Oct. 7, 1930. J. A. PARKER 1,777,502

METHOD OF FORMING OUTSOLES

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Fig. 1.

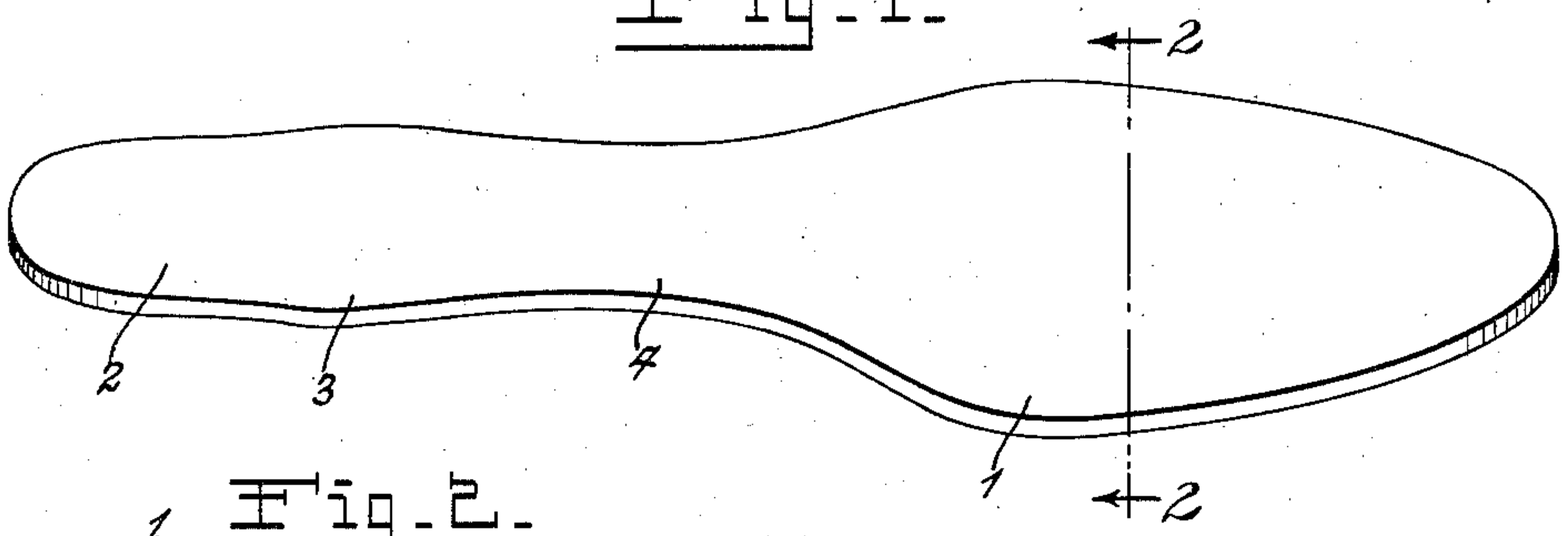


Fig. 2.

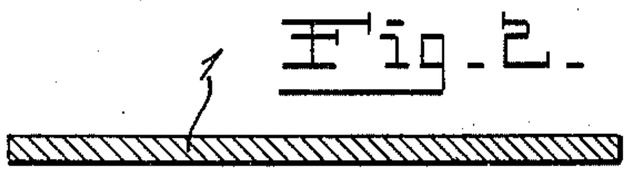


Fig. 3.

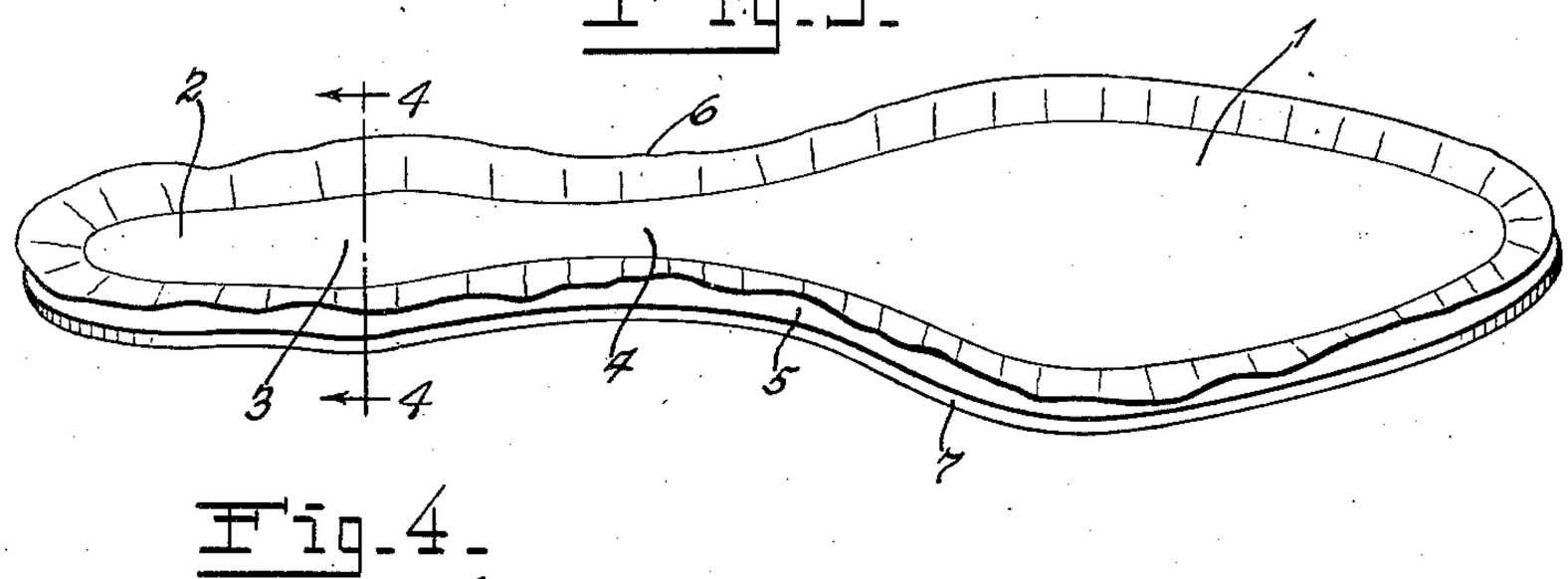


Fig. 4.

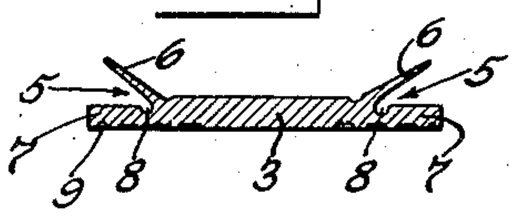
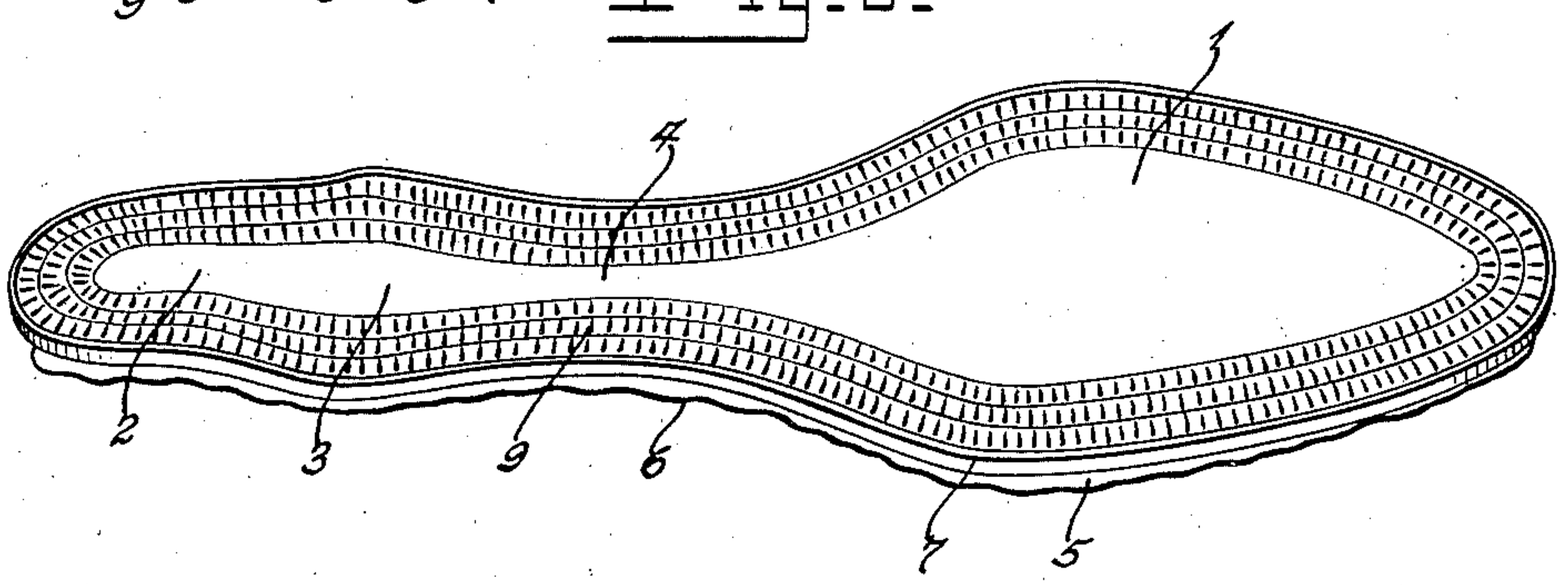


Fig. 5.



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METHOD OF FORMING OUTSOLES

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Fig. 6.

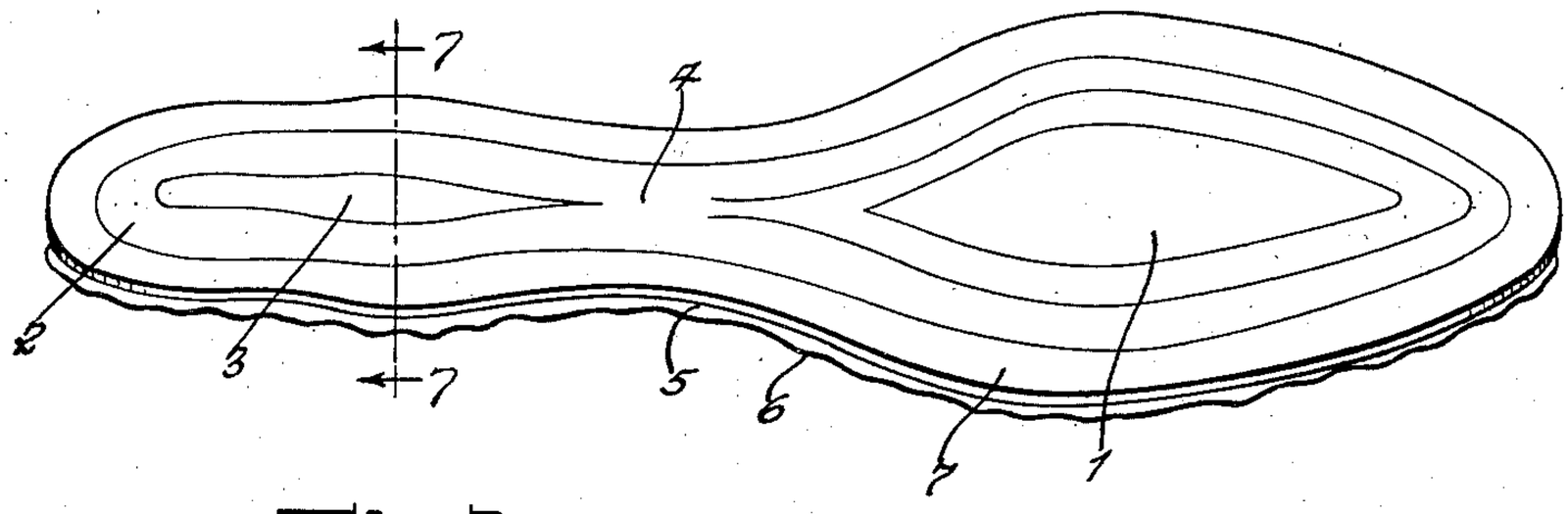


Fig. 7.

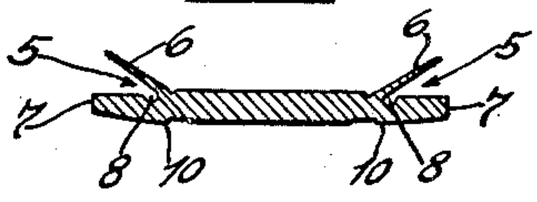


Fig. 8.

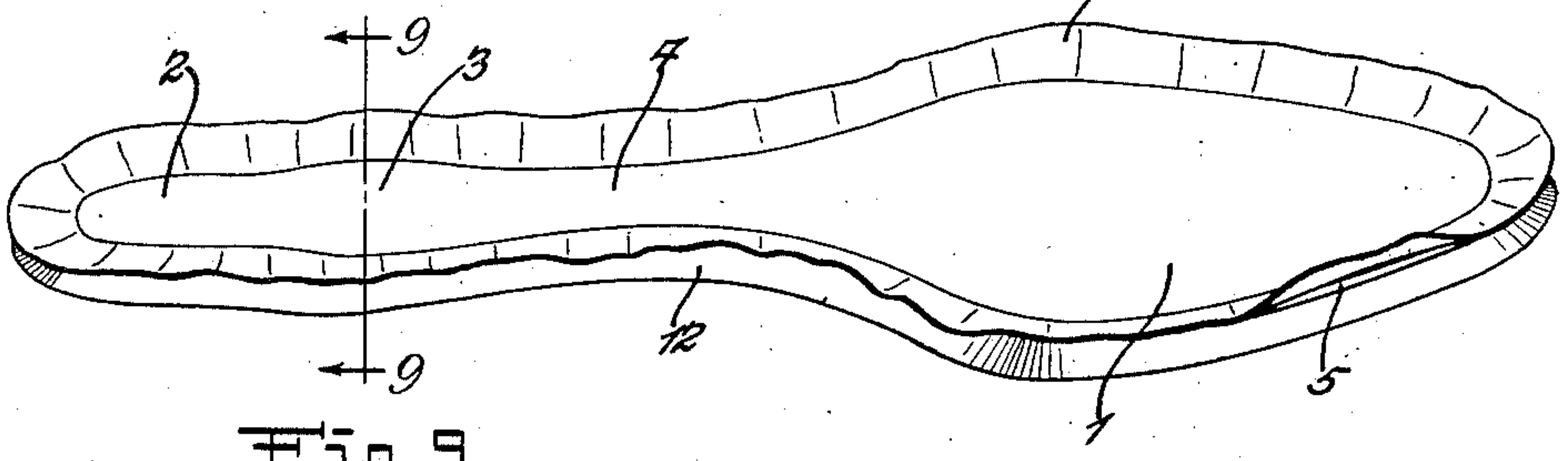


Fig. 9.

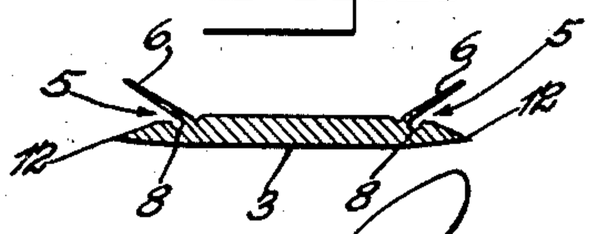


Fig. 10.

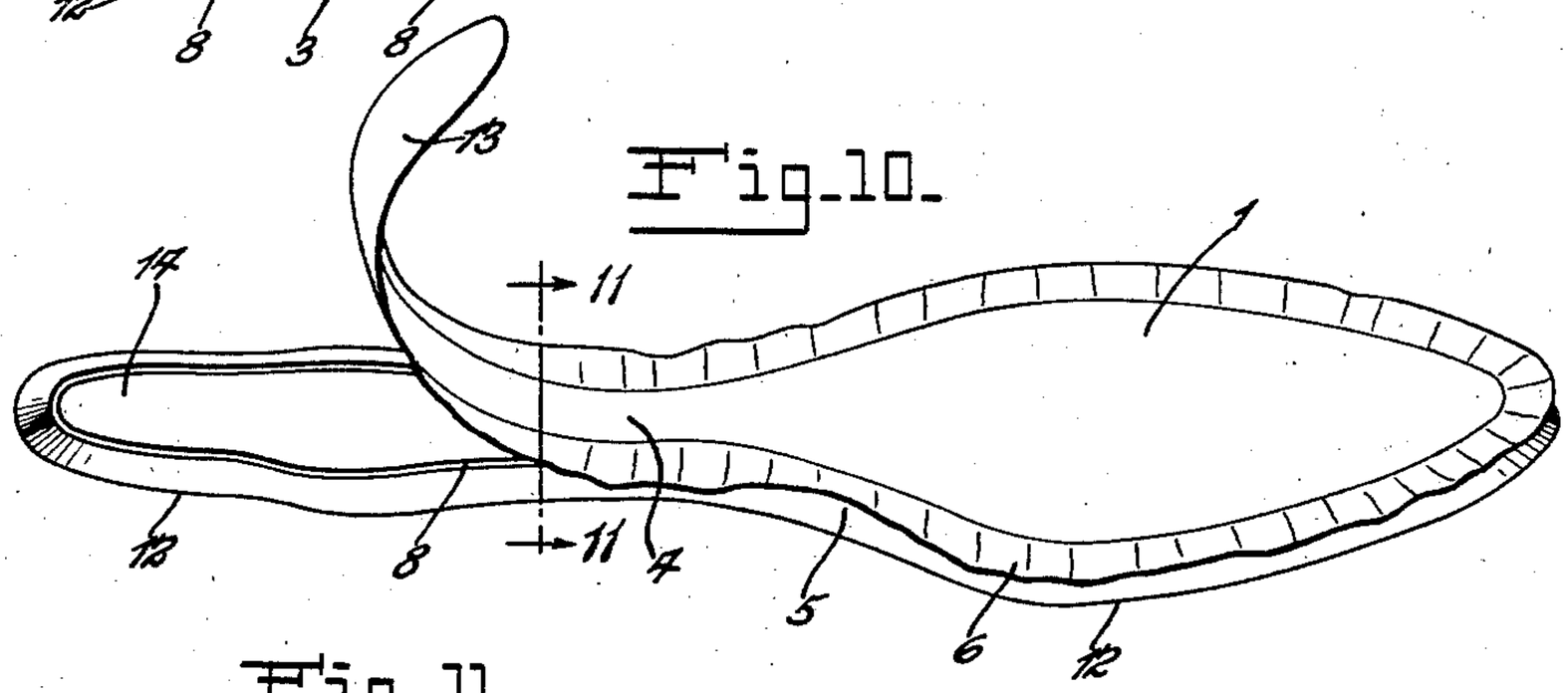
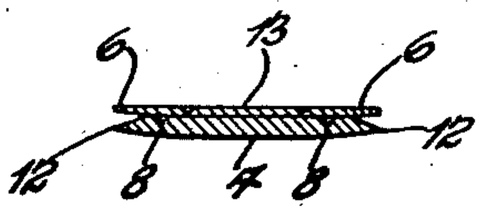


Fig. 11.



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METHOD OF FORMING OUTSOLES

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Fig. 12.

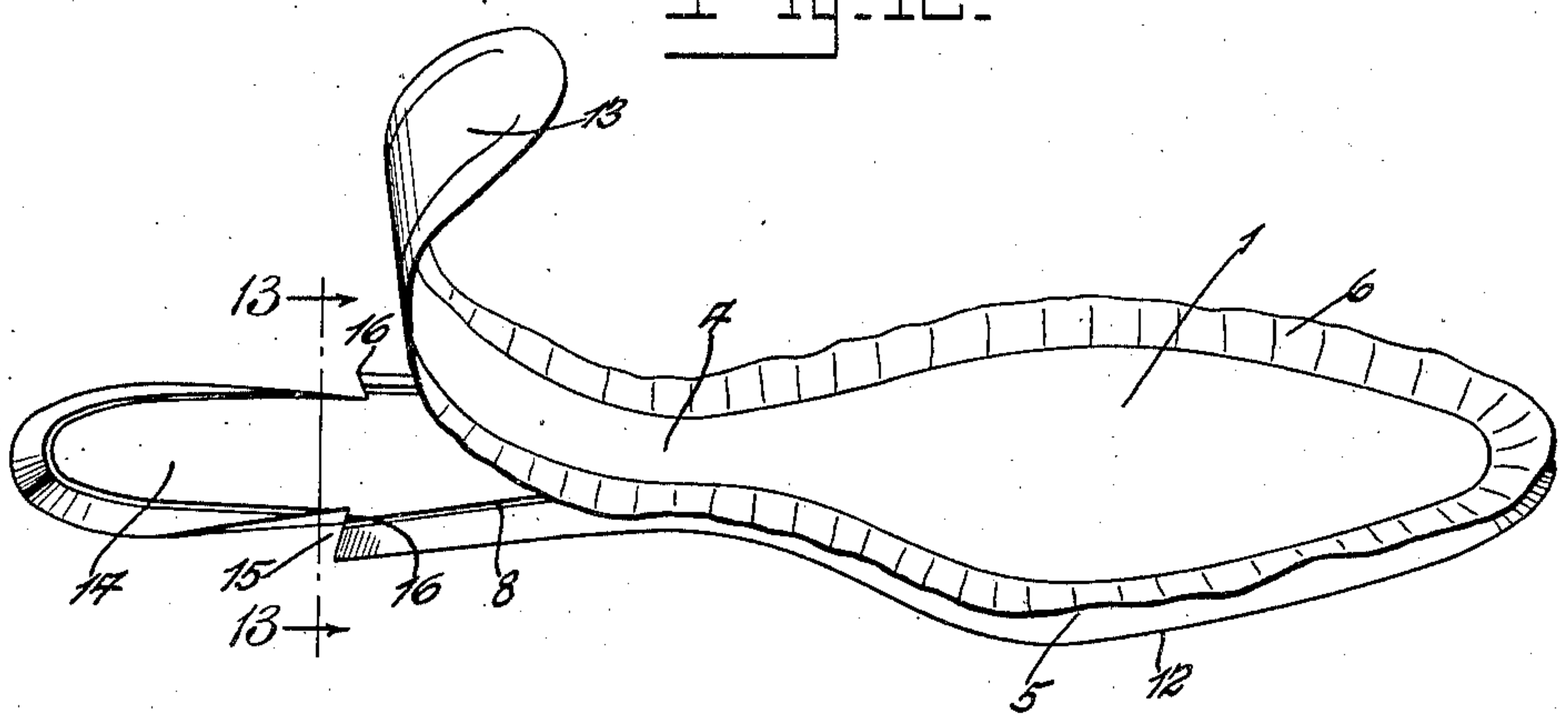


Fig. 13.

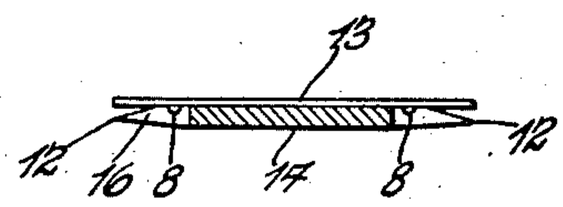


Fig. 14.

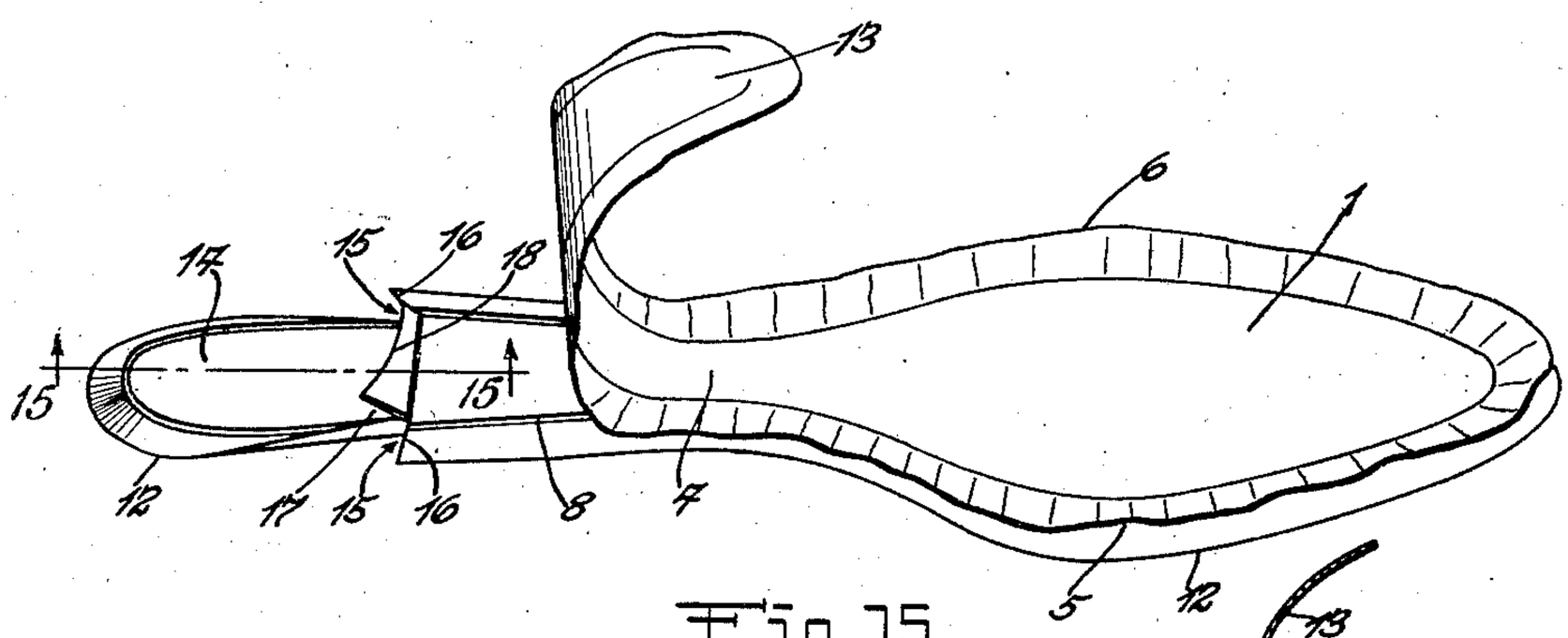
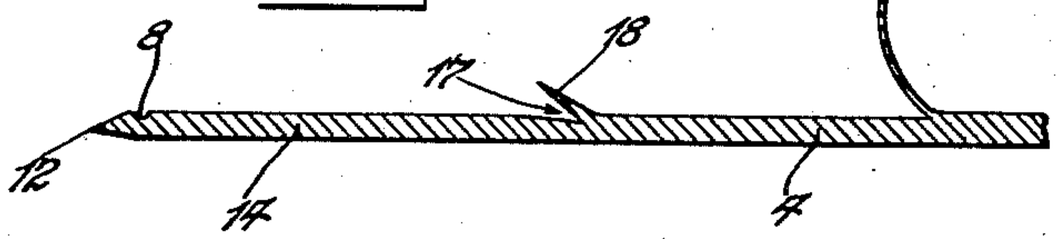


Fig. 15.



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METHOD OF FORMING OUTSOLES

Filed Jan. 25, 1929 4 Sheets-Sheet 4

Fig. 16.

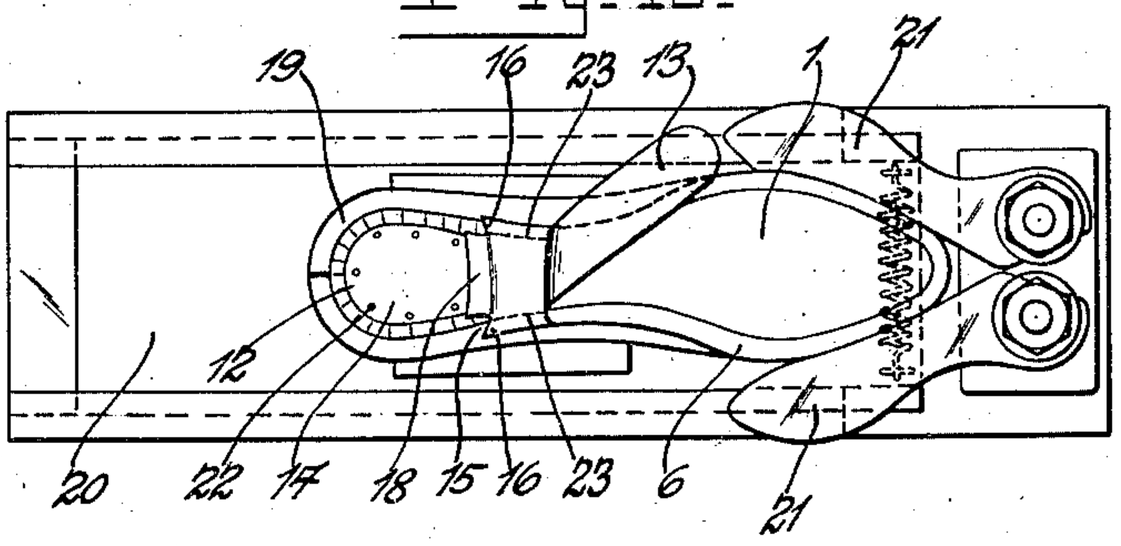
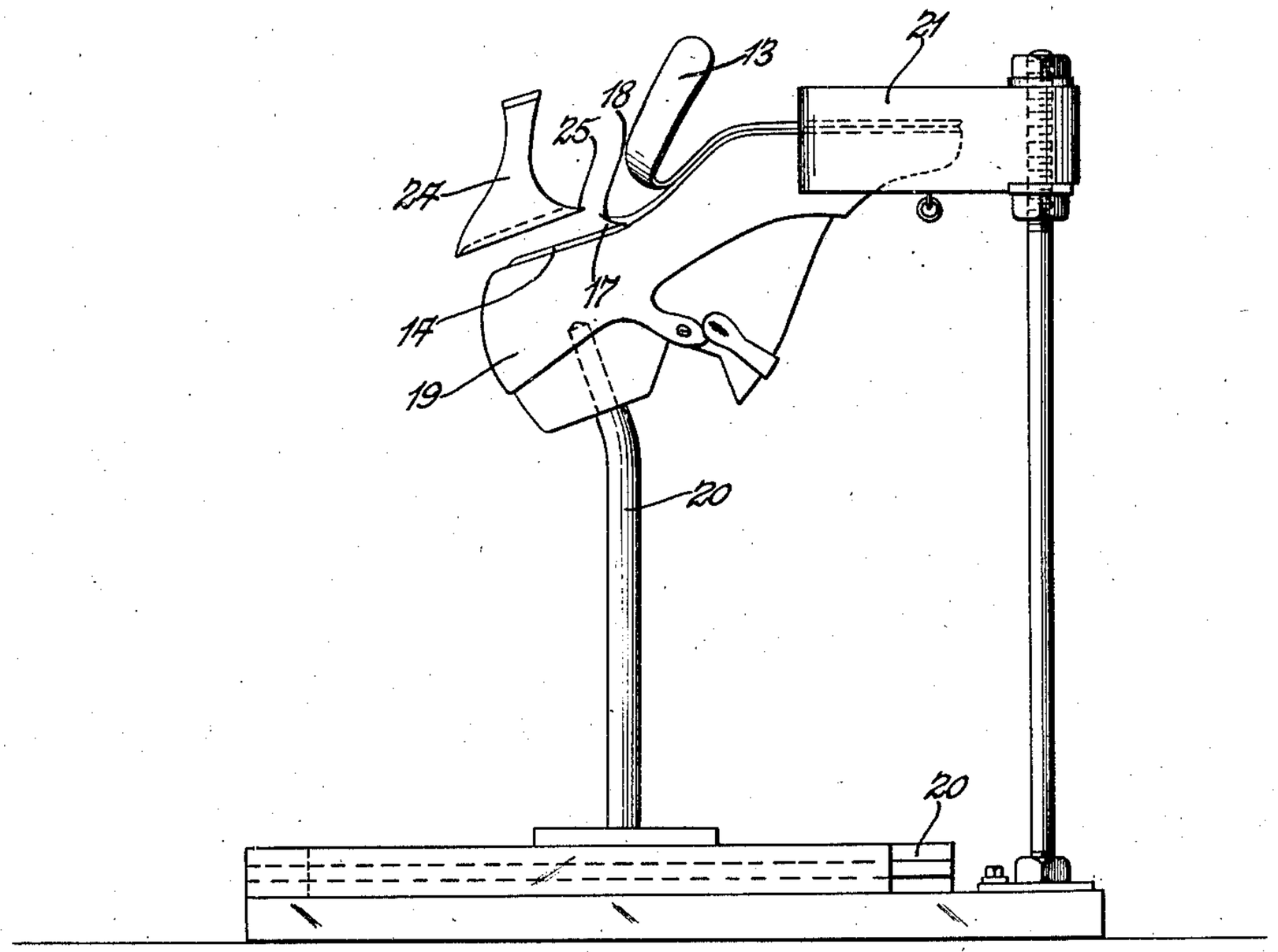


Fig. 17.



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Patented Oct. 7, 1930 1,777,502

UNITED STATES PATENT OFFICE

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METHOD OF FORMING OUTSOLES

Application filed January 25, 1929. Serial No. 335,002.

This invention relates to the method of forming outsoles; and has special reference to the method of forming outsoles for boots and shoes whereby the formation of the outsoles is greatly expedited and facilitated and the cost of production correspondingly reduced.

An object of the invention is to provide an improved method for the construction of outsoles for boots and shoes whereby important operations required to shape the heel portions of the soles are included as parts of other operations so that subsequent or separate operations to form the heel portions of the soles are eliminated.

Another object of the invention is to provide an improved method for producing outsoles of a shape and form greatly facilitating the attachment of wood heels.

Other objects will appear from the the following description, reference being made to the accompanying drawings wherein I have illustrated a shoe sole in different stages of construction and formation and in which

Fig. 1 is a perspective view of a sole blank shaped and designed preparatory to the beginning of the operations included in the present invention.

Fig. 2 is a cross sectional view on the line 2—2 of Fig. 1.

Fig. 3 is a perspective view of the sole blank after the performance of the first operation comprising the formation of a channel around the heel seat of the sole blank.

Fig. 4 is a cross sectional view on the line 4—4 of Fig. 3.

Fig. 5 is a perspective view showing the side of the sole blank opposite from that shown in Fig. 3.

Fig. 6 is a perspective view of the upper side of the sole blank after it has been skived to reduce the thickness of the marginal edges.

Fig. 7 is a cross sectional view on the line 7—7 of Fig. 6.

Fig. 8 is a perspective view of the outer side of the sole blank after the inner portion of the sole blank has been formed with a feather edge.

Fig. 9 is a cross sectional view on the line 9—9 of Fig. 8.

Fig. 10 is a perspective view of the sole blank after the rear or heel portion thereof has been split preparatory for attachment to Louis heels.

Fig. 11 is a cross sectional view on the line 11—11 of Fig. 10.

Fig. 12 is a perspective view of the sole blank after it has been cut to form shoulders adapted to abut against the forward edges of the lateral portions of the heel.

Fig. 13 is a cross sectional view on the line 13—13 of Fig. 12.

Fig. 14 is a perspective view of the sole after the performance of the next operation comprising the step of channeling the sole blank transversely to form a stop for the forward edge of the heel.

Fig. 15 is a longitudinal sectional view approximately on the line 15—15 of Fig. 4.

Fig. 16 is a bottom plan view showing the manner of centering the shoe sole on the shoe and the manner in which the heel seat of the sole is attached to the inner sole.

Fig. 17 is a side elevation of the device shown in Fig. 16 and additionally showing the heel before its location for attachment.

The blank 1 shown in Figs. 1 and 2 is composed of sole leather of approximately uniform thickness. I produce this blank by trimming its marginal edges at a single operation and before the beginning of subsequent operations to provide a heel portion 2 which is slightly narrower than the portion 3 at the rear extremity of the shank 4 of the sole.

Next the sole blank is cut to form a channel 5 entirely around the blank including the heel seat. That is to say, it is an important and essential feature of the present invention that the channel 5 extend entirely around the outer edge of the heel seat irrespective of whatever variation, if any, may be made in the remaining portion of the channel. To the full extent of the length of the channel 5 a feather 6 and a lip 7 are formed and along the border of the juncture of the lip and feather a groove 8 is formed in the lip 7 to receive the line of stitches by which the sole is attached to the shoe.

The formation of this channel or groove entirely around the outer edge of the heel portion of the sole blank at the same time and as a part of the operation of forming the channel 5 in the outer edge of the remaining portion of the sole blank is a new step in this process. As an incident to the formation of the channel entirely around the heel portion of the sole blank the feather 6 is essentially formed around said heel portion.

The two next steps in my improved method comprise the step of thin-edging the lip 7 by skiving or cutting away a portion of the opposite side of the lip 7 opposite from the feather 6 and also the step of featheredging the lip 7 around the rear or heel seat portion of the sole as well as around the remaining portion. The order in which these two steps are formed is unimportant. As shown in Fig. 5 indentations 9 are formed along the marginal portion of the inner side of the sole when the sole is channeled. These indentations are produced by the channeling machine and they are practically eliminated by the step of thin-edging. The thin-edged sole is shown in Figs. 6 and 7. Thus the entire marginal portion of the inner surface of the shoe sole from about the line 10 to the edge of the sole is skived or cut away with the result that the edges of the lips 7 are made of reduced thickness, which step I term the step of thin-edging the outsole. Essentially in my improved method this skiving extends entirely around the marginal portion of the heel seat, thus removing most of the indentations 9. The other step of said two steps consists in trimming and cutting the upper surface of the lip 7 essentially around the marginal portion of the heel seat as well as around the remaining marginal portion of the outsole to provide a featheredge 12.

The next step in my improved method consists in splitting the rear end of the sole to form a tongue 13. This splitting is in continuation of the inner edges of the channels 5 so that the marginal portions of the tongue 13 comprise the feather 6 at the rear end of the sole, the intermediate portion of said tongue 13 being of the same thickness as the inner portions of the feather 6. The sole is split forwardly well beyond the foremost position of the breast wall of the heel of the shoe for which the sole is intended, as will be readily understood by reference to Figs. 12 and 17, inclusive. As will be apparent by reference to Fig. 10, splitting of the rear end of the sole to provide the tongue 13 leaves a heel seat 14 having a featheredge 12.

The next operation consists in cutting notches 15 in diametrically opposite edges of the heel seat 14 to provide diametrically opposite abrupt shoulders 16 on a transverse line at or approximately at the upper edge of the breast wall of the heel so that when a wood heel with a cavity in its upper end is applied to the sole the heel seat 14 of the sole will be received in said cavity and diametrically opposite edge portions at the intersection of the breast wall of the upper end of the heel will be at or adjacent to the shoulders 16 but will not overlap said shoulders. These notches 15 may be simultaneously cut by an appropriate die, the tongue 13 being folded forwardly out of the way of the die during the cutting operation. Thus the heel seat is formed with forwardly converging side walls or edges terminating at the rearwardly facing abrupt shoulders 16.

Next a channel 17 is cut transversely across the front portion of the heel seat 14 forming a tongue 18 extending transversely between the shoulders 16 and functioning to engage against the forward edge of the upper end of the heel to form a stop for the heel to locate the heel in proper position for attachment to the shoe.

The next operation of the manufacture of the shoe to include this sole consists in mounting the lasted shoe 19 upon a movable support 20, placing the sole against the shoe, and moving the sole and the shoe between the arms 21 of a centering device which, by engagement with the sides of the shoe and the side edges of the sole, position the sole properly for attachment to the shoe. Then a number of tacks 22 are driven through the heel seat 14 of the sole and into the adjacent portion of the shoe to secure the sole to the shoe. Then the remaining portion of the sole is attached to the shoe by a line of stitches 23 running along the channel 8. After this, the feather 6 is attached by cement or otherwise to the featheredge 12. The heel 24 is placed with its front edge 25 within the channel 17 and is secured in position by glue or other fastening means. By the novel construction of the sole described I am enabled to obtain a firmer connection of the heel with the shoe because the glue obtains better contact with the outsole in the cup of the heel. After the heel has been located and attached in the manner described the tongue 13 is secured to the breast wall of the heel and trimmed properly.

By the foregoing improved method I obtain the advantageous result of locating the outsole on the shoe more accurately so as to obtain better McKay sewing. The leveling edge-trimming and edge-setting operations are also facilitated and expedited.

The heel seat 14 being of reduced width and provided with the diametrically opposite notches 15 is located wholly within the cup or cavity at the upper end of the heel so that the glue by which the heel is secured to the shoe obtains better contact with the heel seat of the sole and hence secures the heel more rigidly to the shoe. Further, by this process, I obtain a considerable saving in sole leather. For the blank 1 is cut at the required length

without waste, actual experience demonstrating that these blanks may be cut to sizes smaller in length than by the old method with which I am familiar and which I believe to be generally if not universally practiced. Hence, in large factories, my invention results in large savings and further largely expedites and facilitates the operations.

I am aware that the order of procedure may be varied without departure from the nature and principle of the invention. I do not restrict myself in any unessential respects, but what I claim and desire to secure by Letters Patent is:—

1. The method of making a shoe outsole for attachment to a shoe and to a heel which comprises the steps of channeling around the heel portion of the sole, splitting the heel portion of the sole transversely between inner edges of said channel to a point in advance of the position to be occupied by the breast of the heel, and channeling the heel portion of the sole transversely to form a transverse tongue at the position of the breast wall of the heel.

2. The method of making a shoe outsole for attachment to a shoe and to a wood heel having a concavity in its upper end which consists in forming the heel portion of a sole blank of less width than the width of the heel, splitting the heel portion of the sole blank transversely from the rear end forwardly to the shank to form a heel seat and a tongue, featheredging the heel seat, forming rearwardly facing lateral shoulders near the forward end of the heel seat and channeling the heel seat transversely at its forward end to form a tongue to engage the forward edge of the heel and in approximate transverse alinement with said shoulders.

3. The method of making a shoe outsole for attachment to a shoe and to a wood heel having a concavity in its upper end which consists in forming the heel portion of a sole blank of less width than the width of the heel, splitting the heel portion of the sole blank transversely from the rear end forwardly to the shank to form a heel seat and a tongue, featheredging the heel seat, forming rearwardly facing lateral shoulders near the forward end of the heel seat, channeling the heel seat transversely at its forward end to form a tongue to engage the forward edge of the heel, then centering the sole against the shoe to which the sole is to be attached, tacking the heel seat to the shoe, and gluing the heel to the heel seat with the forward edge of the heel engaged between said last named tongue and the upper portion of the outsole.

4. The method of forming an outsole for shoes consisting in forming a sole blank, channeling around the edge of the heel portion of the sole blank, splitting the rear portion of the sole blank transversely from the inner edge of the channel forwardly from the rear end of the sole blank to the shank to form a heel seat, feather edging the heel seat, trimming the forward portion of the heel seat to narrower width to seat within a cavity in the upper end of the heel intended for the shoe for which the sole is provided, forming at the forward end of the heel seat an abutment for the heel, tacking the heel seat to the shoe for which the sole is intended, and gluing the heel to the heel seat with its forward edge against said abutment.

5. The method of making a shoe outsole for attachment to a shoe and to a wood heel having a concavity in its upper end which consists in splitting the rear end of the sole blank transversely to a point across the shank of the sole blank to form a heel seat, forming rearwardly facing lateral shoulders near the forward end of the heel seat, and channeling the heel seat transversely to form a tongue for engagement with the forward edge of the upper end of the heel.

6. The method of making a shoe outsole for attachment to a sole and to a wood heel having a concavity in its upper end which consists in splitting the rear end of the sole blank forwardly and transversely to a point across the shank of the sole blank, shaping the remaining portion of the rear end of the sole blank to form rearwardly facing abrupt lateral shoulders at the front of a heel seat that will be received in the concavity of the heel for which the sole is intended, and channeling the heel seat transversely to form a tongue at the front end of the heel seat for engagement with the forward edge of the heel.

7. The method of making and attaching an outsole to a shoe which comprises splitting the outsole forwardly and transversely from the rear end to a point across the shank of the sole, shaping the remaining portion of the rear end of the sole to form a heel seat adapted to be received in a concavity in the upper end of a heel, forming an abutment tongue and lateral abrupt shoulders at the front end of the heel seat for the forward edge of the heel, centering the sole against the shoe to which the sole is to be attached, tacking the heel seat to the shoe, and securing a heel to the sole and to the shoe with the front edge of the heel engaged against said abutment and with the heel seat of said sole received in a concavity in the upper end of the heel.

8. The method of making a shoe outsole for attachment to a shoe and to a heel which comprises the steps of splitting a sole blank transversely from the rear end forwardly to the shank of the sole blank to form a heel seat on the remaining rear portion of the sole blank, notching opposite edges of the heel seat to form abutments beyond the front end of the heel, and forming a transverse abutment across the heel seat between said notches.

9. The method of making and attaching an outsole to a shoe and to a heel which comprises splitting the outsole transversely from the rear end forwardly to the shank of the sole to form a heel seat on the remaining rear portion of the sole, notching opposite edges of the heel seat to form abutments beyond the front end of the heel, forming a transverse abutment across the heel seat between said notches, tacking the heel seat to the shoe, and attaching the heel to the shoe and to the heel seat of the shoe in a position in which the front edge of the heel is against said transverse abutment.

10. The method of making a shoe outsole for attachment to a shoe and to a wood heel having a concavity in its upper end which consists in splitting the rear end of the sole blank transversely across the shank of the sole blank to form a heel seat, and cutting notches in the lateral edges of the heel seat to form forwardly converging side walls for the heel seat and rearwardly facing abrupt shoulders at the front ends of the forwardly converging side walls of the heel seat.

11. In a shoe, a shoe upper, a heel, a shoe outsole having a heel seat seated upon the heel and attached to the upper and to the heel, a lateral shoulder at each side of the sole at the front of the heel seat abutting against the lateral portions of the front upper edge of the heel, and a transverse abutment on the underside of the sole between said shoulders abutting against the intermediate portion of the front upper edge of the heel.

12. In a shoe, a shoe upper, a heel, a shoe outsole having a heel seat seated upon the heel and attached to the upper and to the heel, a lateral shoulder at each side of the sole at the front of the heel seat abutting against the lateral portions of the front upper edge of the heel, and a downwardly bent tongue on the underside of the sole between said shoulders and having a portion thereof adjacent to the union of said tongue with the sole abutting against the front upper edge of the heel.

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