

(No Model.)

5 Sheets—Sheet 1.

C. E. SACKETT.
MACHINE FOR CUTTING FUR FROM PELTS.

No. 517,397.

Patented Mar. 27, 1894.

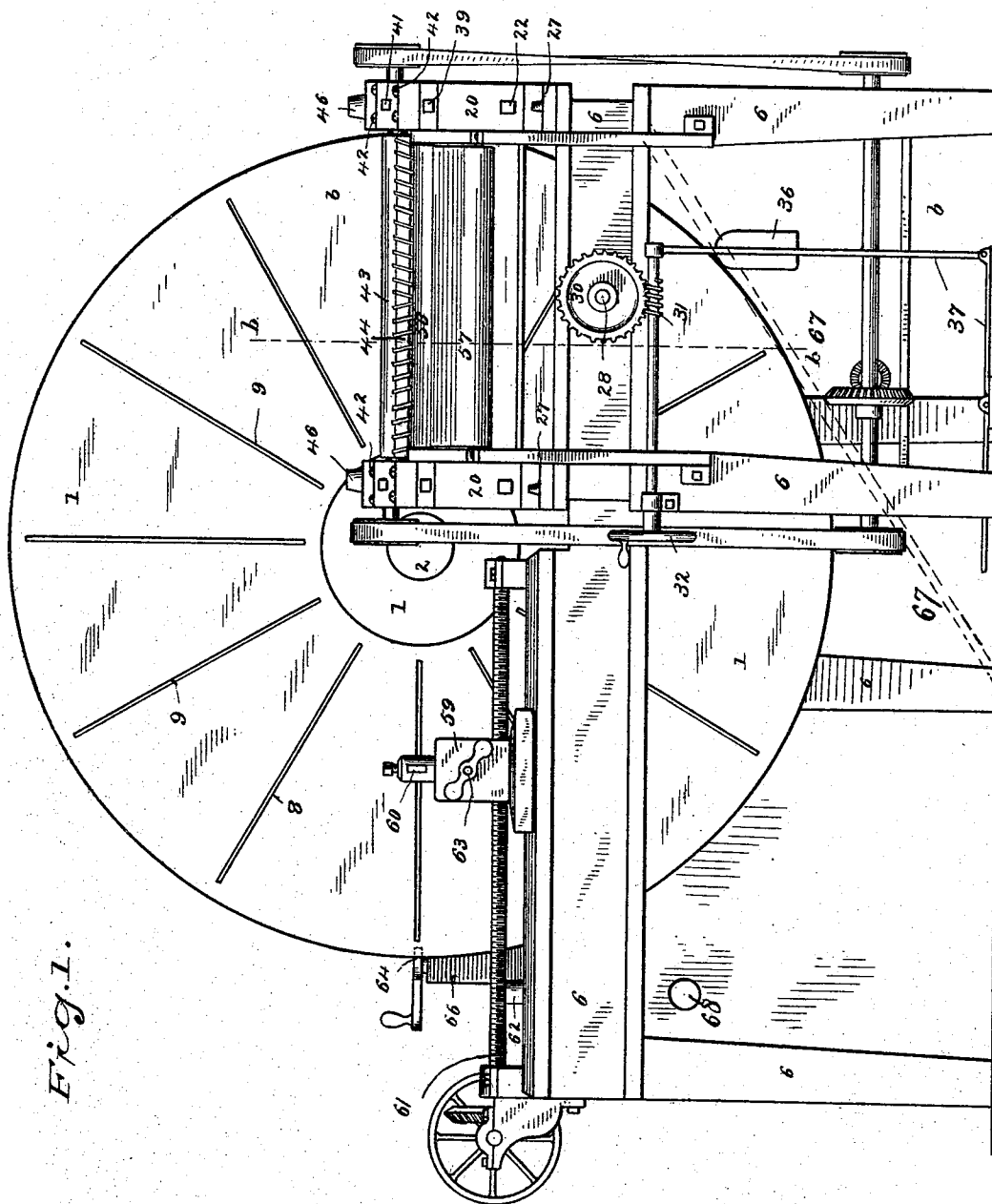


Fig. 1.

WITNESSES

H. A. Lamb
Pearl M. Reynolds

INVENTOR

Charles E. Sackett
By J. M. Wooster
Atty.

(No Model.)

5 Sheets—Sheet 2.

C. E. SACKETT.

MACHINE FOR CUTTING FUR FROM PELTS.

No. 517,397.

Patented Mar. 27, 1894.

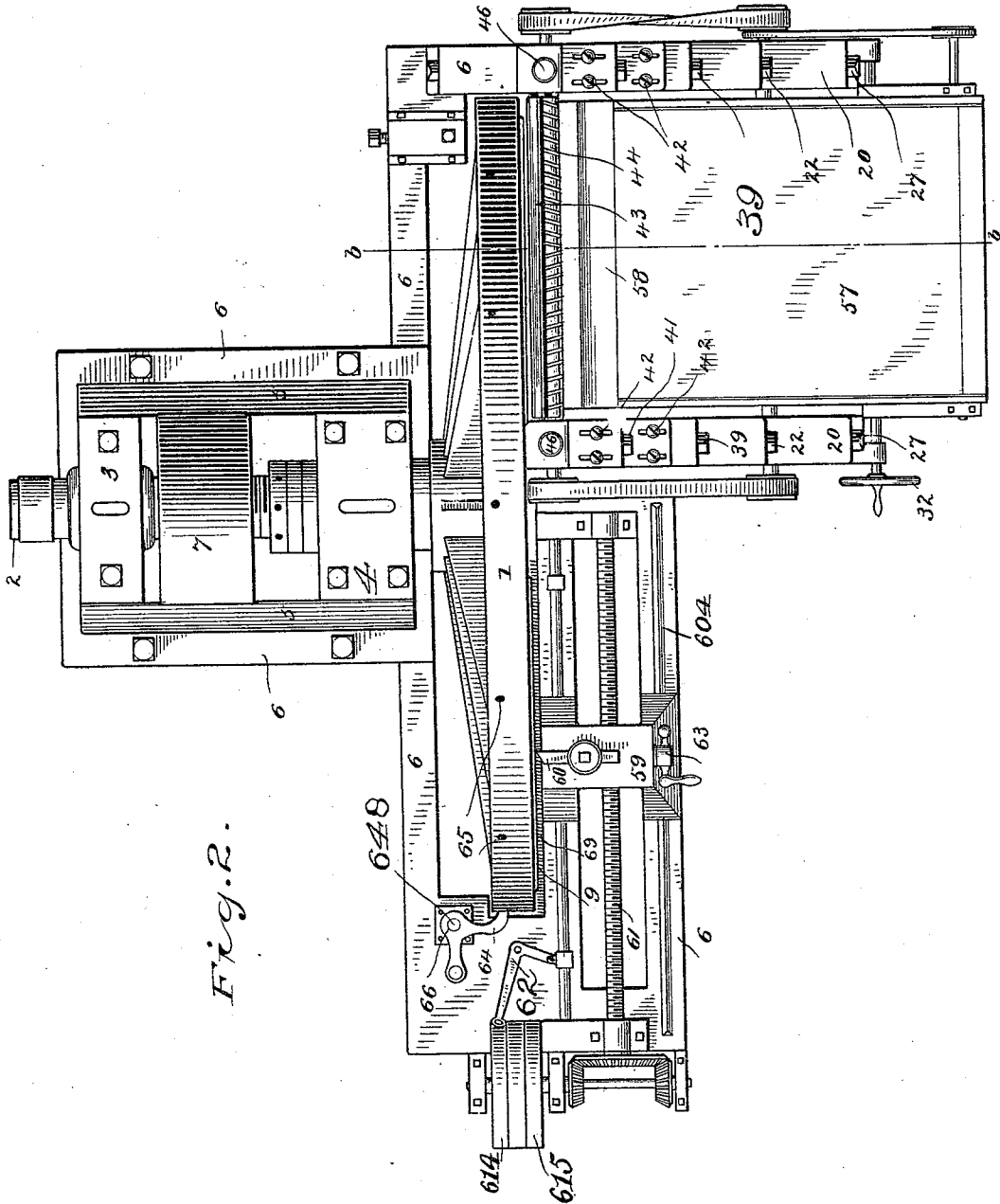


Fig. 2.

WITNESSES

H. A. Lamb
Pearl M. Reynolds.

INVENTOR

Charles E. Sackett
By A. M. Wooster
Atty.

(No Model.)

5 Sheets—Sheet 3.

C. E. SACKETT.
MACHINE FOR CUTTING FUR FROM PELTS.

No. 517,397.

Patented Mar. 27, 1894.

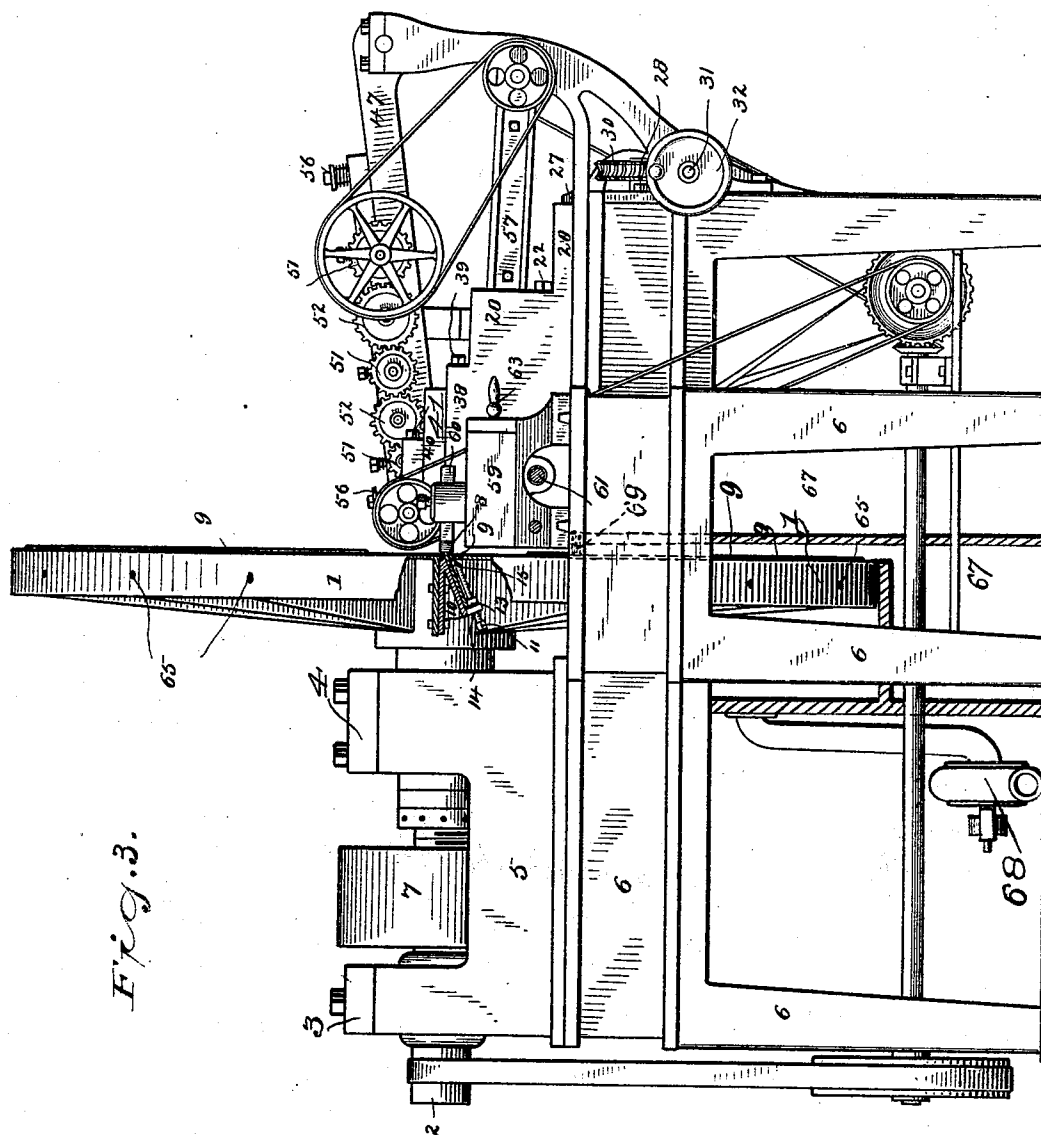


Fig. 3.

WITNESSES

H. A. Lamb
Pearl M. Reynolds

INVENTOR

Charles E. Sackett
By A. M. Foster
Atty.

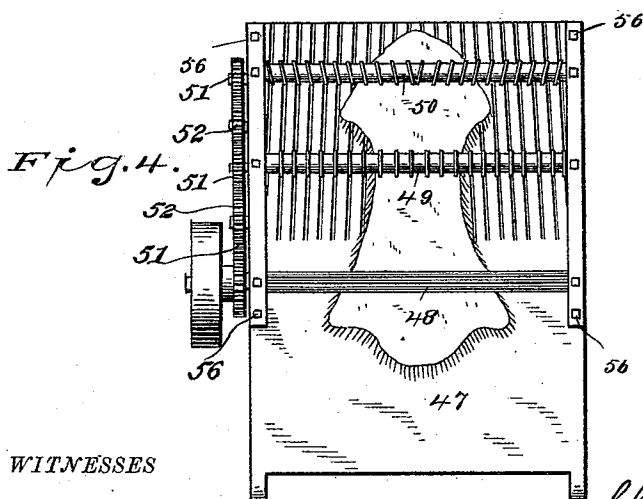
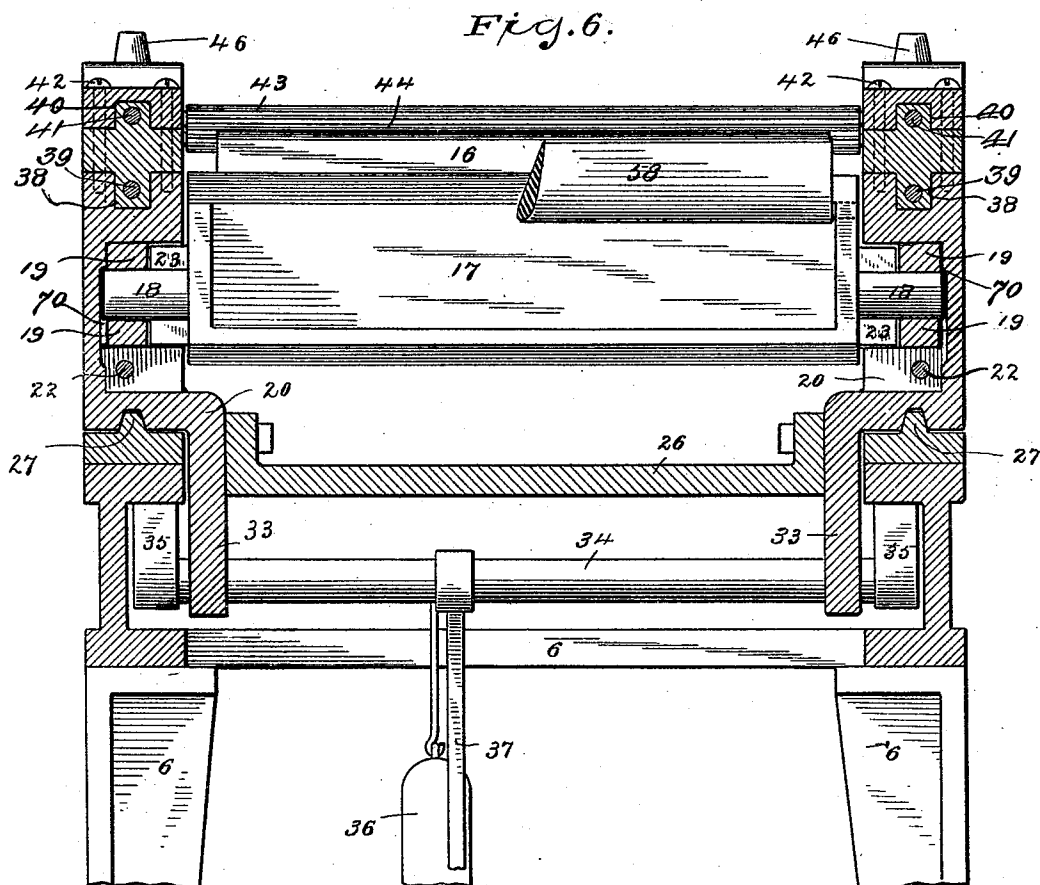
(No Model.)

5 Sheets—Sheet 4.

C. E. SACKETT.
MACHINE FOR CUTTING FUR FROM PELTS.

No. 517,397.

Patented Mar. 27. 1894.



WITNESSES

H. A. Lamb
Pearl M. Reynolds.

INVENTOR

Charles E. Sackett.
By
A. M. Wooster
Atty

(No Model.)

5 Sheets—Sheet 5.

C. E. SACKETT.

MACHINE FOR CUTTING FUR FROM PELTS.

No. 517,397.

Patented Mar. 27, 1894.

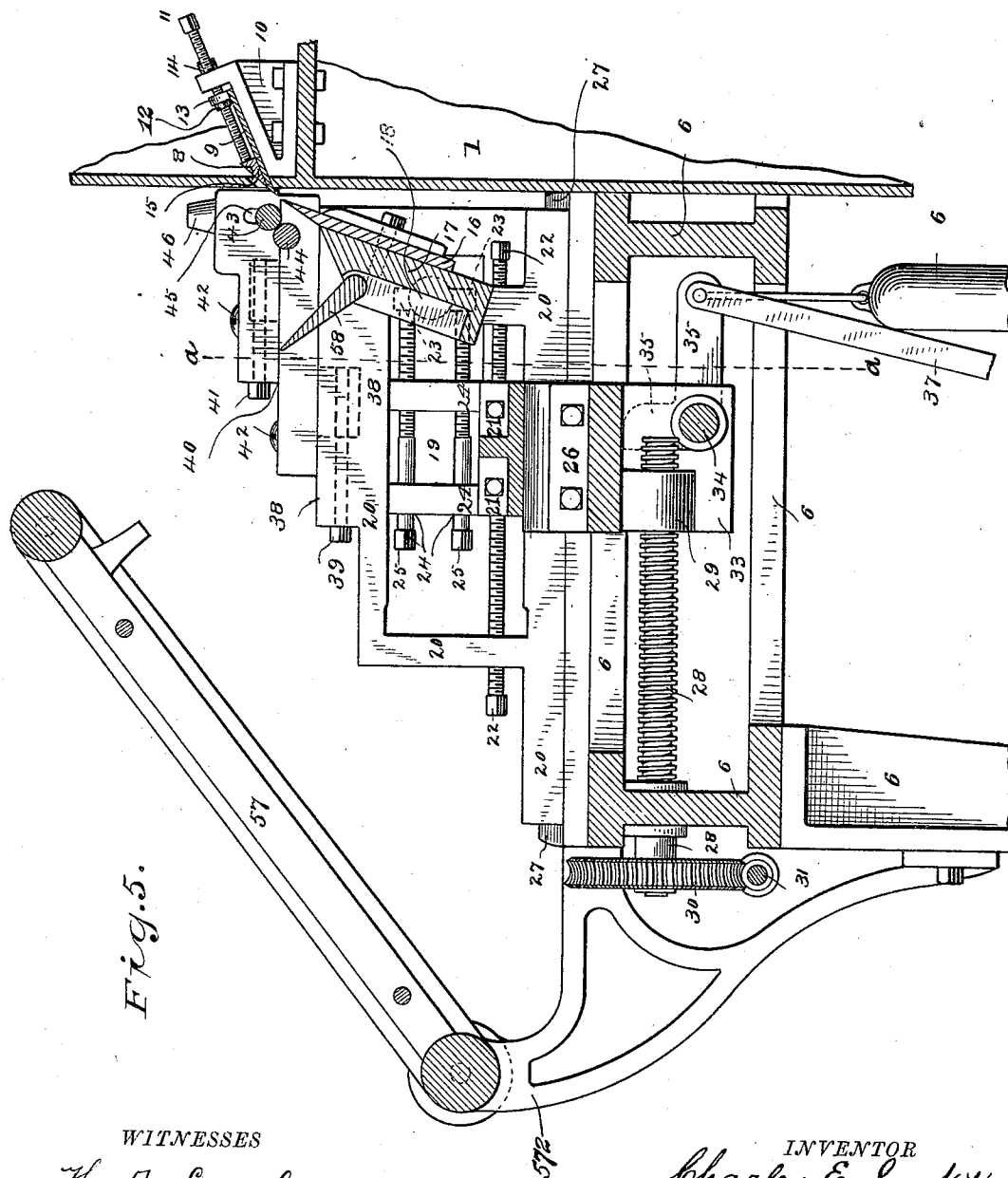


Fig. 5.

WITNESSES

H. A. Lamb
Pearl M. Reynolds

INVENTOR

Charles E. Sackett
By
A. M. Wooster
Att'y.

UNITED STATES PATENT OFFICE.

CHARLES E. SACKETT, OF DANBURY, CONNECTICUT.

MACHINE FOR CUTTING FUR FROM PELTS.

SPECIFICATION forming part of Letters Patent No. 517,397, dated March 27, 1894.

Application filed March 6, 1891. Serial No. 384,057. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. SACKETT, a citizen of the United States, residing in Danbury, in the county of Fairfield and State of Connecticut, have invented a new and useful Improvement in Machines for Cutting Fur from Pelts; and I do hereby declare that the following specification, in connection with the accompanying drawings, is a full, clear, and exact description of the same.

The machines now in use for the above purpose generally consist of a rotary cylinder revolving upon a shaft or axis running longitudinally through it. To the periphery of the cylinder longitudinal spiral knives are attached which operate in conjunction with a bed knife to cut the pelt into thin strips, thereby releasing the fur. In some cases the cylinders are recessed longitudinally, thus providing seats to which knives presenting longitudinal spiral edges are fastened; in either case the operation is the same. The cylinders are run at very high speed and the pelts fed slowly to the knives through feeding rolls in order to bring the cuts or slices from the pelt as closely together as possible, thereby preventing waste of fur. It is obvious the rotary cylinder with knives projecting from its periphery is a species of fan, and as it must be inclosed by a cap, it generates therein a strong current of wind which is prevented from escaping at the fur outlet by a wind gate lest it blow the fur away. It is therefore carried past that outlet to the receptacle for the cut up pelt, but this operates disastrously by causing an indraft or suction at the point of fur discharge, and much good fur is thereby sucked into the waste that should be discharged forward. This is only one of the many defects of the present style of fur cutting machines which it is the object of this invention to remedy, and which may be summarized as follows: first, to, improve the cutting mechanism so as to generate less wind; second, to provide a vertical cut adjustable to any cutting angle by means of a pivoted bed knife in place of the present rotary spiral cut at a fixed angle; third, to improve the method of feeding the skins to the feed rolls; fourth, to make the feed rolls concentrically

fifth, to make the bed knife angularly adjustable with the vertical knives.

In the accompanying drawings, Figure 1 is a front elevation of a machine embodying my invention. Fig. 2 is a plan view thereof. Fig. 3 is an end view thereof showing the feeding table, and with the cutting plate partly broken away to show the sharpening mechanism. Fig. 4 is a plan view of the feeding table. Fig. 5 is a section through the cutting mechanism in dotted line *b* Figs. 1 and 2 showing position of bed knife and vertical plate knives, also a section through the bed knife plate showing its adjusting mechanism, also showing feed roll boxes and swinging delivery apron, all on a larger scale. Fig. 6 is a vertical section through one side of the sliding carriage frame on the dotted line "*a*," Fig. 5.

Like figures in the drawings refer to like parts.

1 is a circular vertical face plate secured upon the end of a shaft 2, journaled in boxes 3 and 4, fitted into a suitable bed 5, upon a bed frame 6, and which is driven by the pulley 7 from any convenient line shafting. This plate is preferably webbed, rimmed, and suitably strengthened to combine lightness with rigidity, and should be perfectly balanced to rotate at high speed. It is perforated with a series of slots 8, 8, 8, arranged nearly radially from its center, through which the cutting edges of knives 9, 9, 9 are introduced from behind. The cutting projection of the knives need be very slight, as the cut of pelt only ranges from about one sixty-fourth to one-sixteenth of an inch, the relation of knife to plate face being much the same as that of a plane bit to a plane. The wind current generated by such a rotary vertical plate will be very slight on its face, and will be more over discharged laterally or outwardly, and not directly at the fleece, as is now the case with the rotary cutting cylinders in general use. The knives, as they wear, are fed forward through the slots in the plate from behind. By this method, knives of any desired width may be used, having three or four times the life of those now in use, which in rotary cylinders are screwed permanently on with permanent cutting projections, which, as soon

as worn down, the knife must be thrown away, the useful part of a knife being only about one-sixth of its weight. The knives are supported on sloping brackets or beds as 10, cast or secured to the back of the face plate; they are fed forward when necessary by screws 11, pushing against the back edge of the knives in conjunction with a retaining collar 12, and lug 13, which holds them 10 in position. When adjusted, they are further secured in position by holding down screws 14, which force a wedge piece 15 against the plate and above the knives, securely clamping them. The slots in the face 15 plate through which the knives pass are sloped so as to present an inclined cutting edge to the face of the plate. The face plate is also mounted on the bed frame so as to bring the radial knives in contact with the 20 stationary bed knife edge at such a cutting angle from heel to point as will produce a vertical scissors like cut of any desirable angle of inclination. The stationary bed knife 16 is secured to a bed plate 17, carried upon the 25 bed frame 6, at one side of the center of the vertical face plate. The bed plate 17 is provided with pivots 18, 18, at its two ends, which are pivoted into side plates 19, 19. These side plates are recessed at 70 into outer side 30 rails or guides 20, 20, in which they slide. They are also solidly connected to each other by a cross plate 21, and they are held as one piece rigidly in position in the outer guide rails by push screws 22, 22, operating through 35 threaded recesses in the guide rails, and impinging upon the ends of the pivotal plates 19, 19. The bed plate 17 is also provided with wings or lugs 23, 23 at its ends above and below the pivots 18. The side plates 19, 19, are 40 also provided with threaded lugs 24 and push screws 25, 25 operating through them to push upon the wings of the bed plate 17, above and below the pivots. These screws, when set, render the pivots inoperative, and hold the 45 bed plate, and with it the bed knife, rigidly as one piece within the outer guide rails.

It is desirable that the bed knife may be advanced or withdrawn from contact with the rotary knives. To accomplish this the outer 50 guide rails 20, 20, are connected together by a cross piece 26, and are recessed in their bottoms to form a traveling carriage sliding on V rails 27, 27, or in suitable grooves upon the main bed frame 6. This carriage carrying the bed knife mechanism is advanced or 55 withdrawn upon the bed frame by means of a screw or screws, as 28, passing through the bed frame and entering tapped recesses, as 29, in the carriage. The screws terminate 60 without the bed frame in a worm wheel, as 30, which is operated by a cross shaft carrying a worm or similar device 31 from a hand wheel 32, thus providing for a very delicate movement of the carriage and with it the 65 bed knife in bringing the bed knife closer to the revolving knives.

In order to prevent a retrograde movement

of the knife from lost motion in the screws, or any other cause, I supplement the thrust of the screws by a suitable clamp mechanism 70 which may be simple bolts, or set screws, or the automatic mechanism shown, which consists in attaching drop plates to the carriage, as 33, 33, through which passes a shaft 34, carrying at each end a cam 35, 35, which op- 75 erates below the bed frame to draw the carriage hard down upon the V slides. The cams are made to take hold of the bed frame by means of the weight 36 hanging from an arm projecting from the shaft 34. When it 80 is desired to release the cams to operate the carriage, the weight is raised by the foot treadle 37. The cams are so shaped as to allow of feeding forward without operating the weight. This carriage containing all the bed 85 knife mechanism also carries upon the top of the outer guide rails the feed roll boxes in which are journaled the feed rolls that feed the pelts to the knife. It is important that these boxes should have an independent motion to and from the knife, and that the feed 90 rolls should be able to change their relative centers of motion so as to feed the pelt at any desired angle to the knife. I accomplish the former result by constructing the outer rails 95 with a raised section 38, provided with a groove into which the feed roll boxes are tongued, and in which they are moved forward or backward by the screw 39 operating through the guide rail. I accomplish the latter 100 purpose, by constructing the boxes in two lateral halves tongued and grooved together as at 40, the lower half being stationary, and the upper half being caused to slide upon it by means of the screw 41, collared in the up- 105 per half, and threaded into the tongue of the lower half; when in position both halves are held securely by the clamping screws 42, 42, operating through elongated slots. The change in the feeding angle of the rolls 43, 44, 110 is obtained by constructing an open journal recess in the lower box, and a similar one in the upper box on their sliding faces; the recess in the upper box allows of a perpendicular motion of the roll as shown at 45, Fig. 5. 115 The rolls are provided with outside collars which roll upon each other. The upper roll is kept pressed upon the entering pelt by means of a spring housing 46, or a similar device consisting of a weighted lever. It is ob- 120 vious that when the screw 41 is turned, the roll 43 will revolve about the roll 44, thus changing the feeding angle to any degree of inclination. The skins or pelts are fed to the 125 rolls fur side down.

It is desirable that all edge fur be turned under the pelt or it is apt to be lost to the fleece. To accomplish this, I provide roll 44 with right and left spiral threads traveling from the outer ends of the roll toward the 130 center. These, as they revolve, will screw the fur beneath the pelt by moving it from both edges of the skin toward the center.

Heretofore it has been customary to feed

the skins to the rolls by hand, the operator entering the head of the skin with the fingers and then endeavoring to stretch out or avoid wrinkles, and at the same time turn the edge fur under by manual dexterity. As the pelts move in rapidly, expert cutters are required or fur is wasted. To obviate the necessity for skilled labor, I provide a feeding table, as 47, Figs. 3 and 4. The table is supported at its outer end by a bracket from the bed frame, in which it is preferably pivoted so as to swing out of the way when not in use. It is supported at its inner end by legs resting on any convenient part of the machine, and said end approaches the feed rolls as closely as possible without touching them. The bed of the feeding table may be a plane surface, or as I show it in Fig. 4, corrugated for part of its length. Where a plane surface is used, it should be in conjunction with milled or grooved rollers such as 48, which operate above the surface of the table to flatten out the skin and push it forward toward the feeding rolls; one or more such rollers may be used. A better means for stretching and removing the wrinkles or depressions from the skin will be to corrugate the table for part of its length, using in connection therewith a roller, as 49, having corresponding corrugations which force the skin into the depressions in the table, thereby stretching it over the saddles formed by the corrugations. I also give the corrugations in the table a slight inclination from the sides toward the center, so that as the pelt is urged forward, the fur which is below will be drawn beneath the pelt edges. To complete the automatic manipulation of the pelt before it reaches the main feed roller, I also provide a spreading roller, as 50, having a spiral thread projecting from its surface traveling as it revolves from the center toward its ends. As the pelt moves below it, this roller will tend to stretch and widen the pelt to its greatest limit, at the same time drawing the fur beneath it by its lateral friction. All or any of these rolls may be used in conjunction with the feeding table. They are operated by a train of gears 51, 51, 51, driven by a belt from any convenient part of the machine, and are run in conjunction with intermediate gears 52, 52, so that they all revolve in the same direction. The gears are preferably slightly speeded from start to finish, so as to keep the skin stretched longitudinally. The rolls are all journaled in boxes held in position by springs and bolts, as 56, 56, so as to allow vertical play to the roller, and still maintain constant pressure on the pelts. As the fleece is shorn from the pelt by the action of the knives, it passes out from below the lower feed roll in front of the bed plate upon an apron which conducts it away. The pelt as it is cut up falls into a receptacle behind the bed knife. As a rule, the aprons for conducting the fur away are fixtures. For convenience, I provide a swinging apron 57 pivoted at its outer

end on a bracket 572 attached to the machine, which enables the apron to be swung up out of the way when any of the aforesaid mechanism requires adjustment. I also provide a pivoted or hinged lip 58 which makes a close connection between the bed knife plate and the apron, and swings out of the way when desired. All of the aforesaid mechanism is on one side of the center of the vertical plate 1. The other side from the center is faced by a mechanism for sharpening the knives projecting from the vertical plate without removing them from the plate. This mechanism is carried from the bed frame 6, and consists of a traveling slide rest 59, carrying a cutting tool 60, which traverses the face of the vertical plate 1, and thereby sharpens the knives. The slide rest travels upon V slides 604 or other suitable rails constructed on the bed frame 6, and is actuated by any automatic reversible screw motion as 61 common to tools of that class. At each end of the cut the tool holder comes in contact with a shifter bar, which moves the belt shifter 62 62 changing a belt from one to the other of the pulleys 614, 615, and thereby reversing the motion. The sharpening tool is fed out by the usual cross feed motion as shown at 63. If the knives are soft enough, such as cast iron, which is often used, the cutting tool may be an ordinary plane tool, but if they are hard, such as steel knives, the slide rest will carry a revolving emery wheel acting as a grinder, or such wheel may be made to traverse the knives in any suitable way. In the drawings I show the planing tool. While sharpening is going on, the vertical knife plate is held rigidly in position by a lock mechanism as shown at 64, which consists of a movable bolt which is shot into suitable holes 65, 65, in the rim of the vertical knife plate, thereby holding each knife in a suitable position parallel with the traversing mechanism of the sharpening tool. A slight adjustment of the knife up or down is obtained by means of a screw 648 operating in the pedestal 66, 66, which raises or lowers the bolt 64 as desired. The lower part of the vertical face plate 1, is inclosed by a box 67 to receive the waste pelt and fur as it is thrown off by the revolving knives. The pelt being heavy, falls quickly, the fur floats and settles slowly. The fur is easily separated from the pelt if means be used to draw it off at this stage, and in order to do this, I connect the box at a suitable point with a rotary suction fan 68, which draws of the floating fur and removes it to any convenient receptacle; the suction of the fan also prevents the fur rising out of the box 67 and following the knives around. In order the more thoroughly to prevent either the fur or the pelt following the knives around, at the upper edge of the box I provide a line of bristles as 69 or other flexible material, through which the knives must pass at such an angle, as sweeps them thoroughly from end to end. I show this line of

bristles just back of the bed frame in Figs. 2 and 3. The fan appears in Fig. 3, the box 67 being shown in section. The fan opening with dotted outlines of box is shown in Fig. 1.

5 Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a machine for cutting fur from the pelt, a bed frame, a vertical face plate supplied with knives, a pivoted bed knife with means for tilting the knife on its pivots and means for adjusting it horizontally, substantially as described.

2. In a machine for cutting fur from the pelt, the bed frame, a rotary face plate carrying knives and a pivoted bed knife with means for tilting the same on its pivots, substantially as described.

3. In a machine for cutting fur from the pelt, the bed frame, a rotary face plate carrying knives, a movable bed knife, with means for adjusting it, and an adjustable frame carrying said knife, substantially as described.

4. The combination with a vertical revolving face plate having slots 8, 8, and carrying brackets on its rear side, of knives supported on said brackets and projecting through said slots, means for adjusting the knives, clamping wedges entering the slots over the knives, and means for moving the wedges, substantially as described.

5. In a machine for cutting fur from the pelt, the combination with a bed frame, of side plates mounted thereon, means for adjusting said plates, and a bed knife plate attached to said side plates, substantially as described.

6. In a machine for cutting fur from the pelt, the combination with a bed frame, of side plates rigidly united and sliding on the bed, means for adjusting said plates, a bed knife plate pivoted in said side plates, and means for adjusting the angle of said bed knife plate, substantially as described.

7. In a machine for cutting fur from the pelt, the combination with a bed knife plate provided with pivots and having wings or lugs 23 above and below the pivots, of side plates supporting said pivots and having lugs 24 containing threaded holes, and push screws 25, passing through said holes and impinging on the wings to hold the knife plate at any desired angle, substantially as described.

8. In a machine for cutting fur from the pelt, the combination with outer rails or guide pieces 20 having recesses, of side plates 19 sliding in said recesses, push screws 22, operating to adjust the side plates, and a knife plate attached to said side plates, substantially as described.

9. In a machine for cutting fur from the pelt, the combination with the guide rails 20, of a cross piece 26, rigidly uniting the same, of side plates adjustable on said guide rails, and

a bed knife plate attached to said side plates, substantially as described.

10. In a machine for cutting fur from the pelt, the combination with a bed frame, of a carriage composed of guide rails 20 and cross pieces 26, an angularly and reciprocally adjustable bed knife carried on said carriage, and means for moving the carriage, substantially as described.

11. In a machine for cutting fur from the pelt, the combination with a bed frame, of a bed knife carriage movable thereon, a screw for operating the same, a worm gear on the screw, and a worm shaft provided with a hand wheel for giving a slow motion to the carriage, substantially as described.

12. In a machine for cutting fur from the pelt, the combination with a bed frame, of a bed knife carriage movable thereon, means for feeding the carriage, one or more cams mounted in the carriage and adapted to impinge upon the bed frame and means for causing the cams to bear against the frame, substantially as described.

13. In a machine for cutting fur from the pelt, the combination with a bed frame, of a bed knife carriage movable thereon, means for feeding the carriage, a rock shaft mounted on the carriage, cams on said rock shaft adapted to impinge upon the frame, and a weighted lever secured to the shaft, substantially as described.

14. In a machine for cutting fur from the pelt, the combination with a flat table 47, of a pair of feed rolls above the table operating together to feed the pelt, one of said feed rolls being provided with a right and left spiral thread traveling from the ends of the roll to its center as it revolves, for the purpose of turning the edge fur beneath the pelt, substantially as described.

15. In combination a pair of feed rolls arranged in different horizontal planes, and means for giving independent horizontal adjustment to each of said rolls, substantially as described.

16. In combination with a pair of feed rolls, boxes therefor in different horizontal planes, means for giving independent horizontal adjustment to each of said rolls, said boxes having the bearings open to the contiguous faces of said boxes, substantially as described.

17. In a machine for cutting fur from the pelt, the combination with the cutting mechanism and the feed rolls, of a feeding table having grooves or corrugations running obliquely to the line of travel of the pelt, substantially as described.

18. In a machine for cutting fur from the pelt, the combination with the cutting mechanism and the feed rolls, of a feeding table having grooves or corrugations converging toward the feed rolls, substantially as described.

19. In a machine for cutting fur from the

pelt, the combination of a cutting mechanism and a table for feeding the pelts to the same having a corrugated surface, a stretching roller and a spreading roller 50, having a double spiral periphery.

20. In a machine for cutting fur from the pelt, the combination with a cutting mechanism and a table for feeding the pelts to the same constructed with corrugations on its surface, of a corrugated roller 49 for stretching the pelt, substantially as described.

21. In a machine for cutting fur from the pelt, the combination with a cutting mechanism and feed rolls for feeding the pelt to the same, of a swinging apron as 57 hinged or pivoted at its outer end for the purpose of conveying away the fur, substantially as described.

22. In a machine for cutting fur from the pelt, the combination with a cutting mechanism, feed rolls and apron for receiving the

fleece from the same, of a hinged or pivoted lip piece as 58, for completing the connection between the same, substantially as described.

23. In combination with a rotary face plate, vertically arranged, knives projecting through radial slots in its face, a feeding table located to one side of the center of said face plate, a receptacle for the waste into which the face plate extends and a brush for the knives and plates located at the mouth of the receptacle, said brush being arranged to the opposite side of the center from the feeding table, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 3d day of March, 1891.

CHAS. E. SACKETT.

Witnesses:

FREDK. WEBER,
W. P. JONES.