

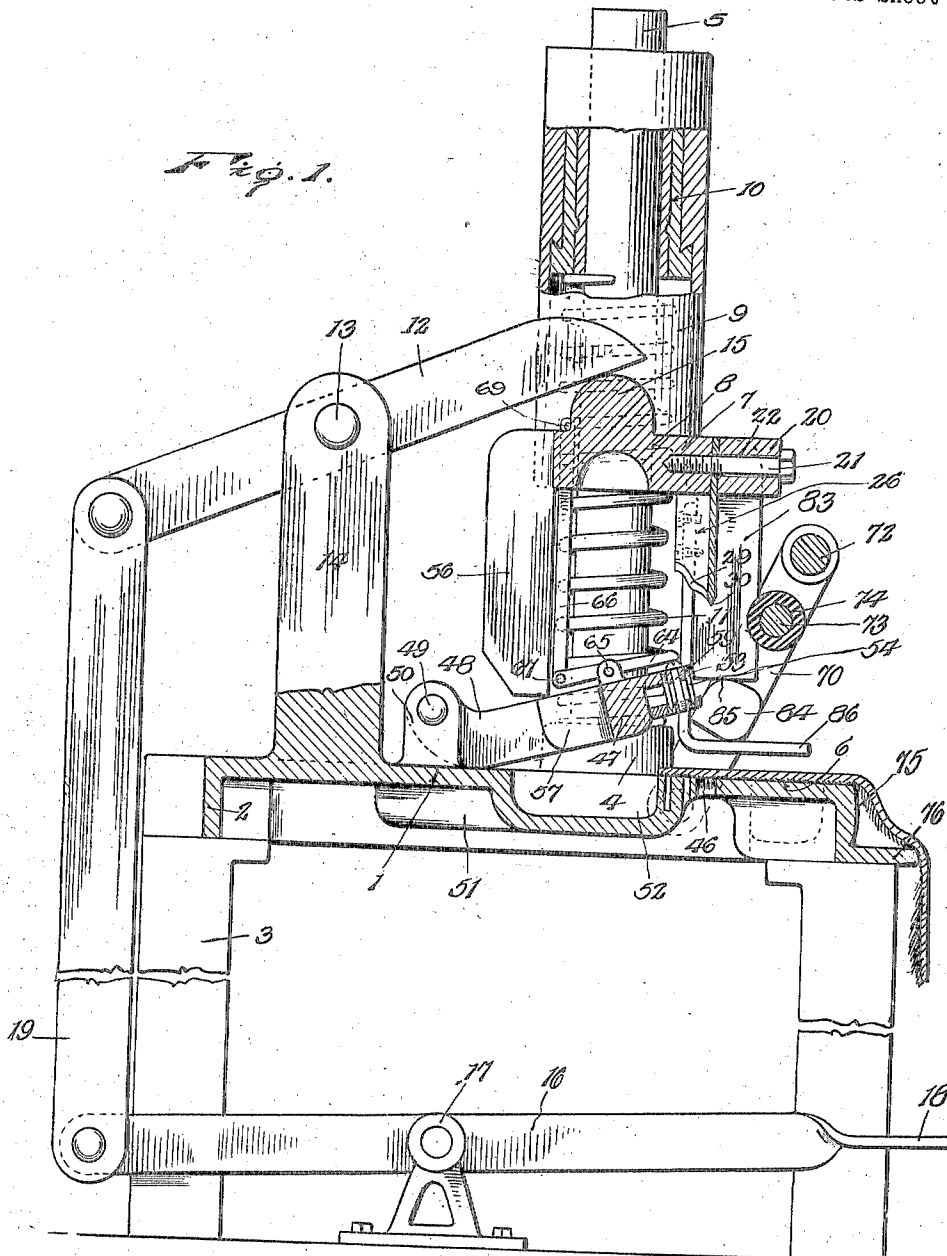
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J. O. STACHO
FUR CUTTING MACHINE

1,453,200

Filed May 28, 1921

4 Sheets-Sheet 1



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4 Sheets-Sheet 2

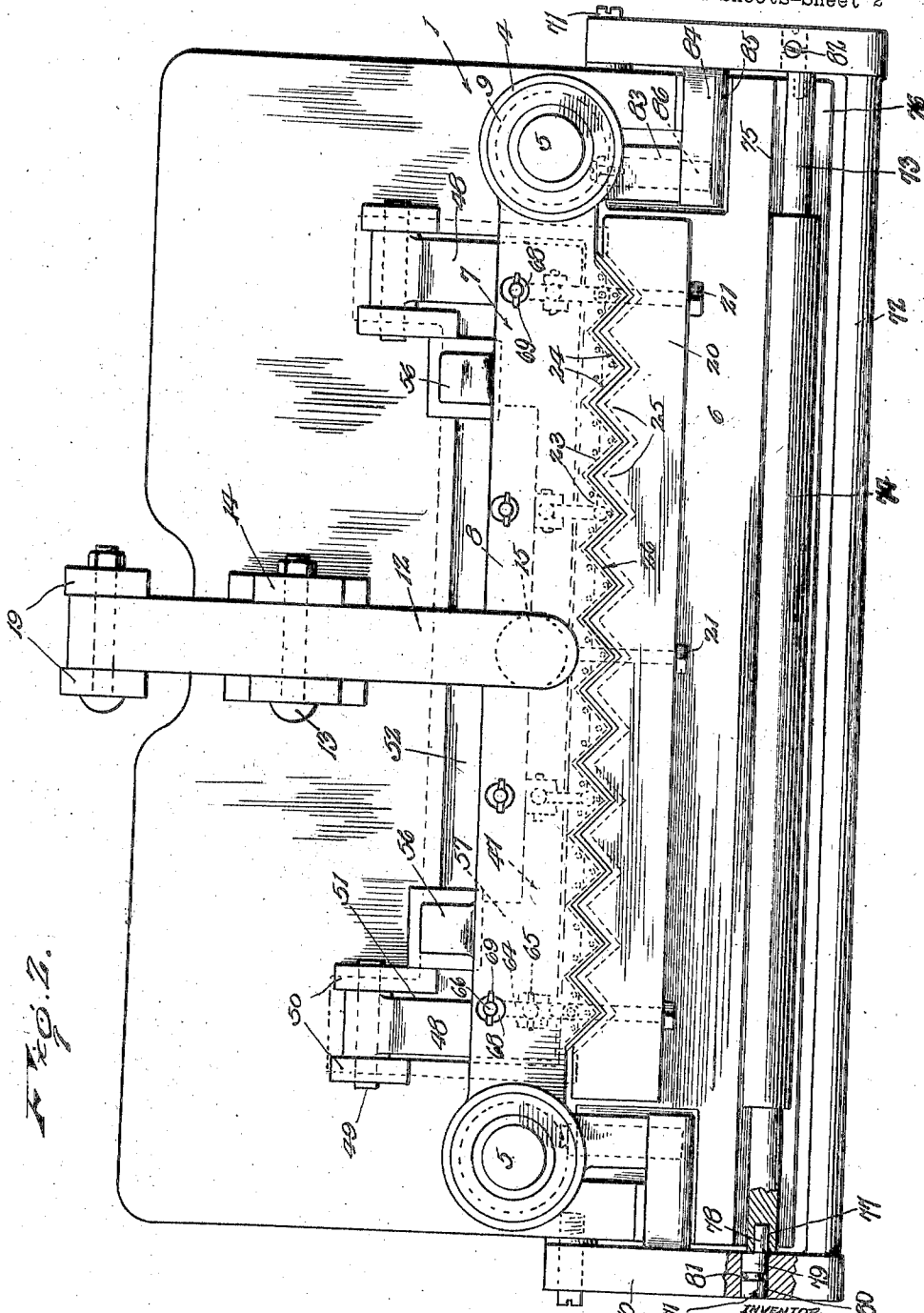


Fig. 2.

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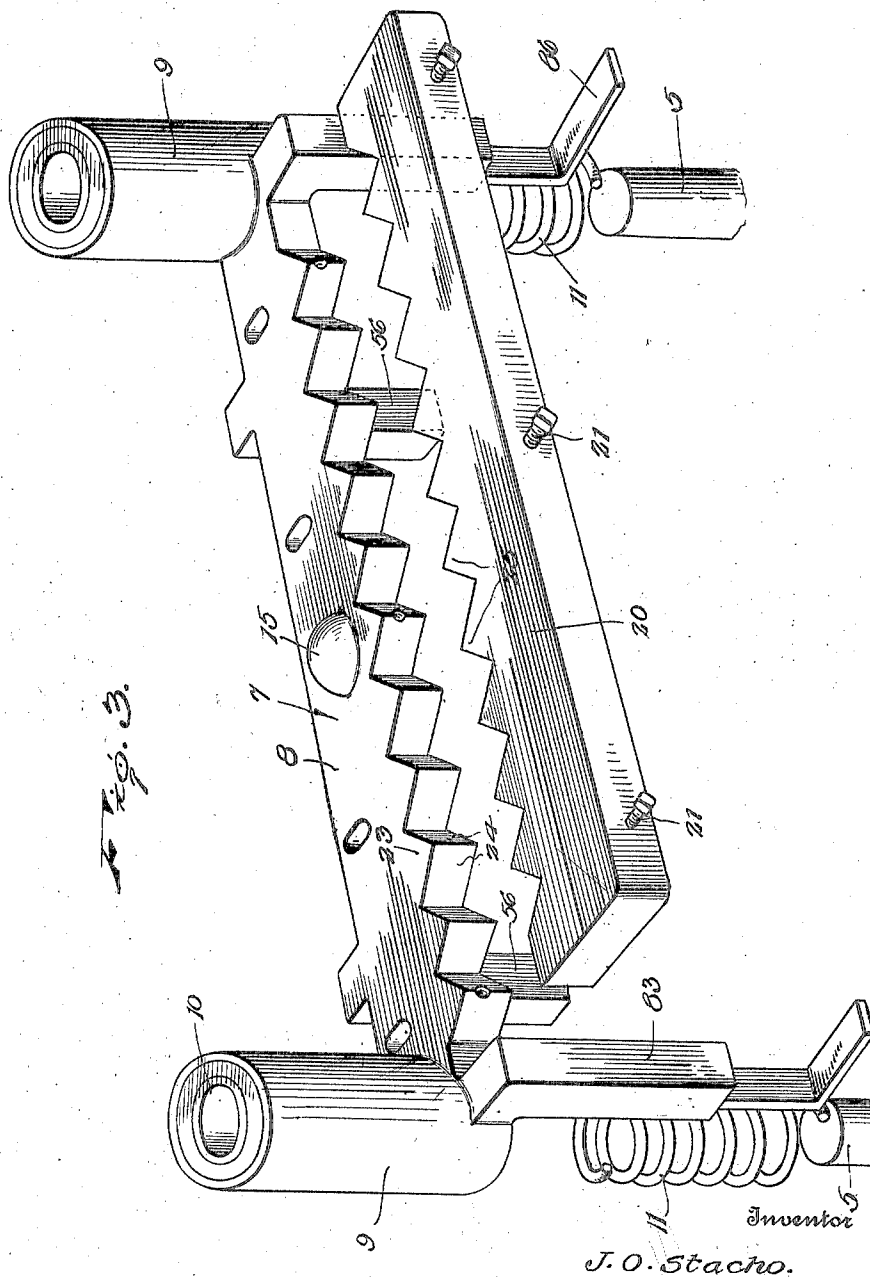
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FUR CUTTING MACHINE

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Apr. 24, 1923.

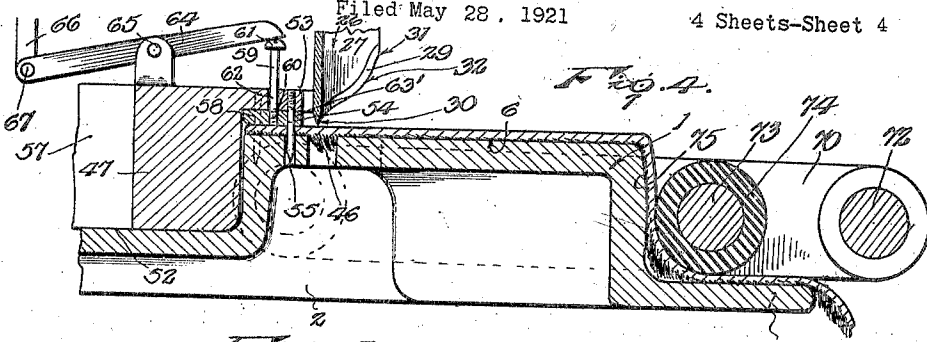
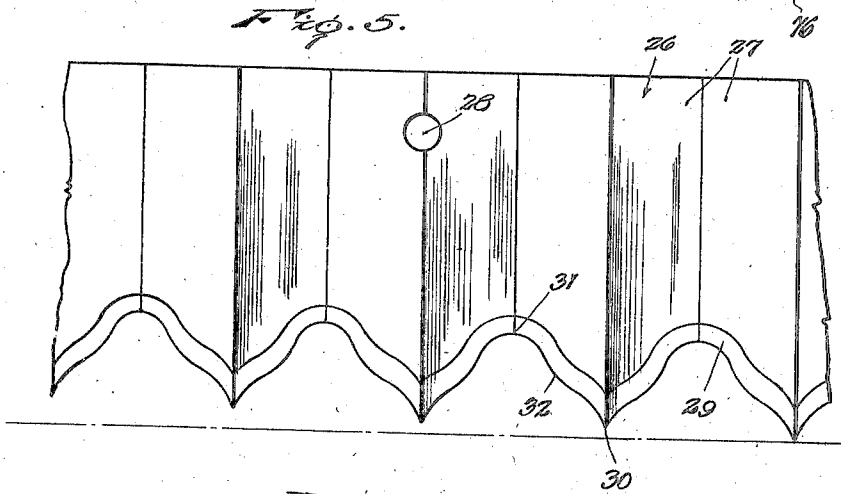
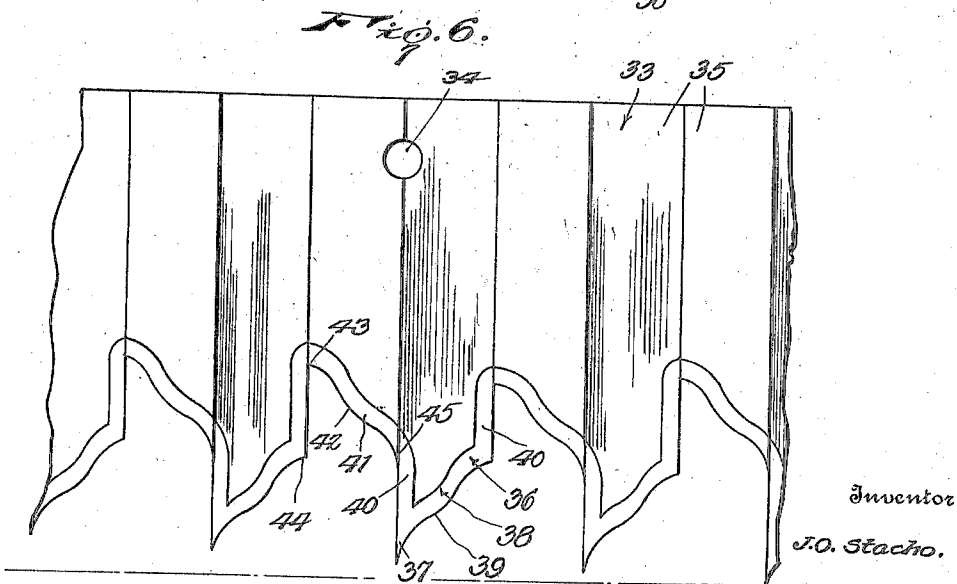
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FUR CUTTING MACHINE

Filed May 28, 1921

4 Sheets-Sheet 4



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UNITED STATES PATENT OFFICE.

JOSEPH O. STACHO, OF NEWARK, NEW JERSEY.

FUR-CUTTING MACHINE.

Application filed May 28, 1921. Serial No. 473,368.

To all whom it may concern:

Be it known that I, JOSEPH O. STACHO, a citizen of Czechoslovakia, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Fur-Cutting Machines, of which the following is a specification.

This invention relates to improvements in machines for cutting fur and more particularly to that class of such machines which are designed for the purpose of cutting furs along zigzag lines, it being the practice to cut furs in this manner so that when pieced together, the seams will not be noticeable from the outer side.

As the skins of furs vary in thickness and in texture, it is one of the primary objects of the present invention to so construct the machine that it will be capable of acting upon various kinds of furs and evenly cut the same without the least liability of causing damage to the furs and especially without liability of clipping the fur. An objection to some of the machines of this class lies in the fact that the blades thereof are designed to act with a shearing cut so that while they may successfully cut through the skin of the furs, they also clip the fur or hairs and thus impair the quality of the final product, it being a well-recognized fact that this clipping of the fur or hair must be avoided. Therefore in this connection the present invention has as a further object to so construct the cutting devices of the machine as to obviate the shearing cut and provide against clipping of the fur or hair.

Another object of the invention is to provide a foot operated machine of the class mentioned which, upon actuation of its foot operated member, will function automatically to grip and securely hold the fur in position to be cut and then neatly and accurately cut through the same.

In one type of machine of the class above mentioned, the cutter comprises a knife made up of a plurality of assembled blade sections disposed with their vertical edges in mutual contact but free from connection with each other, and it has been found that in such a construction the blades are liable to become separated to a greater or less de-

gree as they enter the fur with the result that, at the angles of the cutter, the skin and fur are liable to become lodged or wedged between the adjacent edges of the blade sections thus causing injury to the fur and likewise resulting in a distortion of the said blade sections. It is therefore another very important object of the invention to deviate from the cutter construction above and overcome the disadvantages presented thereby, this being done in the present instance by providing a cutter blade integral throughout and therefore having all of its relatively angularly disposed blade portions integrally connected so that they cannot spring apart nor can any portion of the fur being cut become caught or hung in the blade.

Another object of the invention is to provide in a machine of this class a blade having a novel form of cutting edge designed to produce a most effective and accurate severance of the fur along a zigzag line.

Another object of the invention is to provide novel means for securely gripping and holding the fur while being cut which means will function however without any liability of damaging the fur or distorting the same.

In the accompanying drawings:

Figure 1 is a vertical front to rear sectional view through a machine embodying the present invention, the parts being shown in the positions which they will assume prior to the cutting operation;

Figure 2 is a top plan view, the parts being shown in the positions which they will assume when the machine is operated to cut through the fur laid upon the bed plate thereof;

Figure 3 is a perspective view illustrating the cutter head of the machine and the parts associated therewith;

Figure 4 is a detail vertical front to rear sectional view illustrating the operation of the gripping and holding means;

Figure 5 is a fragmentary front elevation of a type of blade employed in cutting relatively thick furs;

Figure 6 is a similar view illustrating a modified form of blade for employment in cutting thin furs.

The bed plate of the machine is indicated

in general by the numeral 1 and the same is reinforced by a marginal depending flange 2 and is supported by corner legs or standards 3 bolted or otherwise secured thereto at their upper ends. Near each end the bed plate is provided upon its upper surface with a boss 4 from which upstands a post or standard 5 preferably of the cylindrical form illustrated in the drawings, these standards being perpendicular and parallel to each other and being secured at their lower ends in any suitable manner. The standards are located in a line suitably spaced rearwardly from the forward side of the bed plate 1, and the upper surface of the bed plate forwardly of the said standards is smooth and unobstructed thus providing a surface 6 upon which the fur to be cut may be disposed in a flat condition as illustrated in Figures 1 and 4 of the drawings, means being provided for gripping and holding the fur after its disposal upon this surface and for slightly stretching the fur in its laid out condition, and this means will presently be specifically described.

The cutter head of the machine which is indicated in general by the numeral 7 is supported upon and between the standards 5 for vertical movement and the said head comprises a horizontally disposed beam 8 extending between and integrally connected at its ends with the lower ends of sleeves 9 each provided in its upper end with a bushing indicated in general by the numeral 10 and slidably and more or less accurately fitting the respective standard 5. A spring 11 is arranged upon each of the uprights 5 and bears at its lower end against the upper side of the respective boss 4 and is received at its upper end portion within the lower portion of the respective sleeve 9 and bears against the lower end of the bushing 10, as best shown in Figure 1 of the drawings. These springs 11 serve to normally yieldably support the cutter head in elevated position and consequently downward movement of the cutter head is against the tension of these springs. In order that such downward movement may be effected under conditions to be later explained, a rocker arm 12 is pivotally mounted between its ends as at 13 upon an upright 14 upstanding from the bed plate 1 in rear of the cutter head and the forward end of this rock arm coacts with a rounded or conoidal boss 15 formed upon the upper side of the beam 8. A foot lever 16 is supported for rocking movement upon a suitable pedestal bearing 17 beneath the frame of the machine and is provided at its forward end with a foot pedal 18 whereby it may be conveniently rocked, and connected to the rear end of the said foot lever is the lower end of a connecting rod 19 the upper end of which rod is connected with the rear end of the rock arm 12. It will

now be evident that upon depression of the foot pedal 18, the arm 12 will be rocked so as to depress the cutter head 7 against the tension of the springs 11 and when the said pedal is relieved of pressure the springs will act to automatically return the cutter head to its elevated position.

In addition to the beam 8, the cutter head comprises a beam section 20 adapted to be removably secured to the forward side of the beam 8 by means of stud bolts 21 which are passed through openings 22 in the said beam section 20 and threaded into sockets provided in the said forward side of the said beam 8. Referring now to Figures 2 and 3 of the drawings, it will be observed that the forward side of the beam 8 is machined or otherwise provided with a series of substantially V-shaped bosses 23 the relatively angularly disposed faces of which are indicated by the numeral 24 and may form any desired uniform angle with relation to each other depending upon the nature of the zig-zag cut which it is desired to produce in the fur material acted upon by the machine. Likewise the rear side of the beam section 20 is provided with a series of substantially V-shaped bosses 25 designed to match with the bosses 23 when the parts are assembled and secured together by the bolts 21. As previously stated, the cutting blade of the machine is integral throughout and of zig-zag form, comprising a plurality of relatively angularly disposed blade portions, and the said blade is designed to be clamped between the matching edges of the beam 8 and beam section 20 as best illustrated in Figures 1 and 2 of the drawings.

One type of blade is illustrated in Figure 5 and indicated in general by the numeral 26 and the said blade comprises a plurality of relatively angularly disposed blade portions 27 the angular disposition of which corresponds to that of the faces of the bosses 23 and 25 so that when the upper edge portion of the blade is disposed between the beam section 20 and beam 8, it may be securely clamped in position by tightening bolts 21, this portion of the blade being provided with bolt openings 28 for the reception of the said bolts 21. The cutting edge of the blade 26 is indicated by the numeral 29 and the same is formed by bevel-grinding the lower edge of the said blade from both faces as best shown in Figure 4 of the drawings. It will be observed by reference to Figure 5 that the said edge 29 is of undulatory form, the lower points of the edge, indicated by the numeral 30, being in a line with the meeting forward vertical edges of adjacent blade portions 27, and the higher points of the edge, indicated by the numeral 31, being in a line with the meeting rear vertical edges of the said blade portions. It will also be understood and ob-

served by reference to the said figure that the points 30 constitute the entering points of the cutting edge and that these points are successively elevated through the series from one end of the blade to the other so that they successively enter and pierce the skin of the fur to be cut as the blade is moved downwardly through downward movement of the cutter head. Not only is the cutting edge 29 of undulatory form as regards the relative vertical displacement of the points 30 and 31 but furthermore the said edge between each two adjacent points 30 and 31 is more or less scalloped or undulated, as indicated by the numeral 32, so as to better adapt the edge to cut cleanly through the skin of the fur without any liability of tearing the same. This type of blade is especially designed for use in cutting relatively heavy furs or in other words furs having comparatively thick skins.

Figure 6 of the drawings illustrates a blade which is especially designed for use in cutting furs having comparatively thin skins and this blade is indicated in general by the numeral 33, and, like the blade 26, is provided with bolt openings 24 for the passage of the bolts 21. Likewise this blade comprises relatively angularly disposed blade portions 35 corresponding to the portions 27 of the blade 26 and integrally connected at their vertical edges. In this form of blade the cutting edge is indicated in general by the numeral 36 and is double beveled as in the case of the cutting edge 29. Furthermore the cutting edge 36, in alternate ones of the blade portions 35, is brought to a sharp piercing point 37 located substantially in a line with the meeting forward edges of adjacent blade portions. These particular cutting edge portions are indicated specifically by the numeral 38 and each is preferably scalloped or undulated, as at 39, and is furthermore extended as at 40 along the vertical edges of the respective blade portions throughout such lengths of these blade portions as project below the lower edges of the intervening or other blade portions. The portions of the cutting edge 36 which are characteristic of the said other or short blade portions are indicated by the numeral 41 and are spaced above the cutting edge portions 38 and upwardly inclined and scalloped or undulated as at 42, their high points being indicated by the numeral 43 and being located above the high points of the cutting edge portions 38 which high points are indicated by the numeral 44. On the other hand the low points of the cutting edge portions 42, which points are indicated by the numeral 45, are located substantially opposite the high points 44 of the cutting edge portions 38. Also in this form of the invention the low or piercing points 37 are successively elevated throughout the series

so as to successively pierce the skin of the fur to be cut and it will be understood that as the blade is lowered in the cutting operation, the points 37 will first enter the skin of the fur and the cutting edge portions 38 and 40 will make incisions in the skin after which the cutting edge portions 41 will be brought into action and will complete the severance of the skin.

In view of the character of the blade employed in the machine it is not required that the blades have any shearing coaction with any other part or parts and in fact, for the reasons previously explained, this action is to be avoided, the fur to be cut being in fact supported in flat stretched condition in such a manner that the blade, when lowered in the cutting operation, may cut cleanly through the skin of the fur without any shearing effect. With this end in view the bed plate 1 is formed, parallel to its forward side, with a transversely extending slot 46 which is of a zigzag line of extent corresponding to that defined by the cutting edges of the blades employed in the machine, this slot being located vertically beneath the path of downward movement of the blade and it and the blade being so relatively positioned, as best illustrated in Figure 4, that the blade will enter the slot substantially midway between the front and rear walls thereof and consequently will have no shearing coaction with either of these walls. The slot 46 is formed in that portion of the bed plate 1 which bears the surface 6 and consequently the fur to be cut is laid over the slot 46, means being provided as will now be described, for holding the fur in a more or less taut condition when so desired.

In order to grip that portion of the fur which is laid upon the surface 6 in rear of the slot 46, a gripping means is provided comprising a gripper bar 47 provided at its ends with rearwardly extending arms 48 which are pivotally mounted as at 49 upon ears 50 upon the upper surface of the bed plate 1. By a means to be presently described, the gripper bar 47 is normally held in an elevated or upwardly swung position as shown in Figure 1 of the drawings but is adapted to be lowered, upon downward movement of the cutter head, to occupy substantially the position shown in Figure 4 of the drawings. In this latter position the arms 48 will seat in suitable depressions 51 provided in the upper surface of the bed plate 1, and the said bar 47 will be similarly received within a depression 52 formed in the said bed plate. The gripper bar 47 is provided at the forward side and at its top with a forwardly projecting lip 53 in which are fixed the upper ends of piercing pins 54, the pins, in the lowered position of the gripper bar, being received in openings 55 formed in the bed plate 1 in rear of the slot

46. The openings 55 are arranged in a zigzag line the angles of which extend parallel to the angles of the slot 46, and the pins 54 are correspondingly arranged upon the lip 53.

By reference to Figure 4 it will be observed that when the gripper bar 47 is swung downwardly to its lowered position, the pins 54 will pierce the edge portion of a piece of fur stretched over the surface 6, the fur being in this manner gripped in rear of the slot 46. In order that the gripper bar 47 may be moved downwardly automatically upon downward movement of the cutter head, the cutter head 7 is provided adjacent its ends and at its rear side with downwardly projecting presser feet 56 which bear at their lower ends against bosses 57 provided at the corners between the ends of the gripper bar 47 and its associated arms 48. The presser feet 56 have flat rearwardly presented faces and the parts are so proportioned that in the initial downward movement of the cutter head 7, the downward movement of the presser feet 56 will act against the bosses 57 to swing the gripper bar 47 downwardly until the bar has assumed substantially the position shown in Figure 4 of the drawings at which time the lower forward corners of the presser feet 56 will have cleared the upper rear corners of the respective bosses 57, and the flat forward faces of the presser feet will pass downwardly in sliding contact with the rear flat faces of the said bosses, the cutter head 7 being in this manner permitted to have continued downward movement without interference on the part of the gripping device and after the gripping device has been brought to position to grip the fur to be cut.

In order that the gripper bar 47 may be swung upwardly to its normal or inactive position upon upward or return movement of the cutter head 7, and also in order that the strip of fur cut from the piece to be pierced by the pins 54 may be stripped from these pins, means is provided which will now be described. A stripper bar 58 is disposed beneath the lip 53 and is supported in operative relation thereto by means of pins 59 which are threaded or otherwise secured at their lower ends, as at 60, in the said bar 58 and are provided at their upper ends with preferably rounded heads 61, the pins working slidably through openings 62 formed in the lip 53. Openings 63 are formed in the stripper bar 58 and receive the piercing pins 54. The pins 59 are of such length that in the elevated position of the gripper bar 47, in which position the heads 61 of the pins rest against the upper side of the lip 53, the stripper bar 58 will occupy the lowered position shown in Figure 1 in which position its under side will be slightly spaced below the piercing terminals of the pins 54.

It will now be evident that inasmuch as the pins 59 are freely slidable through the openings 62, the stripper bar 58 will be moved upwardly when it comes into contact with the fur to be gripped and as the gripper bar 47 is lowered to the position shown in Figure 4, so that the pins 54 will pierce the fur. However, as the gripper bar 47 is swung upwardly, it will be evident that if pressure is exerted in a downward direction against the pins 59, the stripper bar 58 will be moved downwardly over the pins 54 and against the severed strip of fur and will therefore strip the same from the said pins 54. In order that such pressure may be exerted and also in order that the upward movement of the cutter head 7 will result in the gripper bar 47 being elevated to inactive position, presser fingers 64 are pivotally mounted, as at 65, for rocking movement upon the upper side of the gripper bar 47, one in front to rear alignment with each of the pins 59 and with the forward end of each finger 64 bearing against the head 61 of the respective pin 59. A bar 66 is pivotally connected at its lower end, as at 67, to the rear end of each presser finger 64 and the upper end portions of these bars are led through slots 68 formed in the beam 8 of the cutter head 7, pins 69 being fitted through the upper ends of the bars 66 and projecting laterally in opposite directions beyond the same and engaging at their projecting ends against the upper side of the said beam 8. The cutter head 7 moves downwardly through a greater distance than the gripper bar 47 in the operation of the machine and therefore in such operation the bars 66 will remain stationary after the gripper bar 47 has assumed the position shown in Figure 4, and the cutter head 7 will move downwardly along the said bars 66 without in any way acting upon the same. However as the cutter head 7 is moved upwardly, the upper side of the beam 8 thereof will strike against the projecting ends of the pins 69 thus exerting an upward pull against the bars 66 and rocking the presser fingers 64 upon their pivots 65 so as to cause their forward ends to press downwardly against the pins 59 thus actuating the stripper bar 58 to strip the severed edge of fur from the piercing pins 54. After the stripper bar 58 has been moved to the limit of its downward movement, the upward pull exerted upon the bars 66 will serve to elevate or swing upwardly the gripper bar 47 until the same has assumed the inactive position shown in Figure 1 of the drawings. It will be understood of course that not only are the piercing pins 54 arranged in a series extending along a zigzag line corresponding to the line of extent of the slot 46, but also the forward edges of the lip 53 and the stripper bar 58 are similarly formed so that after the

gripper bar 47 has assumed its relative position, the blades 26 or 33 as the case may be may pass downwardly through the slot 46 without interference on the part of the said gripper bar and its associated parts.

The means just described is adapted, as will be readily understood, to grip the fur in rear of the slot 46, and other means which will now be described is provided for suitably stretching the fur over the surface 6 and gripping the said fur forwardly of the said slot so that during the cutting operation the fur will be held sufficiently taut to insure of proper passage of the cutting edges of the knife therethrough. The stretching and gripping means above referred to comprises spaced arms 70 arranged at the opposite ends of the bed plate 1 and pivotally mounted at their rear ends upon pivot screws 71 threaded or otherwise fixed in the flange 2 at the said ends of the bed plate. A cross rod 72 connects the forward or outer ends of the arms 70 and serves to relatively brace the arms and provide for their movement in unison about their pivots 71. A spindle 73 is supported at its ends by the arms 70 immediately inwardly of the cross rod 72 and extends between the said arms parallel to the said rod, and this spindle is provided with a covering or sheath 74 of rubber or any other material found suitable for the purpose and constituting a yieldable gripping roll. By means to be presently described the arms 70 are normally held in the upwardly swung or elevated position shown in Figure 1 of the drawings but when swung downwardly to the position shown in Figures 2 and 4 of the drawings, the gripping roll 74 is designed to cooperate with a stationary gripping surface 75 perpendicularly rounded and formed at the forward side of the bed plate 1 and extending longitudinally thereof, the bed plate being provided with a ledge or flange 76 at the bottom of the surface 75 and projecting in a forward direction and horizontally disposed. The curvature of the surface 75 is approximately on an arc concentric to the pivots 71; and the roll 74 is so positioned that it will have a more or less firm binding action against the surface 75 when the arms 70 are swung downwardly as stated, it being understood that the fur to be cut, when laid over the surface 6, will be draped also over the space between the surface 75 and flange 76, as shown in Figure 1, so that in the downward movement of the arms 70 and in the coaction of the gripping roll with the surface 75, the roll will ride over the fur slightly pulling or stretching the same in a forward direction and binding or gripping the fur against the said surface 75 as best illustrated in Figure 4. In order that the gripping roll 74 may be adjusted so as to adapt it to grip furs of varying thicknesses

or grip a fur of a given thickness with a greater or less degree of pressure as may be found desirable, it is preferable that the ends of the spindle 73 of said roll be mounted in the manner shown in Figure 2 of the drawings. In thus mounting the ends of the spindle 73 the said ends are formed eccentrically upon the inner ends with cylindrical bearing heads 79 rotatably adjustably mounted in openings 80 formed in the arms 70. Each head 79 is provided in its outer end preferably with a transverse groove 71 adapting it for the application of a screw driver whereby it may be adjusted so as to adjust the respective trunnion 78 and thus vary the position of the axis of rotation of the spindle 73 with relation to the gripping surface 75. In order that the heads 79 may be retained in place and held in their positions of adjustment, each head is formed with a circumscribing groove 81, and a set screw 82 is threaded through the upper side of the arm and seats at its inner end within the groove of the respective head and when tightened binds against the bottom wall of the said groove.

In order that the arms 70 and the gripping roll supported thereby may be moved downwardly automatically upon downward movement of the cutter head 7 and in timed relation to the downward movement of the gripper bar 47 to active position, pressure feet 83 are provided upon the cutter head 7 and project downwardly from the forward side thereof near its ends and ride at their lower ends in engagement with bosses 84 formed upon and projecting inwardly from the arms 70 near the pivoted inner ends thereof. Each boss 84 is formed with a rounded surface 85 contacting the lower end of the respective presser foot 83 and the parts are so positioned and proportioned that after the arms 70 have been swung to the full lowered position shown in Figure 4, the lower forward corners of the presser feet 83 will clear the upper rear corners of the bosses 84 and the presser feet 83 may then have continued downward movement without further exerting pressure against the said bosses so that the continued downward movement of the cutter head 7 is not interfered with. The arrangement is furthermore such that the gripper bar 47 and its associated parts will be moved downwardly to gripping position to grip the rear edge portion of the fur to be cut prior to actual engagement of the gripping roll 74 with the fur and the surface 75 so that the fur is first gripped at its rear portion or in other words rearwardly of the slot 46, and is immediately subsequently stretched in a forward direction and gripped forwardly of the said slot, after which the continued downward movement of the cutter head 7 brings the cutting edges of the knife

into play to sever the fur. In order that upon upward movement of the cutter head 7, the gripping roll 74 will be returned to its elevated or inactive position as shown in Figure 1, lifting fingers 86 are secured to the rear sides of the presser feet 83 and extend downwardly below the lower ends of the said feet and forwardly beneath the respective bosses 84 so that upon such movement of the cutter head, the fingers 86 will engage beneath and exert a lifting action against the said bosses 84 for the purpose stated.

By reference to Figure 4 of the drawings it will be observed that the blade is of a thickness considerably less than the width of the slot 46 and that its cutting edge is located substantially longitudinally medially of the slot so that as the cutter head is lowered and the said edge of the blade enters the slot, the opposite sides of the blade will be spaced from the walls of the slot to such an extent that there can be no shearing contact between these parts and, therefore, as the blade cuts through the skin of the fur and enters the slot, it will not clip the hairs of the material but will merely brush or deflect the same to one side.

Having thus described the invention, what is claimed as new is:

1. The method of cutting furs which comprises passing a blade therethrough, skin side first, and supporting the material at points spaced apart a distance sufficient to permit of free deflection of the fur by the blade and thus avoid clipping the fur along the line of severance.

2. The method of cutting furs which comprises laying the material in flat and substantially taut condition upon spaced supporting surfaces with the fur side presented to the surfaces and to the space between the same, and passing a blade through the material, skin side first, along a line spaced from the adjacent sides of both said supporting surfaces.

3. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, and a blade movable with relation to the said surface, the surface having a slot for the passage of the blade of a width greater than the thickness of the blade, and the blade being positioned to enter the slot in fully spaced relation to both walls thereof and thereby provide against a shearing cut.

4. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, and a blade movable with relation to the said surface and having a cutting edge extending along a line non-parallel to the said plane of the said surface, the surface having a slot for the passage of the blade of a width greater than the thickness of the blade, and the blade being positioned to

enter the slot in fully spaced relation to both walls thereof and thereby provide against a shearing cut.

5. In a fur cutting machine, means for supporting the fur to be cut with a portion of the area of the fur of an appreciable width unsupported and tensioned, and a blade movable with relation to the supporting means and positioned to penetrate and sever the fur along a line extending approximately medially of the width of the said area of the supported fur.

6. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, and a blade movable with relation to the said surface, the surface having a zigzag slot for the passage of the blade of a width greater than the thickness of the blade, the said blade comprising relatively angularly disposed blade portions and thus having a line of extent corresponding to that of the slot, the blade being positioned to enter the slot in fully spaced relation to both walls thereof and thereby provide against a shearing cut.

7. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, the said surface having a slot, means operable to grip the fur at one side of the slot, means operable to grip the fur at the other side of the slot, a blade movable with relation to the surface and to enter the slot in passing through the fur, and an operating mechanism for effecting successive timed operation of one of the gripping means and the blade.

8. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, the said surface having a slot, means operable to grip the fur at one side of the slot, means operable to grip the fur at the other side of the slot, a blade movable with relation to the surface to enter the slot in passing through the fur, and an operating mechanism for effecting successive timed operation of the gripping means and the blade.

9. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, the said surface having a slot, means operable to grip the fur at one side of the slot means operable to grip the fur at the other side of the slot and exert a pulling strain thereon in the direction from the first-mentioned gripping means, a blade movable with relation to the surface to enter the slot in passing through the fur, and an operating mechanism for effecting successive timed operation of the second-mentioned gripping means and the blade.

10. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, the said surface having a slot, means operable to grip the fur at one side of the slot, means operable to grip the fur at the

other side of the slot and exert a pulling strain thereon in a direction from the first-mentioned gripping means, a blade movable with relation to the surface to enter the slot in passing through the fur, and an operating mechanism for effecting successive timed operation of the first and second mentioned gripping means and the blade.

11. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, said surface having a slot, means operable to grip the fur at one side of the slot, means operable to grip the fur at the other side of the slot, a cutter head, a blade carried thereby, means for moving the cutter head in the direction of the said surface, and means actuated through movement of the cutter head for actuating the gripping means prior to entrance of the blade into the slot.

12. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, said surface having a slot, means operable to grip the fur at one side of the slot, means operable to grip the fur at the other side of the slot, a cutter head, a blade carried thereby, means for moving the cutter head in the direction of the said surface, and means actuated through movement of the cutter head for successively operating the gripping means prior to the entrance of the blade into the slot.

13. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, the said surface having a slot, a cutter head movable with relation to the said surface and having a blade to enter the slot in passing through the fur, means at one side of the slot for gripping the fur, means carried by the cutter head and coacting with an element of the gripping means to actuate the same upon movement of the cutter head in the direction of the said surface, means at the other side of the slot for gripping and stretching the fur, and means carried by the head and coacting with an element of the last-mentioned means for actuating the same upon movement of the cutter head in the direction of said surface.

14. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, a gripper bar movable with relation to said surface and having a plurality of piercing elements to penetrate the fur at one side of the slot, a cutter head movable with relation to said surface, a blade carried by the cutter head and positioned to enter the slot in passing through the fur, and coacting means upon the cutter head and gripper bar for actuating the gripper bar upon movement of the cutter with relation to the said surface.

15. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, the said surface having a slot, a

gripper bar mounted for movement with relation to the surface and having means for gripping engagement with the fur laid upon the surface, a cutter head movable with relation to the surface, means for moving the cutter head, a blade carried by the cutter head and positioned to enter the slot in passing through the fur, and means carried by the cutter head and coacting with an element of the gripper bar for moving the latter into active relation to the said surface during one period of movement of the cutter head and inactive during the successive period of movement of the cutter head.

16. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, the said surface having a slot, a gripper bar having arms pivotally mounted to support the bar for swinging movement toward and from the said surface, means carried by the bar for gripping the fur laid upon the surface at one side of the slot, an abutment element associated with the gripping device, a cutter head movable with relation to the surface and having a blade to enter the slot in passing through the fur, and means carried by the cutter head engaging the abutment element to move the gripper bar into active relation to the said surface during the initial period of movement of the cutter head, said means being arranged to clear the abutment element during the succeeding period of movement of the cutter head.

17. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, the said surface having a slot, a gripper bar having arms pivotally mounted to support the bar for swinging movement toward and from the said surface, means carried by the bar for gripping the fur laid upon the surface at one side of the slot, an abutment element associated with the gripping device, a cutter head movable with relation to the surface and having a blade to enter the slot in passing through the fur, means carried by the cutter head engaging the abutment element to move the gripper bar into active relation to the said surface during the initial period of movement of the cutter head, said means being arranged to clear the abutment element during the succeeding period of movement of the cutter head, and operative connection between the gripper bar and the cutter head for moving the former out of operative relation to the said surface when the cutter head is correspondingly moved.

18. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, the said surface having a slot, a gripper bar movable with relation to the surface and having a series of piercing elements arranged to pierce the fur at one side of the slot when the gripper bar is moved

into operative relation to the surface, a cutter head movable with relation to the surface and having a blade to enter the slot in passing through the fur, coacting means upon the cutter head and gripper bar for effecting automatic actuation of the latter upon movement of the former in the direction of the said surface, and means for moving the gripper bar out of active relation to the surface upon corresponding movement of the cutter head.

19. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, the said surface having a slot and provided at one side with a series of openings, a gripper bar movable with relation to the said surface and having a plurality of piercing elements to pierce the fur laid upon the surface and to enter the said openings, a cutter head movable with relation to the said surface, means for moving the cutter head, and operative connection between the cutter head and the said gripper bar for actuating the gripper bar prior to passage of the cutting edge of the blade through the fur and into the slot.

20. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, the said surface having a slot and provided at one side with a series of openings, a gripper bar movable with relation to the said surface and having a plurality of piercing elements to pierce the fur laid upon the surface and to enter the said openings, a cutter head movable with relation to the said surface, means for moving the cutter head, operative connection between the cutter head and the said gripper bar for actuating the gripper bar prior to passage of the cutting edge of the blade through the fur and into the slot, and means movable with relation to the said piercing elements of the gripper bar for stripping the severed fur therefrom.

21. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, the said surface having a slot and provided at one side with a series of openings, a gripper bar movable with relation to the said surface, and having a plurality of piercing elements to pierce the fur laid upon the surface and to enter the said openings, a cutter head movable with relation to the said surface, means for moving the cutter head, operative connection between the cutter head and the said gripper bar for actuating the gripper bar prior to passage of the cutting edge of the blade through the fur and into the slot, and means movable with relation to the said piercing elements of the gripper bar for stripping the severed fur therefrom, the said means comprising a stripper bar having openings receiving the piercing elements, the said bar being movable with relation to the said piercing elements, and oper-

ative connection between the stripper bar and the cutter head for actuating the stripper bar to strip the piercing elements upon receding movement of the cutter head.

22. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, the said surface having a slot, means operable to grip the fur at one side of the slot, the said means comprising a gripper bar supported for swinging movement toward and from the said surface, piercing elements carried by the bar, a stripper bar, a headed pin carried by the stripper bar and slidably fitting through the gripper bar and having openings receiving the piercing elements of the gripper bar, a cutter head movable with relation to the said surface and having a blade to enter the slot in passing through the fur, a presser finger mounted for rocking movement upon the gripper bar and coacting with the headed pin, operative connection between the said finger and the cutter head, and coacting means upon the cutter head and gripper bar for actuating the said bar upon movement of the head in the direction of the said surface.

23. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, the said surface having a slot, a gripping surface at one side of the slot, a gripping roll for coaction with the surface, means mounted for swinging movement and supporting the said roll, a cutter head movable with relation to the surface and having a blade to enter the slot in passing through the fur, and means actuated through movement of the cutter head for swinging the supporting means to bring the gripping roll into active relation to the said gripping surface.

24. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, the said surface having a slot, a gripping surface at one side of the slot, a gripping roll for coaction with the surface, means mounted for swinging movement and supporting the said roll, a cutter head movable with relation to the surface and having a blade to enter the slot in passing through the fur, and means actuated through movement of the cutter head for swinging the supporting means to bring the gripping roll into active relation to the said gripping surface upon movement of the cutter head in the direction of the said surface, the said means embodying an element coacting with the supporting means for swinging the same in the direction to move the gripping roll out of cooperative relation to the gripping surface upon receding movement of the cutter head.

25. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, the said surface having a slot, a cutter head movable with relation to the surface

and to enter the slot in passing through the fur, a gripping surface at one side of the slot, means at the other side of the slot for gripping the fur, arms pivotally supported for swinging movement with relation to the supporting surface, a gripping roll mounted to extend between the arms and to coact with the gripping surface upon swinging movement of the arms in one direction, and means carried by the cutter head and operable to effect such movement of the arms upon the initial movement of the cutter head in the direction of the supporting surface.

26. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, the said surface having a slot, a cutting head movable with relation to the surface and to enter the slot in passing through the fur, a gripping surface at one side of the slot, means at the other side of the slot for gripping the fur, arms pivotally supported for swinging movement with relation to the supporting surface, a gripping roll mounted to extend between the arms and to coact with the gripping surface upon swinging movement of the arms in one direction, means carried by the cutter head and operable to effect such movement of the arms upon the initial movement of the cutter head in the direction of the supporting surface, and means carried by the arms and journaling the gripper roll and adjustable to vary the position of the axis of the roll with relation to the axis of movement of the arms.

27. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, the said surface having a slot, a cutter head movable with relation to the surface and to enter the slot in passing through the fur, a gripping surface at one side of the slot, means at the other side of the slot for gripping the fur, arms pivotally supported for swinging movement with relation to the supporting surface, a gripping roll mounted to extend between the arms and to coact with the gripping surface upon swinging movement of the arms in one direction, and means carried by the cutter head and operable to effect such movement of the arms upon the initial movement of the cutter head in the direction of the supporting surface, the said means being inactive during the subsequent period of movement of the cutter head in said direction.

28. In a fur cutting machine, a supporting surface over which the fur to be cut is to be laid, uprights extending above the surface, a cutter head having bearing sleeves slidably fitting the uprights, springs yieldably supporting the sleeves in elevated position, a blade carried by the cutter head and having a cutting edge presented in the direction of the surface, and means for exerting leverage against the head to move the same

in the direction of said surface against the tension of the springs.

29. A blade for a fur cutting machine integral throughout and comprising a plurality of relatively angularly disposed plane blade portions, the cutting edge of each blade portion being inclined and defining an undulatory line between its high and low points and lying in the plane of the blade portion.

30. A blade for a fur cutting machine integral throughout and comprising a plurality of relatively angularly disposed plane blade portions, the cutting edge inclined between the alternate lines of juncture of the adjacent blade portions and defining undulatory lines between said lines of juncture entirely within the planes of the respective blade portions and the high and low points of the cutting edge being alined respectively with the alternate lines of juncture.

31. A blade for a fur cutting machine integral throughout and comprising a plurality of relatively angularly disposed blade portions, the cutting edge of the blade being of undulatory form and having its high and low points in a line with the lines of juncture of the adjacent blade portions, the low points of the said edge being successively relatively elevated throughout the series.

32. A blade for a fur cutting machine integral throughout and comprising a plurality of relatively angularly disposed blade portions, the cutting edge of the blade being of undulatory form and having its high and low points in a line with the lines of juncture of the adjacent blade portions, the low points of the said edge being successively relatively elevated throughout the series, the portions of the cutting edge between adjacent high and low points being scalloped.

33. A blade for a fur cutting machine comprising a series of relatively angularly disposed blade portions, the cutting edge of the blade throughout alternate ones of said portions having low and high points and the other said portions at their cutting edges likewise having low and high points, the low points of the last-mentioned blade being located approximately opposite the high points of the first-mentioned blade portions.

34. In a fur-cutting machine, a supporting surface over which the fur to be cut is to be laid, a cutter movable to and from said surface, a gripping surface at one side of the path of the cutter, a gripping roller mounted to cooperate with said gripping surface, means actuated by the travel of the cutter to lower the roller to active position in advance of the cutting operation, and means actuated by the cutter to raise the roller to inactive position after the cutting operation.

35. In a fur-cutting machine, a supporting surface over which fur to be cut is to be

laid, a cutter movable to and from said surface, a gripping surface at one side of the path of the cutter, a gripping roller to co-operate with said gripping surface, 5 swinging arms carrying said roller, abutments on said arms, pressers carried by the cutter to bear upon the abutments and move the roller to active position upon descent of the cutter, and lifters carried by the cutter 10 to engage under the abutments and raise the roller to inactive position upon ascent of the cutter.

36. In a fur-cutting machine, a supporting surface on which the fur to be cut is to be laid, a gripper cooperating with said surface, a stripper carried by the gripper and 15 movable relative thereto, a cutter movable to and from the supporting surface, and means controlled by the cutter whereby the gripper and the stripper will be operated 20 successively to secure the fur before cutting and to release same after cutting.

In testimony whereof I affix my signature.
JOSEPH O. STACHO. [L. S.]