

F. GUSTAVESON.

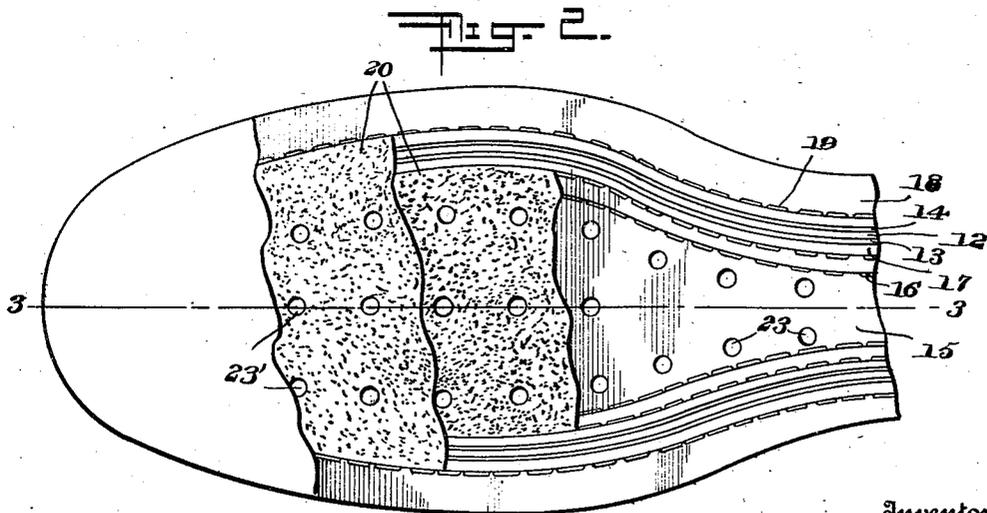
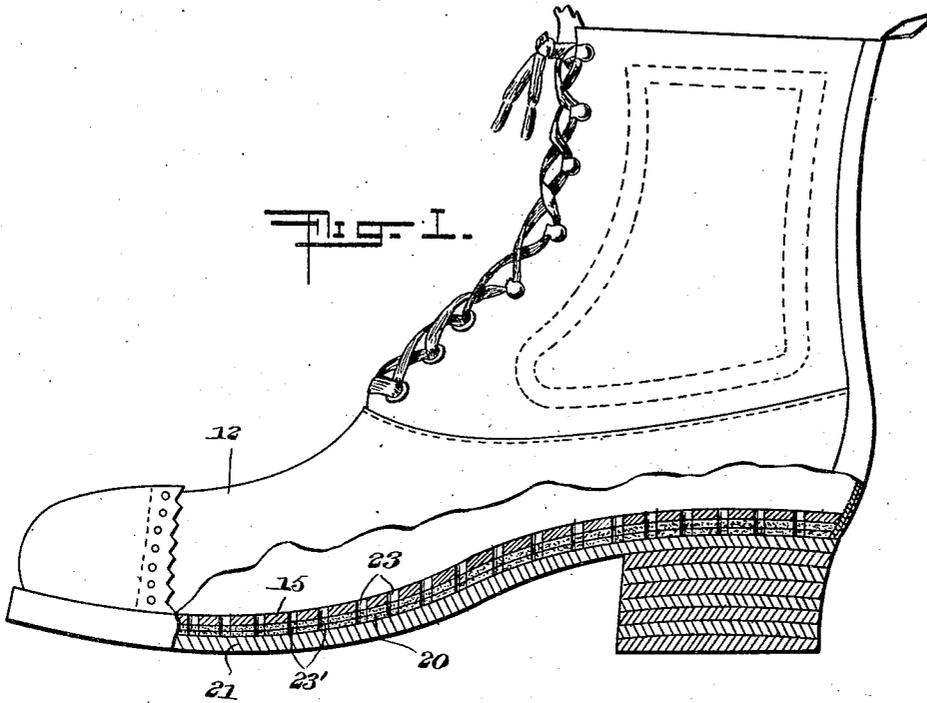
SHOE.

APPLICATION FILED SEPT. 9, 1914.

1,138,557.

Patented May 4, 1915.

2 SHEETS—SHEET 1.



Inventor

Frank Gustaveson

Witnesses

Frederick W. Sly

C. C. Hina

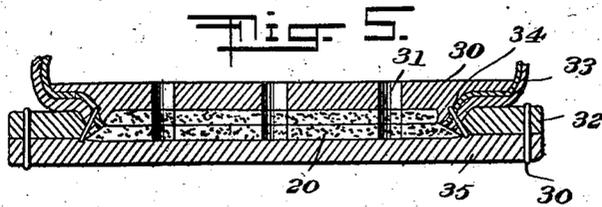
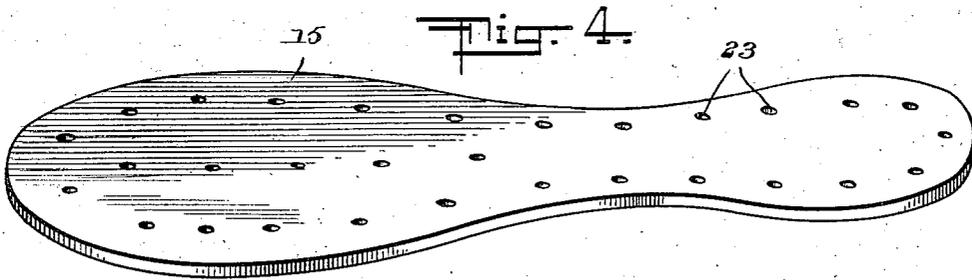
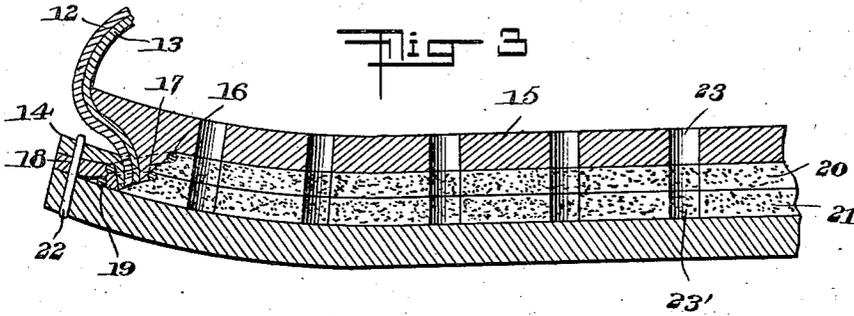
By Victor J. Evans

Attorney

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UNITED STATES PATENT OFFICE

FRANK GUSTAVESON, OF WABASHA, MINNESOTA.

SHOE.

1,138,557.

Specification of Letters Patent.

Patented May 4, 1915.

Application filed September 9, 1914. Serial No. 860,906.

To all whom it may concern:

Be it known that I, FRANK GUSTAVESON, a citizen of the United States, residing at Wabasha, in the county of Wabasha and State of Minnesota, have invented new and useful Improvements in Shoes, of which the following is a specification.

This invention is an improvement upon the construction of shoe shown in my former Patent No. 820,862, dated May 15, 1906, and relates especially to the class of shoes known as ventilating shoes, wherein means are provided for causing a circulation of air in the lower part of the shoe by the act of walking.

The purpose of the present invention is to provide a suitable perforated inner sole and air containing filling and cushion for a shoe or boot.

With these objects in view and others, my invention comprehends the construction and arrangement of parts, substantially as hereinafter set forth, and then particularly pointed out in the claim.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 represents in side elevation, and partially middle vertical section, a shoe embodying my invention; Fig. 2 is a bottom plan view, the parts being broken away in series, showing the several members of the sole proper; Fig. 3 is a vertical middle section through the front portion of a shoe, on an enlarged scale; Fig. 4 is a perspective view showing the perforated inner sole detached from the shoe; and Fig. 5 is a vertical transverse section through the sole of the ventilated shoe.

Referring now to the accompanying drawings, the shoe upper 12 with its usual interior lining 13, together with the first welt 14, is first secured to the inner sole 15 by stitching 16. This stitching 16 passes through the lower portion or base of a rib 17, depending from the inner sole, preferably a short distance back toward the middle portion of the shoe, as best indicated in Fig. 3. Thereupon the outer welt 18, preferably somewhat thinner than the welt 14, is applied against the lower face of the inner welt and secured thereto by stitching 19 that passes through first, the welt 18, second the welt 14, third the upper 12, with its

lining 13, and finally through the lower portion of said rib 17 of the inner sole. While for the sake of economizing space this line of stitching 19 may be on the same plane, or even pass through the same apertures as the first line of stitching 16, it is preferable to have this line of stitching 19 entirely separate and distinct from the other line of stitching and in a separate plane, as shown in Fig. 3. The next step is to place a suitable filling material 20 on the lower side of the inner sole with its edges snugly fitting the welt fastening portion, so as to build up the sole on the same plane as the upper portion of the double welt. This filling material I preferably form of one or several layers of felt, or other similar air containing and cushioning material. This felt may be secured in place by gluing to the inner sole, or in any preferred suitable manner. The shoe is now ready for the application of the usual outer sole 21, that is usually attached by simply sewing through the welt, but in this form of shoe the sole is secured by stitches or other suitable means, to and through each of the welts 14, 18, as shown in Fig. 3.

The inner sole 15 contains suitable perforations 23 throughout a whole or a portion of its length and of any suitable size and shape, while the filling material is provided with similar perforations 23'. When the pressure of the wearer is applied on the inner sole the felt or other filling and cushioning material, will be somewhat compressed, thus forcing the air therein and within the shoe through the perforations and against and around the foot of the wearer. Upon the pressure being released by the foot being raised, the usual resiliency of the filling material will cause it to expand to its former size and thus draw and absorb air again from around the foot, thereby causing a circulation of air inside of the shoe, and producing the effect of ventilation and also serving as a cushion to the foot.

One advantageous result from having the double welt comprising the members 14 and 18, is to build up the inner sole from the outer sole around the periphery of the same, thus permitting an unusual thickness of filling material to be used. But, it will be observed, that an unusually strong attachment is also provided between the inner and outer sole. In the first place, the upper welt

is secured to the inner sole by a line of stitching passing through the edge of the upper, as is the usual practice. But, as above described, there is in addition a second line of stitching that passes through the second welt and moreover passes through the upper, and also through the edge of the inner sole. Furthermore, the line of stitching 22, passes through the outer sole and both of the welts. From this it will be obvious that should either line of stitching be ruptured the other line of stitching would serve to strictly retain the outer sole in attachment with the inner sole. Furthermore, the two lines of stitching being separate and distinct will cause the strain on the edge of the upper sole to be distributed over two portions instead of one as is usually the case. It will further be observed that the separation of the line of stitching will prevent the second line from cutting or breaking the first line, which it would do if both were passed through the same apertures in the inner welt and upper.

While this arrangement of double welt and its mode of attachment is especially applicable to a shoe sole containing a thick filling, it is of great advantage in any form of shoe where a thick sole is desired to be used and there is an unusual strain on the outer sole of the shoe. The construction is furthermore advantageous in allowing a

thick elastic air containing filling and cushion to be used whereby an effective ventilating action can be secured without auxiliary air conducting connections between the interior of the shoe and the outside atmosphere.

In Fig. 5 I have shown my perforated inner sole as applied to the usual construction of a shoe bottom, without the use of a double welt or a double line of stitching. In this instance, the inner sole 30 has perforations 31, and is secured to the welt 32 and the upper 33, by stitching 34 in the usual manner, the welt 32 being secured to the outer sole 35 by stitching 36.

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

The combination, in a shoe, of an outer sole, an inner sole perforated throughout the body thereof, and a flexible elastic air containing filler between said soles, said filler comprising a body of felt having perforations therein registering with the perforations in the inner sole.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK GUSTAVESON.

Witnesses:

JOHN W. MURDOCK,
FANNIE E. CRATTE.