J. A. SCANLON.

METHOD OF MAKING BOOTS AND SHOES.

APPLICATION FILED JAN. 12, 1912.

1,034,035. Patented July 30, 1912.

Fig. 1.

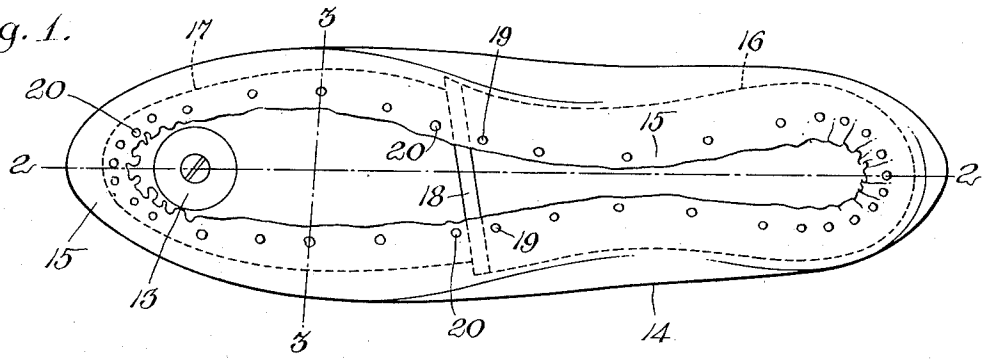


Fig. 2.

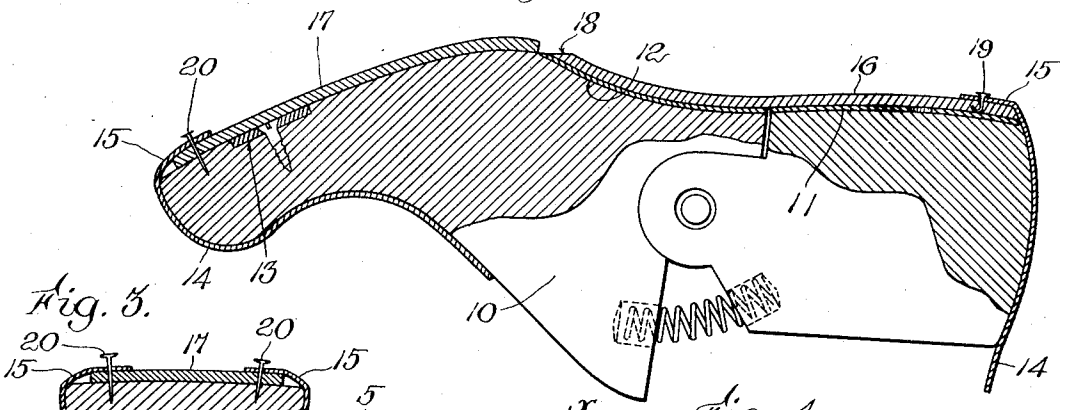


Fig. 3.

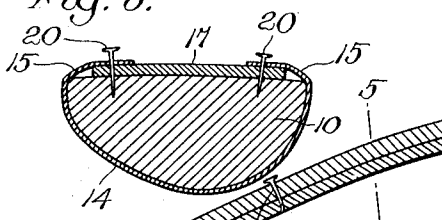


Fig. 4.

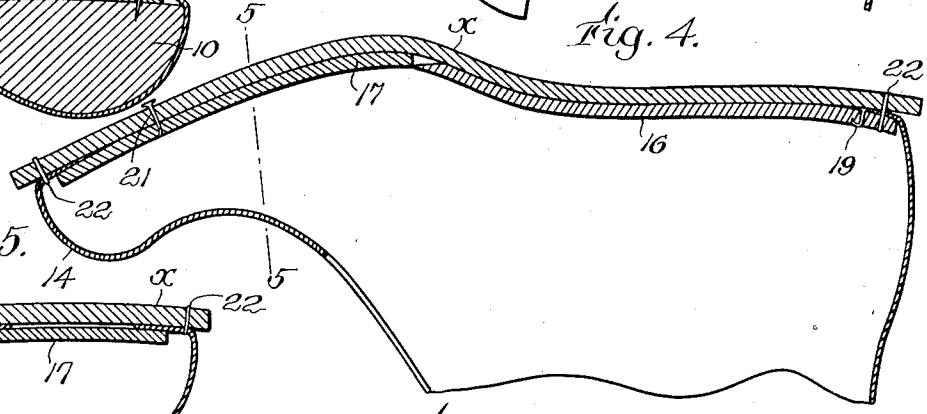


Fig. 5.

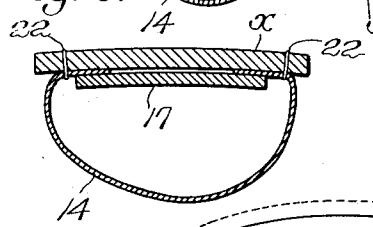
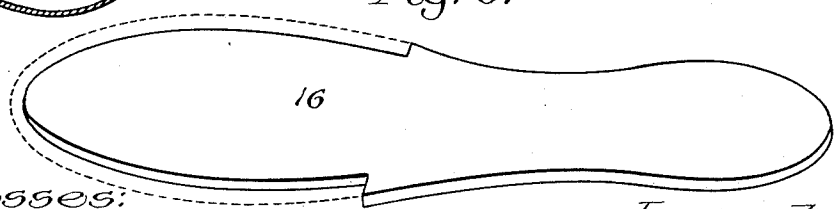


Fig. 6.



Witnesses:
W. C. Abell
W. S. Dot

Inventor:
James A. Scanlon,
by Albright Brown Quinby & May
Attorneys.

UNITED STATES PATENT OFFICE.

JAMES A. SCANLON, OF LYNN, MASSACHUSETTS, ASSIGNOR TO BENDER SHOE COMPANY, OF LYNN, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

METHOD OF MAKING BOOTS AND SHOES.

1,034,035. Specification of Letters Patent. Patented July 30, 1912.

Application filed January 12, 1912. Serial No. 670,852.

To all whom it may concern:

Be it known that I, JAMES A. SCANLON, a citizen of the United States, and resident of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Methods of Making Boots and Shoes, of which the following is a specification.

This invention relates to the manufacture of boots and shoes, and its object is to produce, by the so-called McKay method, a shoe which will be flexible in the forepart of the sole.

Of the accompanying drawings, which represent various steps in the method hereinafter described: Figure 1 represents a bottom view of a shoe lasted in accordance with this invention. Fig. 2 represents a longitudinal section of the lasted shoe, as indicated by line 2—2 of Fig. 1. Fig. 3 represents a cross section as indicated by line 3—3 of Fig. 1. Fig. 4 represents a longitudinal section after the removal of the lasting tacks in the forepart and after the stitching-on of the outer sole. Fig. 5 represents a cross section as indicated by line 5—5 of Fig. 4. Fig. 6 represents a modification of an insole which is not cut off at the ball.

The same reference characters indicate the same parts wherever they occur.

There is a great demand for a shoe which is flexible across the ball of the foot and stiff throughout the shank and heel. To meet this demand the present invention provides a method whereby the desired shoe may be produced without difficulty. A last is used which is shod with metal throughout the shank and heel, but which is unshod where the lasting tacks are driven to secure the forepart of the upper. The lasting tacks around the heel and shank are therefore clenched and left in the finished shoe in accordance with the usual McKay method. The lasting tacks of the forepart, on the other hand, are not clenched, and are removed before the outer sole is stitched on, thus avoiding a source of annoyance common in McKay-sewed shoes.

An insole of peculiar form is used to render the shoe flexible. It is of the usual shape and size throughout its shank and heel portions, but is cut away wholly, or only around the edge, throughout the forepart, so as to avoid connection with the outer sole by the stitches which are used to attach the latter around the forepart. The greatest degree of flexibility across the ball is obtained by entirely cutting off the forepart of the insole, but a comparatively flexible shoe is nevertheless obtained by merely cutting away the margin around the forepart so that it will be entirely within the stitches which attach the outer sole. The forepart of the insole would, in this event, be unattached except for its connection with the shank portion which is attached by the stitches. The unattached forepart would therefore be free to creep back and forth upon the outer sole during flexure at the ball of the shoe instead of resisting flexure.

In the course of lasting the shoe, the pulled-over portion of the upper is secured directly to the last around the forepart, by the tacks which pass through the forepart of the insole. One side of the lasted forepart is not displaced by tension on the other side, as is common in McKay shoes made on lasts whose foreparts are shod with metal. Paste is used on the pulled-over part of the forepart to preserve the shape of the shoe when the lasting tacks are removed from the forepart. These tacks are removed after the paste has set, the paste thereafter holding the forward section of the insole. The outer sole is then attached by stitches which do not pass through the forward section of the insole but which do pass through the shank and heel section of the insole. After the stitching operation the temporary section of the insole may be removed, leaving a McKay-sewed shoe without any tacks in the forepart and without any insole in the forepart.

Proceeding now to a detailed description of the method above outlined, a last is indicated at 10. This last, as shown, comprises a forepart and heel part which are connected by a hinge. The heel part is shod with a metal plate 11, and the forepart is shod with a metal plate 12 which extends forward only as far as the ball portion. There is, however, near the center of the forepart, a small metal disk 13 whose function is hereinafter explained. This disk does not lie within the range of the lasting tacks which are driven into the forepart, and the forepart is therefore adapted to

have the lasting tacks driven into it in the same manner as in the method employed in the manufacture of welt and turned shoes.

The upper of the shoe is indicated at 14, and the pulled-over portion of the upper is indicated at 15. An insole comprising sections 16 and 17 is indicated at 15. An insole comprising sections 16 and 17 is laid upon the bottom of the last, the section 16 extending over the heel and shank portions as far forward as the ball of the last, and is preferably skived or beveled at its forward edge as indicated at 18. The section 17 begins at or near the edge of the section 16 and extends forward nearly but not quite to the toe of the last. This forward section of the insole is narrower than the last, as clearly shown by Figs. 1 and 3, leaving sufficient space between its side edges and the corresponding edges of the last for stitches whereby an outer sole may be attached to the pulled-over portion without passing through the member 17.

The pulled-over portions 15 are secured to the insole sections 16 and 17 in the usual way, tacks 19 being driven through the shank and heel portions and tacks 20 being driven through the forepart portion. The tacks 19 are driven so that their heads lie flush with the pulled-over portion and so that their points are turned back and clenched by the plates 11 and 12. These tacks are intended to remain in the finished shoe in accordance with the practice commonly followed in the manufacture of McKay shoes. In this respect the method of completing the forepart of the shoe differs, the lasting tacks 20 being driven into the wood of the last and removed prior to attaching the outer sole.

To those skilled in the art it is well known that the upper may be more smoothly and thoroughly lasted when the lasting tacks are driven into the wood than when they are clenched against a metal plate. This is because the tacks driven into the wood are fixed with relation to the last, whereas those which are clenched against the metal plate are secured solely by the insole and may slip slightly with relation to the last. Another advantage of driving the tacks into the wood is that the wood will hold the tacks securely, whereas a leather insole, being comparatively soft, will permit the tacks to change their angle as the result of the tension exerted by the pulled-over portion of the upper. In order to set the pulled-over portion of the forepart I apply a coat of suitable paste or cement to the inner side of the vamp prior to lasting the same, which paste permeates the lining to some extent and comes in contact with the member 17. After the upper has been pulled over and lasted, the tacks 20 are left in the last for a sufficient time to enable the above-mentioned paste to harden and set and adhere to the member 17. No attempt has been made in illustrating this method to show the vamp and lining in detail, but it may be assumed that the sectional views are more or less conventional and that they are intended to include the usual details of construction.

When the lasted shoe has stood for a sufficient length of time to enable the paste to set, the tacks 20 are pulled out, thus leaving the member 17 wholly free from the pulled-over portion except for the rupturable connection effected by the paste which permeates the lining. This paste connection, however, is sufficient to hold the member 17 in place during the subsequent stitching operation whereby the outer sole x is attached.

When the outer sole is laid on, a single tack 21 is driven near the center of the forepart so that its point will strike the metal piece 13 and become slightly clenched. The outer sole is thus attached to the member 17 which is held in place only by the adhesive substance already mentioned. The last 10 may now be removed, since it is not held by any tacks. The shoe is then placed upon the horn of a McKay stitching machine and stitched in the usual manner to provide a row of stitches 22 which are wholly outside the margin of the member 17 but which pass through the marginal portion of the member 16. In this way the member 16 is permanently attached to the outer sole throughout the heel and shank portions of the shoe, while the member 17 is left unattached. The tack 21 may then be pulled out from the bottom of the shoe and the forward section 17 of the insole may be removed from the interior of the shoe, a slight pull being sufficient to free the member 17 from the pulled-over portion to which it has been stuck.

A shoe made in accordance with this invention has several advantages which are not found in a standard McKay shoe: First, the improved shoe is more flexible at the ball portion, because the insole does not extend forward of this portion; second, there are no tacks in the forepart of the finished shoe; third, the upper may be lasted to much better advantage because of the fact that the lasting tacks are driven into a wooden last and held thereby instead of being driven against an iron-shod last and held only by leather. This advantage gained in the lasting operation is of especial importance, particularly in the manufacture of shoes on the present style lasts, a great many of which have so-called knob toes which render lasting much more difficult than do lasts in which the toes are low and flat.

It is obvious that the method explained may be varied somewhat without departing

from the spirit of the invention. For example, instead of making the insole of two separate pieces it may be made of a single piece, as shown by Fig. 6, leaving the forward end in the finished shoe. In this case the same kind of last would be used, the lasting operation would be performed in the same manner, and the tacks 20 in the forepart would be removed prior to attaching the outer sole, thus leaving the finished shoe with a complete insole but without any tacks in the forepart. In this instance the forepart of the insole might be as wide as the last or narrower than the last. If it were made as wide as the last it would be united with the outer sole by the stitches 22. On the other hand, if it were narrower than the last it would not be united by the stitches 22 nor by any other means with the forepart of the outer sole; and the shoe would still be more flexible than the ordinary shoe, because the insole and outer sole would be free to creep one upon another during flexure of the shoe.

The lasting tacks which are driven into the forepart would better not be driven as far as possible, because removal thereof would be facilitated if the heads of the tacks were left slightly above the upper so that a tool could be inserted under the heads to lift them. For the same reason, the single tack which is used to temporarily attach the outer sole to the forward part of the insole should not be driven as far as it will go. In this connection it should be understood that any equivalent means may be used for temporarily attaching the outer sole to the forward part of the insole, such, for example, as paste or cement.

I claim:

1. The method of making a boot or shoe, which consists in placing an upper upon a last which is metal-shod upon the shank and heel to turn the points of the lasting tacks, and which is unshod in the ball and forepart to enable the lasting tacks to penetrate the same; placing upon the last an insole whose outline around the shank and heel coincides substantially with the last, but whose outline around the ball and toe lies a considerable distance within that of the last; applying adhesive material to the marginal portion of the forepart of the upper for sticking the same to the insole; pulling the upper over the insole; driving lasting tacks through the pulled-over portion and through the insole throughout the heel and shank and clenching said tacks against the metal shod heel and shank of the last; driving lasting tacks through the pulled-over portion of the forepart and into the unshod forepart of the last inside the edge of the insole; withdrawing the lasting tacks from the forepart; attaching an outer sole to the insole by temporary fastening means; and stitching through the outer sole and pulled-over portion and through the shank and heel of the insole, but outside the outline of the forepart of the insole.

2. The method of making a boot or shoe, which consists in placing an upper upon a last which is metal-shod upon the shank and heel to turn the points of the lasting tacks, and which is unshod in the ball and forepart to enable the lasting tacks to penetrate the same; placing upon the last an insole divided into front and rear sections by a substantially transverse division between the shank and forepart, the outline of the front section lying substantially within the outline of the last, applying adhesive material to the marginal portion of the forepart of the upper for sticking the same to said front section of the insole; driving lasting tacks through the pulled-over portion of the shank and heel and through the rear section of the insole and clenching said tacks against the metal-shod heel and shank of the last; driving lasting tacks through the pulled-over portion of the forepart and into the unshod forepart of the last inside the edge of the front section of the insole; withdrawing the lasting tacks from the forepart; attaching an outer sole by stitches which pass through the pulled-over portion and through the rear section of the insole but not through the front section of the insole; and removing the front section of the insole.

In testimony whereof I have affixed my signature, in presence of two witnesses.

JAMES A. SCANLON.

Witnesses:
W. P. ABELL,
P. W. PEZZETTI.