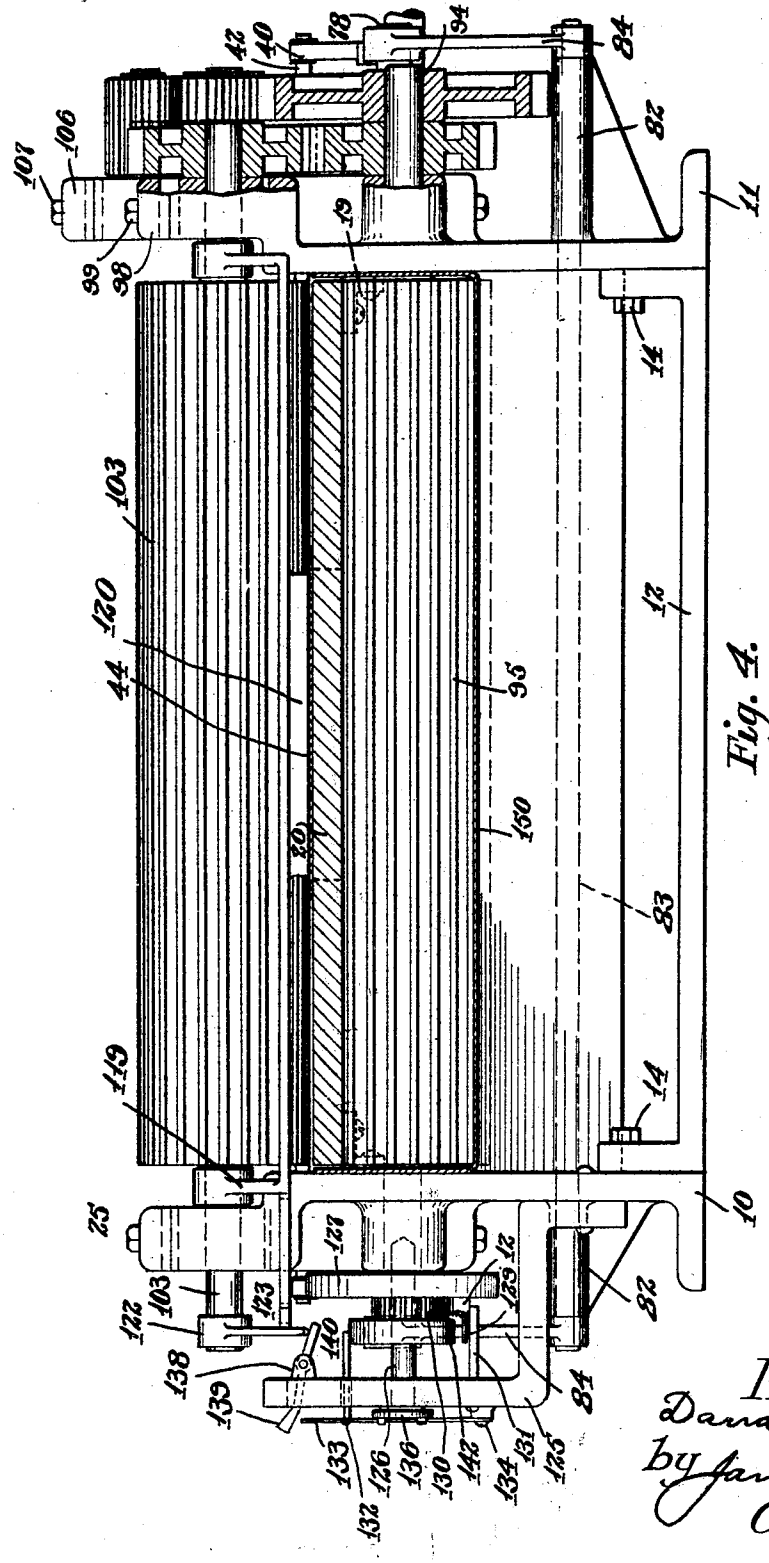



Fig. 4.

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FLESHING MACHINE

Filed Oct. 11, 1928 5 Sheets-Sheet 5

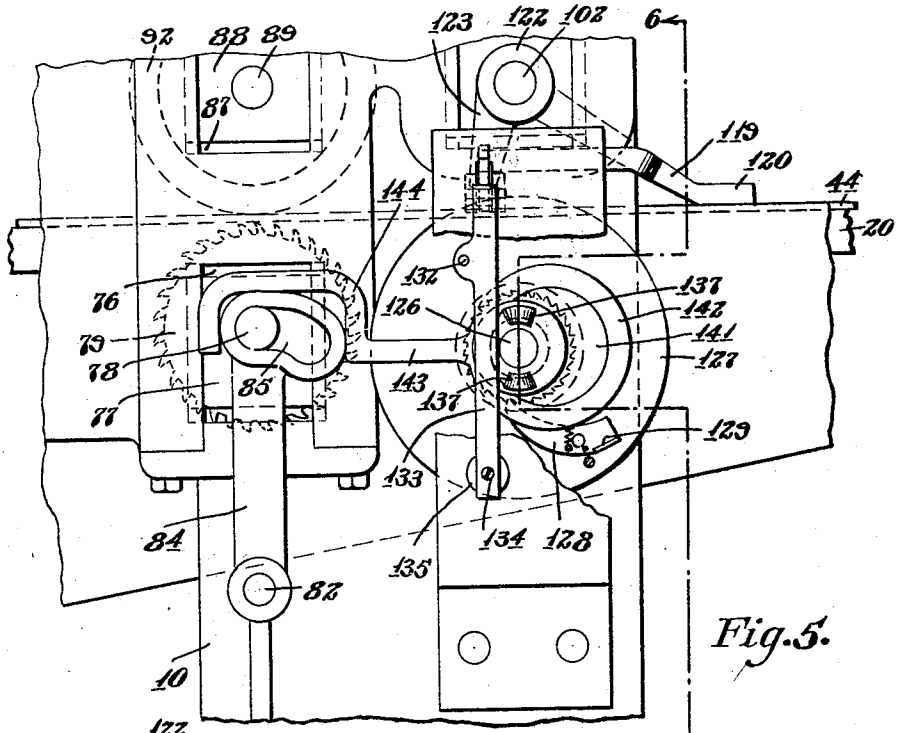



Fig. 5.

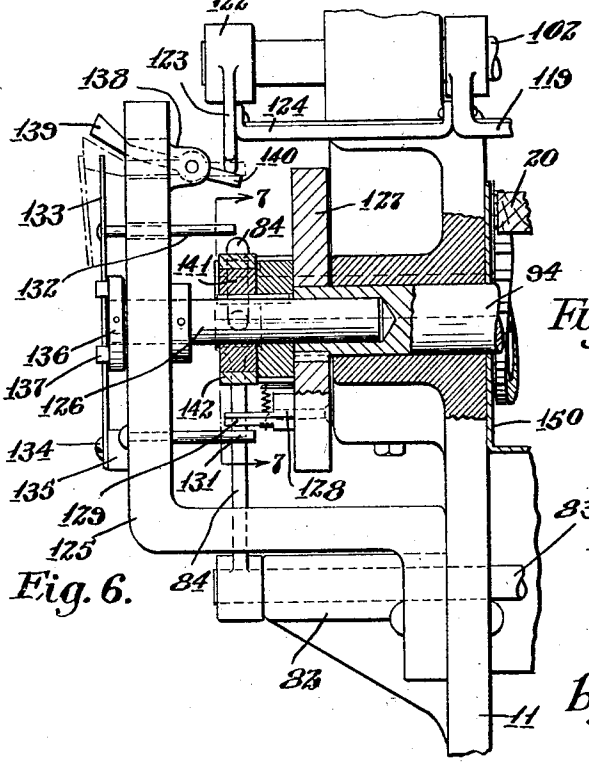



Fig. 6.

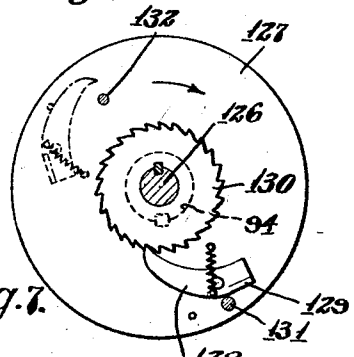



Fig. 7.

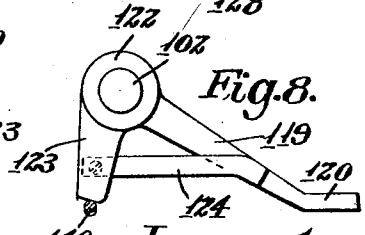



Fig. 8.

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Patented Sept. 1, 1931 1,821,094

# UNITED STATES PATENT OFFICE

DANA E. HARDING, OF MELROSE, MASSACHUSETTS, ASSIGNOR TO HARDING ENGINEERING COMPANY, OF EAST BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS

## FLESHING MACHINE

Application filed October 11, 1928. Serial No. 311,836.

My present invention relates to leather working machines, and more particularly to an improved fleshing machine.

In the manufacture of leather from hides or skins an important operation is that known as fleshing, where the flesh is removed to as great an extent as possible from the hide or skin to insure that only the hide or skin will continue through the tanning process. Heretofore the fleshing operation has been largely a manual operation, although it has been attempted to perform this fleshing operation by the use of machinery. On calf and sheepskins it has been found that the ordinary fleshing machines for performing the fleshing operation mechanically worked with a fair degree of success and it is now conceded that mechanical fleshing machines will perform their function satisfactorily except on hides or skins where there is apt to be a large amount of fatty matter. This is particularly true with regard to pigskins and it has been found impossible to utilize mechanical fleshing machines as at present designed for the purpose of performing the fleshing operation thereon. Pigskins are an extremely hard skin to handle, due to the presence of fat and grease thereon and the fleshing operation on such skins is, therefore, strictly a manual operation and, therefore, slow, laborious and costly. Pigskins differ from the ordinary hide or skin in that they do not have thereon cheeks, shanks, or the like, and the raw skin comes to the tanner in the shape of rectangular strips and the major portion of the weight of such skins as they come to the tanner consists of the particles on the flesh side of the skin.

In my present invention I have devised a machine for performing the fleshing operation on a hide or skin, such as pigskins, and regardless of the amount of fat or grease on the skin it has been found that my machine will satisfactorily and mechanically perform the fleshing operation thereon. In carrying out my invention I have found it advisable to feed the skins to the fleshing knife or cutter, and only allow the skin to be fed to the knife or cutter as the fleshing operation takes place. In order to insure that the fleshing operation is performed on the entire skin and to have this operation performed at a single passage of the skin through the machine, I arrange a second knife or cutter, together with feeding rolls associated therewith, and this second cutter completes the operation started by the first cutter. In order to prevent possible injury to the skins due to piling up thereof by reason of the engagement therewith of the rapidly rotating knife or cutter, I have devised means operable by the skin itself to throw the cutter into and out of cutting position in the passage of the hide or skin through the machine.

An object of my invention, therefore, is an improved fleshing machine.

Another object of my invention is an improved fleshing machine in which the operating mechanism is brought into action and controlled by the passage of the material being worked upon through the machine.

Other objects and novel features of the construction and arrangement of parts comprising my device will appear as the description of the invention progresses.

In the accompanying drawings illustrating a preferred embodiment of my invention,

Fig. 1 is a side elevation;

Fig. 2 is a central longitudinal section;

Fig. 3 is a plan view of Fig. 1;

Fig. 4 is a sectional end elevation on the line 4—4 of Fig. 2;

Fig. 5 is an enlarged elevation of a portion of the machine, as viewed from the left side of Fig. 4;

Fig. 6 is a view on the line 6—6 of Fig. 5;

Fig. 7 is a sectional view on the line 7—7 of Fig. 6, and

Fig. 8 is a detail of the cutter operating means.

Referring to the drawings, 10 and 11 designate side frame members arranged parallel to each other and spaced apart while held in rigid position with relation to each other by spacing bars 12 and 13, such spacing bars being secured to the side frame members 10 and 11 by bolts 14. Formed in the side frame members 10 and 11 and in alinement with each other are bearings in which is ro-

tatably mounted a drive shaft 15. One end of this shaft 15 is provided with tight and loose pulleys 16 and 17 respectively and by means of which power may be transmitted from any suitable source to drive the shaft 15. On the shaft 15 between the side frame members 10 and 11 is secured a corrugated feed roll 18 of suitable diameter and the corrugated roll may be made of any suitable material as rubber, fibre or any metal. Extending between the side frame members 10 and 11 and supported on brackets 19 secured to the side frame members 10 and 11 is a table or platform 20, the upper surface of which lies practically tangent to the surface of the corrugated feed roll 18, such worktable or platform being cut away as indicated at 21 to allow the feed roll 18 to lie in the position indicated. Formed in each of the side frame members 10 and 11 above the shaft 15 are guideways 22 in each of which is slidably mounted a bearing block 23. The top of the slideways 22 is closed by a member 24 secured to the members 10 and 11 by bolts 25 and between the under face of the member 24 and the sliding block 23 is a compression spring 26 which urges the bearing block 23 downwardly, as viewed in Figs. 1 and 2. Bearings are formed in the bearing blocks 23 and in such bearings is rotatably mounted a shaft 27 which, therefore, lies parallel to but above the shaft 15 and on such shaft 27 between the side frame members 10 and 11 is secured a corrugated feed roll 28 of the same external diameter as is the corrugated feed roll 18. Secured to the shaft 15 adjacent to the side frame members is a gear 29 of suitable diameter and pitch which meshes with a similar gear 30 secured to the adjacent end of the shaft 27. The direction of rotation of the shaft 15 is indicated in Figs. 1 and 2 and, therefore, it will be evident that with the construction above described the shaft 27 will rotate in the opposite direction therefrom and at the same rate of speed.

Formed in the side frame members 10 and 11 and in alinement with each other are slideways 32 and in each of these slideways is slidably mounted a bearing block 33. In each of the bearing blocks 33 is formed a bearing and the bearings are in alinement with each other and in said bearings is rotatably mounted a shaft 34. On such shaft 34 is secured a cylindrical member 35 having formed on its outer surface a plurality of parallelly arranged cutting blades 36, the entire members 35 and 36, therefore, acting as a cylindrical fleshing knife. The upper surface of the worktable 20 lies practically tangent to the outer surface of the fleshing cylinder 35, the worktable 20 being cut away as indicated at 37 for such purpose. On each of the side frame members and at one end thereof is a projection 38 having formed therein bearings in which is rotatably mounted a shaft 39. Secured to the outer ends of the shaft 39 are bell crank levers 40 and one arm of each of said bell crank levers extends toward the shaft 34 and the end adjacent to the shaft 34 has formed therein an elongated slot 41 that encircles the outer end of the shaft 34. The other arms of the bell crank levers 38 have extending between their ends a shaft 42 and on such shaft 42 is a roller 43 which, as will be obvious from an inspection of Figs. 1 and 2, lies above or in engagement with the upper surface of the platform or table 20 and will be in position to be engaged by the hide or skin 44 as it passes into and through the machine. Between the lower end of the slideway 32 and the lower face of the bearing block 33 is arranged a coil spring 45 which resiliently holds the bearing blocks 33 and, therefore, the shaft 34 and parts carried thereby in operative position. It is obvious that if the roll 43 on the shaft 42 is in direct engagement with the upper face of the table or platform 20 that the fleshing roll 35 will lie below the upper surface of the table or platform 20 and that when a hide or skin 44 moves under the roll 43 that such roll 43 will be lifted up, rotating the bell crank lever about the shaft 39 and lifting the shaft 34 with the parts carried thereby into position to bring the knives 36 on the fleshing cylinder 35 into operative position. Associated with the fleshing cylinder 35 is a cylindrical anvil 46 of relatively soft material, such as soft metal or hard rubber, and which anvil forms an outer covering for a cylindrical member 47 that is secured to a shaft 48 and between the side frame members 10 and 11. The shaft 48 is rotatably mounted in bearing blocks 49 slidably mounted in guideways 50 formed in the side frame members 10 and 11, and the upper end of such slideways 50 are closed by members 51 secured to the side frame members by bolts 52. Between the under face of the members 51 and the upper face of the sliding blocks 49 are coil springs 53 which urge the bearing blocks 49 downwardly, as viewed in Figs. 1 and 2, so as to bring the anvil 46 into operative engagement with the fleshing roll 35. Mounted on a stub shaft 54 on the outer face of said frame member 11 is an idler pinion 55 which meshes with and is driven by the gear 30 on the shaft 27 and also meshes with and drives a gear 56 secured to one end of the shaft 48, thus driving the cylindrical anvil 46 in the direction of the arrow shown in Figs. 1 and 2.

Rotatably mounted in suitable bearings formed in the side frame members 10 and 11 and arranged parallel to the shafts 34 and 48, is a shaft 57 on which is secured between the side frame members 10 and 11 a corrugated feed roll 58, such feed roll having its outer surface practically tangent to the upper face of a table or platform 20, such table or platform being cut away as indicated at 59

for this purpose. Above the bearings for the shaft 57 and in the side frame members 10 and 11 are formed guideways 60 in which are slidably mounted bearing blocks 61 and the upper open end of the guideways 60 are closed by a member 62 secured to the side frame members 10 and 11 by bolts 63. Between the under face of the members 62 and the upper end of the bearing blocks 61 are coil springs 64 which urge the bearing blocks 61 downwardly as viewed in Figs. 1 and 2. Rotatably mounted in bearings formed in the bearing blocks 61 is a shaft 65, which shaft lies parallel to the shaft 57 and has secured thereto between the side frame members 10 and 11 a corrugated feed roll 66, which feed roll co-operates with the feed roll 58. Rotatably mounted on a stub shaft 67 secured to and extending laterally outward from the outer face of the side frame member 11 is a pinion 68 which meshes with and is driven by the gear 56 and such pinion 68 meshes with and drives a gear 69 secured to one end of the shaft 65. The gear 65 meshes with and drives a gear 70 secured to one end of the shaft 57 and, therefore, it will be obvious from an inspection of Figs. 1 and 6 that the gears 69 and 70, being of the same diameter and pitch as each other and also of the same diameter and pitch as the gears 56, 30 and 29, and also the feed rolls 18, 28, 58 and 66 being of the same diameter, such feed rolls will rotate at the same speed and in the directions indicated by the arrows in Figs. 1 and 2. Secured to the shaft 57 is a gear 71 of suitable diameter and pitch which meshes with and drives a pinion 72 rotatably mounted on a stub shaft 73 secured to the side frame member 11, and such pinion 72 in turn meshes with and drives a pinion 74 secured to one end of the shaft 34. The train of gears 71, 72, and 73 is such that the shaft 34 carrying the fleshing cylinder 35 thereon will rotate at a greatly increased rate of speed over that of the shafts 48 and in the direction of the arrow shown in Fig. 2. It is obvious, therefore, that if the hide or skin 44 is moving through the machine in the direction of the arrow indicated in Fig. 2 that it will pass between and be fed onward between the rolls 58 and 66 and in its movement will pass under the anvil roll 46 and into position to have the flesh side thereof engaged by the knives 36 on the fleshing rolls 35. The anvil roll 46, together with the fleshing roll 35 will exert a feeding movement on the hide or skin 44 but even though the fleshing roll 35 rotates at a high rate of speed it will not feed the hide or skin 44 onward any faster than is allowed by the feed rolls 58 and 66 and, therefore, the energy imparted to the fleshing roll 35 will be expended in removing the surplus flesh from the hide or skin 44.

Formed in each of the side frame members 10 and 11 below the table or platform 20 is a slideway 76 and in each of the slideways is slidably mounted a bearing block 77. In the bearing block 77 are formed bearings in which is rotatably mounted a shaft 78. Secured to the shaft 78 and between the side frame members 10 and 11 is a fleshing roll 79 provided with a plurality of parallelly arranged fleshing blades 80 similar to the fleshing blades 36 on the fleshing roll 35. When in operative position the upper surface of the worktable or bench 20 is tangent to the outer surface of the fleshing roll 79 and the under face of the table or bench 20 is cut away as indicated at 81 for this purpose. Formed in the side frame members 10 and 11 and in alinement with each other are bearings 82 in which is rotatably mounted a shaft 83. Secured to the outer ends of such shaft 83 is the lower end of a member 84. The members 84 extend upwardly and at their upper ends are provided with a cam slot 85 which encircles the outer ends of the shaft 78. As shown in the drawings, and particularly Figs. 1 and 5, the links 84 are in such a position that the cam slots therein have engaged the ends of the shaft 78 so as to move such shaft and the fleshing rolls 79 carried thereby into its uppermost or operative position and it will remain in this position until the shaft 82 is rotated in a counterclockwise direction, as viewed in Fig. 5, so as to return the shaft 78 to its lowermost position. The mechanism for performing this function will be described hereinafter. In the side frame members 10 and 11 and above the table or platform 20 are formed guideways 87 in which are slidably mounted bearing blocks 88. The bearing blocks 88 are provided with alined bearings in which is rotatably mounted a shaft 89 and on such shaft 89 between the side frame members 10 and 11 is a cylindrical anvil 90 similar to the anvil 46 on the shaft 48. This cylindrical anvil 90 is formed on the outer surface of a roll 91 that is, in turn, secured to the shaft 89. The upper ends of the guideways 87 are closed by members 92 secured to the side frame members by the bolts 93 and between the upper surface of the bearing blocks 88 and the under face of the members 92 are located coil springs 94 which urge the bearing blocks 88 and, therefore, the cylindrical anvil 92 downwardly and into association with the fleshing roll 79.

To the right of the shaft 78, as viewed in Fig. 2, and extending parallel therewith is a shaft 94 on which is mounted between the side frame members 10 and 11 a corrugated feed roll 95, which feed roll extends into an opening 96 cut in the under face of the table or platform 20 so as to bring the surface thereof into engagement with the plane in which lies the upper surface of the table or platform 20. Above the shaft 94 and in the side frame members 10 and 11 is formed a

slideway 97 closed at its top by a member 98 secured to the side frame members by bolts 99. Slidably mounted in the slideways 97 are bearing blocks 100 and between the upper surface of the bearing blocks 100 and the under surface of the members 98 are coil springs 101 which urge the bearing blocks 100 and any mechanism carried thereby downwardly, as viewed in Fig. 2. Rotatably mounted in the bearing blocks 100 is a shaft 102 which lies parallel to and above the shaft 94 and secured to said shaft 102 between the side frame members 10 and 11 is a corrugated feed roll 103 equal in diameter to the diameter of the feed roll 95.

Formed in the side frame member 11 between the guideways 90 and 97 is a guideway 105, the upper end of which is closed by a member 106 secured to the side frame member 11 by bolts 107. Slidably mounted in the guideway 105 is a block 108 and between the upper face of the block 108 and the lower face of the member 106 is a coil spring 109 which urges the block 108 downwardly, as viewed in Fig. 2. Secured in the block 108 is a stub shaft 110 on which is rotatably mounted an idler pinion 111 which meshes with a gear 112 secured to one end of the shaft 89 and with a gear 113 secured to one end of the shaft 103. Secured to the side frame member 11 is a stub shaft 114 on which is rotatably mounted a pinion 115 which meshes with and is driven by the gear 30 on the shaft 27 and which meshes with and drives the gear 112 above referred to as being on the shaft 89. The gear 113 on the shaft 103 meshes with and drives a gear 116 secured to the shaft 94. The cylindrical anvil 92 and the corrugated feed rolls 95 and 103 are of the same external diameter. The gears 30, 112, 113 and 116 are of the same diameter and pitch. Therefore, it is obvious that with the train of gears above described and with the arrangement of such gears as shown in the drawings, the feed rolls 95, 103, and the anvil 92 will rotate at the same surface speed and in the directions of the arrows shown, for example, in Figs. 1 and 2.

Secured to the shaft 94 is a gear 117 which meshes with and drives a pinion 118 secured to the shaft 78. The ratio of the pinion 118 and the gear 117 with respect to each other and with respect to the gears 113 and 116 is such that the shaft 78 has imparted thereto a considerably higher speed of rotation than is imparted to either of the shafts 89, 94 or 103 and therefore, the surface speed of the fleshing roll 79 is greater than the surface speed of the feed rolls 95 and 103 and is comparable to the speed of the fleshing roll 35 above described.

Rotatably mounted on the shaft 102 is a U-shaped member 119, the cross portion of which is enlarged into a portion designated by the numeral 120 and which enlargement normally lies in a rectangular perforation 121 formed in the worktable or support 20. Rotatably mounted on the shaft 103 is a hub 122 and radially extending from this hub and downwardly therefrom, as viewed in Fig. 7, is an arm 123. The arm 123 is tied to the U-shaped member 19 by the member 124 and, therefore, the hub 122 and arm 123 are constrained to rotate in unison with the U-shaped member 119. Secured to the side frame member 11 by riveting or in any other suitable manner is a bracket 125 in which is rotatably mounted a shaft 126 in axial alinement with the shaft 94 and the end of the shaft 94 is counterbored as shown in Fig. 7 to act as a bearing for the inner end of the shaft 126. Keyed to the end of the shaft 94 is a face plate 127 on which is pivotally mounted a spring pressed pawl 128, such pawl being provided at one end with a laterally extending plate 129, the spring of such pawl 128 being arranged, as clearly shown in Fig. 7, to hold the pawl either in operative or inoperative position. Keyed to the shaft 126 adjacent to the face plate 127 is a ratchet 130 with which the pawl 128 is adapted to engage. Extending inwardly from the bracket 125 toward the pawl 128 is a pin 131 and this pin 131 is adapted to engage with the laterally extending member 129 on the pawl 128, as clearly shown in Fig. 7, it being assumed that the face plate 127 is capable of rotating in the direction of the arrow shown in such figure. Slidably mounted in the bracket 125 and into and out of position where it may be engaged by the laterally extending member 129 of the pawl 128 is a pin 132, such pin being secured to the free end of a spring member 133 that is secured by screw 134 and block 135 to the bracket 125. On the extreme outer end of the shaft 126 is arranged a collar 136 provided with diametrically arranged cam surfaces 137 and with which the spring member 133 is adapted to engage. Formed on the bracket 125 on the inner face thereof and adjacent to the top end are ears 138 in which is pivotally mounted a latch member 139, one end of which is adapted to engage with the upper free end of the spring member 133 and hold the same in the dash and dotted position shown at the left of Fig. 7, while the other end, the inner end, is rounded as indicated at 140 and is adapted to be engaged by the lower cam shaped end of the arm 123 formed on the hub 122 above described. Keyed to the shaft 126 adjacent to the ratchet 130 is an eccentric 141 with which is engaged an eccentric strap 142, such eccentric strap being connected by member 143 to a U-shaped member 144 that engages with the free end of one of the pivoted members 84. If we assume that the U-shaped member, together with the hub 122 and arm 123 are in the position shown in Fig. 5, for example, and that the latch 139 is engaged with the free end of

the spring member 133 out of possible engagement with the cam members 137, then if we assume that in the rotation of the face plate 127, the laterally projecting member 129 will have been engaged by the pin 131 so as to move the pawl 128 out of engagement with the ratchet 130, it will be obvious that the shaft 94 will have become disconnected from the shaft 126 and such shaft 94 will rotate at will without disturbing the position of the shaft 126. If we assume that at this time the shaft 126 is rotated to a point one hundred eighty degrees removed from that shown in Fig. 5, it will be obvious that the shaft 79 will be in its lowermost position, that is, the arm 84 will have been moved to its extreme left hand position with respect to Fig. 5. It is further assumed that at this time a hide or skin 44, while possibly being fed through the machine illustrated, has not yet reached the enlarged portion 120 of the U-shaped member 119. Assuming that the hide or skin 44 moves onward or to the right, as shown in Fig. 2, it will come into engagement with the U-shaped member 119, which U-shaped member will, therefore, be rotated about the shaft 102 as a center and in doing so, the cam shaped end of the arm 123 will engage with the portion 140 of the latch 139 and will move such latch into the position indicated by full lines in Fig. 7, thus freeing the spring member 133 and allowing it to assume the position shown in full lines in Fig. 7. This will bring the inner end of the pin 132 into position to engage with the lateral projection 129 of the pawl 128 in the rotation of the shaft 94 and will serve to throw the pawl 128 from the inoperative into the operative position or into position to engage with the ratchet 130. The shafts 94 and 126 will now rotate as a unit in the direction of the arrow shown in Fig. 7 and through a half revolution, or until the lateral projection 129 engages with the pin 131, when the pawl 128 is again thrown out of connection with the ratchet 130. In this half revolution of the shaft 126 the eccentric 141 will, acting through the eccentric strap 142, a bar 143 and U-shaped member 144, move from the extreme left position to the extreme right position or into the position shown in Fig. 5, where it will be obvious that the shaft 78 and, therefore, the fleshing roll 79 will be moved in its uppermost or operative position with respect to the circular anvil 92. From an inspection of Fig. 5 it will be obvious that the shaft 78 moves from its lowermost position to its uppermost position during the first quarter of a revolution of the shaft 126 and during this movement also, one of the cam faces 137 will engage with the spring member 133 and force the upper free end thereof outward or into the dot and dash position shown in Fig. 6 so as to be in position to engage with the latch member 139, if at this time the enlargement 120 is not engaged by a hide or skin 44. If, however, the hide or skin 44 has not yet passed beyond the enlargement 120, the cam 137 will be in position to hold the spring member 133 in the dot and dash position and, therefore, hold the pin 132 out of the path of movement of the lateral plate 129 on the pawl 128 and such pawl 128, therefore, will be kept out of engagement with the ratchet 130. Therefore, as long as the hide or skin 44 remains in the enlargement 120, it will be impossible for the pawl 128 to engage with the ratchet 130 and, therefore, the shaft 78 with the fleshing roll 79 thereon will be maintained in its operative position. When, however, the hide or skin 44 has passed beyond or to the right, as viewed in Fig. 5, of the enlargement 120, such enlargement will drop into the rectangular perforation 121 in the table or platform 20 and, therefore, the cam end of the arm 123 will disengage itself from the end 140 of the latch 139 and will allow such latch to drop into the dot and dash position in Fig. 6. When, therefore, the face plate 127 carrying the pawl 128 rotates, the lateral extension 129 of such pawl will engage with the pin 132 and the pawl 128 will be tripped into engagement with the ratchet 130 and such operation will connect the shafts 94 and 126 together and the same will rotate in a clockwise direction until the lateral extension 129 of such pawl 128 engages with the pin 131, as above described. During this rotary movement of the shafts 94 and 126 as a unit, one or the other of the cams 137 will engage with the spring member 133 and will force the same into the dot and dash position, where it will be engaged and locked by the latch 139. The engagement of the lateral extension 129 of the pawl 128 with the pin 131 disconnected the latch 126 from the shaft 94 and the shaft 94 will, therefore, rotate independently of the shaft 126, which remains stationary until the next hide or skin 44 passes under the enlargement 120, as above described. Between the side frame members 10 and 11 and beneath the table or support 20 I have arranged a trough 150 and have one end, as indicated at 151, extending upwardly and spaced apart from the end of the table or support 20 at the end adjacent the rectangular slot 121. Therefore, as the hide or skin 44 feeds through the machine as above described, the end will fall into the slot formed by the portion 151 of the trough 150 and the end of the table or support 20 and will be fed downwardly and thence rearwardly, where it will be within easy reach of the operator, who ordinarily will stand at the entrance end of the device or at the left of Fig. 2.

The mechanism for moving the fleshing rolls into and out of engagement has been described somewhat in detail but such showing

is merely conventional and I may utilize any appropriate controlling mechanism for such fleshing rolls as may seem desirable. Also, while I have shown the preferred embodiment of my invention somewhat in detail, it is to be understood that I may vary the size, shape, and arrangement of parts comprising the device within wide limits without departing from the spirit of the invention.

Having thus described my invention, what I claim as new is:

1. In an improved fleshing machine, the combination of a plurality of fleshing rolls and means operable by the material being worked upon for bringing said rolls into operative position successively.

2. In an improved fleshing machine, the combination of a plurality of fleshing rolls arranged in series, and means operable by the material being worked upon for bringing said rolls into operative position successively.

3. In an improved fleshing machine, the combination of a plurality of fleshing rolls, a cylinder associated with each roll and normally out of operative association therewith, a tubular covering of relatively soft material fixed on each cylinder and constituting an anvil, and means for bringing each of said rolls into operative position with respect to its associated anvil.

4. In an improved fleshing machine, the combination of a plurality of fleshing rolls, a cylinder associated with each roll and normally out of operative association therewith, a tubular covering of relatively soft material fixed to each cylinder and rotatable therewith, said tubular covering and said cylinder constituting an anvil, means for bringing each of said rolls into operative position with respect to its associated anvil, and means for rotating said rolls and said anvils.

5. In an improved fleshing machine, the combination of a plurality of fleshing rolls, a cylinder associated with each roll and normally out of operative association therewith, a tubular covering of relatively soft material fixed to each cylinder and rotatable therewith, said tubular covering and said cylinder constituting an anvil, means for bringing each of said rolls into operative position with respect to its associated anvil, and means for rotating said rolls and said anvils in opposite directions.

6. In an improved fleshing machine, the combination of a plurality of fleshing rolls, a cylinder associated with each roll and normally out of operative association therewith, a tubular covering of relatively soft material fixed to each cylinder and rotatable therewith, said tubular covering and said cylinder constituting an anvil, means for bringing each of said rolls into operative position with respect to its associated anvil, and means for rotating said rolls and said anvils in opposite directions and at different rates of speed.

7. In an improved fleshing machine the combination of a fleshing roll, an anvil associated therewith, a pair of feeding rolls associated with said fleshing roll and means for rotating the feeding rolls to feed a hide or skin to the fleshing roll.

8. In an improved fleshing machine, the combination of a fleshing roll, a cylindrical anvil associated therewith, a pair of feeding rolls associated with said fleshing roll, and means for rotating the feeding rolls to feed a hide or skin to the fleshing roll, and means for simultaneously rotating the fleshing roll.

9. In an improved fleshing machine, the combination of a fleshing roll, a cylindrical anvil associated therewith, a pair of feeding rolls associated with said fleshing roll, means for rotating the feeding rolls to feed a hide or skin to the fleshing roll, and means for simultaneously rotating the fleshing roll at a greater speed than the speed of rotation of the feeding roll.

In testimony whereof, I have signed my name to this specification.

DANA E. HARDING.