

B. F. MAYO.
 SKIVING MACHINE.
 APPLICATION FILED AUG. 16, 1910.

1,166,533.

Patented Jan. 4, 1916.

3 SHEETS—SHEET 2.

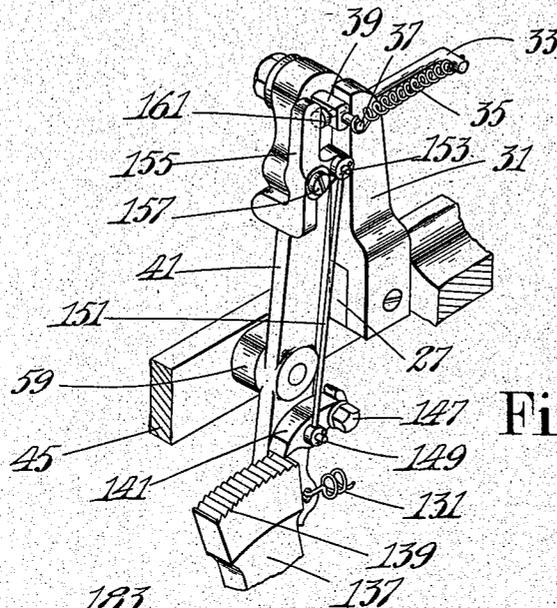


Fig. 2.

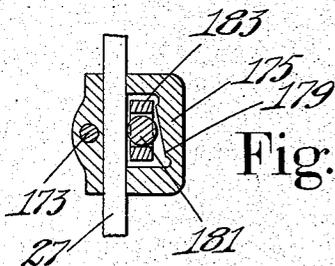


Fig. 4.

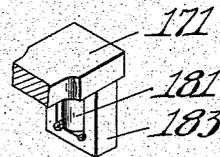


Fig. 5.

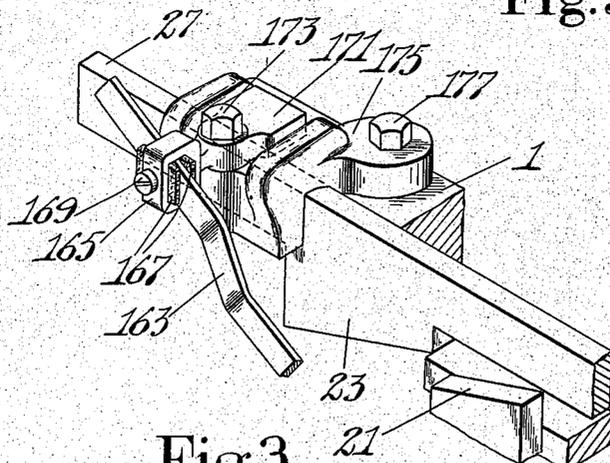


Fig. 3.

WITNESSES.
 Edith C. Hollbrook
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3 SHEETS—SHEET 3.

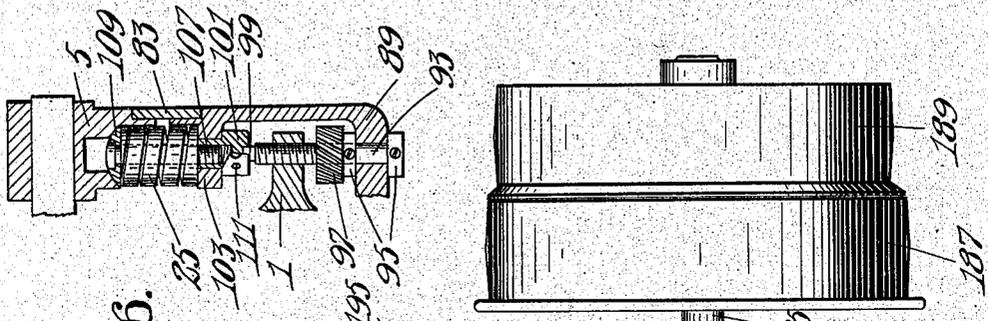
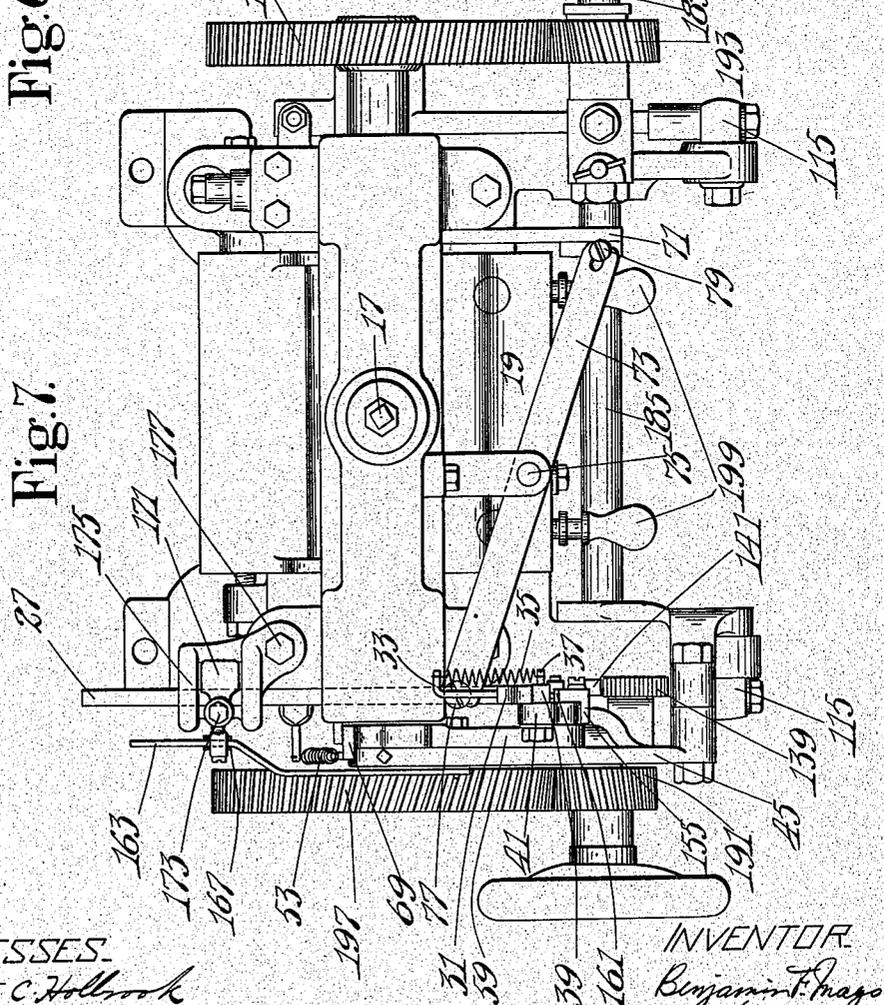


Fig. 6.

Fig. 7.



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UNITED STATES PATENT OFFICE.

BENJAMIN F. MAYO, OF SALEM, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SKIVING-MACHINE.

1,166,533.

Specification of Letters Patent.

Patented Jan. 4, 1916.

Application filed August 16, 1910. Serial No. 577,395.

To all whom it may concern:

Be it known that I, BENJAMIN F. MAYO, a citizen of the United States, residing at Salem, in the county of Essex and State of Massachusetts, have invented certain Improvements in Skiving-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to machines for treating stock and is herein illustrated as embodied in a machine for treating soles which are to be used in the manufacture of boots and shoes.

In the manufacture of shoes it is usual to cut out the soles from a hide by means of a die; and, inasmuch as the thickness of a hide varies in different portions, the individual soles cut therefrom are frequently not of the same thickness throughout their extent. Moreover the flesh side of each sole is rough and would give an unfinished appearance to a shoe if it were used without being smoothed off. It is, therefore, customary to even the soles before incorporating them into shoes, this evening process serving also to smooth off the flesh side. Since sole leather is comparatively expensive it is very desirable to limit the thickness of the stock removed so that the maximum amount of the leather may remain in the sole. A difficulty is experienced, however, from the fact that the died-out soles vary greatly in thickness so that for example, if an ordinary splitting machine were set to remove a skiving from a thick sole it might be that no skiving at all would be removed from a thin sole.

Accordingly, one object of the present invention consists in the provision with a machine having skiving mechanism of means for causing said mechanism to remove a skiving from each piece of stock fed to said machine irrespective of the original thickness of said piece. Preferably the thickness of the skiving is predetermined and in practice a very thin skiving is removed from the flesh side of the sole or other piece of stock. If not enough stock has been removed by this first cut an inspection of the flesh side will reveal certain areas which have not been operated upon by the cutting member of the skiving ma-

chine. It may be that the areas thus revealed will be found to be so located as not to be objectionable. In case, however, that more of the stock is desired to be removed the sole is merely fed a second time through the machine. Provision is thus made for removing successively from different pieces of stock or from a given piece of stock a plurality of skivings the thickness of which is independent of the original thickness of said piece or pieces provided that said original thickness, whatever it is, is uniform throughout the extent of the piece of stock. Under some circumstances it may be desirable to provide stock treating means other than a knife which shall act upon or with reference to the stock in accordance with its thickness at a given portion.

Accordingly another object of this invention consists in the provision with stock treating means of a plurality of members between which the stock passes one of which is normally unyielding and the other normally yielding, and means for rendering the unyielding member yielding and the yielding member unyielding. With this construction as the piece of stock is fed to the machine, and the yielding member is thereby moved to a position dependent upon the thickness of the stock, it may be rigidly supported in said position while the other member which was formerly unyielding is permitted to yield, whereby the stock treating means may be caused to act in accordance with the position of the member which is finally rigidly supported. In the illustrative machine the stock treating means is shown as a knife and the respective yielding and unyielding members as feed rolls having transversely movable bearings; and a plurality of supports are provided which may be moved into the path of the bearings of one roll and out of the path of the bearings of the other respectively at a predetermined point in the movement of the piece of stock. The result is that by causing the supports for the bearings of the rolls to be thrown respectively into and out of operative position at any given time during the passage of the stock between the rolls, the stock treating means may be caused to operate in accordance with the thickness of that portion of the stock which is then in engagement with said rolls.

Another object of the invention consists in

the provision with stock treating means and a plurality of transversely movable feed rolls for feeding a piece of stock to the stock treating means, one of said rolls being
 5 spring pressed, of means adapted for actuation during the passage of the piece of stock between the rolls for limiting the transverse movement of one of said rolls. In the embodiment of the invention one of the feed
 10 rolls is acted upon by a comparatively heavy spring while the other is more easily movable transversely of its axis and means are provided for limiting this transverse movement during the passage of the piece of
 15 stock between the rolls.

Another object of the invention consists in the provision with stock treating means and mechanism operatively connected therewith and arranged to be operated during the passage of a piece of stock through the machine to set said means to reduce by a fixed amount
 20 the thickness of each piece of stock of uniform thickness passing through the machine irrespective of the original thickness of the
 25 piece.

These and other features of the invention including certain details of construction and combinations of parts will be described in connection with an illustrative machine and
 30 pointed out in the claims.

Referring now to the accompanying drawings:—Figure 1 is a side elevation of a machine embodying the present invention. Fig. 2 is a detail perspective showing part
 35 of the mechanism for moving the supports. Fig. 3 is a detail of one of the supports for the bearing of the upper roll. Figs. 4 and 5 are a detail sectional view and a detail perspective respectively showing the locking
 40 mechanism of the support which is illustrated in Fig. 3. Fig. 6 is a section on the line 6 of Fig. 1, and Fig. 7 is a plan of the machine.

The frame 1 is provided with guideways
 45 which receive the bearings of the upper feed roll 7. These bearings are rigidly held against tilting movement by a stem 11, which is held in a tubular bearing 13, said stem being urged downwardly by a spring
 50 15, the tension of which may be varied by means of a set-screw 17. The spring 15 has comparatively little strength and is not essential to the operation of the machine. It is provided merely to insure that the
 55 upper feed roll 7 shall be returned to its lowermost position after a sole has passed from between the rolls. The stock treating means is herein shown as a knife 19, the extent of the downward movement of the bearings for the upper roll being so limited
 60 that the lowermost portion of its surface is normally, substantially in the plane of the knife. The bearing 3 of the upper feed roll is formed with an incline 21, and arranged
 65 to cooperate with the incline is a support 23

herein shown as a wedge, it being understood that when the wedge is moved into operative position, the spring is relieved and the upper feed roll is rendered unyielding. The bearings of the lower feed roll mounted
 70 in brackets 115 which are pivoted to the frame at 117 are supported by springs one of which is shown at 25, the upward movement of said roll being so limited that the edge of the knife is always at a distance
 75 from the upper surface of said roll, and this distance, which as will presently be described may be varied, determines the thickness of the skiving which is removed from each piece of stock fed to the machine. 80

With the construction thus far described and since the spring 25 is much stronger than the spring 15, if the rolls are properly rotated and a sole is introduced between them, the upper roll will be raised. If now
 85 the wedge 23 is moved into contact with the incline 21, the upper roll will be held rigidly against further upward movement. The edge of the knife 19, will therefore contact with the forward edge of the piece of stock
 90 at a predetermined distance from its lower face and this will be true of every piece of stock fed to the machine irrespective of its original thickness.

The wedge may be actuated by any suitable means, and in the illustrated embodiment of the invention automatic means are shown. The wedge 23 is fast to the slide bar 27 which is mounted in a guideway 29. To the slide bar 27 is fastened an upright
 100 31, said upright being provided with an arm 33; and a spring 35 is fast at one end to a pin 37 carried by a bracket 39 which, in turn, is fast to a lever 41 (see Fig. 2). At its other end the spring 35 is fast to the
 105 arm 33. The lever 41 is pivotally mounted on the driving shaft 43; and it is clear that if the lever is swung to the right as viewed in Fig. 1, the slide bar 27 will also be moved to the right and the wedge 23 brought into
 110 contact with the incline 21. This movement of the lever is automatically accomplished by the following mechanism; pivoted at 44 to an upright 46 which is rigid with the frame 1, is a supporting arm
 115 45 provided with a slot 47 and carrying rotatably mounted at its outer end, a cam 49 having fast to it a segment gear 51.

A spring 53 is attached at one end to a pin which is fast to the arm 45 and at the
 120 other end to a pin carried by the frame of the machine, said spring normally holding the arm 45 in its lowermost position which is determined by an adjustable stop 55.

Pivoted to the lever 41 at 57 is a link 59
 125 which is provided near its opposite end with a stud 61. Frictionally connected with the shaft of the upper feed roll is a gear 63 provided with an annular projection 65 which is adapted when the roll is raised to contact 130

with a projection 67 on the arm 45, so that the gears 63 and 51 cannot be forced together so as to bind. If now a sole is fed to the machine the upper roll will be raised so that the gears 63 and 51 will mesh. The cam 49 will thereby be rotated until a stop 69 which is integral with it is brought into contact with the arm 45 the gear 63 there- after slipping upon its shaft. During this movement the cam 49 contacts with the inclined end of the link 59 and thereby through the lever 41, the spring 35, the upright 31 and the slide bar 27 causes the wedge 23, to be moved into contact with the incline 21. The parts are so constructed and arranged that the movements indicated above are completed before the sole reaches the knife, so that each sole fed to the machine contacts with the knife at a predetermined distance from the flesh side thereof irrespective of the original thickness of the sole.

In order to guard against any possibility of tilting movement of the upper roll, a second slide bar 71 (see Fig. 7) provided with a second wedge (not shown) is loosely connected with the slide bar 27 by means of a link 73, which is pivoted at 75 to the frame of the machine, the link being provided with yokes at each end, which embrace screws 77 and 79. The wedges are reversely arranged and in the position shown in Fig. 7, are both inoperative.

With the construction thus far described, the strength of the spring 25 is relied upon to hold the axis of the lower roll firmly in place during the entrance of the sole between the rolls. In order, however, to insure that there shall be no transverse movement of this roll during the entrance of the sole and the movement of the wedge 23, means are provided for supporting this roll rigidly until the wedge 23 has been moved into operative position and for rendering said roll yieldable after such movement of the wedge. Any suitable means may be employed, and in the illustrated embodiment of the invention automatic means are shown. The bearing 5 of the lower roll is provided with an incline 81, and cooperating with the incline is a wedge-shaped support 83 carried by a slide bar 85. This bar is mounted in guides 87 which are integral with a supporting member 89 and is pivoted at its outer end upon a stud 91 which is carried by a lever 137.

Referring now more particularly to Fig. 6, the member 89 is provided with a horizontally extending portion having a bore through which passes a rod 93. This rod, which is screw threaded at its upper portion has fast to it collars 95 and a spiral gear 97, the screw threaded portion of the rod engaging a part of the frame of the machine indicated at 1. The upper end of the

rod is provided with a smooth portion 99 of reduced diameter which is received in a socket in a nut 101. This nut has a reduced portion which extends through a boss 103 on the supporting member 89 and is provided with a screw threaded bore to receive a screw threaded rod 107. Upon the upper end of this rod is swiveled a washer 109 which contacts with the upper end of the spring 25.

Holes 111 are provided in the head of the nut to facilitate turning it. By turning the nut 101, the tension of the spring 25 may be varied. By turning the gear 97 the supporting member 89 together with the wedge 83 and the bearing 5 may be raised or lowered, an adjustable stop 113 (see Fig. 1) being provided to limit the upward movement of the bearing and thereby to determine the thickness of the skiving, which is to be removed from the piece of stock.

As has been stated, the bearings for the lower roll are supported in brackets 115 which are pivoted to the frame at 117. The bearing for the lower roll which is at the opposite side of the machine from that shown in Fig. 1, is similar to the bearing 5 and is likewise supported by a wedge and a spring which are mounted in the same manner as the wedge 83 and spring 25. In order that the wedges may be compelled to move in unison a rod 119 extends from side to side of the machine and carries at each end a segment gear 121, which meshes with a rack 123 provided on each slide bar. The spiral gear 97 is connected with a similar spiral gear located at the opposite side of the machine by means of a rod 125, provided at each end with a gear 127. This rod carries at one end, a hand wheel 129 by which it may conveniently be rotated.

The lever 41 is normally held in the position shown in Fig. 1, by a spring 131 which is fast at one end to the lever and at the other end to the frame of the machine. Pivoted to the lower end of the lever is a link 133 provided with a slot 135 which receives the pin 91, upon which the slide bar 85 is pivoted. The lever 41 consequently operates to move the lower wedge 83 into operative position as soon as the piece of stock passes from between the rolls. The movement of the wedge 83 in the opposite direction is also accomplished by the lever 41 in the following manner: a lever 137, which carries the pivot 91, is itself pivotally mounted on the shaft 43 and carries at its upper end a segment ratchet 139.

Referring now more particularly to Fig. 2 a pawl 141 pivoted to the lever 41 at 147 has pivoted to it at 149 a connecting rod 151 which at its upper end is pivoted to a governor 155. This governor which is pivoted to the lever 41 at 157 has a lower portion which projects over the lever 41 and is nor-

mally urged outwardly by a spring 159 (see Fig. 1) which is seated in a socket in said lever. At its upper portion the governor 155 contacts with a pin 161 which is loosely mounted in and passes through the bracket 39, said pin being normally urged by the spring 35 and the upright 31 to hold the governor in the position shown. With this construction the pawl 141 is normally held in inoperative position as shown and after the introduction of a piece of stock between the rolls, remains so held until the wedge 23 comes to rest against the incline 21. At this point the upper portion of the lever 41 moves away from the upright 31, and the loose pin 161 no longer offers resistance to the action of the spring 159. The pawl 141 is accordingly moved into operative position, the lever 137 rocked about its pivot 43 and the wedge 83 moved away from supporting position whereby the lower roll is rendered yielding.

In order that the wedge 23 may be held firmly in place and any possibility of rearward movement during the operation of the machine prevented, the mechanism illustrated in detail in Figs. 3, 4 and 5 is provided. A link 163 is pivoted at one end upon the pin 61 and at the other end engages a friction device comprising an eye 165 and friction members 167 composed of felt or other suitable material which are held in contact with the link 163 by means of a screw 169. The eye 165 is part of a lever 171 which is pivoted at 173 to a bracket 175, said bracket being fastened to the frame of the machine by a bolt 177. This bracket embraces the slide bar 27 and is provided with an inner inclined face 179 which is designed to cooperate with a roller 181, loosely carried by a downwardly projecting extension 183 of the lever 171, the roller being located between the incline 179 and the slide bar 27. When therefore in the operation of the machine, the friction link 163 is moved forward, the lever 171 is rocked slightly on its pivot to bring the roller into the narrower portion of the space between the bar 27 and the incline 179 so that thereafter any rearward movement of the bar 27 will immediately cause the roller to bind. In the reverse movements of the parts after the piece of stock has left the machine, the lever 171 is rocked at the opposite direction before any movement is imparted to the slide bar 27.

Referring now more particularly to Fig. 7, the driving shaft 185 is provided with fast and loose pulleys 187 and 189 and with two gears, one of which is shown at 191. The other gear is located directly beneath the intermediate gear 193, which meshes with it, said intermediate gear also meshing with a large gear 195, which is fast to the shaft of the upper feed roll. A similar large gear 197 is fast to the shaft of the lower feed roll

and is driven by the gear 191. The knife 19 is adjustable in and out by means of the screws 199.

The operation of the machine is as follows; Power having been applied to the pulley 187, a sole is fed to the machine with its flesh side downward. As the forward portion of the sole enters between the rolls the upper roll is moved upwardly, the gear 63 is moved into engagement with the gear 51, and the cam 49 is thereby rotated until the stop 69 contacts with the arm 45. During this movement, the cam 49 operates through the link 59 to move the lever 41 in a clockwise direction as viewed in Fig. 1. The lever 41 through the spring 35 pulls the wedge 23 into contact with the incline 21 and thereby holds the upper roll against any further transverse movement. At the same time the lever 41 acting through the arm 137 moves the wedge 83 to the left as viewed in Fig. 1, thereby withdrawing the support from the bearings of the lower roll and rendering the lower roll yielding. These movements take place before the sole contacts with the knife. As the sole is fed forward, a skiving is removed from its flesh side, the distance between the edge of the knife and the upper roll remaining fixed, while the distance between the edge of the knife and the lower roll is permitted to vary in case the sole is not of a uniform thickness.

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

1. A machine of the class described having, in combination, skiving mechanism and means operatively connected therewith and arranged to be operated during the passage of a piece of stock for setting said mechanism to cause it to remove a skiving from each piece of stock fed to said machine irrespective of the original thickness of said piece.
2. A machine of the class described, having, in combination, mechanism adapted to cut a skiving progressively from a piece of stock, and automatic means operatively connected therewith for setting said mechanism to remove a skiving of predetermined thickness at the end where the cut commences from each piece of stock fed to said machine irrespective of the original thickness of said piece.
3. A machine of the class described having, in combination, skiving mechanism and automatic means operatively connected therewith and actuated by the passage of the piece of stock for setting said mechanism to remove a skiving from each piece of stock fed to said machine irrespective of the original thickness of said piece.
4. A machine of the class described having, in combination, skiving mechanism and means operatively connected therewith and

arranged to be operated during the passage of a piece of stock for setting said mechanism to remove a skiving of predetermined thickness from each piece of stock of uniform thickness fed to said machine irrespective of the original thickness of said piece.

5. A machine of the class described having, in combination, a skiving knife, feeding mechanism arranged to seize the end of a piece of stock and feed it to said knife, and means constructed and arranged to be operated between the time the stock is seized by the feed-mechanism and the time the forward end of the stock reaches the knife for setting said feed mechanism so as to cause said knife to remove a skiving of predetermined thickness from each piece of stock of uniform thickness irrespective of the original thickness of said piece.

6. A machine of the class described having, in combination, skiving mechanism and automatic means operatively connected therewith and arranged to be actuated by the passage of a piece of stock for setting said mechanism to remove a skiving of predetermined thickness from each piece of stock of uniform thickness fed to said machine irrespective of the original thickness of said piece.

7. A machine of the class described having, in combination, two transversely movable feed rolls, a spring tending to move one of said rolls toward the other, stock treating means to which the stock is fed, and means arranged to be actuated after the stock has entered between the rolls for limiting the transverse movement of said other roll away from said first named roll.

8. A machine of the class described having, in combination, two transversely movable feed rolls, a spring tending to move one of said rolls toward the other, stock treating means to which the stock is fed, and automatic means arranged to be actuated after the stock has entered between the rolls for limiting the transverse movement of said other roll away from said first named roll.

9. A machine of the class described having a knife, a roll arranged to contact with one side of a piece of stock, a spring acting to move said roll toward the plane of the knife, a stop for limiting said movement whereby the operative surface of said roll is prevented from reaching said plane so that there is always a space between the edge of the knife and the adjacent surface of the roll; a second roll to contact with the other side of the piece movable transversely and arranged in cooperative relation with the first; a normally inoperative support for limiting the transverse movement of the second roll away from the first and means for moving said support into operative position.

10. A machine of the class described hav-

ing a knife, a roll arranged to contact with one side of a piece of stock, a spring acting to move said roll toward the plane of the knife, a stop for limiting said movement whereby the operative surface of said roll is prevented from reaching said plane so that there is always a space between the edge of the knife and the adjacent surface of the roll; a second roll to contact with the other side of the piece movable transversely and arranged in cooperative relation with the first, a normally inoperative support for limiting the transverse movement of the second roll away from the first and automatic means for moving said support into operative position.

11. A machine of the class described having a knife, a roll arranged to contact with one side of a piece of stock, a spring acting to move said roll toward the plane of the knife, a stop for limiting said movement whereby the operative surface of said roll is prevented from reaching said plane so that there is always a space between the edge of the knife and the adjacent surface of the roll, a second roll to contact with the other side of the piece movable transversely and arranged in cooperative relation with the first, a normally inoperative support for limiting the transverse movement of the second roll away from the first and automatic means becoming operative during the passage of the piece of stock between the rolls for moving said support into operative position.

12. A machine of the class described having, in combination, stock treating means, a roll normally unyielding with respect to the piece of stock, a roll normally capable of yielding with respect to said piece, actuating mechanism for said rolls, and means for rendering the unyielding roll yielding and the yielding roll unyielding.

13. A machine of the class described having, in combination, stock treating means, a roll normally unyielding with respect to the piece of stock, a roll normally capable of yielding with respect to said piece, actuating mechanism for said rolls, and automatic means for rendering the unyielding roll yielding and the yielding roll unyielding.

14. A machine of the class described having, in combination, stock treating means, a roll normally unyielding with respect to the piece of stock, a roll normally capable of yielding with respect to said piece, actuating mechanism for said rolls, and automatic means thrown into operation by passage of the piece of stock, for rendering the unyielding roll yielding and the yielding roll unyielding.

15. A machine of the class described having, in combination, stock treating means, a roll normally unyielding with respect to

the piece of stock, a roll normally capable of yielding with respect to said piece, actuating mechanism for said rolls, and automatic means becoming operative upon transverse movement of one of said rolls, for rendering the unyielding roll yielding and the yielding roll unyielding.

16. A machine of the class described having, in combination, stock treating means, a roll normally unyielding with respect to the piece of stock, a roll normally yielding with respect to said piece, actuating mechanism for said rolls, means for rendering the unyielding roll yielding and the yielding roll unyielding during the passage of a piece of stock between said rolls and automatic means becoming operative upon the passage of the piece of stock from between the rolls for restoring the parts of the machine to their normal positions.

17. A machine of the class described having, in combination, stock treating means, a roll normally unyielding with respect to the piece of stock, a roll normally yielding with respect to said piece, actuating mechanism for said rolls, automatic means for rendering the unyielding roll yielding and the yielding roll unyielding during the passage of a piece of stock between said rolls and automatic means becoming operative upon the passage of the piece of stock from between the rolls for restoring the parts of the machine to their normal positions.

18. A machine of the class described having, in combination a plurality of feed rolls, means for rotating said rolls and a knife arranged in coöperative relation therewith in combination with automatic means constructed and arranged to be thrown into operation when the rolls are spread apart by the entrance of a piece of stock between them for causing the knife to remove a skiving from each piece which so enters irrespective of its original thickness.

19. A machine of the class described having a plurality of rolls, springs normally pressing said rolls toward each other, stock treating means and means for rotating said rolls to feed a piece of stock to said stock treating means, in combination with a plurality of supports for relieving said springs from the transverse thrust of said rolls, and means for moving said supports alternately into operative position.

20. A machine of the class described having a plurality of rolls, springs normally pressing said rolls toward each other, stock treating means and means for rotating said rolls to feed a piece of stock to said stock treating means, in combination with a plurality of supports for relieving said springs from the transverse thrust of said rolls, and automatic means for moving said supports alternately into operative position.

21. A machine of the class described hav-

ing a plurality of rolls, springs normally pressing said rolls toward each other, stock treating means and means for rotating said rolls to feed a piece of stock to said stock treating means, in combination with a plurality of supports for relieving said springs from the transverse thrust of said rolls, and automatic means thrown into operation by the piece of stock for moving said supports alternately into operative position.

22. A machine of the class described having a plurality of rolls, springs normally pressing said rolls toward each other, stock treating means, and means for rotating said rolls to feed a piece of stock to said stock treating means, in combination with a plurality of supports for relieving said springs from the transverse thrust of said rolls, and automatic means becoming operative upon transverse movement of one of said rolls for moving said supports alternately into operative position.

23. A machine of the class described having stock treating means, a plurality of rolls, means for actuating said rolls, bearings in which said rolls are mounted and spring mechanism tending to force said bearings toward each other, in combination with a support for the bearings of one roll which is normally in operative position to hold said bearings from movement away from the piece of stock, a similar support for another roll but normally out of operative position, and means for rendering the first support inoperative and the second operative.

24. A machine of the class described having stock treating means, a plurality of rolls, means for actuating said rolls, bearings in which said rolls are mounted and spring mechanism tending to force said bearings toward each other, in combination with a support for the bearings of one roll which is normally in operative position to hold said bearings from movement away from the piece of stock, a similar support for another roll but normally out of operative position, and automatic means for rendering the first support inoperative and the second operative.

25. A machine of the class described having stock treating means, a plurality of rolls, means for actuating said rolls, bearings in which said rolls are mounted and spring mechanism tending to force said bearings toward each other, in combination with a support for the bearings of one roll which is normally in operative position to hold said bearings from movement away from the piece of stock, a similar support for another roll but normally out of operative position, and automatic means actuated by the passage of the piece of stock between the rolls for rendering the first support inoperative and the second operative.

26. A machine having stock treating means, a plurality of rolls, means for actuating said rolls, bearings in which said rolls are mounted and spring mechanism tending to force said bearings toward each other, in combination with a support for the bearings of one roll which is normally in operative position to hold said bearings from movement away from the piece of stock, a similar support for another roll but normally out of operative position, and automatic means becoming operative upon transverse movement of one of said rolls for rendering the first support inoperative and the second operative.

27. A machine of the class described having a plurality of spring-pressed rolls, means for actuating the same, and stock treating means in cooperative relation therewith, one of said rolls being normally capable of yielding away from the stock while the other is normally rigidly supported against such movement, in combination with means for withdrawing the rigid support from the latter roll and for rigidly supporting the former.

28. A machine of the class described having a plurality of spring-pressed rolls, means for actuating the same, and stock treating means in cooperative relation therewith, one of said rolls being normally capable of yielding away from the stock while the other is normally rigidly supported against such movement, in combination with automatic means for withdrawing the rigid support from the latter roll and for rigidly supporting the former.

29. A machine of the class described having a plurality of spring-pressed rolls, means for actuating the same, and stock treating means in cooperative relation therewith, one of said rolls being normally capable of yielding away from the stock while the other is normally rigidly supported against such movement, in combination with automatic means actuated by the passage of the piece of stock for withdrawing the rigid support from the latter roll and for rigidly supporting the former.

30. A machine of the class described having a plurality of spring-pressed rolls, means for actuating the same, and stock treating means in cooperative relation therewith, one of said rolls being normally capable of yielding away from the stock while another is normally rigidly supported against such movement, in combination with automatic means becoming operative upon transverse movement of one of said rolls for withdrawing the rigid support from the latter roll and for rigidly supporting the former.

31. A machine for operating upon leather pieces having feeding mechanism and a knife to which the stock is fed in combination with means for adjusting the mechanism to cause the knife to contact with each leather piece irrespective of its thickness at a predetermined distance from one side and thereafter during the passage of the piece of stock to maintain the distance between the knife and the other side constant.

32. A machine for operating upon leather pieces having feeding mechanism and a knife to which the stock is fed in combination with automatic means for adjusting the mechanism to cause the knife to contact with each piece irrespective of its thickness at a predetermined distance from the flesh side and thereafter during the passage of the piece of stock to maintain the distance between the knife and the grain side constant.

33. A machine operating upon leather pieces having feeding mechanism and a knife to which the stock is fed in combination with automatic means thrown into actuation by the leather piece for adjusting the mechanism to cause the knife to contact with each piece irrespective of its thickness at a predetermined distance from the flesh side and thereafter during the passage of the piece to maintain the distance between the knife and the grain side constant.

34. A machine of the class described having in combination a plurality of feed rolls, means for rotating said rolls, a knife in cooperative relation therewith, a gear connected with one of said rolls and means actuated by said gear for causing the machine to remove a skiving from each piece of stock fed thereto irrespective of the original thickness of said piece.

35. A machine of the class described having, in combination, a plurality of feed rolls, means for rotating said rolls, a knife in cooperative relation therewith, a gear connected with one of said rolls and automatic means actuated by said gear for causing the machine to remove a skiving from each piece of stock fed to said rolls irrespective of the original thickness of said piece.

36. A machine of the class described having, in combination, a plurality of feed rolls, means for rotating said rolls, a knife in cooperative relation therewith, a gear connected with one of said rolls and a cam actuated by said gear for causing the machine to remove a skiving from each piece of stock fed thereto irrespective of the original thickness of said piece.

37. A machine of the class described having a plurality of rolls, springs normally pressing said rolls toward each other, stock treating means and means for rotating said rolls to feed a piece of stock to said stock treating means, in combination with a plurality of wedges for relieving said springs from the transverse thrust of said rolls, and means for moving said wedges alternately into operative position.

38. A machine of the class described having a plurality of rolls, springs normally pressing said rolls toward each other, a cutting member and means for rotating said rolls to feed a piece of stock to said cutting member, in combination with a plurality of slidable supports for relieving said springs from the transverse thrust of said rolls, and means for moving said slidable supports alternately into operative position.
39. A machine of the class described having stock treating means, a plurality of rolls, means for actuating said rolls, bearings in which said rolls are mounted and spring mechanism tending to force said bearings toward each other, in combination with a support for the bearings of one roll which is normally in operative position to hold said bearings from movement away from the piece of stock, a similar support for another roll but normally out of operative position, and means for rendering the first support inoperative and the second operative, said means including a movable member yieldingly connected with one of said supports.
40. A machine of the class described having stock treating means, a plurality of rolls, means for actuating said rolls, bearings in which said rolls are mounted and spring mechanism tending to force said bearings toward each other, in combination with a slidable wedge for the bearings of one roll which is normally in operative position to hold said bearings from movement away from the piece of stock, a similar slidable wedge for another roll but normally out of operative position and means for sliding said wedges in opposite directions.
41. A machine of the class described having stock treating means, a plurality of rolls, means for actuating said rolls, bearings in which said rolls are mounted and spring mechanism tending to force said bearings toward each other, in combination with a slidable support for the bearings of one roll which is normally in operative position to hold said bearings from movement away from the piece of stock, a similar slidable support for another roll but normally out of operative position and a member yieldably connected with the second support for moving it into operative position, said member in its movement serving to move said first support into inoperative position.
42. A machine of the class described having a plurality of feed rolls, yielding means normally tending to produce relative movement of said rolls toward each other, and stock treating means in cooperative relation with said rolls, in combination with slide bars provided with supports for said rolls, a lever yieldingly connected with one slide bar, a pawl through which the other slide bar is actuated by said lever, said pawl being normally held in inoperative position and means becoming operative during the actuation of said lever for rendering the pawl operative.
43. A machine of the class described having a plurality of feed rolls, yielding means normally tending to produce relative movement of said rolls toward each other, and stock treating means in cooperative relation with said rolls, in combination a plurality of supports for said rolls one of said supports being normally operative and the other normally inoperative, and means becoming operative upon movement of the normally inoperative support to operative position for moving the normally operative support to inoperative position.
44. A machine of the class described having, in combination, a plurality of feed rolls, means for actuating the same, stock treating means arranged in cooperative relation therewith, a support for limiting the transverse movement of one of said rolls, a lever connected with said supports, a link connected with said lever, a cam for actuating said link, a gear fast to said cam, and a gear frictionally connected with said last named roll and arranged to mesh with the gear of said cam upon transverse movement of said roll.
45. A machine of the class described having, in combination, a plurality of feed rolls, stock treating means arranged in cooperative relation therewith, a slide bar provided with a support for limiting the transverse movement of one of said rolls, means for moving said slide bar forward into operative position during the passage of a piece of stock between said rolls and automatic means becoming operative upon forward movement of said bar for preventing rearward movement during the passage of said piece.
46. A machine of the class described having, in combination, a plurality of feed rolls, stock treating means arranged in cooperative relation therewith, a slide bar provided with a support for limiting the transverse movement of one of said rolls, automatic means for moving said slide bar forward into operative position during the passage of a piece of stock between said rolls and automatic means becoming operative upon forward movement of said bar for preventing rearward movement during the passage of said piece.
47. A machine of the class described having, in combination, a plurality of feed rolls, stock treating means arranged in cooperative relation therewith, a slide bar provided with a support for limiting the transverse movement of one of said rolls, means for moving said slide bar forward into operative position during the passage of a

piece of stock between said rolls, a locking device for preventing rearward movement of said slide bar during the passage of said piece, a lever for moving said slide bar, and means connecting said device and lever.

48. A machine of the class described having, in combination, a plurality of feed rolls, stock treating means arranged in cooperative relation therewith, means for actuating said rolls, a support for limiting the transverse movement of one of said rolls, and means arranged to be actuated during the passage of a piece of stock between said rolls for moving said support into operative position, said means including a gear connected with one of said rolls, a rotatable cam provided with a gear arranged to mesh with said first named gear upon the entrance of a piece of stock between the feed rolls, and yielding means for holding said gears in mesh during the passage of the piece of stock between said rolls.

49. A machine of the class described having, in combination, a plurality of feed rolls, stock treating means arranged in cooperative relation therewith, means for actuating said rolls, a spring tending to urge one of said rolls toward the other, a support normally in position to relieve said spring from the thrust caused by the entrance of a piece of stock between said rolls, means for varying the tension of said spring, and means for adjusting said roll, spring and support toward and from the other roll.

50. A machine of the class described having a knife, a roll arranged to contact with one side of a piece of stock, a spring acting to move said roll toward the plane of the knife, a stop for limiting said movement whereby the operative surface of said roll is prevented from reaching said plane so that there is always a space between the edge of the knife and the adjacent surface of the roll, adjustable means for varying said space, a second roll to contact with the other side of the stock movably transversely and arranged in cooperative relation with the first, a normally inoperative support for limiting the transverse movement of the second roll away from the first and means for moving said support into operative position.

51. A machine of the class described having a plurality of rolls, springs normally pressing said rolls toward each other, stock treating means, and means for rotating said rolls to feed a piece of stock to said stock treating means, in combination with a support for relieving one of said springs from the transverse thrust of one roll, and means adapted to be operated during the passage of the stock between the rolls for moving said support into operative position.

52. A machine of the class described having a plurality of rolls, springs normally

pressing said rolls toward each other, stock treating means, and means for rotating said rolls to feed a piece of stock to said stock treating means, in combination with a support for relieving one of said springs from the transverse thrust of one roll, and automatic means becoming operative during the passage of the stock between the rolls for moving said support into operative position.

53. A machine of the class described having, in combination, skiving mechanism, and automatic means operatively connected therewith and actuated by the passage of the piece of stock for setting said mechanism to remove from each piece of stock of uniform thickness fed to said machine, irrespective of the original thickness of said piece, a skiving of fixed thickness.

54. A machine of the class described having, in combination, skiving mechanism and automatic means operatively connected therewith and actuated by the passage of the piece of stock for setting said mechanism to remove a skiving from each piece fed to the machine irrespective of the original thickness as well as of the uniformity or non-uniformity of thickness of said piece.

55. A machine for operating upon stock having in combination stock treating means and automatic mechanism operatively connected therewith and arranged to be actuated by the piece of stock in its passage through the machine for setting said stock treating means to reduce the thickness of each piece of stock of uniform thickness passed through the machine by a fixed amount irrespective of the original thickness of said piece.

56. A machine for operating upon stock having, in combination, stock treating means and mechanism operatively connected therewith and arranged to be operated during the passage of a piece of stock through the machine to set said means to reduce by a fixed amount the thickness of each piece of stock of uniform thickness passing through the machine irrespective of the original thickness of the piece.

57. In a machine for operating upon blanks of leather or the like, the combination of a pair of feed rolls, one of which is movable toward and from the other, means for reducing the thickness of the blank, a wedge device for controlling the extent of such reduction, and connections between said movable roll and said wedge device whereby bodily movement of said movable roll causes movement of said wedge device.

58. A machine for reducing the thickness of pieces of stock by a predetermined amount having in combination a plurality of members between which each piece is gripped, an adjustable wedge for limiting the movement of one of said members away

from the other, automatic means set by the leather piece for adjusting said wedge, and a one-way clutch for holding said wedge firmly in place during the reducing operation.

59. In a machine for operating upon blanks of leather or the like, the combination of a pair of feed rolls, one of which is movable toward and from the other, means for reducing the thickness of the blank, a wedge device for controlling the extent of such reduction, means for locking said wedge in adjusted position, means for automatically unlocking the same, and connections between said movable roll and said wedge device.

60. A machine for reducing the thickness of pieces of stock by a fixed amount having in combination a plurality of members, one being movable toward and from the other, between which each piece is gripped, an adjustable wedge movable in one direction to increase the extent of separation permitted between said members and in another direction to decrease it, a bar movable with said wedge, a one-way clutch for holding said bar in adjusted position, automatic means actuated by the piece of stock in its passage through the machine for adjusting said bar, and automatic means for releasing said clutch as said piece leaves the machine.

61. A machine of the class described having, in combination, a knife, a plurality of members between which the stock is pressed during the skiving operation, one of said members being movable transversely toward and from the knife, and means arranged to be operated during the passage of the stock for limiting the movement of said movable member to a distance from said knife less than the thickness of said piece of stock irrespective of said thickness.

62. A machine of the class described having, in combination, a knife, a plurality of members between which the stock is pressed during the skiving operation, one of said members being movable transversely toward and from the knife, and automatic means

for limiting the movement of said movable member to a distance from said knife less than the thickness of said piece of stock irrespective of said thickness.

63. A machine of the class described having, in combination, a knife, a plurality of members between which the stock is pressed during the skiving operation, one of said members being movable transversely toward and from the knife, and automatic means actuated by the passage of the piece of stock for limiting the movement of the movable member to a distance from said knife less than the thickness of said piece of stock irrespective of said thickness.

64. A machine for operating on stock having, in combination, two members between which the piece of stock is subjected to pressure, and automatic means operatively connected with one of said members and acting by the passage of said piece through said machine to set said members to cause them to exert the same pressure upon each piece of stock of uniform thickness fed between them irrespective of the original thickness of said piece.

65. A machine of the class described having, in combination, a skiving knife, feed mechanism adapted to seize the end of a piece of stock and feed it to said knife, and means constructed and arranged to be operated between the time the stock is seized by the feed mechanism and the time the forward end of the stock reaches the knife for setting said feed mechanism and the knife relatively so as to cause said knife to remove a skiving from each piece of stock presented to said feed mechanism irrespective of the original thickness of said piece.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

BENJAMIN F. MAYO.

Witnesses:

FRED W. GUIBORD,
FREDERICK L. EDMONDS.