A stitch-down shoe and a method for making the same are provided. The method includes: imparting a toe cap shape to an upper; reserving a width along a lower edge of the upper as a folded-out edge according to the toe cap shape; fixedly attaching a welt along a periphery of a midsole sheet so as to form a midsole; bonding and stitching the folded-out edge flush to a periphery of the midsole so as to form a shoe body; steaming the shoe body until softened, and putting a last into the shoe body for shaping; removing the last; bonding an outsole; performing fine edge-abrading; and finishing. The midsole sheet is made of a non-woven material and the welt, of leather. The width of the folded-out edge is precisely controllable. The resultant stitch-down shoe is economical in material, keeps the upper smooth, has nice curvature, and feels soft when worn.
STITCH-DOWN SHOE AND METHOD FOR MAKING THE SAME

BACKGROUND OF THE INVENTION

[0001] 1. Technical Field

[0002] The present invention relates to stitch-down shoes and a method for making the same. More particularly, the present invention relates to a method for making a stitch-down shoe by lasting.

[0003] 2. Description of Related Art

[0004] Stitch-down shoes, as the name explains, have a shoe structure in which the uppers of the shoes have their lower edges folded outward and then bonded and stitched to their respective soles. This type of shoes feature a flexible structure and wearing comfort. Consequently, the majority of casual shoes are of the stitch-down construction.

[0005] The making of a stitch-down shoe typically involves a wrapping process, which includes: mounting an upper around a last and tacking a midsole to a bottom of the last; wrapping a front portion of the upper, pressing a toe cap portion of the upper, pulling lateral portions of the upper, wrapping a rear portion of the upper, and pressing the rear portion of the upper, in that order, along contours of the last and of the midsole, so as to fold a lower edge of the upper outward and bond the folded-out lower edge to the midsole made entirely of leather; trimming an excess of the folded-out lower edge of the upper and a periphery of the midsole and performing rough edge-abrading; stitching the folded-out lower edge of the upper securely to the midsole; bonding and pressing an outsole in place; removing the last; performing fine edge-abrading; and finishing.

[0006] However, the wrapping process described above has the following problems:

[0007] With regard to the process itself, now that the upper and the midsole are combined by wrapping so as to form a shoe shape, it is important that each step be properly performed while wrapping the front portion of the upper, pressing the toe cap portion of the upper, pulling the lateral portions of the upper, wrapping the rear portion of the upper, and pressing the rear portion of the upper. Otherwise, the upper is likely to wrinkle or be torn up. Besides, during the wrapping process, it is impossible to secure an insole, a toe puff, and a counter (heel lining) of the shoe in position so that these three parts are easily exposed. Since the exposed portions are not adhesive, the upper and the sole of the finished shoe may readily separate from each other.

[0008] Regarding the use of material, it is required in the wrapping process to set aside a sufficient width along the lower edge of the upper. However, after the lower edge of the upper is bonded to the midsole, a portion of the lower edge that exceeds the periphery of the midsole must be trimmed off, followed by rough abrading and fine abrading. Thus, the wrapping process makes very uneconomic use of material. Moreover, the midsole is made of a whole piece of leather and must have a certain thickness (about 3 mm) to serve as a basis of the shoe shape. As a result, there is no room for lowering the material cost.

[0009] As to the shoe shape, improper wrapping may cause certain aspects of the formed shoe (such as the toe spring) to vary so that a rigorously consistent shoe shape cannot be obtained.

[0010] With respect to wearing comfort, the thickness of the midsole tends to stiffen the bottom of the shoe and compromise the flexibility and wearing comfort of the stitch-down shoe.

BRIEF SUMMARY OF THE INVENTION

[0011] In view of the aforesaid problems of the wrapping process, the present invention aims firstly to solve the problem that the wrapping process may result in a wrinkled or torn upper, or lead to inconsistent shoe shapes.

[0012] Secondly, the present invention aims to solve the problem that the wrapping process involves excessive consumption of the upper and midsole material and thus incurs high material cost.

[0013] Lastly, the present invention aims to solve the problem that the wrapping process may have adverse effects on the flexibility and wearing comfort of stitch-down shoes.

[0014] In order to solve these problems, the present invention provides a method for making a stitch-down shoe, wherein the method comprises the steps of: imparting a toe cap shape to an upper, reserving a width along a lower edge of the upper as a folded-out edge according to the toe cap shape; fixedly attaching a welt along a periphery of a midsole sheet so as to form a midsole; bonding and stitching the folded-out edge of the upper flush to a periphery of the midsole so as to form a shoe body; steaming the shoe body until the shoe body is softened, and putting a last into the shoe body to form a shoe shape; removing the last after the shoe body is cooled down; bonding an outsole; performing fine edge-abrading; and finishing.

[0015] According to the aforesaid method of the present invention for making the stitch-down shoe, the upper is stitched to the midsole to form the shoe body, and the last is put into the shoe body to form the shoe shape after the shoe body is softened by steaming. Consequently, smoothness of the upper is maintained while a consistent toe spring is achieved, thereby solving such problems of the conventional stitch-down shoes as unsmooth uppers and inconsistent toe springs. Furthermore, as the shoe shape is formed by lasting, there is no need to consider the positioning of the insole, toe puff, and counter of the shoe. Thus, the problem of having these parts exposed during the wrapping process is prevented, and separation of the upper and sole of the finished shoe due to the fact that the exposed portions are not adhesive is also avoided. It has been experimentally proven that the shoe made by the method of the present invention is capable of withstanding 125,000 times of bending without its upper separating from the sole.

[0016] According to the aforesaid method of the present invention for making the stitch-down shoe, the toe cap shape is imparted to the upper prior to determination of an appropriate width of the folded-out edge. Therefore, the method of the present invention provides an improvement over the conventional wrapping process by eliminating the need for setting aside an excessive length of leather material of the upper before the toe cap shape is formed, and thus preventing the leather material from being cut off and wasted.

[0017] According to the aforesaid method of the present invention for making the stitch-down shoe, the midsole is a composite midsole comprising the midsole sheet, which is made of a non-woven material, and the welt, which is made of leather. Compared with a midsole made entirely of leather, the midsole of the present invention is lightweight, soft, and economical in the use of material. In addition, the stitch-down
shoe made of this composite midsole is more easily bent and more suitable for long-term wear than a stitch-down shoe made by wrapping a whole leather midsole.

[0018] According to the aforesaid method of the present invention for making the stitch-down shoe, the shoe body is placed on a seat when the last is put into the shoe body to form the shoe shape. The seat is provided with an anti-slip device on a surface of the seat that is in contact with the midsole at the bottom of the shoe body. With the anti-slip device, the last can be pushed without the shoe body being moved by the force pushing the last, so that a shoe shape with a good toe spring is achievable by pushing the last. The anti-slip device on the surface of the seat is a rough surface, a plurality of distributed nail-shape objects, or a plurality of distributed projections protruding outward from the seat.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0019] The invention as well as a preferred mode of use, further objectives and advantages thereof will be best understood by referring to the following detailed description of an illustrative embodiment in conjunction with the accompanying drawings, wherein:

[0020] FIG. 1 is a front view of a stitch-down shoe according to the present invention;

[0021] FIG. 2 is a bottom view of a midsole of the stitch-down shoe according to the present invention;

[0022] FIG. 3 is a partial sectional view taken along line B-B of FIG. 2, showing structure of the midsole;

[0023] FIG. 4 is a partial sectional view taken along line A-A of FIG. 1, showing structure of the stitch-down shoe and an outer sole bonded thereto;

[0024] FIG. 5 is another partial sectional view taken along line A-A of FIG. 1, showing structure of the stitch-down shoe and an outer sole bonded thereto;

[0025] FIG. 6 shows a seat for use in a last pushing operation for shaping the stitch-down shoe according to the present invention; and

[0026] FIGS. 7 and 8 are schematic drawings showing surface structures of the seat for use in the last pushing operation and how these structures work with the sole.

DETAILED DESCRIPTION OF THE INVENTION

[0027] The preferred mode of implementation and features of the present invention are herein illustrated by reference to at least one embodiment.

[0028] Referring to FIG. 1, a stitch-down shoe 1 according to a preferred embodiment of the present invention comprises an upper 10. The upper 10 has a lower edge folded outward to form a folded-out edge 11. The folded-out edge 11 has a bottom stitched with a midsole 20. The midsole 20 has a bottom bonded with an outer sole 30.

[0029] As shown in FIGS. 2 and 3, the midsole 20 further comprises a midsole sheet 21 and a welt 22 fixedly attached along a periphery of the midsole sheet 21. The welt 22 has a step-like cross section that forms a recess 221. The recess 221 serves as a connecting portion for being fixedly attached to the periphery of the midsole sheet 21. The welt 22 is fixedly attached to the midsole sheet 21 by bonding only, by stitching only, or by bonding and then stitching. In the present invention, the welt 22 is bonded and then stitched to the midsole sheet 21 so as to be fixedly attached thereto.

[0030] As mentioned above, the midsole 20 is made up by fixedly attaching the welt 22 along the periphery of midsole sheet 21. In the preferred embodiment of the present invention, the midsole sheet 21 is made of a non-woven material so as to be softer and more breathable and require a lower material cost than a whole leather midsole. On the other hand, the welt 22 stitched along the periphery of the midsole sheet 21 is made of leather. Consequently, after the shoe is formed, the exposed part of the midsole 20 is the leather welt 22, which has the same texture as the conventional whole leather midsole. However, the midsole 20 of the present invention is made of composite materials and incurs a lower cost than the whole leather midsole. Moreover, when the midsole 20 made of the composite materials is used to form a stitch-down shoe, the leather welt 22, which is coupled only on the periphery of the midsole sheet 21, is not so stiff as the whole leather midsole so that the resultant stitch-down shoe has an easily bent bottom and is suitable for long-term wear.

[0031] Referring to FIGS. 4, 5, and 6, in addition to the aforesaid structural difference of the midsole, the present invention proposes a shoemaking method different from the conventional wrapping approach. The method for making a stitch-down shoe according to the present invention comprises the following steps.

[0032] To begin with, the upper 10 is imparted with the toe cap shape of the stitch-down shoe. Then, a width along the lower edge of the upper 10 is reserved according to the toe cap shape as the folded-out edge 11. Following that, the aforesaid welt 22 is bonded and then stitched along the periphery of the midsole sheet 21, so that the welt 22 is fixedly attached to the midsole sheet 21 to form the midsole 20. The folded-out edge 11 of the upper 10 is bonded and stitched flush to the periphery of the midsole 20 so as to form a semi-finished shoe body 1’, as shown in FIG. 4. The shoe body 1’ is steamed until softened, and a last 40 is put into the shoe body 1’. The last 40 is pushed to form the shoe shape, as shown in FIG. 6. The last 40 is removed when the shoe body 1’ is cooled down. Afterward, the outer sole is bonded in place. Finally, the folded-out edge 11, an outer edge of the midsole 20, and an outer edge of the outer sole are abraded until flush and then finished, so as to produce the stitch-down shoe 1 shown in FIG. 5.

[0033] Referring to FIGS. 6 and 7, according to the aforesaid method of the present invention for making the stitch-down shoe, the shoe body of the stitch-down shoe 1 is placed on a seat 50 when the last 40 is put into the shoe body to form the shoe shape, as shown in FIG. 6. The seat 50 has a surface 51 which is in contact with the midsole 20 at a bottom of the shoe body and provided with an anti-slip device 52. Thanks to the anti-slip device 52, when the last 40 is pushed inside the shoe body of the stitch-down shoe 1 to form the shoe shape, the shoe body will not be moved by the force pushing the last 40. Thus, an ideal shoe shape, particularly a toe cap having a nice curvature, is obtained by pushing the last 40. The anti-slip device 52 on the surface 51 of the seat 50 is a rough surface or a plurality of distributed nail-like objects. Alternatively, as shown in FIG. 8, a seat 50a is provided which has an upper surface bonded with a metal skin 51a. The metal skin 51a is formed with a plurality of distributed projections 52a protruding from a bottom surface of the metal skin 51a toward a top surface of the metal skin 51a.

[0034] In the conventional wrapping approach, since the toe cap shape is yet to be formed, it is required to reserve a sufficient amount of leather material of the upper for wrapping and thus forming the shoe shape. However, the amount
of leather material reserved depends mostly on experience. As a result, a considerable portion of the reserved leather material is cut off and wasted after the shoe body is formed. In contrast, according to the method of the present invention for making the stitch-down shoe, the upper is imparted with the toe cap shape of the stitch-down shoe before the width of the folded-out edge of the upper is determined according to the toe cap shape. Now that the toe cap shape is set, it is necessary only to reserve an edge width of the material of the upper that is no more than enough for being folded outward. Consequently, the width of the folded-out edge can be precisely controlled (at about 10 mm in the present invention) without wasting the leather material of the upper.

Furthermore, in the conventional wrapping approach, the shoe shape is formed by wrapping the upper around the contour of the last. As a result, uneven lines tend to occur on the upper, and the toe spring may be inconsistent due to such factors as the wrapping force and tension control. In comparison, according to the method of the present invention for making the stitch-down shoe, the upper and the midsole are stitched together to form the shoe body, and the shoe body is steamed until softened before the last is put into the shoe body and pushed to form the shoe shape. Hence, the upper remains smooth while the toe spring is consistent.

As mentioned above, it is required in the conventional wrapping approach to reserve an excessive amount of leather material at the lower edge of the upper. However, after being bonded and stitched to the midsole, the leather material must be trimmed and roughly abraded so as to be in line with the periphery of the midsole. Besides, the different soles must be finely abraded after the outsole is bonded in place. In short, the conventional wrapping approach involves a complicated procedure. On the other hand, according to the method of the present invention for making the stitch-down shoe, the reserved folded-out edge is directly bonded and stitched along the periphery of the midsole such that a rim of the folded-out edge is flush with a rim of the midsole, and no rough abrading is required. Fine edge-abrading and finishing are performed only after the outsole is bonded in place. Hence, the method according to the present invention includes fewer steps than the conventional wrapping approach.

The above embodiment is provided to demonstrate the preferred mode of implementation of the present invention but not intended to limit the scope of the present invention. It is possible for a person of ordinary skill in the art who has reviewed the technical contents disclosed herein to make changes or modifications that do not depart from the spirit of the present invention. Therefore, the scope of the present invention is defined only by the appended claims.

1. A stitch-down shoe, comprising an upper having a lower edge folded outward to form a folded-out edge, the folded-out edge having a bottom stitched with a midsole, the midsole having a bottom bonded with an outsole, the stitch-down shoe being characterized in that:
   the midsole comprises a midsole sheet and a welt fixedly attached along a periphery of the midsole sheet.
   2. The stitch-down shoe as claimed in claim 1, wherein the welt has a step-like cross section forming a recess for being fixedly attached to the periphery of the midsole sheet.
   3. The stitch-down shoe as claimed in claim 1, wherein the midsole comprises the midsole sheet made of a non-woven material and the welt made of leather.
   4. A method for making the stitch-down shoe of claim 1, comprising steps of:
      imparting a toe cap shape to the upper;
      reserving a width along the lower edge of the upper as the folded-out edge according to the toe cap shape;
      fixedly attaching the welt along the periphery of the midsole sheet so as to form the midsole;
      bonding and stitching the folded-out edge of the upper flush to a periphery of the midsole so as to form a shoe body;
      steaming the shoe body until the shoe body is softened, and putting a last into the shoe body to form a shoe shape;
      removing the last after the shoe body is cooled down;
      bonding the outsole;
      performing fine edge-abrading; and finishing.
   5. The method for making the stitch-down shoe as claimed in claim 4, wherein the welt is bonded and stitched along the periphery of the midsole sheet.
   6. The method for making the stitch-down shoe as claimed in claim 4, wherein the shoe body is placed on a seat when the last is put into the shoe body to form the shoe shape, and the seat is provided with an anti-slip device on a surface of the seat that is in contact with a bottom of the shoe body.
   7. The method for making the stitch-down shoe as claimed in claim 6, wherein the anti-slip device on the surface of the seat is a rough surface.
   8. The method for making the stitch-down shoe as claimed in claim 6, wherein the anti-slip device on the surface of the seat is a plurality of distributed nail-like objects.
   9. The method for making the stitch-down shoe as claimed in claim 6, wherein the anti-slip device on the surface of the seat is a metal skin bonded to the surface of the seat, and the metal skin is formed with a plurality of distributed projections protruding from a bottom surface of the metal skin toward a top surface of the metal skin.

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