W. J. DREY.

SHOE.

APPLICATION FILED DEC. 13, 1910.

1,068,867. Patented July 29, 1913.

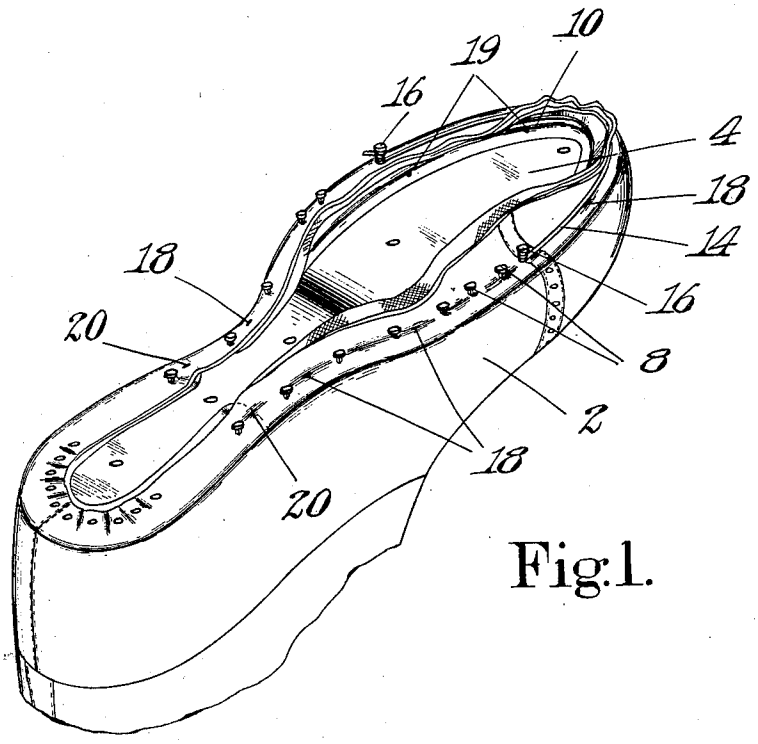


Fig. 1.

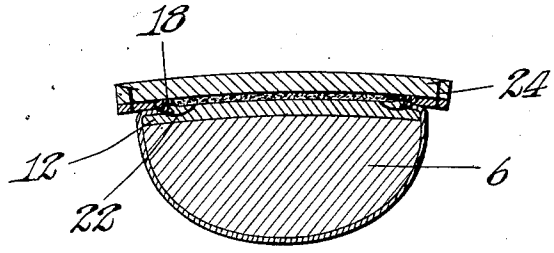


Fig. 2.

WITNESSES.

Elizabeth C. Coupe

Blanche Hargraves.

INVENTOR.

Wilfred J. Drey

By his Attorney,

Nelson W. Howard

UNITED STATES PATENT OFFICE.

WILFRED J. DREY, OF CATAWISSA, PENNSYLVANIA, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SHOE.

1,068,867. Specification of Letters Patent. Patented July 29, 1913.

Application filed December 13, 1910. Serial No. 597,054.

To all whom it may concern:

Be it known that I, WILFRED J. DREY, a citizen of the United States, residing at Catawissa, in the county of Columbia and State of Pennsylvania, have invented certain Improvements in Shoes, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to shoes and is herein shown as embodied in a shoe of the type known to the trade as "Goodyear welt shoes", although it will be understood that some features of the invention can be embodied to advantage in shoes of other types.

An object of the invention is to provide an improved shoe which will be stronger, tighter, and more durable than shoes of the better grades now known, while maintaining all of the desirable characteristics of such shoes, particularly as to fit and appearance, and which, furthermore, can be made more easily and at a lower cost.

In the manufacture of welt shoes, the upper is usually lasted over the edge of the insole and secured in lasted position by tacks driven into the insole, preferably in the angle of union between the feather of the insole and the shoulder or channel lip against which the welt is sewed. The upper is then allowed to set to lasted shape after which the welt is attached to the upper and insole. Before the welt attaching operation, however, some, or all, of the lasting tacks are removed to prevent their interfering too much with the needle of the welt attaching machine.

When all of the lasting tacks are removed, the usual practice is to insert a few lighter tacks to hold the upper in position for the welt attaching operation. The tacks which remain in the shoe during the welt attaching operation are removed after this operation, provided they have not been broken off by the needle of the welt attaching machine. It frequently happens, however, that the heads of some of the tacks are cut off by the needle during the welt attaching operation, and the points of these tacks are thus left in the shoe after the usual tack pulling operation and frequently escape detection until the shoe is placed upon the foot of the wearer. Moreover the tacks which hold the upper in position for the welt attaching operation interfere somewhat with the proper attachment of the welt and with the formation of a tight, close inseam uniting the welt, upper and insole.

An important object of the invention is to eliminate the difficulties encountered in obtaining a tight inseam and at the same time to do away with the danger of leaving points of broken-off tacks projecting into the inside of the finished shoe. To this end, the invention contemplates attaching the upper to the insole, preferably after the lasting operation and before the welt attaching operation, in such manner that no part of the attaching fastening shall project into the inside of the shoe and that the upper shall be secured firmly in position for the welt attaching operation, the securing fastenings forming a part of the permanent fastenings attaching the upper to the insole and aiding to make a tighter, closer fitting and more durable shoe.

Other objects and features of the invention will be apparent when the following description and claims are considered in connection with the accompanying drawings, in which,—

Figure 1 is a perspective view of a partly completed shoe in which the invention is embodied in a preferred form; and Fig. 2 is a transverse section through the completed shoe.

The preferred method of making the shoe constituting the present invention is disclosed and fully described in my copending application Serial No. 585,060, filed October 3, 1910, and will be only briefly described in connection with the present invention. The preferred fastening for uniting the upper to the insole to reinforce the union of these parts by the inseam and to prepare these parts for the welt attaching operation is a staple, preferably of fine wire, the size of the wire and its strength being so proportioned to the corresponding characteristics of the needle of the welter that the staple will not interfere with the operation of said needle, and the term "fine wire," as used in

the specification and claims, means wire of this character. A convenient means for forming and inserting this staple is described in my co-pending application Serial No. 585,061, filed October 3, 1910. As set forth in the method application above referred to, this staple is preferably inserted and clenched while the lasting tacks which hold the upper in its original lasted position are still in place, and, being inserted between the lasting tacks, helps further to conform the upper to the shape of the last. Moreover as the staples are preferably inserted through the upper and the outer channel lip and clenched upon the inside of the outer channel lip, or if the insole be provided with a rib of the type formed upon Gem insoles, are inserted through the rib and clenched upon the inside of said rib, the upper is secured to the insole in such position as to permit the most effective operation of the welt attaching means. In the preferred mode of making the shoe of this invention, the welt attaching operation is further facilitated by tucking the upper into the angle of union between the channel lip and the feather of the insole in advance of the staple inserting operation and inserting the staple close to this angle of union.

In the drawings, the upper 2 is lasted over the edge of the insole 4, which is secured to the bottom of the last 6 in the usual manner, and is confined in lasted position by tacks 8 driven into the insole and through the insole into the last, preferably in the angle of union between the outer channel lip 10 of the insole and the feather 12, the toe part of the upper being confined in lasted position by a binding wire 14 attached at its ends to stay tacks 16. The lasting tacks 8 are, as usual, only partially inserted so that they may be easily removed. After the lasting operation and at any time before the removal of the lasting tacks, the staples 18, which are preferably utilized to hold the upper in position for the welt attaching operation as well as to form part of the permanent fastenings uniting the upper and insole, are inserted through the upper and outer channel lip or through the upper and rib or shoulder of the insole, if a different type of insole is employed, the staples being inserted, preferably, at points of excessive strain to reinforce the inseam as well as to secure the upper most effectively for the welt attaching operation and being clenched, as at 19, to secure the parts united by them firmly together.

The number of the staples inserted will vary with different types of shoes and with the materials employed in the shoe, the staples being preferably inserted, as above suggested, at points where the strain is excessive, the number and locations of the staples being left largely to the judgment of the operator. One or more staples will preferably be inserted, as at 20, through the upper, counter and insole channel lip, so that the forward end of the counter will be confined in the angle of union between the channel lip and the feather of the insole and a proper union of these parts during the welt attaching operation will be insured. Some of the staples will preferably be inserted around the toe, thus permitting the removal of the toe binding wire during the welt attaching operation.

The upper and insole having been united by staples, in the manner set forth, all of the lasting tacks 8 are removed, together with the binding wire 14 and the stay tacks 16, and the welt, upper and insole are then united by stitches 22 in the usual manner. The succeeding operations upon the shoe, including the inseam trimming operation and the laying of the outsole, are then performed, and the outsole and welt are united by a line of stitches 24 in the usual manner.

It will be noted that the staples 18 and 20 are so inserted that they are above the path of operation of the needle of the welt attaching machine and below the field of operation of the inseam trimmer, and that, therefore, they are permanent fastenings in the shoe and tend to hold the upper and insole tightly together, thereby preventing moisture from gaining entrance to the inside of the shoe. The staples thus increase, both directly and indirectly, the durability of the shoe. It will be noted further that the staples are so located that after the welt is attached the heads or outer ends of the staples will be covered by the welt and that the inner ends of the staples will be covered by the inner channel lip provided the sole is of the type having such a lip.

In the foregoing description the insertion of the staples has been referred to as taking place preferably after the lasting operation and before the welt attaching operation. It will be understood, however, that the location and the function of the staples are more important than the time of insertion and that these staples may therefore be inserted at other times, for example, during the lasting operation, to take the place of the usual means for securing the upper in lasted position. Moreover as these staples are of very fine wire, preferably not exceeding 35/1000 of an inch in diameter, and as they never penetrate to the inside of the shoe, they affect in no manner the flexibility of the finished shoe and are open to none of the objections to the use of metallic fastenings in welt shoes which have heretofore necessitated the removal of all such fastenings before the completion of the shoe. The use of fine wire in forming these staples also

makes the time of their insertion less important, since they will not interfere with the succeeding operations upon the shoe and will not form openings in the upper, channel lip, or other parts which they penetrate, of such size that they will damage or weaken such parts or in any way interfere with the holding power of other fastenings, whether the other fastenings be inserted before the staples are inserted, or thereafter. In practice I have found wire of a diameter of 16/1000 of an inch very satisfactory.

Although the invention has been specifically described as embodied in a Goodyear welt shoe, it will be apparent, as above suggested, that some features may be embodied to advantage in shoes of other types, for example "turn shoes". The possibility of thus employing certain features of the invention should be taken into consideration in construing the terms of the claims.

Having described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:—

1. A shoe, comprising an upper, an insole, a line of inseam stitches which extend through the upper and a portion of the insole in directions substantially parallel to the bottom face of the insole and staples of fine wire likewise extending through the upper and a portion of the insole only in directions substantially parallel to the aforementioned face of the insole, said staples being located at points of excessive strain and within the inseam trimming line and being so inserted and clenched upon said insole as not to appear upon the inner face of said insole.

2. A shoe, comprising an upper, an insole and a welt, a line of stitches forming an inseam uniting said welt to said upper and insole, said stitches also serving to unite the upper and insole, and metallic fastenings of fine wire inserted through the upper and a part of the insole only at irregular intervals to reinforce the inseam, said fastenings being located within the inseam trimming line and being clenched upon the insole upon its outer side and having their outer ends covered by the welt.

3. A shoe, comprising an upper, an insole and a welt, a line of stitches forming an inseam which unites said welt to said upper and insole, said stitches also serving to unite the upper and insole, and separate permanent metallic fastenings of fine wire driven through the upper and a part of the insole only in such manner as to reinforce the inseam, said fastenings being clenched upon said insole upon the outer side thereof and inside the inseam trimming line, and being entirely concealed between the insole and the outsole.

4. A shoe, comprising an upper and an insole shaped to provide a shoulder against which the upper is sewed, said upper being lasted over said insole in substantially the usual manner, staples of fine wire securing the upper against said shoulder, said staples being inserted at relatively long intervals and at points between the points of location of the original means for securing the upper in lasted position and being clenched upon the insole upon the outer side thereof and inside the inseam trimming line to form part of the permanent fastenings which unite the insole and upper, a welt united to said upper and insole by stitches which also serve to unite the upper and insole, the welt being attached after the staples are inserted whereby it covers the heads of the staples, and an outsole attached to said welt.

5. A shoe, comprising an upper and an insole, staples attaching said upper to said insole, a welt united to said upper and insole by stitches which also serve to unite the upper and insole, said staples being inserted through the upper and channel lip and being located outside the path of movement of the needle of the welt attaching machine and being clenched upon the insole upon the outer side thereof to form part of the permanent fastenings which unite the insole and upper, and an outsole attached to said welt.

6. A shoe, comprising an upper and a channeled insole, the channel in said insole providing a rib or shoulder against which the upper is sewed, staples attaching said upper to said insole, said staples being inserted through the upper and channel lip and clenched upon the inside of said channel lip, and being located above the path of movement of the needle of the welter and below the field of operation of the inseam trimmer, whereby they form a part of the permanent fastenings in the shoe, a welt united to said upper and insole by stitches which also serve to unite the upper and insole, and an outsole attached to said welt.

7. A shoe, comprising an upper, an insole, a line of inseam stitches which extend through the upper and a portion of the insole in directions substantially parallel to the face of the insole, said stitches not appearing upon the inner face of the insole, and staples of fine wire likewise extending through the upper and a portion of the insole only in directions substantially parallel to the aforementioned face of the insole, said staples passing through independent openings in the upper and insole, inside the inseam trimming line being so inserted and clenched upon said insole as also not to appear upon the inner face of said insole, and constituting permanent parts of the shoe.

8. A shoe, comprising an upper and an insole, staples of fine wire attaching said

upper to said insole, a welt attached to said upper and insole by stitches which also serve to unite the upper and insole, said staples being located inside the inseam trimming line and having their outer ends covered by the welt and their inner ends covered by the inner channel lip.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILFRED J. DREY.

Witnesses:
H. L. HERRON,
ROBERT M. ZIEGLER.