No. 872,615. PATENTED DEC. 3, 1907.

E. A. EASTMAN.

SELF STRETCHING OR SHAPING SHOE.

APPLICATION FILED NOV. 15, 1906.

Fig. 1.

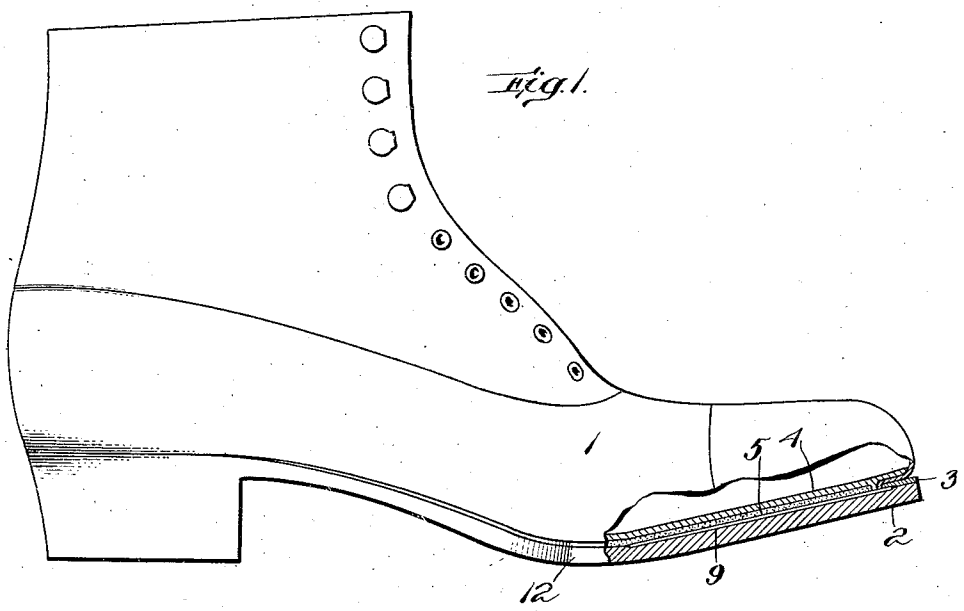


Fig. 2.

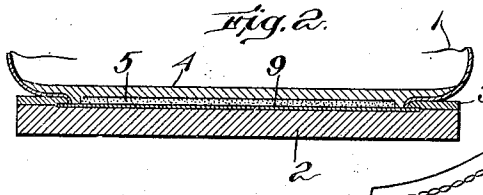


Fig. 3.

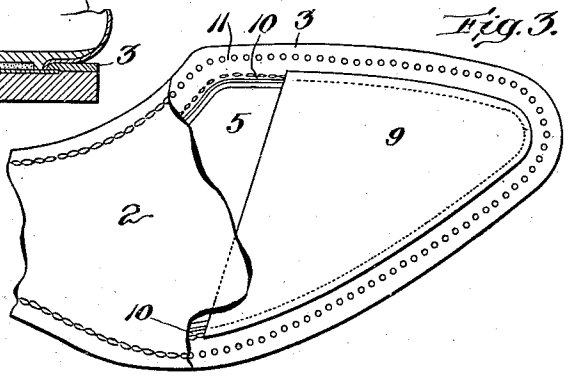


Fig. 5.

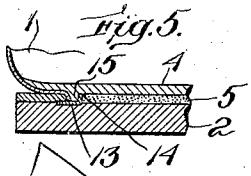


Fig. 4.

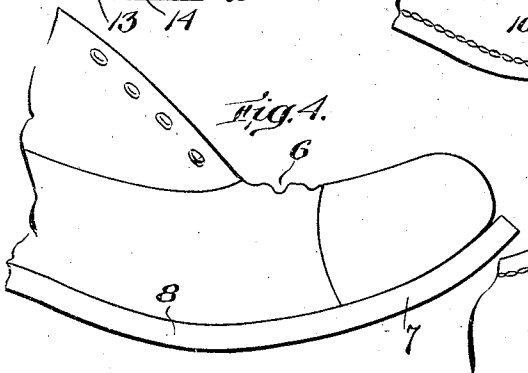
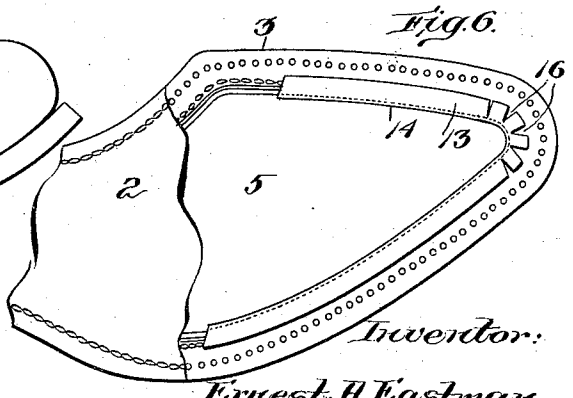


Fig. 6.



Witnesses:
M. J. Spalding.
Edward Maxwell.

Inventor:
Ernest A. Eastman.
by Geo. J. Maxwell,
Attorney.

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ERNEST A. EASTMAN, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO WILLIAM H. CRAWFORD, OF DAYTON, OHIO.

SELF STRETCHING OR SHAPING SHOE.

No. 872,615. Specification of Letters Patent. Patented Dec. 3, 1907.

Application filed November 15, 1906. Serial No. 343,575.

To all whom it may concern:

Be it known that I, ERNEST A. EASTMAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented an Improvement in Self Stretching or Shaping Shoes, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

A common experience is to find the upper of one's shoes wrinkled over the ball, and the sole bent upwardly at the toe, especially if the shoe has not been worn for some time, said wrinkling and bending causing considerable injury to the leather and appearance of the shoe and to its integrity, as the repeated wrinkling or warping and subsequent straightening out and stretching of the shoe to correct shape opens the seams and stitches and tends to disturb the more or less intricate portions of the shoe adjacent the sole, and tends to otherwise injure the shoe in the course of time. To prevent this, it is a common practice to insert shoe forms or trees in shoes when removed at night, thereby maintaining the shoes in properly distended position the same as when on the foot, but the provision and insertion of shoe forms or trees is troublesome and expensive. Accordingly my invention aims to make the shoe self-stretching as I have termed it, by which I mean that the portion which has heretofore wrinkled and curled as the shoe has become dry when out of use, will not wrinkle or curl but will invariably maintain its distended shape the same as if the shoe tree or the foot were in it all the time. I accomplish these results by providing between the welt and outersole a stiffener, preferably in the form of a metal plate which is incapable of bending under the shrinking strain of the drying leather of the shoe, and therefore prevents the shoe wrinkling and bending or curling up when not on the foot.

The constructional details and further features of my invention will be pointed out in the course of the following description, reference being had to the accompanying drawings in which I have shown certain preferred embodiments of the invention.

In the drawings: Figure 1 is a view in side elevation partly broken away, of a shoe embodying my invention; Fig. 2 is a transverse sectional view thereof; Fig. 3 is a bottom plan view of the toe-part of the shoe with the sole removed; Fig. 4 is a view of a shoe in side elevation showing the evil which my invention corrects; Fig. 5 is a transverse sectional view showing a modified construction; Fig. 6 is a plan view similar to Fig. 3 showing said modified construction.

As the Goodyear shoe construction is well known, it will be unnecessary for me to explain the same in detail, and accordingly it will be understood that the upper 1, sole 2, welt 3, innersole 4 and filler material 5 may be of any usual or preferred kind. The tendency of a shoe, as usually constructed, to wrinkle above the ball is clearly indicated at 6 Fig. 4, the sole gradually bending upward as indicated at 7 from the ball region 8 of the shoe. Accordingly shoe forms or trees, which are virtually skeleton lasts, are commonly employed to keep the shoes straight and stretched out without wrinkles when they are removed at night, said trees being inserted at night and removed again in the morning. My invention aims to provide means in the shoe itself for automatically maintaining the shoe in this proper stretched, taut condition without the use of shoe trees.

As shown in Figs. 1—3 I provide a thin metal plate 9 of steel or other material sufficiently stiff to maintain the shoe straight when off the foot, without, however, interfering materially with ease in walking. This plate 9 is shaped accurately so as to fit on the inner edge 10 of the welt 3 just within the sewing line 11, and it extends preferably back approximately to the ball 12 of the shoe. By reason of the provision of this stiffener 9 the shoe forward of the ball is maintained normally in a perfectly flat condition, the result being that the top part of vamp is kept stretched out without wrinkles exactly the same as if it contained a shoe tree.

In Figs. 5 and 6 I have shown a modified construction, in which, instead of having a flat plate 9 extending substantially the entire width of the innersole, I have provided a U-shaped metal piece as the stiffening means comprising a flat lateral part 13 and a depending flange 14 adapted to rest flat against the stitch-receiving rib 15 of the innersole as shown clearly in Fig. 5. This form of stiffener may be made as a substantially straight strip provided with slits 16 at suitable intervals, so that when it is to be fitted to a shoe

bottom it is simply curved around as shown in Fig. 6, the slits gapping and permitting the metal to bend sufficiently to conform to the general shape of the innersole cavity. I prefer to employ metal, as it is advantageous from the point of economy and facility of application, although I do not intend to restrict myself to metal, as other stiff or strongly flexible materials may be employed. Nor do I intend to restrict myself to the two species of my invention herein presented, as the invention is capable of many embodiments.

While I have shown my invention in connection with Goodyear shoes, it may be used with McKay shoes and especially with welt McKays, the essential feature of my invention, broadly considered, being the application of a stiffener at or adjacent the sole, so secured and located that it maintains the forward portion of the shoe taut when not in use, said stiffener preferably being clamped or otherwise secured directly against the sole, *i. e.* laid in rigid relation to that part of the shoe which constitutes or is supported by the tread member of the shoe.

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

1. A shoe, comprising an upper, a sole secured thereto, and internal stiffening means for preventing the sole from bending or curling up when the shoe is off the foot and for maintaining the upper smooth and without wrinkles, consisting of a rigid plate within the shoe next to the sole located entirely forward of the ball of the shoe and fastened immovably to the sole.

2. A shoe, comprising an upper, a welt, and a sole, combined with a stiffener clamped between said welt and sole forward of the ball of the shoe.

3. A shoe, comprising an upper, a welt, and a sole, combined with a stiffener clamped between said welt and sole at the inner edge of the welt forward of the ball of the shoe.

4. A shoe, comprising an upper, innersole, welt, and sole all secured together, and a stiffener engaged at its peripheral edge by the innersole and welt on its upper side and by the sole on its under side for maintaining the shoe in normally taut condition when not in use.

5. A shoe, comprising an upper, welt, and sole, and a stiffener plate located forward of the ball of the shoe and spanning the width of the shoe at the inner edges of the welt, said plate being clamped between the sole and welt adjacent the sewing line thereof.

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

ERNEST A. EASTMAN.

Witnesses:
GEO. H. MAXWELL,
M. J. SPALDING.