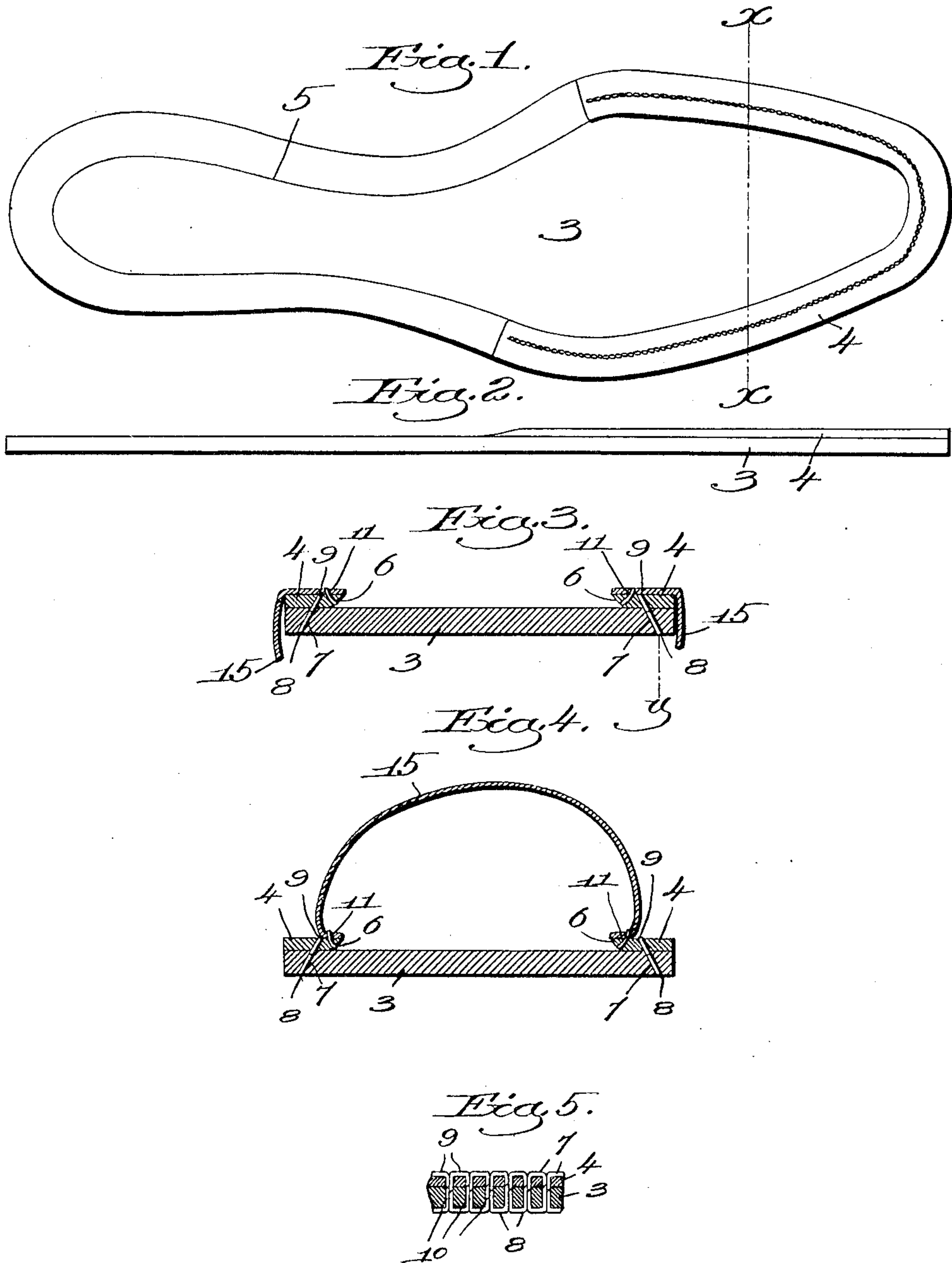


No. 887,456.

PATENTED MAY 12, 1908.

F. A. BEAL.  
SHOE.

APPLICATION FILED DEC. 16, 1907.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

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## SHOE.

No. 887,456.

Specification of Letters Patent.

Patented May 12, 1908.

Application filed December 16, 1907. Serial No. 406,633.

*To all whom it may concern:*

Be it known that I, FRANK A. BEAL, a citizen of the United States, and a resident of Haverhill, in the county of Essex and State of Massachusetts, have invented an Improvement in Shoes, of which the following description, in connection with the accompanying drawing, is a specification, like letters on the drawing representing like parts.

This invention relates to shoes and has for its object to provide a turned shoe which has all the appearance and many of the advantages of a welt shoe.

A turned shoe is generally much more flexible than a welt shoe, but as usually made it will not wear as long because the channeling of the sole of a turned shoe to form the shoulder to sew the upper to reduces materially the thickness of sole available for wear. A welt shoe, on the other hand, can be, and usually is, made with an extension edge which is a desirable feature in many styles of shoes, while turned shoes as commonly made do not have such extension edge.

In making my present invention I have endeavored to provide a shoe which combines all the desirable features of a turned shoe with all the desirable features of a welt shoe, and yet which does not possess the undesirable features of either shoe.

In making my improved shoe I first sew a welt to the sole in a particular way, all as will be more fully hereinafter described, and then I sew the upper to the welt wrongside out to the top of the welt at or near the inner edge thereof; and after the upper has been thus sewed to the welt the shoe is turned and finished as usual with or without the addition of an insole. The welt is stitched to the sole in a peculiar manner so as to prevent the welt from pulling up from the sole after the shoe is turned, and also so as to prevent the welt from separating from the sole at the outer edge. I find that a shoe thus made is comparatively flexible, has all the appearance of a welt shoe and the full thickness of the sole is available for wearing purposes. Moreover, such a shoe can be readily tapped in a manner similar to that in which a welt shoe is tapped as cannot be done with an ordinary turned shoe.

Referring to the drawings wherein I have shown one embodiment of my invention—Figure 1 is a top plan view of a sole for one of my improved shoes, said sole having the

welt sewed thereto; Fig. 2 is an edge view of Fig. 1; Fig. 3 is a section on the line  $x-x$ , Fig. 1, showing the welt sewed to the sole and also showing the upper stitched to the welt; Fig. 4 is a cross section through the shoe after it has been turned; Fig. 5 is a section on the line  $y$ , Fig. 3, showing the style of stitching for sewing the welt to the sole.

In making a shoe in accordance with my invention, I first take the sole 3 and sew thereto a welt 4. The welt is preferably applied to the sole only at the front part thereof where the most wear occurs, and the shank and heel of the sole where practically no wear occurs may be channeled in the usual manner, as at 5, to form the usual shoulder for sewing the upper to. The welt 4 is provided with the undercut inner edge 6 so that when it is applied to the sole said undercut edge forms of itself a suitable shoulder for sewing the upper to and no channeling of the welt for this purpose is necessary. The welt is sewed to the sole by stitches 7 which occupy an inclined plane so that the stitching appears at the bottom of the sole at 8 comparatively near the edge thereof while at the top of the welt the stitching appears at 9 near the inner edge of the welt. The reason for this will be explained further on.

While stitching of any suitable character may be employed for sewing the welt to the sole I prefer to employ a lock stitch, such as shown in Fig. 5, wherein the two threads forming the stitches are locked together at a point between the top of the welt and the bottom of the sole; and in sewing the welt and sole together, I use a small needle for the size of thread used and also use the usual waxed thread. The result is that the portions 10 of the thread 8 are so tightly compressed in the leather of the sole that even after the exposed parts of the thread on the bottom of the sole are worn off the stitching will not pull out, this being partly due to the lock stitch construction and partly due to the friction between the threads and the sole due to drawing a comparatively large thread into a comparatively small needle hole. After the welt has been sewed to the sole, as above described, the upper 15 is stitched to the welt at the portion of the shoe where the wear occurs, and to the shoulder formed by the channel 5 at the other portion of the shoe in a manner commonly employed in making turned shoes; and after the upper 15 has thus



been sewed the shoe may be turned right side out when it will present the appearance shown in Fig. 4.

In the embodiment of the invention shown in Figs. 3 and 4 the upper is sewed to the welt by stitching 11 which is situated entirely inside of the stitching 7 although closely adjacent thereto.

The advantage in placing the stitching 7 at an inclination is that said stitching will prevent the inner edge of the welt (which is that to which the upper is sewed) from pulling away from the sole 3 as the shoe is worn, and will also prevent the welt and the sole from separating at their outer edges. It will be readily seen that if the stitching 7 extended perpendicularly to the sole adjacent the outer edge of the welt, the welt would be secured to the sole only at the outer edge and any strain on the upper would tend to lift the inner edge of the welt from the sole. If, on the other hand, the stitching extended perpendicularly to the sole closely adjacent the inner edge of the welt there would be a tendency for the welt and the upper to separate at the edge. By placing the stitching 7 in an inclined position as clearly shown in Figs. 3 and 4, the inner edge of the welt is held in position and prevented from being pulled up from the sole, and at the same time the sole

and welt are prevented from separating at their edges.

A shoe made in this way has all the appearance of a welt shoe, but it has the flexibility and other desirable qualities of the turned shoe.

Having described my invention what I claim as new and desire to secure by Letters Patent is:—

1. A turned shoe comprising a sole having a welt sewed thereto by stitches which incline downwardly and outwardly from near the inner edge of the top of the welt to near the outer edge of the sole at the bottom, and an upper stitched to the welt.

2. A turned shoe comprising a sole having a welt sewed thereto by stitches which incline downwardly and outwardly from near the inner edge of the top of the welt to near the outer edge of the sole at the bottom, the inner edge of said welt being skived, and an upper stitched to the skived edge of the welt.

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

FRANK A. BEAL.

Witnesses:

FRED'K. H. TILTON,  
J. FRANK BATCHELDER.