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DRAWINGS ATTACHED

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(54) IMPROVEMENTS IN OR RELATING TO FOOTWEAR

(71) I, NOEL HETHERINGTON MIDGLEY, a British Subject, of 361 Dandenong Road, Armadale, in the State of Victoria, Commonwealth of Australia, do hereby declare

the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to the production of shoes and other footwear having a reinforcing shank extending lengthwise of the rear section of the shoe bottom.

A shoe is generally constructed with a shoe bottom and an upper. The shoe bottom is usually of laminated construction and may include an outersole and heel, and innersole, and a sock lining which covers the inner surface of the innersole. The shoe bottom may include other components or, alternatively, be made in one piece.

A shoe bottom may for convenience of descripion be divided into four zones which, extending from the front to rear may be called, the toe, forepart, waist and heel sections. These sections successively merge together and may be considered as roughly corresponding to the toe, ball, arch and heel zones of the foot. The toe and forepart may together be called the front section and the waist and heel sections may together be called the rear section. Generally, at least in an innersole, the waist and heel sections constituting the rear section are relatively rigid and strong, whereas the forepart is far more flexible and resilient and the toe section is more rigid than the forepart but less rigid than the rear section.

This invention is particularly concerned with the waist and heel sections or rear section. These sections are required to be relatively rigid and strong to retain the shoe shape although the properties required depend on the manufacturing processes used and the intended use of the finished product. For example, the material may need to receive nails and tacks without splintering or may need to be compatible with various adhesives.

Rear sections have for many years been made from fibreboards or laminations of materials. The material is chosen for its ability to be moulded to the shape of the arch and heel area of the shoe last concerned and for strength and economy. Paper and wood fibreboard has become the major material used for the production of rear sections.

Generally rear sections are of a thickness of about 2.0 to 3.5 mm. and fibreboard of this thickness is not usually strong enough in use to retain the shape to which it is moulded. The contour to which the rear section is moulded depends on the shoe concerned. In high heel shoes for ladies the contour involves sharp curvature. A reinforcing shank is generally included to retain the desired contour.

The reinforcing shank is generally made of metal and extends lengthwise and substantially centrally of the rear section. The rear end of the reinforcing shank may terminate about one inch from the rear extremity of the heel. Reinforcing shanks are available in widths varying from about ¼" to 1" and they generally have a longitudinally extending strengthening rib pressed outwardly from the surface of the shank. Reinforcing shanks are attached to rear sections by tacking, riveting or stapling and anchoring holes or slots are generally provided in the shanks for this purpose.

Usually reinforcing shanks are hardened and tempered after provision of the strengthening rib and after being preformed to the desired curved contour. The reinforcing shank is then fitted to a rear section of corresponding contour. Alternatively the contoured shank is connected to a relatively flat rear section and subsequently moulded

[Price 5s. 0d. (25p)]

to final form in a press.

The reinforcing shank generally extends along the underside of the rear section and may be fastened with two rivets, each adjacent a separate end of the shank. To reduce bulk a groove or slot may be machined lengthwise and substantially centrally in the underside of the rear section to receive the shank. However, this weakens the rear section.

The main disadvantage in the known arrangement described is that a large stock of different reinforcing shanks must be maintained for the manufacture of different shoes. In addition, special skills and machines are required to locate the reinforcing shanks and separate operations are required to shape the shank and the rear section to the desired contour. Moreover, hardened and tempered reinforcing shanks are relatively expensive.

The primary object of the present invention is to provide improvements in reinforcing shanks and in the reinforcing of rear sections of footwear components and articles of footwear.

Accordingly the present invention provides a reinforcing shank for the rear section of a footwear sole component having upper and lower component surfaces, said shank including; an elongated strip-like web portion of a length and width adapted to extend generally longitudinally of a zone intermediate in the width of said rear section, and a pair of laterally spaced reinforcing flanges extending lengthwise of said web portion; said web portion being of substantially uncontoured formation along its length and having opposed inner and outer web faces and longitudinally extending opposite side edges; both said reinforcing flanges projecting from said inner web face at substantially right angles to said web portion with each said reinforcing flange extending along a separate one of said side edges so that said web portion extends between said reinforcing flanges; said shank being connectable directly to said sole component by driving the longitudinal free edges of the reinforcing flanges into said rear section material through the intermediate zone of one of said component surfaces so that said reinforcing flanges are embedded in said rear section material with said free edges enclosed in said rear section material and said inner web face is in face-to-face relationship with the intermediate zone of said one component surface; said shank being such that it is capable of lengthwise contour deformation in a direction at substantially right angles to said web portion to a desired contour after connection to said rear section to enable said embedded and contoured shank to hold the rear section in the desired contour and resist deformation thereof during use of the sole component in an article of footwear.

The term "shank" as used herein, includes both an uncontoured shank blank and a fully contoured shank.

The invention also provides a method of manufacturing a reinforced and contoured footwear sole component including the steps of: forming a footwear sole component with a rear section, said rear section being of substantially uncontoured formation along its length and having upper and lower component surfaces; forming a reinforcing shank blank having an elongated strip-like web portion of a length and width adapted to extend generally longitudinally of a zone intermediate in the width of said rear section, and a pair of laterally spaced reinforcing flanges extending lengthwise of said web portion; said web portion being of substantially uncontoured formation along its length and having opposed inner and outer web faces and longitudinally extending opposite side edges; both said reinforcing flanges projecting from said inner web face at substantially right angles to said web portion with each said reinforcing flange extending along a separate one of said side edges so that said web portion extends between said reinforcing flanges, connecting said shank blank directly to said rear section by driving the longitudinal free edges of the reinforcing flanges into said rear section material through the intermediate zone of one of said component surfaces so that said reinforcing flanges are embedded in said rear section material with said free edges enclosed in said rear section material and said inner web face is in face-to-face relationship with the intermediate zone of said one component surface; and lengthwise contour deforming said shank blank together with said rear section in a direction at substantially right angles to said web portion to a desired contour; said shank blank being such as to enable said embedded and contoured shank to hold the rear section in the desired contour and resist deformation thereof during use of the sole component in an article of footwear.

In order to further describe the invention reference is now made to the accompanying drawings wherein preferred embodiments of the invention are shown and in which:

Figure 1 is a plan of a reinforcing shank blank,

Figure 2 is an enlarged cross-section on the line II-II of Figure 1,

Figure 3 is an underneath plan of a reinforced but uncontoured innersole component including a front section and a rear section, the front section being shown in phantom line,

Figure 4 is a cross-section on the line IV-IV of Figure 3 with the front section

excluded,

Figure 5 is a part cross-section on an enlarged scale on the line V-V of Figure 3,

Figure 6 is a longitudinal cross-section of an article of footwear including an innersole component,

Figure 7 is a cross-section on the line VII-VII of Figure 6, and

Figure 8 is a schematic representation of a mould shown lengthwise contour deforming a shank blank together with a rear section to a desired contour.

The description that follows refers to essential and optional features of the invention. This description is facilitated by reference to the accompanying drawings, but it is to be understood that the reference to the drawings is by way of illustration only and it is not intended that the features described be limited by the features shown.

As has already been indicated and present invention is concerned with improvements in or relating to footwear and several different aspects are involved. In order to assist an understanding of these aspects it is proposed firstly to make reference in general terms to various parts of an article of footwear. The terms concerned are used throughout the specification.

Figure 6 illustrates an article of footwear 11, namely a shoe that includes a shoe bottom 12 and an upper 13 connected to the shoe bottom. The shoe bottom 12 illustrated is of laminated construction and includes an outersole 14 and heel 16, an innersole 17 in face-to-face relationship with the outersole 14 and a sock lining 18 covering the upper surface 19 of the innersole 17. The shoe bottom 12 may include further components such as a midsole (not shown) intermediate between the innersole 17 and the outersole 14.

The shoe bottom 12 may for convenience of description be considered as being divided into four zones which, extending from the front to the rear may be called, the toe, forepart, waist and heel sections. These sections successively merge together and may be considered as roughly corresponding to the toe, ball, arch and heel zones of the foot. The toe and forepart may together be called the front section and the waist and heel sections may together be called the rear section.

This division of the shoe bottom conforms with accepted shoe making practice in that an innersole, for example, is often made in two parts being a front section and a rear section that are joined together intermediate in the length of the innersole. Figure 3 shows an example of such an innersole with a front section 21 and a rear section 22.

Figures 1 and 2 show one embodiment of a shank blank 20 according to the invention. The shank blank is for reinforcing the rear section 22 of a footwear sole component, such as the innersole component 17 of the drawings, and having upper and lower component surfaces 19 and 23 respectively. The shank blank 20 includes an elongated strip-like web portion 24 of a length and width adapted to extend generally longitudinally of a zone intermediate in the width of the rear section 22 and a pair of laterally spaced reinforcing flanges 26, 27 extending lengthwise of the web portion 24.

The web portion 24 is of substantially uncontoured formation along its length and has opposed inner and outer web faces 28 and 29 respectively and longitudinally extending opposite side edges 31, 32. As mentioned the web portion 24 is of substantially uncontoured formation along its length and is preferably substantially flat along its length. Moulding of the shank blank to the desired contour along its length is carried out later.

Both of the reinforcing flanges 26, 27 project from the inner web face 28 at substantially right angles to the web portion 24 with each reinforcing flange extending along a separate one of the side edges 31, 32. It will be seen that the web portion 24 therefore extends between the reinforcing flanges 26, 27.

Each of the reinforcing flanges 26, 27 is embeddable in the material of the rear section 22 and for this purpose the longitudinal free edge 33 of each reinforcing flange remote from the web portion 24 is drivable into the rear section material.

The shank blank 20 is connectable directly to the sole component by driving the free edges 33 into the rear section material through the intermediate zone of either the upper component surface 19 or the lower component surface 23 so that the reinforcing flanges 26, 27 are embedded in the rear section material with the free edges 33 enclosed in the rear section material and the inner web face 28 in face-to-face relationship with the intermediate zone of the component surface concerned. In the embodiment shown it is the lower component surface 23.

The shank blank 20 is made of material and shaped such that it is capable of lengthwise contour deformation in a direction at substantially right angles to the web portion 24 to a desired contour after connection of the shank blank 20 to the rear section 22; and also such that the embedded and contoured shank is able to hold the rear section 22 in the desired contour and resist deformation thereof during use of the sole component in an article of footwear 11.

The web portion 24 is preferably curved across its width so that the outer web face

29 is of convex curvature and the inner web face 28 is of concave curvature. The web portion 24 may be provided with one or more ribs (not shown) along its length. Additionally, the web portion 24 is preferably of a width so that it is adapted to extend across only a minor part of the width of the rear section 22. For example, the web portion may be about 0.725 inches in width.

The opposite side edges 31, 32 of the web portion are preferably substantially parallel and the web portion 24 is preferably continuous throughout its length and width.

The front of the web portion may be provided with a tongue 25 and the rear with a recess 30. The recess may accommodate a screw anchoring the heel to the sole component. The tongue reduces distortion of the rear section material when the shank is driven into the material.

The free edges 33 of the reinforcing flanges 26, 27 are preferably of sharpened formation to facilitate driving them into the rear section material. Each reinforcing flange has an inner flange face 36 and an outer flange face 37 and the inner flange faces 36 of the shank blank are preferably substantially parallel. The sharpened formation may be provided by forming each outer flange face 37 so that it has a bevelled surface 38 extending along its associated reinforcing flange 26 or 27 and tapering to its associated free edge 33.

The invention also provides a reinforced but uncontoured footwear sole component including a rear section 22 and a reinforcing shank blank 20 (as previously described) connected directly to the rear section 22. The sole component is preferably an innersole component including a front section 21 and a rear section 22 with the shank blank 20 connected directly to the rear section 22. The rear section is of substantially uncontoured formation along its length and has an upper and lower component surfaces 19, 23 as previously described.

In this arrangement both the reinforcing flanges 26, 27 project from the inner web face 28 at substantially right angles to the web portion 24 through the intermediate zone of either of the upper or lower component surfaces and are embedded in the rear section material with the free edges 33 enclosed in the rear section material. The reinforcing flanges preferably extend about half way through the rear section material. This is best seen in the illustration of Figure 5.

It will be appreciated that the blank is held in its operative position by frictional engagement of the reinforcing flanges with the rear section material. However the uncontoured sole component may also include supplementary anchoring means additional to the reinforcing flanges 26, 27 anchoring the shank blank 20 to the rear section 22. The supplementary anchoring means may comprise rivets, stitches, adhesive or staples 41 as illustrated particularly in Figures 3 to 5.

The invention also covers a reinforced and contoured footwear sole component, such as an innersole component, and including a rear section 22 and a reinforcing shank connected directly to the rear section as previously described. In this arrangement both the rear section 22 and the reinforcing shank 20 are contoured along their lengths to a desired contour and the embedded and contoured shank is such as to hold the rear section in the desired contour and resist deformation thereof during use. When so contoured, the inner flange faces 36 preferably extend from the inner web face 28 at substantially right angles to the web portion as aforesaid but so as to converge towards each other away from the inner web face 28. Such a converging arrangement facilitates self locking of the reinforcing flanges 26, 27 in the rear section material.

According to the invention the reinforced and contoured sole component may be incorporated in an article of footwear 11 including a shoe bottom 12 and an upper 13 connected to the shoe bottom. The web portion 24 is preferably sandwiched between the innersole 17 and the outersole 14 or another sole component.

According to another aspect, the invention provides a method of manufacturing a reinforced and contoured footwear sole component.

The method includes the steps of:

Forming a footwear sole component with a rear section 22, the rear section being of substantially uncontoured formation along its length and having upper and lower component surfaces 19, 23.

Forming a reinforcing shank blank 20 having an elongated strip-like web portion 24 of a length and width adapted to extend generally longitudinally of a zone intermediate of the width of the rear section 22, and a pair of laterally spaced reinforcing flanges 26, 27 extending lengthwise of the web portion 24. The web portion 24 is of substantially uncontoured formation along its length and has opposed inner and outer web faces 28, 29 and longitudinally extending opposite side edges 31, 32. The reinforcing flanges 26, 27 are formed so as to project from the inner web face 28 at substantially right angles to the web portion 24 with each reinforcing flange extending along a separate one of the side edges 31, 32 so that the web portion 24 therefore extends between the reinforcing flanges. Each rein-

forcing flange 26, 27 is formed so that it is embeddable in the material of the rear section 22 and the longitudinal free edge 33 of each reinforcing flange remote from the web portion is formed so that it is drivable into the rear section material.

Connecting the shank blank 20 directly to the rear section 22 by driving the free edge 33 into the rear section material through the intermediate zone of one of the component surfaces 19, 23 so that the reinforcing flanges 26, 27 are embedded in the rear section material with the free edges 33 enclosed in the rear section material and the inner web face 28 is in face-to-face relationship with the intermediate zone of said one component surface. And lengthwise contour deforming the shank blank 20 together with the rear section 22 in a direction at substantially right angles to the web portion to a desired contour.

The contouring step is preferably carried out in a mould. As shown schematically in Figure 8 the mould may have two mould parts 51 and 52. The uncontoured component is located between the mould parts and pressed to the desired contour. The steps of connecting the blank to the sole component and contouring may be carried out simultaneously.

In refinements of the method the shank blank is formed with some or all of the optional features previously described and additionally it is preferred that the sole component is an innersole component with a front section and a rear section as previously described.

When the rear section is moulded to the desired contour along its length it is usual to also mould the rear section to a contour across its width. During the cross contouring it is preferred that the reinforcing flanges are urged towards each other so that they converge away from the inner face of the web portion. Alternatively this converging arrangement may be achieved as the reinforcing flanges are driven into the rear section material. The converging arrangement, however achieved, facilitates self locking of the reinforcing flanges in the rear section material.

The shank blank is preferably made of mild steel and may be formed to shape by cold rolling and subsequent machining. The thickness of the material and relative dimensions of the web portion and reinforcing flanges may vary according to the particular use. For example the web portion may be 0.725 inch wide, the reinforcing flanges 0.085 inch deep and the material 0.056 inch thick. The blank may be made of other metals or suitable plastics material. Similarly the sole component may be made of plastics material.

The manufacture of articles of footwear and components according to the invention has several substantial advantages.

Firstly the shape of the reinforcing shank enables the production of a strong product. The channel type shape is strong in itself and when the reinforcing flanges are embedded in the rear section material the shank and rear section support each other. The rear section material minimizes the possibility of the reinforcing flanges collapsing sidewardly thus holding the shank in the strong channel shape.

Secondly the cross-sectional dimensions of the shank need not be large thus requiring only a relatively small amount of material. Moreover no special hardening or tempering processes are required and inexpensixe material may be used.

Thirdly there is no need to stock a large variety of pre-contoured reinforcing shanks because contouring is carried out after the uncontoured shank is connected to the rear section or during such connection. Thus shank blanks may be produced in uncontoured form as needed or stored in uncontoured form.

Fourthly the connection of an uncontoured shank blank to an uncontoured rear section enables the use of faster production techniques and the use of less skilled labour.

It is preferred that the web portion be curved across its width as described because this strengthens the shank and enables the web portion to conform to the surface of the rear section with minimum interruption. A web portion of narrow width allows economy of material, light weight and better appearance.

WHAT I CLAIM IS:—

1. A reinforcing shank for the rear section of a footwear sole component having upper and lower component surfaces, said shank including: an elongated strip-like web portion of a length and width adapted to extend generally longitudinally of a zone intermediate in the width of said rear section, and a pair of laterally spaced reinforcing flanges extending lengthwise of said web portion; said web portion being of substantially uncontoured formation along its length and having opposed inner and outer web faces and longitudinally extending opposite side edges; both said reinforcing flanges projecting from said inner web face at substantially right angles to said web portion with each of said reinforcing flanges extending along a separate one of said side edges so that said web portion extends between said reinforcing flanges, said shank being connectable directly to said sole component by driving the longitudinal free edges of the reinforcing flanges into said rear section material through the intermediate zone of one of said component surfaces so that said reinforcing flanges are

forcing flange 26, 27 is formed so that it is embeddable in the material of the rear section 22 and the longitudinal free edge 33 of each reinforcing flange remote from the web portion is formed so that it is drivable into the rear section material.

Connecting the shank blank 20 directly to the rear section 22 by driving the free edge 33 into the rear section material through the intermediate zone of one of the component surfaces 19, 23 so that the reinforcing flanges 26, 27 are embedded in the rear section material with the free edges 33 enclosed in the rear section material and the inner web face 28 is in face-to-face relationship with the intermediate zone of said one component surface. And lengthwise contour deforming the shank blank 20 together with the rear section 22 in a direction at substantially right angles to the web portion to a desired contour.

The contouring step is preferably carried out in a mould. As shown schematically in Figure 8 the mould may have two mould parts 51 and 52. The uncontoured component is located between the mould parts and pressed to the desired contour. The steps of connecting the blank to the sole component and contouring may be carried out simultaneously.

In refinements of the method the shank blank is formed with some or all of the optional features previously described and additionally it is preferred that the sole component is an innersole component with a front section and a rear section as previously described.

When the rear section is moulded to the desired contour along its length it is usual to also mould the rear section to a contour across its width. During the cross contouring it is preferred that the reinforcing flanges are urged towards each other so that they converge away from the inner face of the web portion. Alternatively this converging arrangement may be achieved as the reinforcing flanges are driven into the rear section material. The converging arrangement, however achieved, facilitates self locking of the reinforcing flanges in the rear section material.

The shank blank is preferably made of mild steel and may be formed to shape by cold rolling and subsequent machining. The thickness of the material and relative dimensions of the web portion and reinforcing flanges may vary according to the particular use. For example the web portion may be 0.725 inch wide, the reinforcing flanges 0.085 inch deep and the material 0.056 inch thick. The blank may be made of other metals or suitable plastics material. Similarly the sole component may be made of plastics material.

The manufacture of articles of footwear and components according to the invention has several substantial advantages.

Firstly the shape of the reinforcing shank enables the production of a strong product. The channel type shape is strong in itself and when the reinforcing flanges are embedded in the rear section material the shank and rear section support each other. The rear section material minimizes the possibility of the reinforcing flanges collapsing sidewardly thus holding the shank in the strong channel shape.

Secondly the cross-sectional dimensions of the shank need not be large thus requiring only a relatively small amount of material. Moreover no special hardening or tempering processes are required and inexpensive material may be used.

Thirdly there is no need to stock a large variety of pre-contoured reinforcing shanks because contouring is carried out after the uncontoured shank is connected to the rear section or during such connection. Thus shank blanks may be produced in uncontoured form as needed or stored in uncontoured form.

Fourthly the connection of an uncontoured shank blank to an uncontoured rear section enables the use of faster production techniques and the use of less skilled labour.

It is preferred that the web portion be curved across its width as described because this strengthens the shank and enables the web portion to conform to the surface of the rear section with minimum interruption. A web portion of narrow width allows economy of material, light weight and better appearance.

WHAT I CLAIM IS:—

1. A reinforcing shank for the rear section of a footwear sole component having upper and lower component surfaces, said shank including: an elongated strip-like web portion of a length and width adapted to extend generally longitudinally of a zone intermediate in the width of said rear section, and a pair of laterally spaced reinforcing flanges extending lengthwise of said web portion; said web portion being of substantially uncontoured formation along its length and having opposed inner and outer web faces and longitudinally extending opposite side edges; both said reinforcing flanges projecting from said inner web face at substantially right angles to said web portion with each of said reinforcing flanges extending along a separate one of said side edges so that said web portion extends between said reinforcing flanges, said shank being connectable directly to said sole component by driving the longitudinal free edges of the reinforcing flanges into said rear section material through the intermediate zone of one of said component surfaces so that said reinforcing flanges are

embedded in said rear section material with the longitudinal free edges thereof enclosed in said rear section material and said inner web face is in face-to-face relationship with the intermediate zone of said one component surface; said shank being such that it is capable of lengthwise contour deformation in a direction at substantially right angles to said web portion to a desired contour after connection to said rear section to enable said embedded and contoured shank to hold the rear section in the desired contour and resist deformation thereof during use of the sole component in an article of footwear.

2. A shank as claimed in claim 1, wherein said web portion is curved across its width so that said outer web face is of convex curvature and said inner web face is of concave curvature.

3. A shank as claimed in claim 1 or claim 2, wherein said web portion is of a width adapted to extend across only a minor part of the width of said rear section.

4. A shank as claimed in any one of claims 1 to 3, wherein said side edges are substantially parallel and said web portion is continuous throughout its length and width.

5. A shank as claimed in any one of claims 1 to 4, wherein said free edges are of sharpened formation to facilitate driving into said rear section material.

6. A shank as claimed in claim 5, wherein each of said reinforcing flanges has an inner flange face and an outer flange face, said inner flange faces being substantially parallel; said sharpened formation being provided by each outer flange face having a bevelled surface extending along its associated reinforcing flange and tapering to its associated free edge.

7. A reinforced footwear sole component including a rear section and a reinforcing shank as claimed in any of claims 1 to 5, connected directly to said rear section; said rear section being of substantially uncontoured formation along its length and having upper and lower component surfaces; the inner web face of the shank being in face-to-face relationship with the intermediate zone of one of said component surfaces and the reinforcing flanges on said inner web face projecting through the intermediate zone of said one component surface and being embedded in said rear section material with said free edges enclosed in said rear section material.

8. A reinforced and contoured footwear sole component including: a rear section and a reinforcing shank as claimed in any one of claims 1 to 5, connected directly to said rear section; said rear section having upper and lower component surfaces; the inner web face of the shank being in face-to-face relationship with the intermedite zone of one of said component surfaces; and the reinforcing flanges on said inner web face projecting through the intermediate zone of said one component surface and being embedded in said rear section material with said free edges enclosed in said rear section material; both of said rear section and said reinforcing shank being contoured along their lengths to a desired contour, said embedded and contoured shank being such as to hold the rear section in the desired contour and resist deformation thereof during use of the sole component in an article of footwear.

9. A component as claimed in claim 7 or 8, which is an innersole component.

10. A component as claimed in claim 7, 8 or 9, wherein each of said reinforcing flanges has an inner flange face and an outer flange face, said inner flange faces extending substantially at right angles from said inner web face but so as to converge towards each other away from said inner web face; said sharpened formation being provided by each outer flange face having a bevelled surface extending along its associated reinforcing flange and tapering to its associated free edge.

11. A component as claimed in any one of claims 7 to 10 and also including supplementary anchoring means additional to said reinforcing flanges anchoring said shank blank to said rear section.

12. An article of footwear including a shoe bottom and an upper connected to said shoe bottom, said shoe bottom having a sole component as claimed in any one of claims 8 to 11.

13. A method of manufacturing a reinforced and contoured footwear sole component including the steps of: forming a footwear sole component with a rear section, said rear section being of substantially uncontoured formation along its length and having upper and lower component surfaces; forming a reinforcing shank having an elongated strip-like web portion of a length and width adapted to extend generally longitudinally of a zone intermediate in the width of said rear section, and a pair of laterally spaced reinforcing flanges extending lengthwise of said web portion; said web portion being of substantially uncontoured formation along its length and having opposed inner and outer web faces and longitudinally extending opposite side edges; both said reinforcing flanges projecting from said inner web face at substantially right angles to said web portion with each said reinforcing flange extending along a separate one of said side edges so that said web portion extends between said reinforcing flanges, connecting said shank directly to said rear section by driving the longitudinal free edges of the reinforcing flanges into said rear

* C L M S *

section material through the intermediate zone of one of said component surfaces so that said reinforcing flanges are embedded in said rear section material and said inner webface is in face-to-face relationship with the intermediate zone of said one component surface; and lengthwise contour deforming said shank together with said rear section in a direction at substantially right angles to said web portion to a desired contour; said shank being such as to enable said embedded and contoured shank to hold the rear section in the desired contour and resist deformation thereof during use of the sole component in an article of footwear.

14. A method as claimed in claim 13 wherein said web portion is so formed that it is curved across its width with said outer web face being of convex curvature and said inner web face being of concave curvature.

15. A method as claimed in claim 13 or 14, wherein said web portion is formed of a width adapted to extend across only a minor part of the width of said rear section.

16. A method as claimed in any one of claims 13 to 15, wherein said shank is formed so that said side edges are substantially parallel and said web portion is continuous throughout its length and width.

17. A method as claimed in any one of claims 13 to 16, wherein said free edges are of sharpened formation to facilitate driving into said rear section material.

18. A method as claimed in claim 17, wherein said shank is formed so that each said reinforcing flange has an inner flange face and an outer flange face, said sharpened formation being provided by each outer flange face having a bevelled surface extending along its associated reinforcing flange and tapering to its associated free edge; said shank being connected to said rear section so that said inner flange faces extend substantially at right angles from said inner web face and in such a manner as to converge towards each other away from said inner web face.

19. A method as claimed in any one of claims 13 to 18, wherein supplementary anchoring means additional to said reinforcing flanges are used to anchor said shank blank to said rear section.

20. A method as claimed in any one of claims 13 to 19, in which the sole component is an innersole component.

21. A reinforcing shank for a footwear sole component substantially as hereinbefore described with reference to Figs. 1 and 2 of the accompanying drawings.

22. A reinforced footwear sole component substantially as hereinbefore described with reference to Figs. 3, 4 and 5 of the accompanying drawing.

23. An article of footwear substantially as hereinbefore described with reference to ponent substantially as hereinbefore des- Figs. 6 and 7 of the accompanying drawing.

24. A method of manufacturing a reinforced and contoured footwear sole comcribed with reference to the accompanying drawings.

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