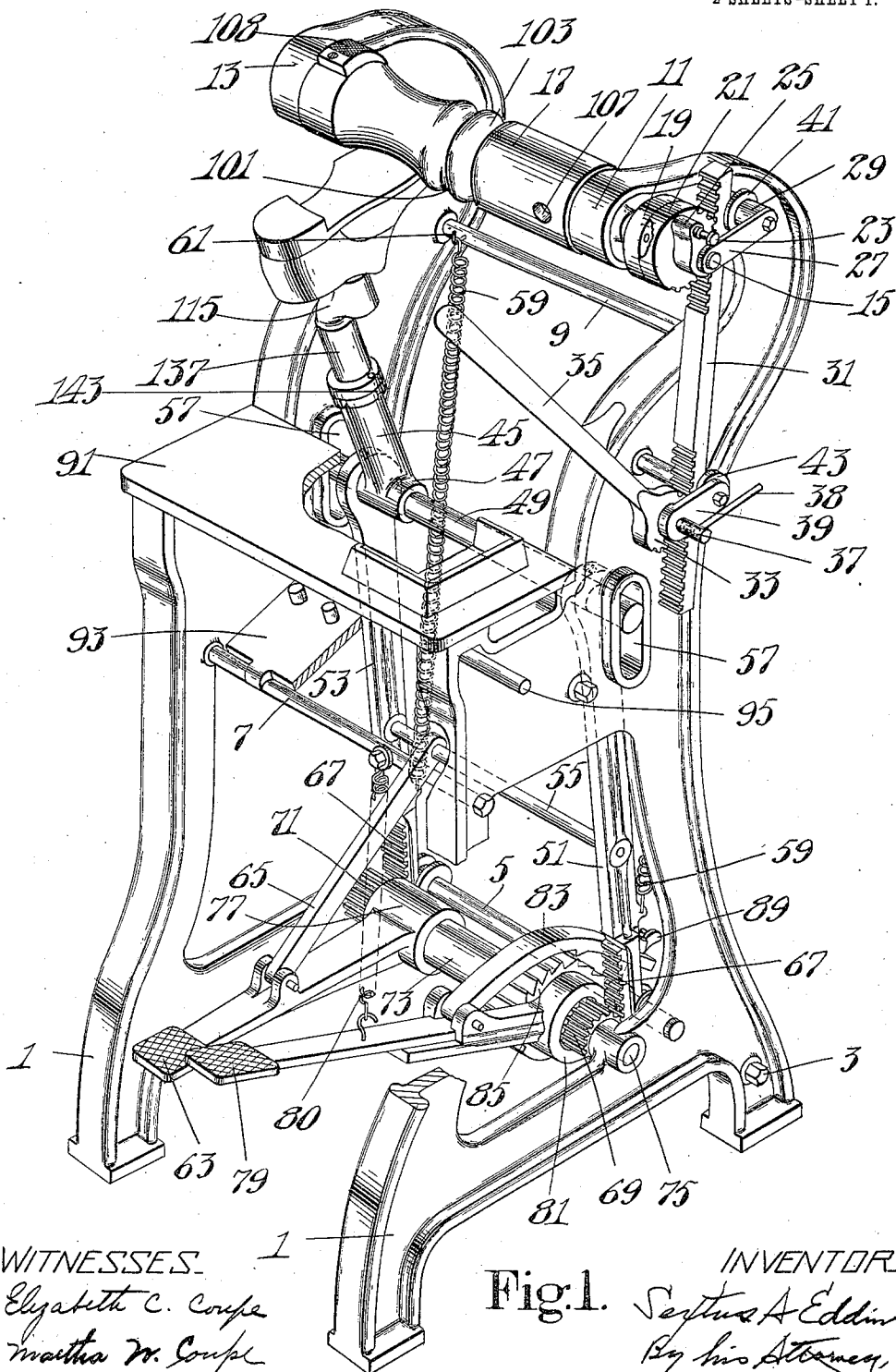


S. A. EDDINS.
MACHINE FOR BREAKING-IN SHOES.
APPLICATION FILED SEPT. 13, 1910.

1,023,510.

Patented Apr. 16, 1912.

2 SHEETS-SHEET 1.



WITNESSES.

Elizabeth C. Coupe
Martha W. Coupe

Fig. 1.

INVENTOR.

Septus A. Eddins
By his Attorney,
Nelson K. Howard

S. A. EDDINS.
MACHINE FOR BREAKING-IN SHOES.
APPLICATION FILED SEPT. 13, 1910.

1,023,510.

Patented Apr. 16, 1912.

2 SHEETS-SHEET 2.

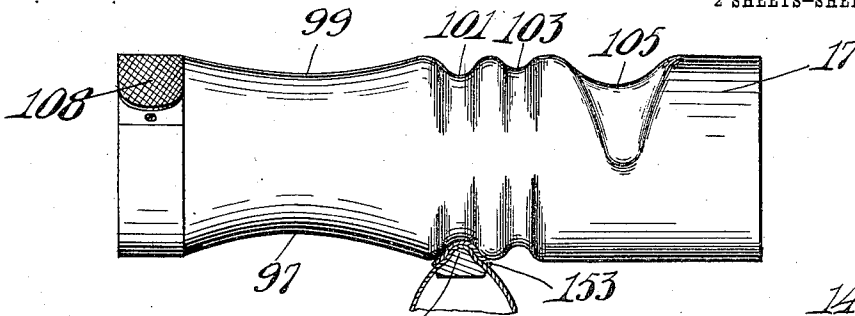


Fig. 4.

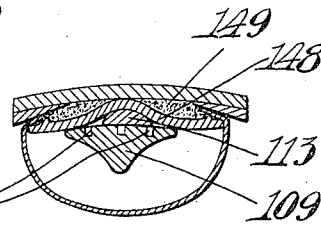


Fig. 3.

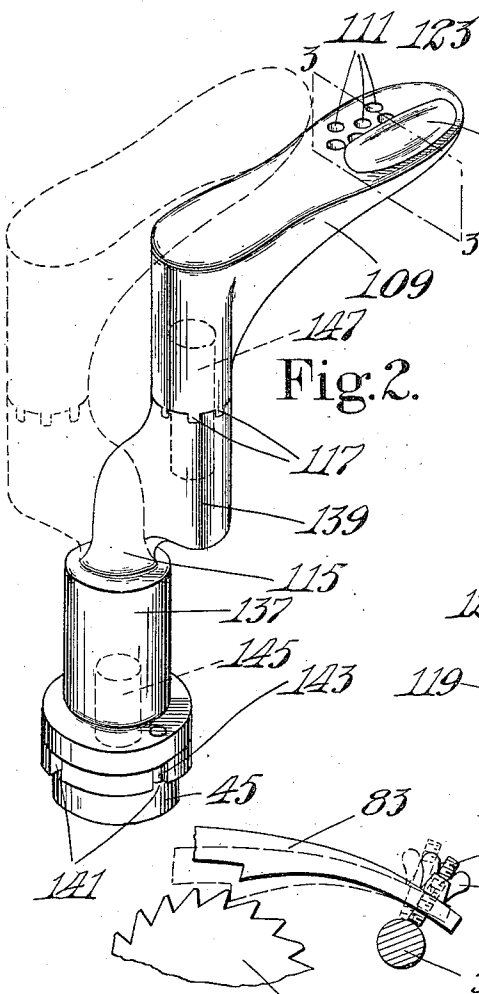


Fig. 2.

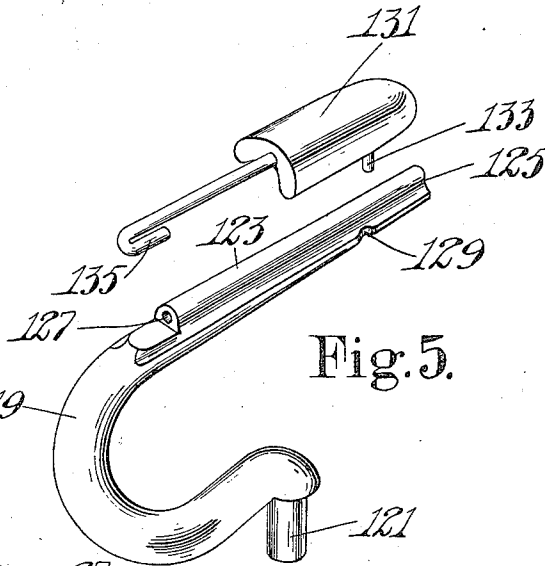


Fig. 5.

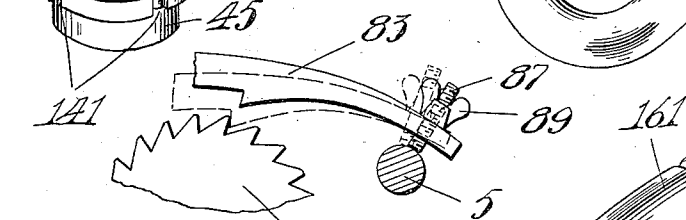


Fig. 7.

WITNESSES:
Elizabeth C. Coupe
Martha W. Coupe

INVENTOR:
Septus A. Eddins
By his Attorney,
Nelson & Monard

UNITED STATES PATENT OFFICE.

SEXTUS ASBERRY EDDINS, OF CHARLOTTESVILLE, VIRGINIA, ASSIGNOR TO O. A. MILLER TREERING MACHINE COMPANY, OF PORTLAND, MAINE, A CORPORATION OF MAINE.

MACHINE FOR BREAKING-IN SHOES.

1,023,510.

Specification of Letters Patent.

Patented Apr. 16, 1912.

Application filed September 13, 1910. Serial No. 581,821.

To all whom it may concern:

Be it known that I, SEXTUS A. EDDINS, a citizen of the United States, residing at Charlottesville, in the county of Albemarle and State of Virginia, have invented certain Improvements in Machines for Breaking-In Shoes, 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 the "breaking-in" of footwear and this application is a continuation so far as common subject matter is concerned of application Serial No. 403,978.

Owing to the non-uniformity in the shape of the human foot the great majority of ready made boots and shoes cause a certain amount of discomfort to the wearer until they have been worn sufficiently to have become stretched and shaped to the particular wearer's feet. Aside from this general difficulty almost universally experienced in wearing new boots and shoes it frequently happens that a given shoe which is otherwise suited to the foot is rendered uncomfortable by the presence of a raised seam or a lump of cement in the lining or by the presence on the foot of a bunion, space for which must be provided. In the latter case, which is a very common one, I have found that it is usually unnecessary to stretch the upper and that permanent relief may generally be secured by depressing a portion of the insole.

Certain machines and implements for breaking in shoes have been used hitherto, but so far as I am aware they have been subject to one of the following objections,—either the result accomplished by them has not been permanent, the appearance of the shoe has been marred or some permanent injury has been done to the shoe.

The general purpose of this invention is to provide a breaking in machine of general application which will produce permanent results without in any way marring the appearance of or otherwise injuring the shoe,—a machine by which, for example, the insole may be depressed, the box toe lifted, the counter softened and formed, the seams ironed, the upper stretched and various other

operations performed, all without injury to the wearing qualities or the appearance of the shoe.

Accordingly, one feature of the invention consists in the provision with a suitable support for a shoe, of a roller, means for oscillating one of said members and means for applying pressure to said shoe. By this operation every part of the selected portion of the leather is kneaded by being squeezed and pressed and worked upon uniformly so that a permanent result is obtained without disfiguring the shoe. This kneading process in which parts of a finished shoe are stretched and softened by the application of a rolling pressure is new so far as I am aware and possesses obvious advantages over the simple stretching processes hitherto made use of or those in which the leather has been beaten and hammered.

In order that various portions of a shoe may be conveniently operated upon another feature of the invention consists in the provision in a machine of the class described of a roller having areas of different contour and means permitting a shoe support to be presented selectively to the desired area of the roller. Preferably the roller has sections of different diameters and the shoe support is capable of movement longitudinally of said roller so that said support can be adjusted along the roller to bring it into operative relation with the particular section of the roller desired. Preferably also the roller is angularly adjustable on its shaft so that certain areas may be brought within the operative arc of oscillation.

Another feature of this invention consists in the provision with a machine of the class described of means permitting the shoe support to be moved angularly toward and from the roller. In the illustrated embodiment the shoe support is carried by a standard which in turn is slidably mounted on a rod and is angularly movable with respect thereto, said rod being arranged for movement toward and from the roller. With this construction not only may the standard and support be rocked toward the operator to bring said support into convenient position for the placing of a shoe thereon and then rocked back into position to be advanced toward the roller, but oscillation of the roller

will cause oscillation of the support so that the particular portion of the shoe chosen will be thoroughly and uniformly broken in and shaped.

5 It has been found that a certain difficulty arises in a machine of this class, wherein a pivotally mounted shoe support is arranged to coöperate with a kneading roller, due to the fact that a support which is suitable for
10 coöperating with the roller to break in one part of a given shoe (for example, the ball of the sole) is not suitable for coöperating with the roller to break in some other part (for example, the extreme toe of the sole).
15 This difficulty could be overcome by the provision of a large number of interchangeable shoe supports having shanks attached in different positions relatively to said supports. To obviate the necessity of providing these
20 different supports, however, another feature of the present invention consists in the provision of means whereby a shoe support may be moved forward and backward with reference to the standard upon which it is
25 mounted so as to permit proper presentation of different portions of a shoe to the roller without moving said standard. In the illustrated embodiment of the invention an adjustable member comprising two rigid
30 arms the axes of which are eccentric to each other is provided, one of said arms being arranged to carry the shoe support and the other to be angularly adjustable upon the standard. Preferably also the shoe support
35 is angularly adjustable with respect to the arm upon which it is mounted. The effect of this construction is to permit the shoe support to take up different positions with respect to the roller so that different portions
40 of the same shoe as well as shoes differing in size may be properly presented to the roller without the use of a large number of interchangeable shoe supports.

It is desirable that means be provided for
45 varying the pressure with which the portion of the shoe being operated upon is gripped between its support and the roller. Accordingly another feature of the invention consists in the provision of such means; and in
50 the illustrated embodiment this takes the form of a treadle, which when actuated operates through suitable mechanism to force the shoe support toward the roller.

These and other features of the invention
55 including certain details of construction and combinations of parts will be described in connection with the accompanying drawings and will be pointed out in the claims.

Referring now to the accompanying drawings, Figure 1 is a perspective of a machine
60 embodying the present invention, a shoe being shown in the position it occupies while having its sole operated upon; Fig. 2 is a perspective showing a shoe support, the adjusting member and part of the standard;
65

Fig. 3 is a cross-section of the shoe support taken on the line 3—3 of Fig. 2, a portion of the bottom of a shoe being shown in the position which it would occupy when being
70 subjected to the breaking in operation; Fig. 4 is an elevation of the kneading roller, a shoe support being shown in position to coöperate with one of the grooves; Fig. 5 is a perspective of a shoe support which is of somewhat different form from that shown
75 in Fig. 2; Fig. 6 is a perspective of a third shoe support; and Fig. 7 is a detail perspective of a portion of the pawl and ratchet mechanism.

Referring particularly to Fig. 1 the parts
80 of the frame 1 are held together by a plurality of stay-rods four of which are shown at 3, 5, 7 and 9. Rotatably mounted in bearings 11 and 13 in the upper part of said frame is a kneading roller 17 in which in
85 turn is rotatably mounted a shaft 15. The roller has an operative portion of comparatively large diameter and two portions of smaller diameter, said latter being received in the bearings 13 and 11. To that portion
90 of smaller diameter which extends through the bearing 11 is fixed a disk 19 which abuts a mutilated gear 21, and in the abutting face of said disk are formed a plurality of sockets (one of which is shown in Fig. 1) which co-
95 operate with a pin 23 to hold said roller in adjusted angular position with respect to said shaft, it being understood that the projection 25 is integral with the mutilated gear 21. A latch 27 which fits over the end
100 of the shaft 15 and is bolted to a stud 29 serves to hold the parts in place. A rack 31 has its upper end meshing with the mutilated gear 21 and its lower end meshing with a sector 33 having a handle 35 located in
105 convenient position to be grasped by the operator, said sector being pivoted on a pin the outer end of which is screw threaded. A clamping cap 37 having a handle 38 is threaded on said pin and bears against a
110 latch 39 to clamp the sector 33 in the position shown when the machine is not in use. The rack 31 runs on rollers 41 and 43. In order to permit the proper presentation of a shoe to said roller a shoe support of any de-
115 sired form is carried by a standard 45 which is mounted in any convenient manner for rocking movement and for movement toward and from the roller. In the illustrative machine said standard is formed
120 with a bearing 47 through which passes a shaft 49, said shaft forming part of a rigid frame comprising said shaft, two side bars 51 and 53, and a stay-rod 55, said side bars being fastened to said shaft by set screws as
125 shown.

The shaft 49 is slidably mounted in slots
130 formed in the frame of the machine and is normally held in its uppermost position by means of springs 59 which are attached

at their lower ends to the side bars 51 and 53 and at their upper ends to hooks 61 (only one being shown) which are carried by the stay-rod 9. This rigid frame of which the shaft 49 forms a part may be depressed when desired by means of a treadle 63 connected by a link 65 with the stay-rod 55. With the construction thus far described it is clear that depression of the treadle 63 depresses the shaft 49 so that the operator may rock the shoe support from beneath the roller to place a shoe on said support and may then rock said support back into the position shown. It will also be clear that relative adjustment of the shoe support and the roller longitudinally of the roller is possible and that with the parts of the machine in the position shown oscillation of the handle 35 will cause oscillation of the kneading roller 17 and through it oscillation of the shoe support about the axis of the shaft 49.

In a machine of this class it is necessary at times that considerable pressure be applied and it is desirable that this pressure be under the control of the operator so that it may be varied at will. Accordingly the side bars 51 and 53 are formed at their lower ends with racks 67 which mesh with pinions 69 and 71, said pinions being fast to a sleeve 73 which is rotatable on a shaft 75 and which serves as a bearing for an eye 77 fast to the treadle 63 the function of which has been set forth. A second treadle 79 normally held in raised position by the spring 80 has an eye 81 which is also rotatable on said sleeve 73 and has pivoted to it a pawl 83 which coöperates when said treadle is depressed with a ratchet 85. The relation of the pawl and ratchet to each other are best shown in Fig. 7 in which the dotted lines indicate their relative positions when the treadle 79 has been depressed. In order to determine the extent of movement of the treadle which shall be necessary before the tooth of the pawl contacts with a tooth of the ratchet a set screw 87 is threaded through the end of said pawl and contacts with the stay-rod 5, a wingnut 89 being provided to lock said screw in adjusted position. Raising or lowering the end of the pawl by means of the set screw 87 will render it necessary to move the pawl a greater or lesser distance before it contacts with the ratchet so that the extent of the vertical movement imparted to the shaft 49 by a given angular movement of the treadle may be varied. The particular purpose of this adjustment is to do away with idle movement of the lever 79.

A table 91, which coöperates with the stay-rods in tying together the parts of the frame, is provided for the convenience of the operator, and below said table is a shelf

93 which may be used to hold the various shoe supports and any desired dies, tools and the like. In order to limit the downward movement of the handle 35 a pin 95 is provided.

Referring now to Fig. 4, the kneading roller 17 is provided near one end with a plurality of concave surfaces, the concavity of the surface 97 being greater than that of the surface 99, the profile curve of each face being of comparatively large radius. Adjacent this portion of the roller there are formed two grooves 101 and 103 of slightly different depth and contour, their profile curves being of comparatively small radius. Adjacent these grooves is a depression 105. The remaining portion of the roller is cylindrical, and in this cylindrical portion of the roller is a socket 107 (see Fig. 1) for the reception of the shank of a die which may be used to stamp a firm's initials or the date of sale or any desired mark upon the shoe. There may also be provided a corrugated portion 108. The depression 105 may be shaped to correspond to the shape of a given portion of a shoe as for example the box toe or the counter. As shown, this depression is substantially V-shaped in outline and the greater portion of its bottom is approximately concentric with the axis of the roller. It will thus be apparent that the kneading roller has areas of different contour or sections of different diameters to which a shoe may be selectively presented.

Referring now to Figs. 2 and 3 wherein one form of shoe support 109 is shown, this support has the approximate form of a shoe maker's iron last. In the bottom of said last, however, are a plurality of sockets 111 for the reception of holding studs which are formed on the bottom of a plurality of interchangeable buttons 113 (only one being shown) which when in place form protuberances upon said last or tools carried by said last and one use of which is to coöperate with other parts of the machine in depressing the insole of a shoe as shown in Fig. 3. This shoe support 109 is mounted upon an adjustable member 115 (presently to be described) and is provided with a series of tongues 117 which fit into corresponding grooves in the member 115 so that said support may be angularly adjusted with respect to said member.

In Fig. 5 there is shown another form of shoe support 119 having a shank 121 which is adapted to be inserted in a socket in the member 139. The upper face of this support is provided medially with a longitudinal rib 123 convex in cross-section having grooves 125 on each side thereof, this rib being of such contour as to be received in the grooves 101 and 103 although, as will

presently be apparent, it may be used in co-operation with other areas of the roller. The rib 123 is provided in its end with a socket 127 and the support near its outer end is formed with notches 129, only one being shown. A cap-expanding member or tool 131 having a convex upper surface to contact with the inside of a shoe and a lower concave surface to fit over the rib 123 is provided with pins 133 (only one being shown) to coöperate with the notches 129, and with a stem having a recurved portion 135 to enter the socket 127.

It is apparent from an inspection of Fig. 1 that when the sole of a shoe is being kneaded force is exerted in a direction at an angle to the axis of the standard 45. The effect of the application of force in this manner gives rise to the difficulty that a shoe support which is adapted to present a shoe for operation upon a certain portion is often not adapted to present the same shoe for operation upon another portion. For example, a support which will properly present a shoe in position to have the ball of the sole kneaded will not properly present the toe portion owing to the fact that when the standard is rocked toward the operator in order to bring the toe portion of the sole beneath the roller the angle at which the shoe is presented to the roller is changed. In the given case it is sometimes found in practice that when an attempt is made to knead the toe portion of the shoe, the shoe is forcibly ejected from beneath the roller. This difficulty of breaking in different parts of a shoe without placing it upon different supports arises with respect to various portions of a shoe and is not limited to the specific case described above. To meet this difficulty an adjustable member 115 is mounted upon the standard 45 said member comprising arms 137 and 139 eccentrically arranged with respect to each other. The standard 45 has formed upon its upper end a flange provided with a plurality of slots 141 with which a pin 143 fast to the arm 137 coöperates. A pin 145 loosely mounted in a socket in the standard 45 extends into a socket in the arm 137, and a similar pin 147 similarly connects the arm 139 with the shoe support 109. With this construction the shoe support may be adjusted to various positions (one of which is indicated by dotted lines in Fig. 2) to move said support forward and back beneath the roller without changing the angular position of the standard 45. When it is desired to use the support shown in Fig. 5 the loose pin 147 is removed and the shank 121 of said support inserted in the socket in the arm 139.

The shoe support shown in Fig. 2 may be used to coöperate with the roller in depressing a portion of an insole as shown in Fig. 3 wherein the insole 148 is shown as dis-

torted, the filling material 149 permitting such distortion, while the outer sole is not affected. By using a button of the desired shape space can thus be provided for any irregularity in the shape of the bottom of the foot, or the insole may be depressed entirely across the ball to relieve a shoe which is tight across the instep. By using the support without any of the interchangeable attachments a sole may be rendered flexible throughout a selected portion thereof, or the bottom of the sole may be roughened by presenting it to the corrugated portion 108 of the roller.

One use of the support shown in Fig. 5 is to coöperate with the roller in stretching a portion of the upper as shown in Fig. 4, wherein a portion of the upper is indicated at 153. The rib 123 in this case coöperates with the groove 101 and the walls of the groove coöperate with the grooves 125 in the support, a construction and arrangement which has been found very efficacious in permanently stretching the leather. This shoe support may also be caused to coöperate with the ridge between the grooves 101 and 103 or with various other portions of the roller to press out seams, to crush lumps of cement which may be present in the lining, to soften back stays or counters and to operate upon various portions of shoes. The cap expanding member 131 is so termed because it is particularly useful in raising or expanding a toe cap, the shape of which is not suited to the foot. In using this device the shoe is drawn over it until said device has been received in the toe portion of the shoe and is then presented to the roller; and in performing this operation the depression 105 in the roller is particularly effective.

The shoe support shown in Fig. 6 is designed particularly to coöperate with the roller to form corrugations or ridges on the inner portion of the counter of a low shoe so that such a shoe will not rub up and down upon the heel of the wearer. This support is accordingly provided with a convex portion 161 to conform to the transverse curvature of the counter; and upon this convex portion are formed projections herein shown as ribs 163. In operation the shoe is placed with the inner portion of the counter resting upon the corrugated portion of the support, and the roller is oscillated over the outer surface of the counter, pressure being applied as usual. By this process the ribs 163 are forced into the counter and form grooves therein while between the grooves there are thus formed a series of ridges which correspond to the spaces between the ridges of the support.

With regard to the shoe supports it should be understood that the uses which have been briefly indicated above are only a few of the various uses of which they are capable, and

that shoe supports of other forms may be used if desired. It should also be noted with regard to these supports that they are constructed and arranged to enter a shoe and formed to permit the shoe to be shifted thereon to bring different portions of its interior into contact therewith.

The operation of the machine is as follows: Starting with the parts of the machine in the position shown in Fig. 1 and with the roller held by the pin 23 in proper angular position the treadle 63 is depressed and the standard swung out from beneath the roller. The proper support is placed upon the adjustable member 115 and upon this support the shoe is placed with that portion uppermost which is to be operated upon. The standard is then moved along the rod 49 until the shoe is opposite the proper portion of the roller and swung until the shoe is beneath the roller. The treadle 63 is released, the treadle 79 depressed and the handle 35 manipulated. If the leather is not satisfactorily gripped between the support and the roller said support is swung from beneath the roller as described above and the member 115 is adjusted. During the manipulation of the handle 35 the pressure upon the treadle 79 is varied as desired so that the breaking in operation may be intensified at the exact portion where it is most required. The oscillation of the roller serves to oscillate the shoe support about the axis of the rod or shaft 49 and since pressure is being selectively applied by means of the lever 79 every part of the desired portion of the shoe is successively compressed and kneaded without being unduly strained. Moreover, the amount of pressure applied is under the control of the operator and may be varied between wide limits, the present machine as built being capable of exerting a pressure of thirty-six hundred pounds, a particular advantage of the process as carried out by the present machine lying in the fact that great pressure may be selectively applied to the leather thereby effectually softening and stretching it, where desired, without injuring the wearing qualities or marring the appearance of the shoe.

For convenience, the word shoe will be used throughout the following claims as a term comprising all kinds of footwear.

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

1. A machine for breaking-in shoes having, in combination, a shoe support, a tool projecting from said support and held immovably thereon during the breaking-in operation and adapted to operate upon the insole of a shoe, a cooperating roller arranged to bear against the outsole of the shoe, means for producing pressure between said tool and roller, and means for causing rela-

tive movement of the roller and shoe whereby depression of a selected area of the insole is produced by a kneading or rolling action.

2. A machine for breaking in shoes having, in combination, a roller, a support for a finished shoe, a projecting tool held immovably upon said support during the breaking-in operation and adapted to operate upon the insole of the shoe, manual means for oscillating one of said members, and means for applying pressure to said shoe.

3. A machine for breaking in shoes having, in combination, a roller, a support for a finished shoe, a projecting tool held immovably upon said support during the breaking-in operation and adapted to operate upon the insole of the shoe, means for oscillating one of said members and means under control of the operator for applying pressure to said shoe.

4. A machine for breaking in shoes having, in combination, a roller, a support for a finished shoe, a projecting tool held immovably upon said support during the breaking-in operation and adapted to operate upon the insole of the shoe, manual means for oscillating one of said members, and manual means for applying pressure to said shoe.

5. A machine for breaking in shoes having, in combination, a roller having areas of different contour, a support for a finished shoe, manual means for oscillating one of said members, and means permitting said shoe to be selectively presented to the desired area.

6. A machine for breaking in shoes having, in combination, a roller having areas of different contour, a support for a finished shoe, means for oscillating one of said members whereby a given area of said roller is rendered effective and means permitting said roller and support to be relatively adjusted longitudinally of said roller to bring another area into effective operation.

7. A machine for breaking in shoes having, in combination, a roller having areas of different contour, a support for a finished shoe, means for oscillating one of said members, means permitting said shoe to be selectively presented to the desired area and means under control of the operator for applying pressure to said shoe.

8. A machine for breaking in shoes having, in combination, a roller having areas of different contour, a support for a finished shoe, manual means for oscillating one of said members, means permitting said shoe to be selectively presented to the desired area and means under control of the operator for applying pressure to said shoe.

9. A machine for breaking in shoes having, in combination, a roller having areas of different contour, a support for a finished

shoe, means for oscillating one of said members, means whereby said shoe may be selectively presented to the desired area and manual means under control of the operator for applying pressure to said shoe.

10. A machine for breaking in shoes having, in combination, a roller having areas of different contour, a support for a finished shoe, manual means for oscillating one of said members, means whereby said shoe may be selectively presented to the desired area and manual means under control of the operator for applying pressure to said shoe.

11. A machine for breaking in shoes having, in combination, a roller, a support for a finished shoe carrying projecting means, a hand lever for oscillating one of said members and a foot lever for selectively applying pressure to said shoe during the breaking-in operation.

12. A machine for breaking in shoes having, in combination, a roller, a support for a finished shoe, a projecting tool held immovably upon said support during the breaking-in operation and adapted to operate upon the inside of said shoe, a foot lever for producing relative movement of said support and roller toward each other and manual means for oscillating said roller to break in selected portions of said shoe.

13. A machine for breaking in shoes having, in combination, a roller, a support for a finished shoe carrying projecting means, a hand lever for oscillating said roller, and a foot lever for selectively applying pressure to said shoe during the breaking in operation.

14. A machine for breaking in shoes having, in combination, a kneading roller, an oscillatory support for a finished shoe, and means for oscillating said roller against the support to knead portions of the shoe, the oscillation of said support being effected by the oscillation of said roller.

15. A machine for breaking in shoes having, in combination, a kneading roller, an oscillatory support for a finished shoe, means for oscillating said roller against the support to knead portions of the shoe, the oscillation of said support being effected by the oscillation of said roller, and means under control of the operator for applying pressure to said shoe.

16. A machine for breaking in shoes having, in combination, a roller, a support for a finished shoe movable toward and from said roller as well as in an arc about an axis outside said roller, a projecting tool carried by said support, means for oscillating said roller and means for selectively applying pressure during the breaking in operation.

17. A machine for breaking in shoes having, in combination, an oscillatory kneading member, an oscillatory support for a finished

shoe, a member by which said support is carried, and means for producing relative movement between said roller and carrying member to cause them to take up a position to cooperate in kneading portions of a shoe, the oscillation of the support being effected by the oscillation of the roller when said elements are in such position.

18. A machine for breaking in footwear comprising in combination an oscillatory kneading member, an oscillatory support for a finished shoe, a member by which the support is carried, and means for moving the carrying member bodily toward said kneading member to bring said support into position to cooperate therewith in kneading portions of the shoe, the oscillation of the support being effected by that of said kneading member when said elements are in such position.

19. A machine for breaking in footwear comprising, in combination, an oscillatory kneading member, an oscillatory support for a finished shoe, a shaft by which the support is carried, said shaft being disposed parallel with the axis of said member, and means for moving the shaft bodily toward said member, to bring said support into position to cooperate therewith in kneading portions of the shoe, the oscillation of the support being effected by that of said member, when said elements are in such position.

20. A machine for breaking in footwear comprising in combination, an oscillatory kneading member, an oscillatory support for a finished shoe, a member by which the support is carried, said carrying member being located below said kneading member, and means for raising the carrying member bodily toward said kneading member to bring said support into position to cooperate therewith in kneading portions of the shoe, the oscillation of the support being effected by that of said kneading member when said elements are in such position.

21. A machine for breaking in footwear comprising in combination, a kneading roller arranged for backward and forward rotation, an oscillatory support for a finished shoe, a shaft by which the support is carried, said shaft being disposed parallel with and below the roller, and means for raising the shaft bodily toward said roller to bring the support into position to cooperate therewith in kneading portions of the shoe, the oscillation of the support being effected by the rotation of the roller, when said elements are in such position.

22. A machine for breaking in footwear comprising in combination, a frame having its sides formed intermediate their ends with a pair of oppositely disposed vertical slots, an oscillatory shaft journaled in the frame above the slots, a kneading member secured to the shaft, an oscillatory support for a

finished shoe, a shaft by which the support is carried, the last mentioned shaft having its ends extending into said slots, and means for raising said last mentioned shaft bodily toward the first mentioned shaft to bring said support into position to cooperate with said member, in kneading portions of the shoe, the oscillation of said support being effected by that of said member, when said elements are in such position.

23. A machine for breaking in shoes having, in combination, a kneading roller having areas of different contour, a support for a finished shoe and means for oscillating said roller, said machine being constructed and arranged to permit relative adjustment of said support longitudinally of said roller.

24. A machine for breaking in footwear comprising in combination a kneading member having an irregular working surface, a carrying member, a support for a finished shoe carried by said member and arranged for movement longitudinally thereof, to adjust its position with respect to said kneading member, and means for oscillating said kneading member to knead portions of the shoe.

25. A machine for breaking in footwear comprising in combination a kneading roller having working faces of different diameters, a shaft disposed parallel with the axis of the roller, a support for a finished shoe, and means for rotating the roller forward and backward against the support, to knead portions of the shoe, said support being adjustable longitudinally of said shaft to cooperate with various portions of the roller.

26. In a machine for breaking in footwear, in combination, a kneading roller having working faces of different diameters, a shaft movable in the direction of the roller, and a support for a finished shoe loosely mounted upon the shaft and movable therewith into position to cooperate with the roller in kneading portions of the shoe, the support being movable longitudinally of its shaft to cooperate with various portions of said roller and being capable of oscillatory movement upon the shaft.

27. In a machine for breaking in footwear, in combination, an oscillatory kneading roller, a shaft movable in the direction of said roller, and an arm for supporting a finished shoe, said arm being formed at one end with a collar loosely engaged upon said shaft, and being movable with the shaft into position to cooperate with the roller in kneading portions of the shoe.

28. In a machine for breaking in footwear, in combination, a kneading member having an irregular working surface, a shaft movable in the direction of said member, and a support for a finished shoe loosely mounted upon said shaft and movable therewith into position to cooperate with said

member in kneading portions of the shoe, the support being movable longitudinally of its shaft to cooperate with various portions of said member, and being capable of oscillatory movement upon the shaft.

29. A machine for breaking in footwear comprising in combination, a kneading roller having working faces of different diameters, a shaft disposed parallel with the axis of said roller and movable toward and from the same, and a support for a finished shoe mounted upon said shaft and movable therewith into position to cooperate with said rollers in kneading portions of the shoe, said support being arranged for movement longitudinally of said shaft to cooperate with various portions of said roller.

30. A machine for breaking in footwear comprising in combination, a movable kneading member having an irregular working surface, a rocking support for a finished shoe, a shaft by which the support is carried, and means for moving the shaft bodily toward said member, to bring said support into position to cooperate therewith in kneading portions of the shoe, the support being arranged for longitudinal adjustment upon said shaft to permit its cooperation with different portions of said member, the rocking movement of said support being effected by the movement of said member when said elements are in such position.

31. A machine for breaking in footwear comprising, in combination, an oscillatory kneading member having an irregular working surface, an oscillatory support for a finished shoe, a shaft by which the support is carried, and means for moving the shaft bodily toward said member, to bring said support into position to cooperate therewith in kneading portions of the shoe, the support being arranged for longitudinal adjustment upon said shaft to permit its cooperation with different portions of said member, the oscillation of said support being effected by that of said member when said elements are in such position.

32. A machine for breaking in footwear comprising in combination an oscillatory kneading roller having working faces of different diameters, an oscillatory support for a finished shoe, a shaft by which the support is carried, and means for moving the shaft bodily toward said roller to bring said support into position to cooperate therewith in kneading portions of the shoe, the support being arranged for longitudinal adjustment upon said shaft to permit its cooperation with different portions of said roller, the oscillation of said support being effected by that of said roller when said elements are in such position.

33. A machine for breaking in footwear comprising in combination an oscillatory kneading member having an irregular work-

ing surface, an oscillatory support for a finished shoe, a shaft by which the support is carried, said shaft being located below said member, and means for raising the shaft bodily toward said member to bring said support into position to cooperate therewith in kneading portions of the shoe, the support being arranged for longitudinal adjustment upon said shaft to permit its operation with different portions of said member, the oscillation of said support being effected by that of said member when said elements are in such position.

34. A machine for breaking in shoes having, in combination, a kneading roller having areas of different contour, a support for a finished shoe, said machine being constructed and arranged to permit relative adjustment of said support longitudinally of said roller, means for oscillating said roller and means under control of the operator for applying pressure to said shoe.

35. A machine for breaking-in shoes having in combination a roller, a shoe support adapted to enter a shoe and formed to permit a shoe to be shifted thereon to bring various of its interior portions in contact therewith, means for oscillating one of said members and means under the control of the operator for applying pressure to said shoe.

36. A machine for breaking-in shoes having in combination a roller having areas of different contour, a shoe support adapted to enter a shoe and formed to permit a shoe to be shifted thereon to bring various of its interior portions in contact therewith, manual means for oscillating one of said members and means permitting said shoe to be selectively presented to the desired area.

37. A machine for breaking-in shoes having in combination a roller, a support constructed and arranged to enter a shoe and formed to permit the shoe to be shifted thereon to bring different portions of its interior into contact therewith, said support being provided with a longitudinal rib, means for producing relative movement of said roller and support toward each other, and means for oscillating one of said members.

38. A machine for breaking in footwear comprising a shoe support formed to enter a shoe and to engage a restricted portion of the insole leaving unsupported a portion of the insole outside of the effective area of said support, and means for applying pressure to the outsole progressively in the direction of the length of the shoe over substantially the entire width of said outsole.

39. A machine for breaking in shoes having, in combination, a kneading roller, a support for a finished shoe, a lever for oscillating said roller the construction permitting adjustment of the roller angularly

about its axis and means for holding said roller in adjusted position.

40. A machine for breaking in shoes having, in combination, a kneading roller having areas of different contour located in different relative angular positions with respect to the axis of said roller, a support for a finished shoe, means for oscillating said roller whereby a given area of its periphery is caused to cooperate with said support, the construction permitting adjustment of said roller angularly to cause another area to cooperate and means for holding said roller in adjusted position.

41. A machine for breaking in shoes having, in combination, a kneading roller having areas of different contour located in different relative angular positions with respect to the axis of said roller, a support for a finished shoe, means for oscillating said roller whereby a given area of its periphery is caused to cooperate with said support, the construction permitting adjustment of said roller angularly to cause another area to cooperate, means for holding said roller in adjusted position and means for applying pressure to said shoe.

42. A machine for breaking in shoes having, in combination, a kneading roller, a standard, a support for a finished shoe carried by said standard, there being provision for adjustment of said support angularly about the axis of said standard and means for oscillating said roller.

43. A machine for breaking in shoes having, in combination, an oscillatory kneading roller, an oscillatory standard, a support for a finished shoe carried by said standard and means permitting adjustment of said support angularly about the axis of said standard to permit presentation of different portions of said shoe while maintaining the relative positions of said standard and roller.

44. A machine for breaking in shoes having, in combination, an oscillatory kneading roller, a rigid frame movable toward and from said roller, a support for a finished shoe mounted on said frame and movable longitudinally thereof and angularly with respect thereto, yielding means normally tending to move said frame toward said roller, means for moving said frame in opposition to said yielding means and means for moving said frame positively toward said roller.

45. A machine for breaking in shoes having, in combination, an oscillatory kneading roller, a support for a finished shoe, a lever for moving said support toward said roller, and means for varying the extent of movement of said support which corresponds to a given extent of movement of said lever.

46. A machine for breaking-in shoes having, in combination, a roller arranged to

engage the outsole, a coöperating projecting
tool to engage the insole, means for produc-
ing pressure between said roller and tool,
and means for causing relative movement
5 of the roller and outsole whereby depres-
sion of the insole is produced by a kneading
or rolling action.

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

SEXTUS ASBERRY EDDINS.

Witnesses:

AMOS MATTHEWS GOVER,

THOMAS PINCKNEY BRYAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."