Oct. 16, 1928. 1,687,529

P. W. VALENTINE

STITCHDOWN SHOE AND METHOD OF MAKING

Filed March 2, 1927

Fig. 1.

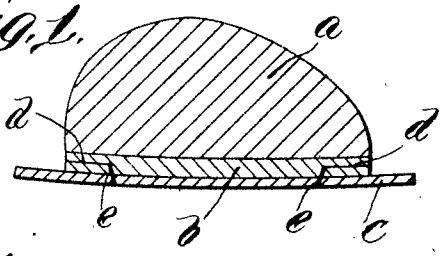


Fig. 2.

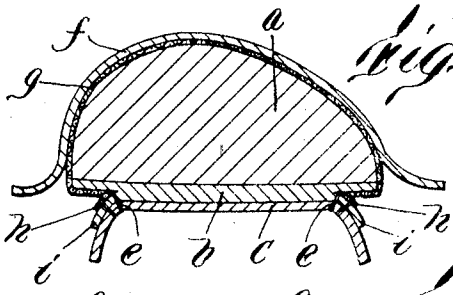


Fig. 3.

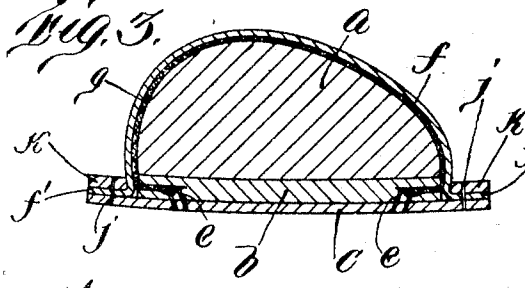


Fig. 4.

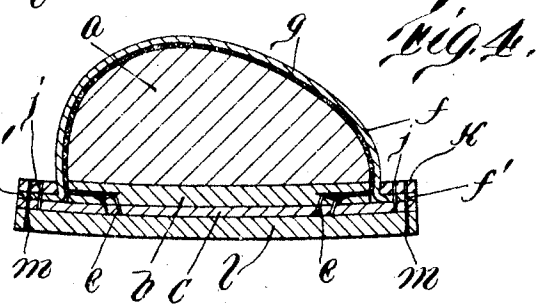


Fig. 5.

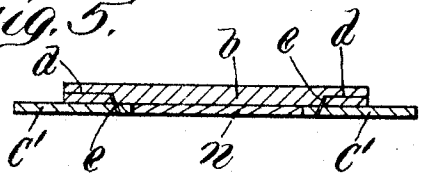


Fig. 6.

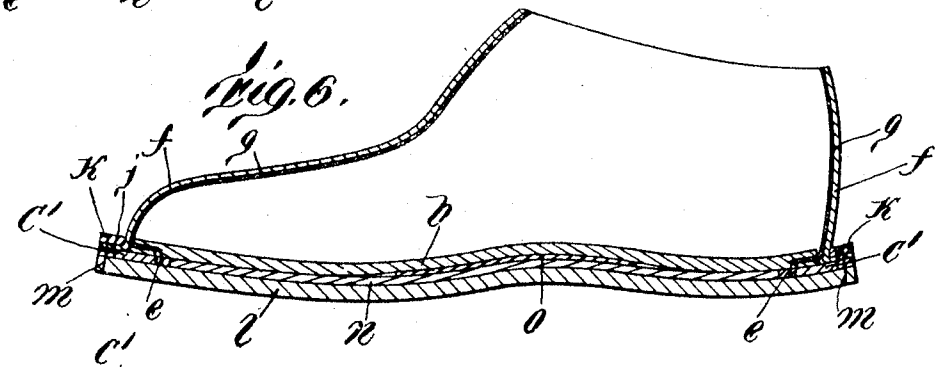
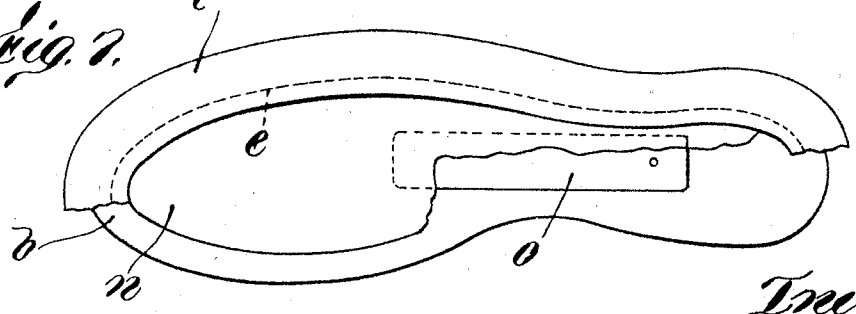


Fig. 7.



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UNITED STATES PATENT OFFICE.

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STITCHDOWN SHOE AND METHOD OF MAKING.

Application filed March 2, 1927. Serial No. 172,150.

The present invention relates to shoe making and has particular reference to the class of shoes known as "stitchdown", that is, shoes in which the bottom edges of the upper leather, or equivalent integument, (whether actually made of leather or some other material), are turned outward and stitched to the sole. It is particularly applicable to shoes in which the upper contains a lining. As so used, the object of the invention is to provide for the benefit of the art a method according to which the lining may be turned inward at its lower edge and secured to the innersole, or to both the innersole and a middle sole or doubler, while the upper leather is turned outward at its lower edge and independently secured to the middle sole or doubler. A further object is to build shoes of this class in such a manner that repairs may be effected after the outer sole has been worn out, by substituting a new outer sole, without risking loss of its previous shape by the upper or requiring the shoe to be relasted in order to restore its proper shape. Still another object is to provide a shoe of the stitchdown type having an arch support.

The manner in which these and other objects are accomplished and the new steps and features in which the present invention consists are explained in detail in the following specification with reference to the drawings.

In the drawings,—

Figs. 1, 2, 3 and 4 are cross sectional views of a last and the parts of the shoe thereon illustrating successive steps in the performance of the method, and the construction of the finished shoe, the product of such method, embodying the present invention;

Fig. 5 is a cross section of a connected innersole and middle sole or doubler containing a modified construction of middle sole;

Fig. 6 is a longitudinal section of a shoe constructed according to this invention and containing the modified form of doubler shown in Fig. 5, together with an arch support;

Fig. 7 is a bottom plan view of the shoe, prior to placement thereon of the outer sole, and showing parts of the shoe bottom as broken away to illustrate other parts which would otherwise be hidden.

Like reference characters designate the same parts wherever they occur in all the figures.

In practising the method in this invention, I first provide a connected innersole and middle sole or doubler, and apply them to the bottom of the last, with the innersole next to the last. The result of these steps is shown in Fig. 1 where *a* represents the last, *b* represents the innersole, and *c* represents the doubler or middle sole. The innersole conforms approximately in outlines and dimensions to the last bottom, and it is channeled inwardly from its edges at *d*. The middle sole or doubler has a similar outline to the innersole but is of larger area and projects therefrom at all sides, at least in the fore part of the shoe. It may also have the same character of outward projection in the heel part as well, although it is not a departure from the invention to have the fore part only of the doubler thus project, in which case the shoe upper at the heel part would be turned inward rather than outward. The means for attaching the innersole and doubler together consist preferably of stitches *e* which may be formed of thread by a sewing machine, or may be of other construction formed and placed by other means. Such stitches are laid in the channel *d* whereby they are covered by the upper flap of the channel and do not extend to that surface of the innersole which comes inside the shoe. The combined innersole and doubler are temporarily secured to the last bottom in ways already known or practised in the shoe making art, or in any other suitable way.

The upper, consisting of the upper leather or other outer integument *f* and a lining *g* of textile fabric or other suitable material, is placed on the last and pulled and stretched about the same as required to give it the desired smooth lasted shape. But before lasting the upper, the lower channel flap of the upper and the extension edge part of the doubler are bent outward, substantially as shown in Fig. 2, although whether to a greater or less degree than as there shown is immaterial. This turning back of the channel flap and doubler may be performed before or after the combined innersole and doubler structure have been attached to the last. The edge of the lining *f* is pulled inward and placed in the channel of the innersole, where it may be secured in one of a variety of ways; for instance, by adhesively connecting it to the inner flap or part of the innersole, or by a sewed seam *h* passing through the edge of the lining, the outer channel flap *i* of the innersole, and the doubler, or by staples or other forms of stitches

otherwise applied. Either type of uniting means may be used alone, or both may be used together; or both may be omitted and reliance placed in the frictional grip of the two flaps to retain the lining in the channel after the outer flap and doubler have been laid down and the outer sole laid on and secured.

The turned back edges of the doubler and innersole are next laid and flattened down, as shown in Fig. 3, and the upper leather is pulled over and lasted, with its edge part *f'* turned out and laid on the extension edge of the doubler. The upper leather and doubler are connected together by stitches *j* applied simultaneously with the lasting operation, or afterwards, if desired; and a welt strip *k* may be laid on the out-turned edge of the upper at the same time and secured by the same line of stitches *j*, if desired. Such welt strip serves as a reinforcement to hold the uniting stitches and gives a finished appearance to the shoe. It is not otherwise essential to the method or to the finished product.

Finally, the outer sole *l* is laid on the bottom of the shoe thus constructed and subjected to such leveling operation as may be necessary or desired to conform it to the last bottom, and then is secured by stitches *m* passing through it and also through the doubler, the outturned edge of the upper leather, and the welt *k*.

The middle sole or doubler *c*, heretofore described, consists of a single piece of leather, or other suitable material, continuous across its length and breadth. An equivalent structure may, however, be formed by a strip *c'* as shown in Figs. 5, 6 and 7, following the outline of the shoe bottom and having sufficient width to extend both under the innersole far enough to be united thereto as described, and also outward far enough for union with the outturned edge of the upper. Such strip may be originally straight, for which purpose ordinary Goodyear welting may be used, and bent into conformity with the outline of the shoe bottom, or it may be originally died out from suitable stock in a form more or less closely approximating such outline. Preferably, the space bounded by the inner edge of this strip is occupied by a filler piece *n*, or other filling material, such as is used in the manufacture of Goodyear welt shoes, the outer surface of which is approximately flush with the under surface of the doubler. The strip construction of doubler performs the same functions and acts in the same way as the one which is continuous from side to side of the shoe, and is equivalent thereto in all material respects. Hence the term "doubler", and likewise the term "middle sole", are used in this specification and in the following claims with a meaning wide enough to include both forms hereinabove described, except where a different meaning is clearly expressed by the context. The use of the strip form of doubler, with the separate interior filler piece, has the advantage in some cases of a saving in cost, as where cheaper material is used for the filler than for the strip doubler.

Preferably a shank stiffener or arch support *o* is applied to shoes made according to this invention, being placed between the innersole and doubler, when a continuous doubler is used, or between the innersole and filler when a strip doubler is used. It may, however, be located between the outer sole and the doubler or the filler, or simply between the inner and outer soles if no filler is used. In any case, however, it lies between the inner and outer soles.

Shoes made according to this invention conform accurately to the shape of the last and comfortably embrace and confine the wearer's foot, due to the fact that the lining is lasted inwardly and secured to the innersole. This construction also enables the shoe to conform more closely in shape and appearance to welt shoes than has been possible heretofore in the manufacture of stitchdown shoes, and preserves its shape. As the lining is tightly confined between the flaps of the channel and the innersole, it is retained even if not originally secured by stitches or adhesive, or if originally adhesively fastened and the adhesive has lost its strength. Then, owing to the union of the upper lining and innersole, and further to the union of the upper leather and doubler, which in turn is secured to the outer sole, the upper retains its previous form, without danger or even possibility of change in the position of its edges when the outer sole is removed for the purpose of substituting a new one in making repairs.

The term "upper leather" has been used in the foregoing specification to designate the outer part or layer of the upper and distinguish it from the lining. As so used, it conforms to common practice, but for the purposes of this specification is not intended to indicate any necessary limitation as to the material of which the upper is made. That is, it would not be a departure from the present invention if a shoe made otherwise in accordance therewith should have an upper consisting partly or wholly of other material than leather.

The terms "doubler" and "middle sole" are used synonymously in this specification. The material of which such doubler or middle sole is made may be anything having sufficient strength and durability to hold the upper in place prior to attachment of the outer sole, and during removal of the outer sole when repairs are made. It may be thin and inexpensive leather, or a substitute for leather, such as textile fabric, artificial leather, leather-board, etc.

What I claim and desire to secure by Letters Patent is:

1. A stitchdown shoe comprising an innersole and a doubler independently united to one another with the edge part of the doubler projecting, an upper and its lining, the innersole having a channel in its edge in which the edge of the lining is confined, the upper being turned out at its lower edge and secured to the projecting edge part of the doubler, and an outer sole independently secured to the doubler and upper.

2. A shoe comprising a channeled innersole, a doubler, fastening means uniting said innersole and doubler together and located in said channel and outside of the surface of the innersole which comes next to the wearer's foot, an upper lining having its edge turned inward and tucked into said channel, an upper having its edges turned out and attached to the doubler outside of the edges of the innersole, an outer sole, and independent means uniting said outer sole to the shoe constructed as hereinbefore set forth.

3. A shoe comprising a channeled innersole, a doubler, fastening means uniting said innersole and doubler together and located in said channel and outside of the surface of the innersole which comes next to the wearer's foot, an upper lining having its edge turned inward and tucked into said channel, an upper having its edges turned out and attached to the doubler outside of the edges of the innersole, an outer sole, independent means uniting said outer sole to the shoe constructed as hereinbefore set forth, and an arch support interposed between the inner and outer soles.

4. A shoe comprising an innersole, a doubler formed of a strip following the outline of said innersole, means securing said doubler to the innersole in a line following substantially the entire perimeter of the innersole at a relatively short distance inward from its edge, the strip doubler having sufficient width to extend from within the line of attaching means outward beyond the edges of the innersole, an upper lining having its edges turned inward and secured to the edge portion of the innersole beneath the top surface thereof, an upper having its edges turned outward and secured to the doubler outside of the edges of the innersole, and an outer sole secured to the shoe independently of the innersole and upper lining.

5. A shoe comprising an innersole, a strip doubler secured to said innersole adjacent to the edges thereof and projecting beyond such edges, an upper secured to said doubler, an outer sole secured to the doubler, and an arch support located between the inner and outer soles in the space enclosed by the strip doubler.

6. The method of making stitchdown shoes which consists in channeling an innersole at its edges, uniting a doubler to said innersole and laying the uniting stitches in the channel thereof, lasting an upper and an upper lining with placement of the lining in said channel, laying the channel flap against the edge part of the lining so placed, turning out and stitching the edge part of the upper proper to the doubler outside of the edges of the innersole, and applying an outer sole.

In testimony whereof I have affixed my signature.

PERCY W. VALENTINE.