

Sept. 30, 1947.

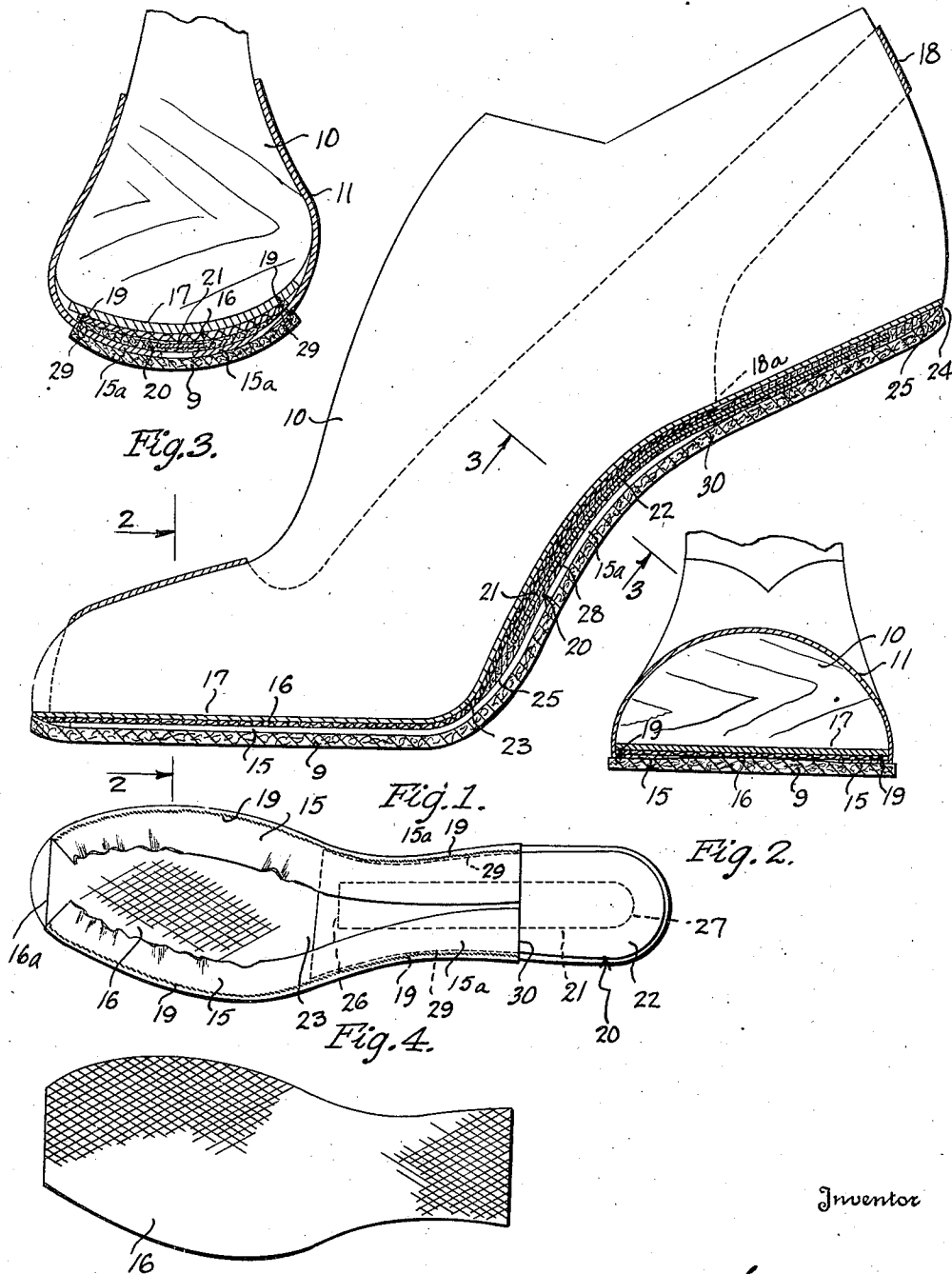
C. G. FORSLUND

2,428,210

CEMENTED SHOE AND METHOD OF MAKING SAME

Filed Dec. 10, 1946

2 Sheets-Sheet 1



Inventor

Fig. 5.

By

Carl G. Forslund

Mooster & Davis Attorneys

Sept. 30, 1947.

C. G. FORSLUND

2,428,210

CEMENTED SHOE AND METHOD OF MAKING SAME

Filed Dec. 10, 1946

2 Sheets-Sheet 2

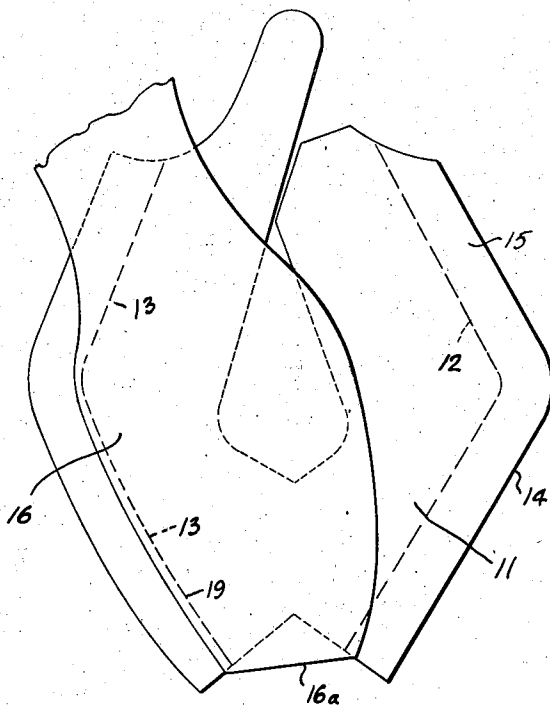


Fig. 6.

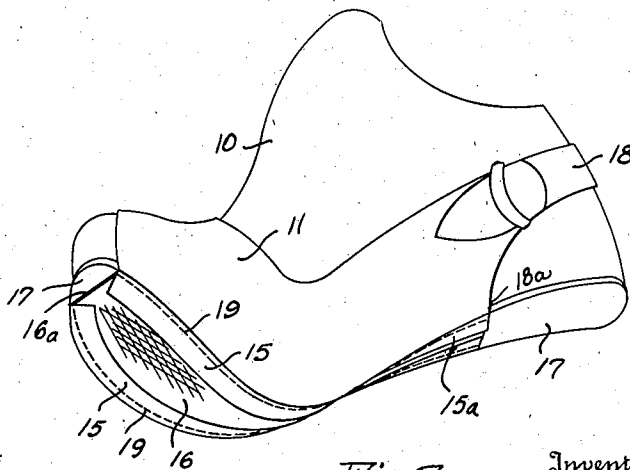


Fig. 7.

Inventor

Carl G. Forslund

By

Mooster & Davis Attorneys.

UNITED STATES PATENT OFFICE

2,428,210

CEMENTED SHOE AND METHOD OF
MAKING SAME

Carl G. Forslund, Norwalk, Conn.

Application December 10, 1946, Serial No. 715,186

6 Claims. (Cl. 36—19.5)

1

This invention relates to a shoe and method of making it, and has for an object to provide an improved method of making shoes in which it is not necessary to tack the upper to the last in lasting.

Another object is to provide a construction and method in which the upper is stitched to a lasting stay in such a manner that when drawn onto the last, all the necessary drafts in lasting are secured and the upper conforms perfectly to the last without tacking the sides of the upper to the under side of the last, as is usual in the ordinary operation.

A further object is to provide a construction and method in which the outer sole is cemented directly through a lasting stay stitched to the upper, and in which the mesh of the lasting stay is sufficiently open to permit the cement bond to be continuous from the insole to the outer sole, so the outer sole is cemented directly to the insole, and still the advantages of a lasting stay stitched to the upper in such a way as to do away with the necessity of tacking the upper to the last, are secured.

A still further object is to provide a construction and method by which a shank comprising a metal piece in a molded fiber may be more effectively and easily lasted under the arch of the shoe.

With the foregoing and other objects in view, I have devised the construction illustrated in the accompanying drawing forming a part of this specification. It is, however, to be understood the invention is not limited to the specific details of construction and arrangement shown, but may embody various changes and modifications within the scope of the invention.

In these drawings:

Fig. 1 is a side elevation of a last with my improved shoe lasted thereon, the shoe, however, being shown in section;

Figs. 2 and 3 are transverse sections substantially on lines 2—2 and 3—3 respectively, of Fig. 1;

Fig. 4 is a plan view on a reduced scale of the shoe on the last before applying the outer sole;

Fig. 5 is a plan view of the lasting stay;

Fig. 6 is a development of the upper showing how the lasting stay is stitched to it, and

Fig. 7 is a perspective view of the shoe on the last, before applying the outer sole.

In the drawings, 10 represents the usual wooden last on which the shoe is lasted. The last is shelled to secure exactly the form thereof in the usual manner, and then the upper 11, a development of which is shown in Fig. 6, is cut to the

2

proper size and shape, from any suitable material, as flexible cloth or leather, and this is marked, as indicated at 12 and 13, on both sides, to indicate the desired line of stitching. In the present case these prearranged marks are spaced inwardly from the outer edges 14 to allow the proper overlap or lasting allowance 15. This upper is then laid flat and a flexible fabric lasting stay 16 is accurately stitched to it, first on one side, as at 13, on a flat sewing machine, and then on the other side along the marked line 12. The lasting stay is preferably cut off square at the toe, as indicated at 16a. This lasting stay is of a woven flexible fabric having fine mesh. That is, the weave is sufficiently open to form a fine open mesh, which will permit liquid cement employed later, as will presently be described, to flow through the mesh so that there is a continuous layer of the cement on both sides of this fabric, which are joined through the fabric to form a unitary solid layer of cement, so that an outer sole can be directly cemented to an insole through this fabric lasting stay, by a continuous and unitary layer of cement, to form a direct continuous bond right through this lasting stay between the insole and the outer sole, as will presently be described.

In lasting, a covered insole 17 is first applied to the under side of the last to follow the surface from toe to heel, and is tacked to the last at the toe and heel only. Then the upper 11 with the lasting stay 16 stitched to it is slipped over the last from the toe end, with first a light coating of cement applied to the inside of the lasting stay 16, and the upper and the attached lasting stay are slipped or drawn onto the last while the cement is still wet. The upper is drawn snug about the last, and the strap 18 over the heel is drawn up tight holding the upper snugly against and tightly fitting the surface of the last at all points and with the lasting stay 16 snugly against the insole 17. The lines of stitching 12 and 13 were so figured out and located that when the upper and this lasting stay are drawn onto the last, these lines of stitching, indicated at 19 in Fig. 4, lie just under the edges of the last. That is, they are located on the under side of the last and spaced inwardly from the outer edges thereof, preferably about $\frac{1}{16}$ to $\frac{1}{8}$ of an inch. By thus locating the lines of stitching between the lasting stay and the upper, inwardly of the side edges of the last, in the operation of drawing the upper and lasting stay onto the last all the necessary drafts of lasting are secured and the upper conforms perfectly to the last, without tacking the

sides of the upper to the under side of the last, as in the usual lasting operation.

A coating of cement is applied to the inside of the overlap or lasting allowance 15 of the upper, and these are pressed down or lasted against the lasting stay. Then after roughening the outer surfaces of these overlaps and applying another coating of cement to them and the exposed surfaces of the lasting stay, an outer sole 9 is applied to them, after also applying a coating of cement to the inner surface of the outer sole. Because of the fine open mesh construction of the fabric of the lasting stay 16, this forms a continuous solid layer of cement from the surface of the insole to the inner surface of the outer sole, right through the fabric mesh of the lasting stay, so the cement forms a continuous bond through the lasting stay between the insole and the outer sole. The preferred type of cement to be used is what is known as the "Upagrip" type, which is a flexible type of rubber cement and never gets rigid or hard, but remains flexible, and in this construction the cement in the mesh of the lasting stay and between the inner and outer soles will form a rubber cushion between these inner and outer soles. This lasting stay in this construction and method is provided only to hold the shoe on the last without tacking the upper to the last, and is not a sock lining. It is possible in this method to put the lines of stitching 19 on the under side of the last and spaced inwardly from the outer edges of the last, because there is a cushion formed by this construction, and the stitching does not form a raised surface on the inner side of the insole. The lasting stay in the open heel type of shoe shown is not carried back over the shoe but terminates at the front of the heel or point 30, or that is, at the rear edge 18a of the strap 18.

This construction and method also facilitates the lasting of a shank under the arch, and to do this in such a way as to get a rounded construction or body for the sole to be applied to, as is most desirable. This shank 20 comprises a flat metal piece 21 enclosed in a molded fiber 22, the shank extending from the break 23 of the last to the rear end 24 of the heel, and being tapered or rounded off, as shown at 25, so as to run out to a thin edge and not form an undue thickness between the inner and outer soles. The metal insert 21, however, is not run to the ends of the shank, but terminates at 26, a short distance from the break and at 27 in about the center of the heel, or a little farther back. At the intermediate part 28 under the arch it may be thickened and rounded out, as shown in Fig. 3, to give the proper shape and rounded appearance for the outer sole. The side edges 29 taper to a thin edge so as not to add thickness at the line of stitching of the upper to the lasting stay. It is lasted by applying cement to the outer surface of the lasting stay 16 on the arch and heel portions of the shoe, and then after applying a similar coating to the inner surface of this shank and the inner portion of the overlap 15a of the upper, under this arch, these overlaps are folded over onto the shank, as shown in Fig. 4, and preferably these overlaps are made sufficiently wide to substantially come together at their free edges on the under side of the shank to give a rounded body for the outer sole to be applied to, and to insure the shank is firmly locked by being firmly lasted under the upper. The thin side edges 29 preferably extend outwardly to about the lines of stitching 19. Then the outer sole is applied as previously de-

scribed. This facilitates the lasting of the shank and permits the use of a rounded properly shaped shank which is securely held in proper position by the overlap 15a of the upper, and as will be seen in Fig. 4, these are not carried back over the heel but terminate at 30 at the forward edge thereof. The shoe is finished with any suitable type of heel, or it can be of the wedge type if preferred.

It will be seen from the above this construction and method permits lasting of the shoe without tacking the upper to the under side of the last, and that inner and outer soles may be used which are bonded together directly by a continuous layer of the flexible cement through the fine open mesh of the lasting stay. This permits the location of the lines of stitching under the last and spaced inwardly from the outer edges thereof, as it prevents the stitches from forming a rough undesirable surface on the inner side of the shoe, and also provides a flexible, comfortable shoe and one that is not too stiff. It also facilitates the lasting of the shank under the arch without tacking operations, and permits the use of an arch with a desirable thickened and rounded shape of the curved intermediate portion of the arch.

Having thus set forth the nature of my invention, I claim:

1. In a shoe, an insole, a lasting stay of flexible, fine mesh woven fabric, an upper having its lower portion stitched to said stay along its opposite edges with the lines of stitching under and spaced inwardly from the edges of the insole, the edge portions of the upper being folded over and cemented to the under side of the insole, and an outer sole cemented to the under side of the lasting stay, the mesh of this stay being sufficiently open to permit the cement to penetrate through it to form a continuous bond by the cement through the lasting stay between the inner sole and the outer sole.

2. In a shoe, an insole, a lasting stay of flexible, fine mesh fabric, an upper having its lower portion stitched to said stay along its opposite edges with the line of stitching spaced inwardly of the edges of the upper to leave a lasting allowance, said lines of stitching being also located under the insole and spaced inwardly from the outer edges thereof, said lasting allowances being folded over onto and cemented to the lasting stay, and an outer sole cemented by flexible cement to the lasting stay and folded over portions of the upper, the mesh of this stay being sufficiently open to permit the cement to penetrate through it to form a continuous bond by a unitary layer of the cement through the lasting stay between the inner sole and the outer sole.

3. In a shoe, an insole, a lasting stay of flexible, fine mesh fabric, an upper having its lower portion stitched to said stay along its opposite edges with the line of stitching spaced inwardly of the edges of the upper to leave a lasting allowance, said lines of stitching being also located under the insole and spaced inwardly from the outer edges thereof, a shank comprising a metal strip enclosed in a molded fibre cemented to the insole under the arch and extending from the break under the arch across the heel, the shank being transversely curved on its outer surface and tapering to thin edges along its opposite sides lying closely adjacent the lines of stitching between the upper and the lasting stay, said lasting allowances being folded over and cemented to the lasting stay and the shank, and an outer sole cemented by flexible cement to the lasting stay,

5

the folded over lasting allowances and the shank.

4. A method of making shoes, which comprises cutting an upper from suitable flexible material to shape, stitching a lasting stay of fine open mesh fabric to the upper along prearranged lines spaced inwardly from the lower side edges of the upper, tacking an insole to the under side of a last at the toe and heel, placing a coating of flexible cement on the under surface of the insole and inner surface of the lasting stay, drawing the upper and lasting stay onto the last over the toe while the cement is still wet, applying more cement to the inner surfaces of the portions of the upper outwardly of the lines of stitching and folding them down onto the lasting stay, and cementing an outer sole to the insole, lasting stay and folded over portions of the upper by a layer of the flexible cement applied so as to form with the cement on the inner side of the lasting stay a continuous bond by a continuous unitary layer of the cement from the insole through the mesh of the lasting stay to the outer sole.

5. A method of making shoes, which comprises cutting an upper from suitable flexible material to shape, stitching a lasting stay of fine open mesh fabric to the upper along prearranged lines spaced inwardly from the lower side edges of the upper leaving lasting allowances on the upper outwardly of the stitches and locating the lines of stitches so that when the upper and attached lasting stay are drawn onto a last they are located under and inwardly of the side edges of the last, tacking an insole to the under side of a last at the toe and heel, placing a coating of flexible cement on the under surface of the insole and inner surface of the lasting stay, drawing the upper and lasting stay onto the last over the toe while the cement is still wet and locating the lines of stitching under and spaced inwardly from the side edges

6

of the last, applying more of the flexible cement to the inner surfaces of the lasting allowances of the upper and folding them down onto the lasting stay, and cementing an outer sole to the insole, lasting stay and folded over lasting allowances by a layer of the flexible cement applied so as to form with the cement on the inner side of the lasting stay a continuous bond by a continuous unitary layer of the cement from the insole through the mesh of the lasting stay to the outer sole.

6. A method of making shoes, which comprises cutting an upper from suitable flexible material to shape, stitching a lasting stay of fine open mesh fabric to the upper along prearranged lines spaced inwardly from the lower side edges of the upper leaving lasting allowances on the upper outwardly of the stitches and locating the lines of stitches so that when the upper and attached lasting stay are drawn onto a last they are located under and inwardly of the side edges of the last, tacking an insole to the under side of a last at the toe and heel, placing a coating of flexible cement on the under surface of the insole and inner surface of the lasting stay, drawing the upper and lasting stay onto the last over the toe while the cement is still wet and locating the lines of stitching under and spaced inwardly from the side edges of the last, cementing a fibre shank with thin outer side edges under the arch from the break to the heel and with the side edges of the shank adjacent the lines of stitching, applying more cement to the under sides of the lasting allowances and folding them down onto the lasting stay and the shank, and cementing an outer sole to the insole lasting stay, folded over lasting allowances and the shank.

CARL G. FORSLUND.