Oct. 19, 1948. H. S. LYNESS 2,451,570

METHOD OF MAKING SLIP-LASTED SHOES

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Fig. 1.

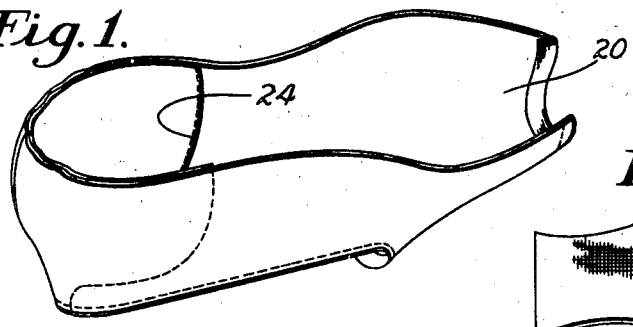


Fig. 2.



Fig. 3.

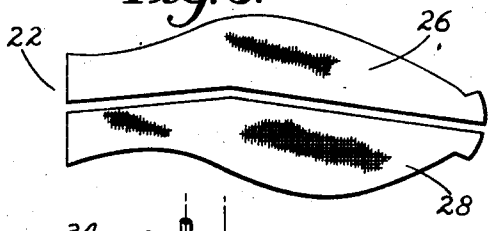


Fig. 5.

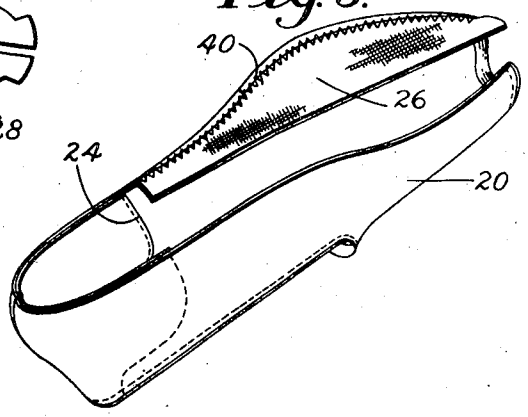


Fig. 4.

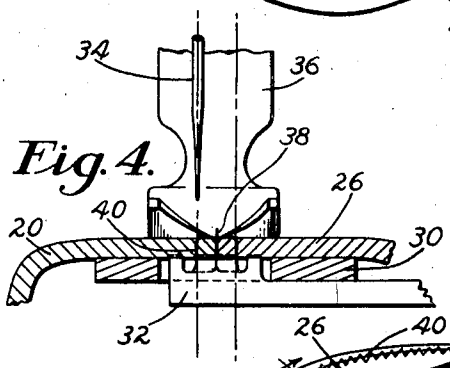


Fig. 6.

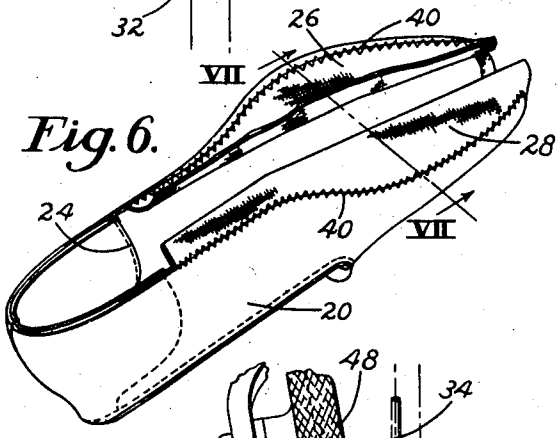


Fig. 7.

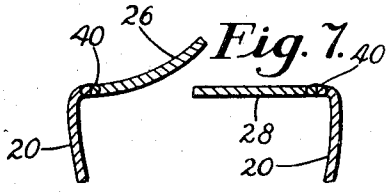


Fig. 9.

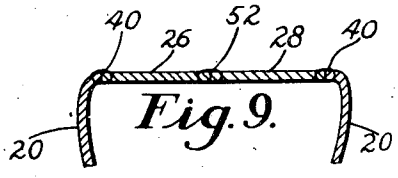
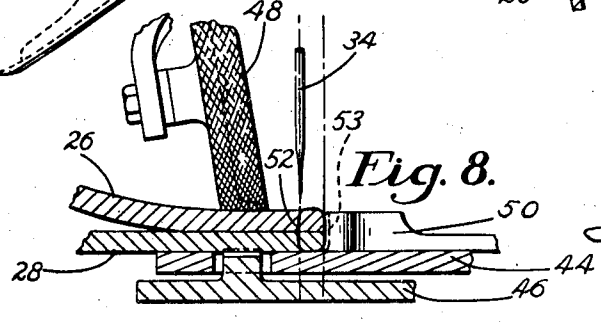


Fig. 8.



Inventor

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METHOD OF MAKING SLIP-LASTED SHOES

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Fig. 11.

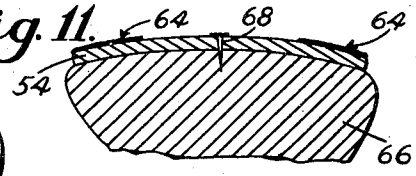


Fig. 10.

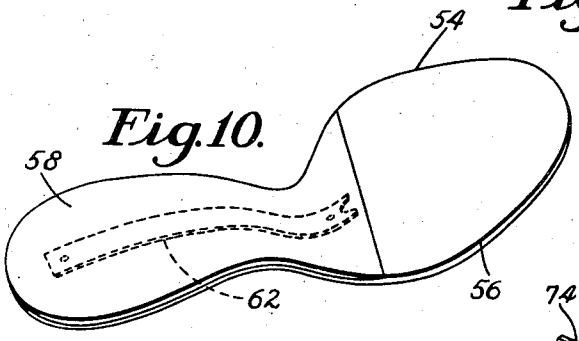


Fig. 12.

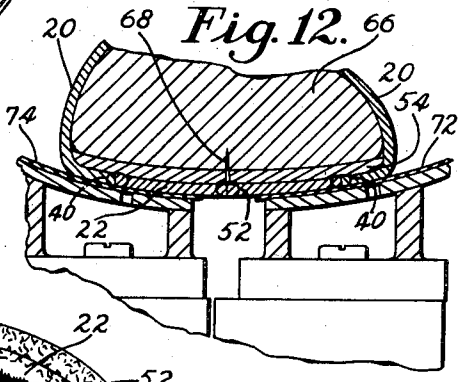


Fig. 13.

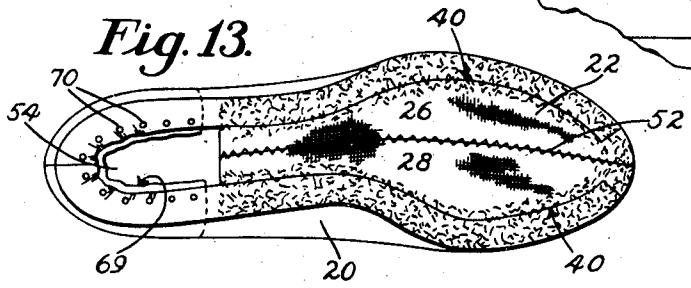


Fig. 14.

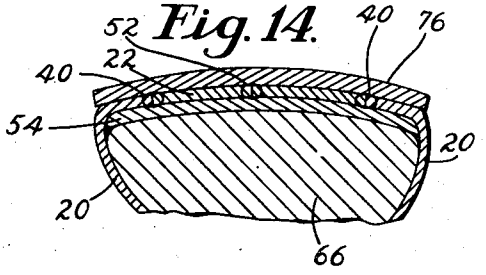


Fig. 16.

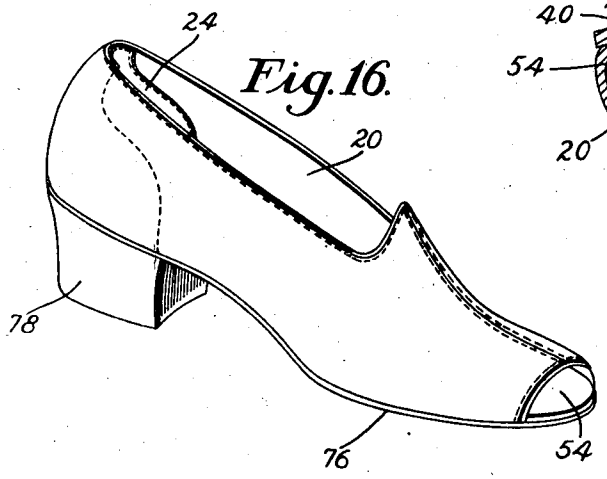
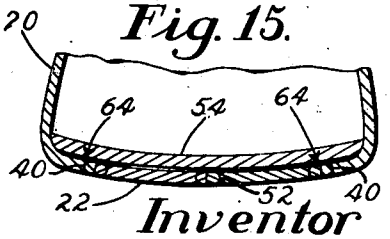


Fig. 15.



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Patented Oct. 19, 1948

2,451,570

UNITED STATES PATENT OFFICE

2,451,570

METHOD OF MAKING SLIP-LASTED SHOES

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Application July 9, 1946, Serial No. 682,231

11 Claims. (Cl. 12—142)

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This invention relates to shoes and methods of making shoes and is illustrated herein with particular reference to slip-lasted shoes having closed heel ends and single outer or tread soles as distinguished from slip-lasted shoes having open heel ends and platform soles.

The majority of slip-lasted shoes manufactured today are platform shoes having uppers with open toe and heel ends, the shoes usually being provided with wedge heels located between the platform soles and the outsoles. In manufacturing such shoes, an upper, sock lining and platform wrapper are usually stitched together while off a last and the shoe is then slip-lasted by inserting a last into the upper. A platform sole is applied to the shoe bottom, a wedge heel attached and the wrapper turned and secured to the bottom surfaces of the wedge heel and platform sole. The shoe is then ready to receive an outsole which is usually attached by cement to the inturned portion of the platform wrapper.

An important object of the present invention is to provide an improved method of making slip-lasted shoes having closed heel ends and single outer or tread soles as distinguished from the open heel, platform type of slip-lasted shoe referred to above.

Another object of the invention is to provide an improved method of making shoes of the type referred to, the practice of which is simple and economical and which will produce slip-lasted shoes which are superior in construction and appearance to the usual types of slip-lasted shoes.

A further object of the invention is to provide a method of making slip-lasted shoes which, while retaining the advantages of the slip-lasted method, will provide shoes which have the appearance of conventionally lasted shoes and will compare favorably with such shoes in fitting and wearing qualities.

To these ends, the invention provides, in accordance with one aspect, an improved method of making shoes which comprises providing a prefitted upper having a relatively narrow lasting allowance and providing an insole which is smaller than a last bottom by the width of the lasting allowance of the upper, the insole preferably being a three-quarter length insole terminating at about the heel breast line of the shoe. The insole is divided lengthwise to form substantially two half insoles and each insole is secured while off a last to that portion of the lasting allowance of the upper which corresponds thereto, the adjacent edges of the upper and each half

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insole being located in abutting relation to each other.

The half insoles are next attached to each other while still off a last along the line of division by overseaming stitches which permit relative adjustment of the insoles about said stitches without disturbing the stitches, the half insoles being held in superimposed relation during the stitching operation with their adjacent edges in alinement or flush with each other. The divided insole is thus closed or made complete again to close the upper. A last is inserted into the closed upper to slip-last the shoe and shape the upper, this action positioning the zig-zag seams opposite the bottom of the last with the adjacent edges of the upper and half insoles abutting each other to provide a relatively flat surface on the shoe bottom.

Before the last is inserted into the upper, an insole which is substantially equal in size and shape to a last bottom is introduced into the closed upper or, if desired, the second insole may be introduced into the upper with the last by being temporarily secured to the last bottom, the second insole having a coating of cement, preferably thermoplastic cement, applied to the margin of its outer surface. As herein illustrated, the insole of last bottom size may be a premolded insole unit having a usual shank stiffener embodied therein.

The heel portion of the upper, which is not stitched to the first-named insole, is now secured in lasted relation to the heel portion of the second insole, thereby completing the lasting of the shoe. Heat and pressure are applied to the shoe bottom to activate the cement on the second insole and to cause said insole to become permanently bonded to the inside of the shoe, that is, bonded to the first insole and the lasting allowance of the upper.

The shoe is now ready to receive a sole member which, in accordance with the method illustrated herein, comprises an outer or tread sole, the outsole being preferably secured to the shoe bottom by cement although other fastening means such as through-and-through stitches can be used if desired. If cement is used for attaching the outsole to the shoe, the margin of the shoe bottom formed by the lasting allowance of the upper and the adjacent portion of the divided insole may be roughened lightly in the usual manner to adapt it for receiving cement. Since the upper and divided insole are now securely bonded to the second insole, breaking or weakening of the stitches securing the

half insoles to the upper by the roughening operation is of no consequence. After the outsole has been attached, the shoe may be completed by the attachment of a heel and performing the customary finishing operations on the shoe.

By this process a shoe may be produced which has the advantageous features of a slip-lasted shoe but also has a closed heel end or back part, including a stiff flanged counter, if desired, and has only a single outer or tread sole similar to a shoe of conventional construction which is made on a last in the usual manner.

With the above and other aspects and features in view, the invention will now be described in detail in connection with the accompanying drawings and will thereafter be pointed out in the claims.

In the drawings,

Fig. 1 is a perspective view of a prefitted shoe upper of the open toe type;

Fig. 2 is a perspective view of an insole which extends from the toe to about the heel breast line of a shoe;

Fig. 3 is a plan view of the insole divided lengthwise to form substantially two half insole members;

Fig. 4 is a front elevational view, enlarged and partly in section, of the operating instrumentalities of a sewing machine securing one of the half insoles to the corresponding margin of the upper with the adjacent edges of the upper and insole abutting each other;

Fig. 5 is a perspective view of the upper after the half insole has been secured thereto;

Fig. 6 is a perspective view of an upper similar to Fig. 5 showing both half insoles secured to the corresponding margins of the upper;

Fig. 7 is a transverse sectional view taken on the line VII—VII of Fig. 6;

Fig. 8 is a front elevational view similar to Fig. 4, showing the operating instrumentalities of the sewing machine stitching the two half insoles together off a last by an overcast seam, the insoles being located in superimposed relation with their edges substantially flush;

Fig. 9 is a transverse sectional view similar to Fig. 7 after the half insoles have been stitched together as illustrated in Fig. 8;

Fig. 10 is a perspective view of a premolded insole unit having a shank stiffener embodied therein;

Fig. 11 is a transverse sectional view of a last with the insole unit of Fig. 10 temporarily secured thereon;

Fig. 12 is a transverse sectional view of the united upper and insole of Fig. 9 with the last and insole of Fig. 11 inserted therein, the shoe being mounted on a device adapted to apply heat to its bottom surface;

Fig. 13 is a plan view of the bottom of the shoe illustrated in Fig. 12;

Fig. 14 is a transverse sectional view of the shoe after an outsole has been attached to the shoe bottom;

Fig. 15 is a transverse sectional view of the united upper and divided insole having an insole of last bottom size positioned inside the upper; and

Fig. 16 is a perspective view of the completed shoe.

In practicing the method of the present invention a prefitted shoe upper **20** (Fig. 1) of the open toe type is provided together with an insole **22** (Fig. 2) preferably composed of thin flexible

material such as canvas or Gem duck and extending from the toe end of a last or shoe to about the heel-breast line. The upper **20** is illustrated in Fig. 1 as an unlined leather upper backed with fabric or similar material and provided at its rear portion with a counter pocket **24**, although the upper might, if desired, have a loose fabric lining of usual construction. The upper is cut so that it has only a narrow margin or lasting allowance, this allowance preferably being approximately thre-eighths of an inch wide. The insole **22** is cut smaller than a last bottom by an amount substantially equal to the width of the lasting allowance of the upper except at the toe end of the insole where, as illustrated in Fig. 2, it is made to register with the periphery of the toe end of the last.

The insole **22** is divided lengthwise in the manner illustrated in Fig. 3 approximately along its longitudinal median portion to separate it into substantially two half insoles **26** and **28**.

The next step in the method illustrated herein is to secure each half insole **26** and **28** off a last to that portion of the margin of the upper **20** which corresponds to that half insole. Fig. 4 illustrates the operation of securing the half insole **26** to the margin or lasting allowance of the upper **20** off a last by zig-zag stitches with the parts located in a substantially flat position and with their adjacent edge faces abutting each other, this operation preferably being performed with the aid of a zig-zag sewing machine of any usual or conventional type. As illustrated in Fig. 4, the sewing machine is provided with a throat plate **30** which supports the work in the position described and has an opening through which a feed dog **32** projects to engage the work and feed it under a needle **34** and a presser foot **36**. A thin vertical fin or gage **38** is provided on the feed dog rearwardly of the needle to position the two pieces in abutting relation to each other as the work is fed through the machine. The zig-zag stitch, indicated at **40**, extends through the adjacent margins of the upper and half insole **26** from the toe of the insole to its rearward end adjacent to the heel breast line of the shoe and attaches the two parts securely together as shown in Figs. 4 and 5. Figs. 6 and 7 illustrate the upper **20** after both half insole members **26** and **28** have been secured off a last to the lasting margins of the upper which correspond thereto by zig-zag stitches **40**. Since the adjacent edge faces of the upper margin and half insole members are located in abutting relation to each other during the stitching operation, as shown in Fig. 4, this operation is accomplished without changing the size or shape of either the prefitted upper or the insole members.

After the half insoles **26**, **28** have been secured to the corresponding margins of the upper **20**, the two half insoles are attached to each other along the line of division while still off a last by zig-zag stitches inserted with the aid of the zig-zag sewing machine fitted with instrumentalities adapted to perform this operation. As illustrated in Fig. 8, the sewing machine may be provided with a different type of throat plate **44** and feed dog **46** arranged to engage the work at one side of the needle **34** to feed the work through the machine. The half insoles **26** and **28** are located in superimposed relation to each other for this operation with their adjacent edges in substantial alinement or flush with each other as shown in Fig. 8. The feed dog **46** engages the work through an opening in the throat plate **44**, the feed dog coop-

erating with a presser roll 48 located opposite the feed dog for feeding the two thicknesses of material through the machine.

An edge gage 50 is positioned above the throat plate 44 at the side of the needle opposite the presser roll 48 for engaging the alined edges of the half insoles and guiding them in this position past the sewing instrumentalities of the machine, the edge gage being provided with a thin projection or fin 53 over which the stitch is sewn. The machine inserts an overcast or zig-zag stitch 52 which secures the two pieces securely together in superimposed relation to each other but which, by reason of the fin 53, is loose enough to permit the half insoles to be subsequently adjusted or turned about the stitches without disturbing them to position the half insoles in abutting relation to each other, as illustrated in Fig. 9. The insole 22 has now been closed or made complete again to close the upper 20 and thereby to form a united upper and insole assembly ready for the next operation. The bottom surface of the connected insole and upper is substantially flat transversely of the shoe bottom because the edges of the upper and insole are held by the stitches in abutting relation. Since the adjoining edge faces of the half insoles are in abutting relation to each other, the size of the insole has not been changed.

In accordance with the method herein illustrated, the next step comprises slip-lasting the shoe, that is, inserting a last of the required size and shape into the closed upper to shape the upper and to position its margin or lasting allowance and the margins of the divider insole opposite the last bottom. However, since it is desirable to provide an insole of some usual or conventional type inside the finished shoe, an insole which is substantially equal in size and shape to the last bottom is mounted on the last bottom and temporarily secured thereto before the last is inserted into the upper to slip-last the shoe.

As illustrated in Fig. 10, an insole 54 of last bottom size is provided for use in the present shoe so that the shoe, when completed, will be similar in construction to any conventional shoe having a single outer or tread sole except that, in the present case, the shoe will have been constructed off a last by the slip-lasted method instead of by the usual on-the-last method. The insole 54 may be a conventional type insole of usual thickness which corresponds in size and shape to the periphery of the bottom of the last which is to be used in the shoe. If desired, however, the insole 54 may be a premolded insole unit, such as is illustrated in Fig. 10, this unit comprising a full length lower insole 56 upon which is mounted a fiber reinforcing member 58 with a shank stiffener 62 of usual construction embodied in the unit between the full length insole and the reinforcing member 58 to give strength and rigidity to the shank portion of the unit. Before it is embodied in a shoe the insole unit 54 is molded to conform to the longitudinal and transverse curvatures of the last bottom, as illustrated in Fig. 10, a unit of this general type being disclosed in United States Letters Patent No. 2,065,464, granted December 22, 1936, on the application of John M. Whelton and commonly referred to as a Unishank insole.

The insole unit 54 is coated around the margin of its outer surface with cement 64 (Fig. 11), preferably thermoplastic cement, whereby the insole may later become permanently secured to the portions of the upper margin and divided insole

22 which will engage the outer surface of the full length insole 56 inside the shoe after the unit has been introduced into the shoe. The insole 54 may be mounted on a last 66, as shown in Fig. 11, and temporarily secured to the last bottom by two or more tacks 68 which are preferably located along the longitudinal median line of the insole unit to hold the unit in proper position on the bottom of the last.

The last 66 with the second insole 54 mounted thereon is inserted into the closed upper 20, thereby slip-lasting the shoe and shaping the upper to the contour of the last, as illustrated in Figs. 12 and 13. Since the upper has only a relatively narrow lasting allowance, and since the upper has been closed at its lower margin forwardly of the heel breast line by the divided insole 22, the upper and insole 22 will now assume the shapes shown in Figs. 12 and 13 in which the narrow lasting allowance of the upper underlies the insole unit 54 and is connected across the last bottom by the divided insole 22 the parts of which are secured together along its longitudinal median portion by the zig-zag stitches 52.

Since the insole 22, as illustrated in Fig. 2, extends only to about the heel breast line of the shoe, it is necessary to secure the heel portion of the upper 20 in lasted position rearwardly of the heel breast line of the shoe. It should be pointed out that, prior to inserting the last 66 into the upper 20, a counter 69 (Fig. 13) of fiber or other suitable material may be inserted into the counter pocket 24 of the upper if the shoe is to have a stiff counter. The counter 69 may comprise a molded flanged counter of usual construction or it may, if desired, consist of a flat unmolded counter of flexible material impregnated with a stiffening solution which may be activated by heat or a solvent to stiffen the counter after the last has been inserted and thus conform the counter to the shape of the heel portion of the last.

The heel ends of the upper 20 and counter 69 are wiped inwardly over the exposed surface of the rear portion of the insole unit 54, as illustrated in Fig. 13, and are secured in lasted relation to the insole by any usual means such, for example, as tacks 70. The lasting operation at the heel end of the shoe may be conveniently performed with the aid of a machine of the general type disclosed in Letters Patent of the United States No. 2,059,241, granted November 3, 1936, on an application filed in the name of Jacob C. Jorgensen, although other lasting machines could of course be used if desired. Fig. 13 illustrates the shoe bottom at this stage of the method or after the last has been inserted and the heel seat portions of the upper and counter secured in lasted relation to the insole 54 by tacks 70 as described above.

In order to cause the insole 54 to become permanently secured to the lasted margin of the upper and to the divided insole 22, the bottom of the shoe is now subjected to heat to activate the thermoplastic cement on the outer margin of the insole unit 54 and thus cause it to become permanently bonded to the margin of the upper and to the portion of the insole 22 adjacent thereto. Heat may be applied to the shoe bottom in any usual or convenient manner to effect this operation. A convenient method of accomplishing the heat applying operation is with the aid of a bottom ironing machine of the type disclosed in United States Letters Patent No. 2,175,474,

granted October 10, 1939, upon an application filed in the name of Axel A. Lawson, although other machines or apparatus could be utilized, if desired, for performing this operation. Fig. 12 illustrates the shoe positioned on the ironing plates 72, 74 of a bottom ironing machine of the type referred to, the plates being curved longitudinally and transversely to conform substantially to the shape of the shoe bottom and being heated, as disclosed in the patent referred to, in order to apply sufficient heat to the shoe bottom to activate the thermoplastic cement on the insole unit 54 and thus cause the insole to become permanently bonded to the upper and divided insole 22.

The shoe is now ready for the attachment of a sole member to its bottom surface, the sole member in the type of shoe herein disclosed comprising an outsole although, of course, an intermediate or midsole or a platform sole may be utilized between the upper and the outer or tread sole if desired. Before an outsole can be attached to the shoe bottom, however, it is necessary to remove the tacks 68 which temporarily secure the insole unit 54 to the last bottom. These tacks may be readily removed by cutting small openings through the insole 22 at the points where the tacks are located and then withdrawing the tacks through these openings with any suitable instrument.

The overlasted marginal portion of the upper 20 and adjacent portion of the divided insole 22 are next roughened lightly, as illustrated in Fig. 13, from about the heel breast line on one side of the shoe to the breast line at its opposite side. The roughening operation will usually extend over the portion of the margin of the shoe bottom where the zig-zag stitches 40 are located and, accordingly, may weaken or break some of these stitches even though the shoe bottom is roughened lightly. However, since the lasting allowance of the upper and the adjacent portion of the insole 22 are now securely bonded inside the shoe to the insole or insole unit 54, the zig-zag stitches 40 now serve no useful purpose and may be weakened or broken without damaging the shoe.

After the margin of the shoe bottom has been roughened as described, sole attaching cement is applied to the roughened margin in the usual manner and an outsole 76 is laid on the shoe bottom and attached thereto in any conventional type of sole attaching machine such, for example, as a machine of the type disclosed in Letters Patent of the United States No. 2,047,185, granted July 14, 1936, on an application filed in the name of Milton H. Ballard et al., thereby completing the construction of the shoe except for the attachment of a heel and the performance of the usual finishing operations.

Fig. 16 illustrates the completed shoe after the outsole 76 has been attached and a heel 78 has been secured to the shoe bottom in any usual or convenient manner. It will be seen in Fig. 16 that the present shoe has the appearance of a conventional shoe of usual construction made in accordance with the customary methods of shoemaking. In other words, the shoe has the appearance of a shoe made on a last and which has had its upper pulled over and secured in lasted relation to an insole in the usual manner. The shoe has a closed heel end or back part provided with a stiff counter located in the counter pocket formed in the upper. It has a single outer or tread sole and a heel of usual construction as distinguished from the general types of slip-lasted shoes which have an open heel end without a counter, and a wedge heel interposed between a platform sole and an outer or tread sole. Although the shoe illustrated herein has an open toe end, it could obviously have a closed toe, if desired, merely by cutting the upper in a manner to produce a closed toe. Accordingly, although the present shoe is constructed by a novel slip-lasting method, it embodies many of the advantages of a shoe built on a last over a normal last-sized insole by the usual on-the-last method of making shoes. Moreover, it also includes the advantageous features of slip-lasted shoes.

If it is not desirable to secure the insole or insole unit 54 to the bottom of the last 66 by tacks or similar fastening means, as described above, before the last is inserted into the upper, the insole 54 may, if desired, be introduced manually into the loose upper 20 before the last is inserted into the upper, as illustrated in Fig. 15, the insole being positioned by hand in the lower portion of the upper adjacent to the divided insole 22 and being provided on its lower surface with thermoplastic cement as described above. After the insole has been introduced into the upper, the last 66 may be inserted to slip-last the shoe and force the insole against the lasting allowance of the upper and the divided insole 22. Heat may then be applied to the shoe bottom in the manner described above to activate the thermoplastic cement and thus cause the insole to become permanently bonded to the inner face of the upper margin and to the adjacent portion of the divided insole 22, thereby permanently securing the insole of last bottom size to the inner side of the shoe bottom but avoiding the use of temporary fastenings and thus eliminating the operation of removing such fastenings before the outer or tread sole can be applied.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. That improvement in methods of making shoes which comprises providing a prefitted upper having a scant lasting margin, providing an insole which is smaller than a last bottom by the width of the lasting margin of the upper, dividing said insole substantially along its longitudinal median line to form two half insoles, stitching each half insole by zig-zag stitches inserted off a last to that portion of the lasting margin of the upper which corresponds thereto with the edge of the upper abutting the adjacent edge of each half insole, securing the two half insoles together off a last along the line of division by overseaming stitches with the adjacent marginal portions of the half insoles located in superimposed relation to each other and with their edges substantially flush, said overseaming stitches permitting relative adjustment of the half insoles about the stitches without disturbing said stitches, positioning a second insole of last bottom size inside the shoe against the divided insole, inserting a last into the upper to slip-last the shoe and position the adjacent edges of the half insoles in abutting relation to each other, securing the second insole to the upper and the divided insole, and attaching a sole to the shoe bottom.

2. That improvement in methods of making shoes which comprises providing an upper closed by an insole smaller than a last bottom, introducing into the upper an insole equal in size to a last bottom and having inactive cement on its

outer surface, inserting a last into the upper to slip-last the shoe, activating the cement on the outer surface of the last-named insole, thereby causing it to become bonded to the first-named insole and upper, and attaching a sole to the shoe bottom.

3. That improvement in methods of making shoes which comprises providing an upper closed by an insole which is smaller that a last bottom, introducing into the closed upper an insole equal in size to a last bottom and having inactive thermoplastic cement on its outer surface, inserting a last into the upper, applying heat to the shoe bottom to activate the thermoplastic cement on the last-named insole and thereby cause it to become permanently bonded to the first-named insole and upper, and attaching a sole member to the bottom of the shoe.

4. That improvement in methods of making shoes which comprises providing an upper which is closed at its bottom opening by an insole smaller than a last bottom stitched to said upper, introducing into the closed upper an insole which corresponds in size and shape to a last bottom and has thermoplastic cement on the margin of its outer surface, applying heat to the bottom surface of the shoe to activate said thermoplastic cement and cause the last-named insole to become bonded to the first-named insole and to the inturned marginal portion of the upper inside the shoe, and attaching an outsole to the shoe bottom.

5. That improvement in methods of making shoes which comprises providing a prefitted upper and an insole smaller than a last bottom, dividing the insole lengthwise into substantially two halves, securing each half insole to that portion of the upper margin which corresponds thereto, attaching the half insoles together off a last along the line of division to close the insole and upper, introducing into the closed upper an insole corresponding in size to the last bottom and having inactive thermoplastic cement on its outer surface, inserting a last into the upper to slip-last the shoe and shape the upper, applying heat to the shoe bottom to activate the thermoplastic cement on the last-named insole to cause it to become permanently bonded to the other insole and upper inside the shoe, and attaching an outsole to the shoe bottom.

6. That improvement in methods of making shoes which comprises providing a prefitted upper having a narrow lasting margin and an insole which is smaller than a last bottom by the width of said lasting margin, dividing the insole lengthwise to form substantially two half insoles, stitching each half insole off a last to that portion of the lasting margin of the upper which corresponds thereto, securing the insole together again off a last along the line of division, inserting a last and a second insole of last bottom size into the upper with inactive thermoplastic cement on the outer surface of the second insole, thereby slip-lasting the shoe and shaping the upper, applying heat to the shoe bottom to activate said thermoplastic cement and to cause the second insole to become permanently attached to the upper and first-named insole, roughening the margin of the upper that underlies the last bottom, applying cement to the roughened margin, and cement attaching an outsole to the shoe bottom.

7. That improvement in methods of making shoes which comprises providing a prefitted shoe upper having a predetermined lasting allowance,

providing an insole which is smaller than a last bottom by an amount substantially equal to the lasting allowance of the upper, severing the insole lengthwise to form a pair of half insoles, stitching each half insole off a last to the portion of the lasting allowance of the upper that corresponds thereto with the adjacent edges of the upper and half insoles abutting each other, securing the half insoles together again along the line of severance by overseaming stitches with the adjacent portions of the half insoles in superimposed relation to each other and with their edges in substantial alinement, inserting into the upper a last having a second insole of last bottom size temporarily secured to its bottom surface, thereby shaping the upper and positioning the alined edges of the insole halves in abutting relation to each other, said second insole having inactive thermoplastic cement on its marginal portion, applying heat to the shoe bottom to activate said thermoplastic cement to cause the second insole to become permanently bonded to the inner surfaces of the upper and first-named insole, removing the tacks that secure the second insole to the last, roughening the marginal portions of the upper and first-named insole that underlie the last bottom, applying cement to said roughened portions, and cement attaching an outsole to the shoe bottom.

8. That improvement in methods of making shoes which comprises providing an upper and an insole, dividing the insole lengthwise to form a pair of half insoles, attaching each half insole to that margin of the upper which corresponds thereto, securing the half insoles together off a last along the line upon which they were divided, thereby closing the insole and upper, inserting into the closed upper a last having a premolded insole unit mounted thereon having cement on its outer surface, activating the cement on said insole unit to cause the unit to become permanently bonded to the upper and first-named insole, and attaching a sole to the shoe bottom.

9. That improvement in methods of making shoes which comprises providing a prefitted upper and an insole, dividing the insole lengthwise to form half insole members, securing each half insole to that portion of the upper margin which corresponds thereto, attaching the half insoles together off a last to close the insole and upper, introducing into the upper a premolded insole unit having a shank stiffener embodied therein, said unit having inactive thermoplastic cement on its outer surface, inserting a last into the upper to slip-last the shoe and shape the upper, applying heat to the shoe bottom to activate the thermoplastic cement and cause the insole unit to become permanently attached to the insole and upper inside the shoe, and attaching an outsole to the bottom of the shoe.

10. That improvement in methods of making shoes which comprises providing an upper and an insole which extends only to about the heel breast line of a shoe, dividing the insole lengthwise into substantially two halves, securing each half insole to that portion of the upper margin which corresponds thereto, attaching the half insoles together off a last along the line of division to close the upper, introducing into the closed upper a premolded insole unit having a shank stiffener embodied therein, said unit having inactive thermoplastic cement on the margin of its outer surface, inserting a last into the upper to slip-last the shoe, securing the heel portion

of the upper in lasted relation to the premolded insole unit, applying heat to the shoe bottom to activate the thermoplastic cement on the insole unit and cause it to become permanently bonded to the first-named insole and upper margin inside the shoe, roughening the marginal portion of the shoe bottom and applying cement thereto, and cement attaching an outsole to said shoe bottom.

11. That improvement in methods of making shoes which comprises providing a prefitted upper having a relatively narrow lasting allowance and an insole which is smaller than a last bottom by an amount substantially equal to the lasting allowance of the upper, said insole extending only to about the heel breast line of a shoe, dividing the insole lengthwise to form substantially half insoles, stitching each half insole by zig-zag stitches off a last to that portion of the lasting allowance of the upper which corresponds thereto with the adjacent edges of the upper and half insole abutting each other, stitching the adjacent marginal portions of the half insoles together in superimposed relation off a last along the line of division by overseaming stitches with the edges of the half insoles substantially flush to render the insole complete again and thereby to close the upper, inserting into the closed upper a last having a premolded insole unit including a shank stiffener temporarily secured by tacks to its bottom surface with thermoplastic cement on the outer margin of said insole unit, thereby slip-lasting the upper and positioning the edges of the superimposed margins of the first-named insole in abutting relation to each other, securing the upper in lasted relation to the heel portion of the insole unit, heating the shoe bottom to activate the thermoplastic cement on the insole unit to cause said unit to become permanently bonded to the upper and first-named insole inside the shoe, removing the tacks which hold the insole unit to the last bottom, roughening the portions of the upper and first-named insole that underlie the margin of the last bottom, applying sole attaching cement to said roughened portions, and cement attaching an outsole to the bottom of the shoe.

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