

March 24, 1942.

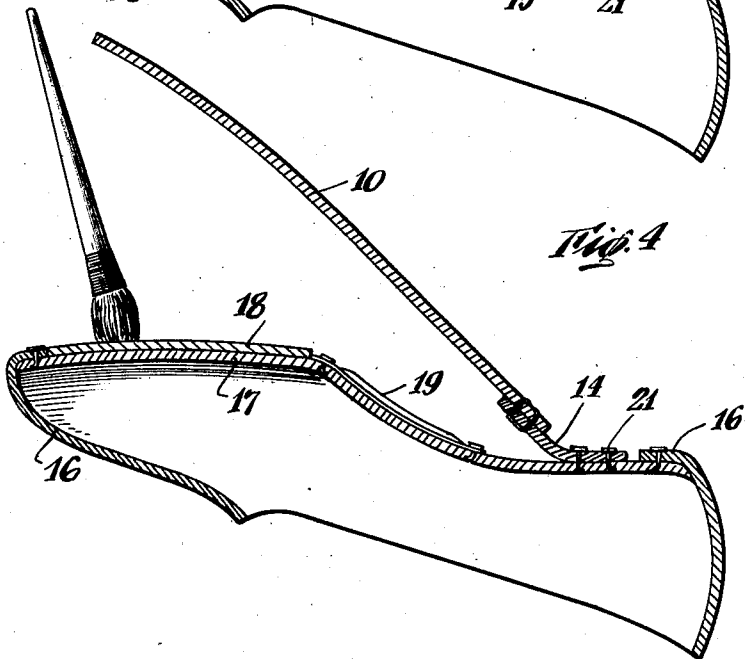
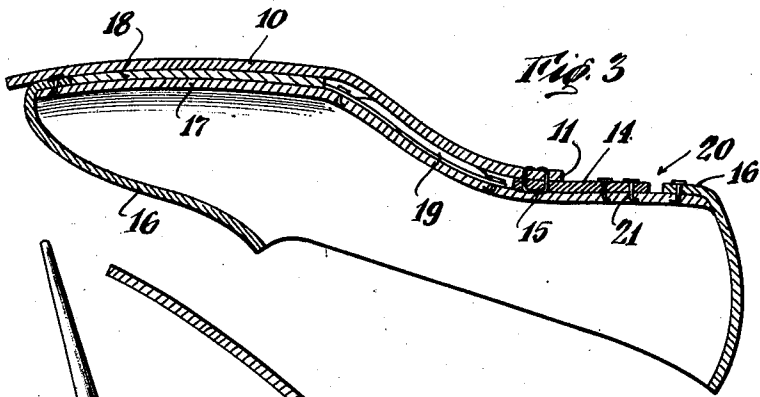
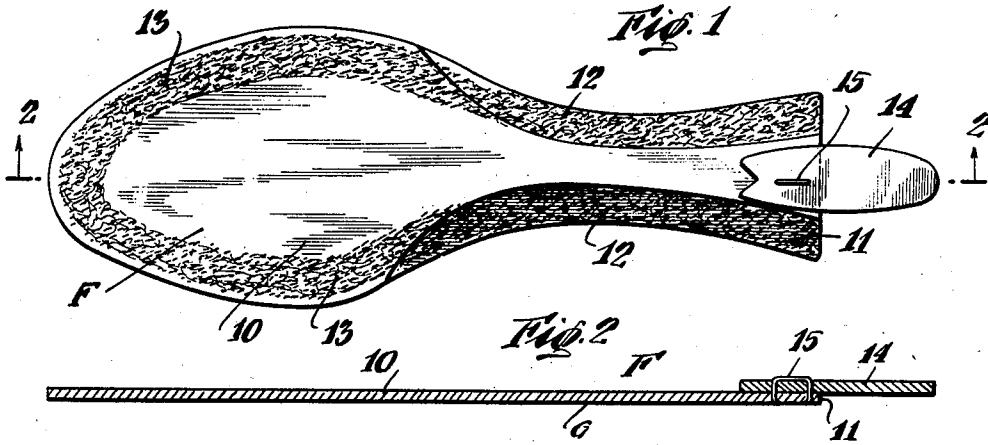
J. F. SMITH

2,277,531

MANUFACTURE OF SHORT SOLED FOOTWEAR

Filed March 2, 1938

2 Sheets-Sheet 1



INVENTOR,

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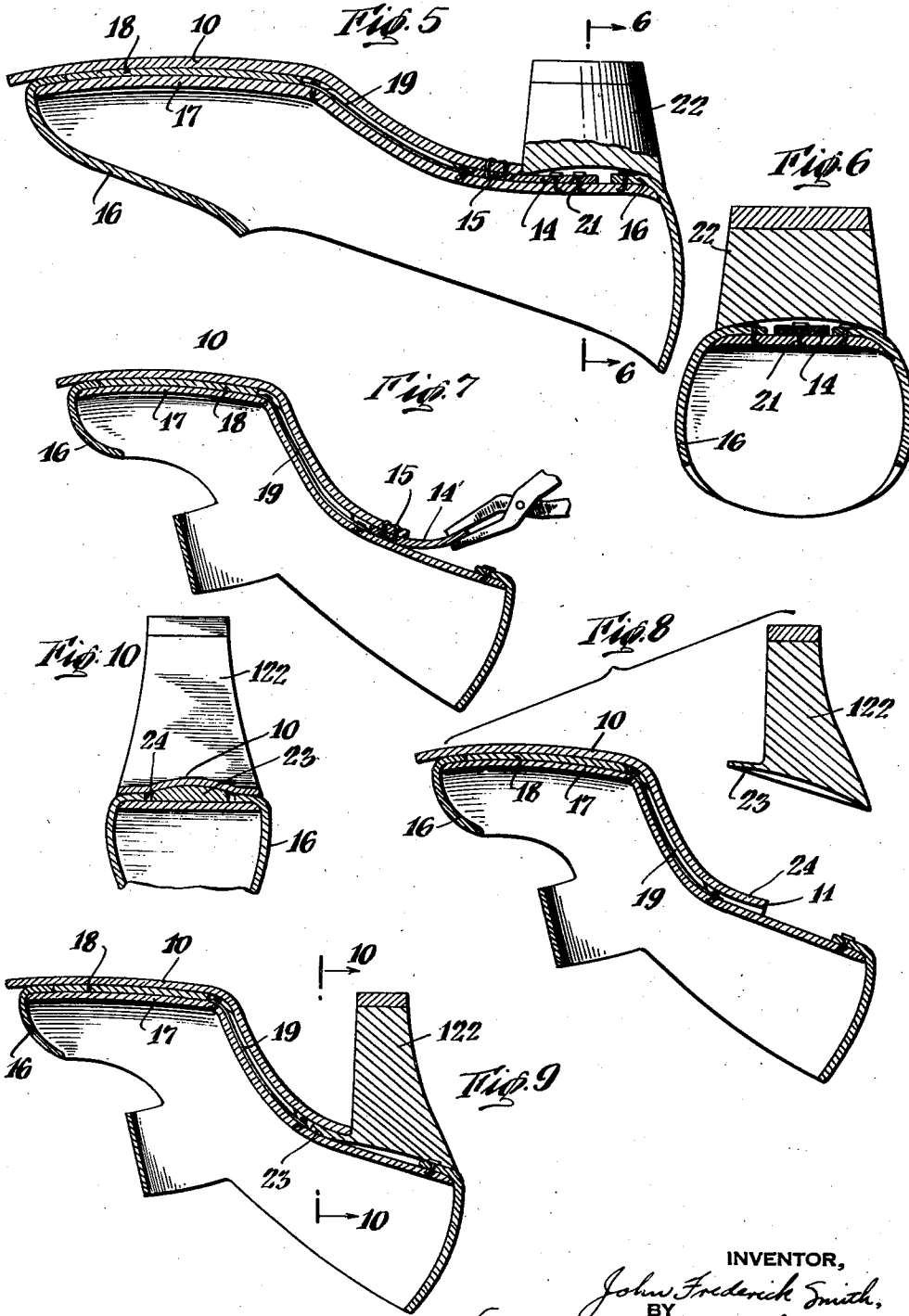
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MANUFACTURE OF SHORT SOLED FOOTWEAR

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,277,531

MANUFACTURE OF SHORT SOLED FOOTWEAR

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Application March 2, 1938, Serial No. 193,456

7 Claims. (Cl. 12-142)

This invention relates to the manufacture of footwear, and more particularly to soling and heeling operations and materials.

A general object of the invention is to effect a substantial saving in the cost of making shoes having heels of the Cuban or other straight breasted types which can be formed with a short outsole.

Short outsoles comprising a forepart and shank portion terminating rearwardly at the heel breast line can be provided at savings of over one cent a pair as compared with full outsoles which extend rearwardly over the heel seat. However, in affixing outsoles to lasted shoes, particularly where cement affixation is used, the outsole must be located lengthwise and laterally with respect to the upper. This locating can best be effected by tacking or stapling the heel portion of the outsole against the shoe heel seat prior to attaching the margins of the forepart and shank of the shoe and outsole together, as is well illustrated, for example, in U. S. Letters Patent 1,893,015, issued to W. H. Bresnahan. Since short soles cannot be tacked at the heel, it has been common practice for manufacturers to purchase full soles so that they could follow the advantageous affixing procedure shown in the mentioned Bresnahan patent, and thereafter to trim or cut-on the outsole at the heel breast line to fit it for the particular type of heel to be attached.

With this in view, it is an object of the present invention to provide short outsoles with means for locating them on the heel seat of a shoe, so that advantages as to economy are obtained while preserving advantages as to locating the soles and maintaining registry with the shoe during affixing operations which heretofore have required full length outsoles. In one aspect of the invention, a further object is to provide this locating means in the form of a detachable filler plug attached to the outsole in position to form a cavity between the rear portion of the sole and the shoe to receive a forwardly extending heel tongue which may in desired instances be provided as a special locking means on the heel.

The objects comprise provision of improved shoe-making methods involving use of such an improved short outsole, as well as provision of the sole itself as a novel and useful article.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the several steps and the relation of one or more of such steps with respect to each of the others, and the article possessing the features, proper-

ties, and the relation of elements, which are exemplified in the following detailed disclosure, and the scope of the invention will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawings, in which:

Fig. 1 is a plan view of the flesh side of an outsole embodying features of the invention;

Fig. 2 is a longitudinal sectional view along line 2-2 of Fig. 1;

Fig. 3 is a longitudinal sectional view, on a reduced scale, through a shoe having the outsole of Fig. 1 located thereon;

Fig. 4 is a longitudinal sectional view similar to Fig. 3 but showing a stage in permanent cement sole-affixation;

Fig. 5 is a longitudinal sectional view through a completed shoe having a Cuban heel attached thereto;

Fig. 6 is a transverse sectional view along line 6-6 of Fig. 5;

Figs. 7, 8, 9 and 10 are sectional views showing steps in the soling and heel affixing of a shoe utilizing the outsole of Fig. 1 but having a special form of heel.

Referring more particularly to the drawings, there is shown in Figs. 1 and 2, an outsole 10 preferably of sole leather stock having a flesh side F and a grain side G. This sole is of short construction having a forepart and shank portion which terminates rearwardly at the heel breast line 11. It may preferably be shank skived as at 12 and marginally roughed and coated with cement as at 13. This may be pyroxylin cement which can be allowed to dry subject to reactivation by means of a suitable solvent just prior to the sole-affixing operation. Other forms of adhesives such as pressure or heat responsive cements, or other forms of sole-affixing, such as stitching, may be employed while obtaining certain benefits of the present invention. In its preferred form, the sole may also be rounded, edge-set, and burnished, although the edge finishing operations may be effected after the sole is attached to the shoe if desired.

On the rear part of the short outsole between its cemented margins, the forward portion of a separate extension tongue 14 is attached on the flesh side. The remaining portion of tongue 14 projects rearwardly from the heel in position to overlie the heel seat of a shoe. The separate tongue 14 is of material such as plied paper board,

fibre board, or the like, having sufficient strength to keep the sole oriented when it is fastened to a shoe heel seat by locating tacks, and being sufficiently flexible to permit the sole to be bent back for the purpose of applying cement or solvent after it has been thus located.

With some types of shoes, it is desirable that the tongue 14 be only temporarily attached to the outsole, while with others the tongue may better be retained in the shoe as a heel seat filler. To care for either type, the attachment between tongue and outsole is preferably effected by means of a staple 15 driven through the tongue from the foot side or inner side with its prongs passing through the tongue and into the outsole, and with its head resting against the tongue. A staple or staples, so driven, is adapted to pull out of the outsole along with the tongue when the latter is forcibly removed. Obviously other temporary fastening means, such as tacky cement or friable fasteners may be employed when desired, and in cases where the tongue is to be retained as a filler, the fastening need not be temporary.

In Fig. 3, a shoe is shown comprising an upper 16 lasted to an insole 17 in any suitable manner such as cementing, stitching, stapling, etc. The shoe bottom may be finished by the application of the usual filler 18 and a metal shank stiffener 19, and if it is to be cement affixed to the outsole, the marginal portion of its shank and forepart may be roughed and coated with cement.

The short outsole 10 is located on this lasted shoe by means of its attached locating tongue 14 which overlies the heel seat area, generally designated 20, in position to have locating fasteners such as tacks 21, or staples, driven therein from the sole or outer side into the insole at the heel seat. As is understood in the art, this locating operation properly arranges the sole longitudinally and laterally of the shoe bottom and the term "locating" the outsole is referred to in this sense throughout the present specification and claims.

The short outsole, having been located on the shoe bottom, is ready for permanent affixation thereto. This may advantageously be carried out by following the steps shown in the above-mentioned Bresnahan patent. In so doing, the sole 10, or rather the extension 14, may be bent back as shown in Fig. 4 without disrupting its located registry, and the opposing marginal surfaces of the sole and shoe bottom may be rendered adhesive as by brushing solvent thereon, or by applying cement thereto if this has not already been done. The sole is then pressed against the upper in a conventional or other suitable shoe press (not shown), the parts being retained in located relation during this pressing operation.

The shoe with its permanently affixed sole is shown in Fig. 5. It is adapted to receive any type of heel suitable for affixation directly against the heel seat of the lasted upper and having a straight or otherwise suitably shaped breast-line capable of abutting the rear edge 11 of the short outsole. A straight breasted Cuban heel, for example, may be employed, as illustrated in Fig. 5. The locating extension tongue 14 may be retained in the shoe as a filler piece for the heel seat cavity usually formed between the inturred edges of the overlasted upper and it is so shown in Fig. 5. If desired, however, the plug may be pulled out before attachment of the heel, this depending on the type of heel used and on the type of heel affixing employed. The heel affixing step may be

carried out by means of pyroxylin cement or other suitable pressure responsive or thermoplastic adhesives, by nailing, screwing or other suitable means. As shown in Figs. 5 and 6, the heel 21 is cement-affixed.

The shoe shown in Figs. 7 to 10 is adapted to have the short outsole 10 located thereon and affixed thereto just as in the first described form. The heel 122, however, is of a special form known commercially as a "Breastlock" heel and has a central heel tongue 23 projecting forwardly from the upper edge of its breast in position to be locked between the outsole and shoe. When use of such a heel is contemplated, or indeed in any case, the locating extension tongue can conveniently be made in the form of a plug having sufficient thickness to act as a filler between the rear part of the outsole and the adjacent shank portion of the shoe bottom. As shown in Fig. 7, the shoe having the outsole 10 permanently attached thereto by cement or other means, then has the locating fasteners removed and the plug 14 bent up and pulled out rearwardly by means of pliers. This also pulls out the attaching staple 15 and leaves a cavity 24 (Fig. 8) to accommodate the heel tongue 23. This tongue is inserted in such cavity, as illustrated in Figs. 9 and 10, until the breast of the heel abuts snugly against the rear edge 11 of the short outsole, at which time the heel can be cement-affixed, or otherwise attached against the heel seat of the lasted upper.

In both forms, it will be seen that the advantages of using short outsoles are obtained without necessitating the initial purchase of full length soles for locating purposes, since the present improved short outsoles can be located and attached conveniently and accurately and the locating means, when desired, can also advantageously function as a filler plug usable in conjunction with "Breastlock" type heels.

Since certain changes in carrying out the above process, and certain modifications in the article which embody the invention may be made without departing from its scope, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

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

1. A rounded outsole adapted to be cemented to a shoe bottom, said outsole having a forepart and shank portion terminating rearwardly at the heel breast line and having the marginal portions of its flesh side roughed and coated with cement, a separate plug, and means temporarily fastening the forward portion of said plug against the central portion of the rear part of said outsole between its cemented margins, the remaining portion of said plug projecting rearwardly from said outsole in position to be held by locating fasteners against the heel seat of a shoe.

2. A rounded outsole adapted to be cemented to a shoe bottom, said outsole having a forepart and shank portion terminating rearwardly at the heel breast line, a separate plug of tough flexible material having its forward portion overlying the central portion of the rear part of the flesh side

of said outsole and having its remaining portion projecting rearwardly from said outsole in position to overlie the heel seat of a shoe, and a staple having its prongs passing through said plug and into said outsole with its head against the foot or inner side of said plug, whereby a pull on said plug can serve to remove it and said staple from the outsole.

3. A shoemaking method which comprises, lasting an upper to an insole to form a shoe, providing a short rounded outsole comprising a forepart and shank portion terminating rearwardly at the heel breast line, temporarily fastening the forward portion of a flexible plug against the rear part of the flesh side of said outsole with its remaining portion projecting rearwardly therefrom, locating said outsole with its flesh side facing the bottom of said shoe by inserting temporary locating fasteners between said plug and the heel seat of said shoe, bending back said located outsole and rendering the opposed outsole and shoe bottom margins adhesive, pressing said shoe and outsole together, then removing said plug, providing a heel having a heel tongue projecting forwardly from its breast line, inserting said heel tongue between the outsole and shoe in the space formerly occupied by said plug, and fastening said heel against the heel seat of said shoe with its breast abutting the rear edge of said outsole.

4. A shoemaking method which comprises, lasting an upper to an insole to form a shoe, providing a short outsole comprising a forepart and shank portion terminating rearwardly at the heel breast line and having the margins of its flesh side coated with cement, laying the forward portion of a tough flexible plug against the flesh side of the rear part of said outsole between its cemented margins, driving a staple through said plug from the foot side and into the outsole with its head against the plug, locating said outsole on the bottom of said shoe by driving temporary locating fasteners in the rearward portion of said plug and the heel seat of said shoe, then permanently sticking the margins of said outsole and shoe bottom together, then pulling out said fasteners, plug and staple, providing a heel having a heel tongue projecting forwardly from its breast line, inserting said heel tongue between the outsole and shoe in the space formerly oc-

cupied by said plug, and fastening said heel against the heel seat of said shoe with its breast abutting the rear edge of said outsole.

5. That improvement in methods of making shoes which comprises providing an outsole which will not cover the entire bottom surface of a shoe, securing to said outsole an extension which is adapted to overlap a portion of the shoe bottom not covered by the outsole, positioning the outsole relatively to the shoe bottom, thereby locating the extension in a predetermined position relatively to the portion of the shoe bottom which it overlaps, maintaining the outsole in such position prior to its attachment by holding the extension in said predetermined position, attaching the outsole to the shoe, and removing the extension.

6. That improvement in methods of making shoes which comprises providing a short outsole which will not cover the heel portion of a shoe bottom, securing to the outsole a tab which projects beyond the rear edge of the outsole and is adapted to overlap the heel portion of the shoe bottom, positioning the outsole relatively to the shoe bottom, thereby locating the tab in a predetermined position relatively to the heel portion of the shoe bottom, insuring the return of the outsole to said position if it should be displaced prior to its attachment by securing the tab to the heel portion of the shoe bottom, cement attaching the outsole to the shoe, and removing the tab from the heel portion of the shoe bottom.

7. An outsole adapted to cover only a portion of the bottom surface of a shoe and having a straight rear edge face extending at right angles to the plane of the outsole, said outsole having removably secured to its inner surface an extension of separate thin, fibrous material which projects beyond the rear edge face of the outsole in a position to overlap and engage a portion of a shoe bottom not to be covered by the outsole, the material of said extension being stiff enough to be secured to the shoe bottom to hold the outsole in position thereon but being flexible enough to act as a hinge to permit the outsole to be lifted from, and returned against, the shoe bottom without losing its proper position relatively thereto.

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