

981,106.

H. O'SULLIVAN.
RUBBER SOLE SHOE.
APPLICATION FILED NOV. 27, 1905.

Patented Jan. 10, 1911.

Fig. 1.

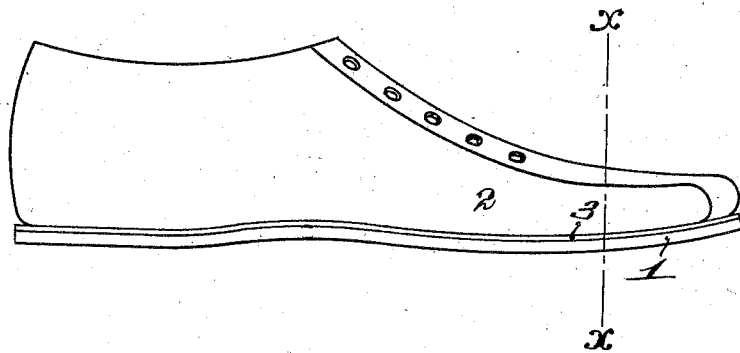


Fig. 3.

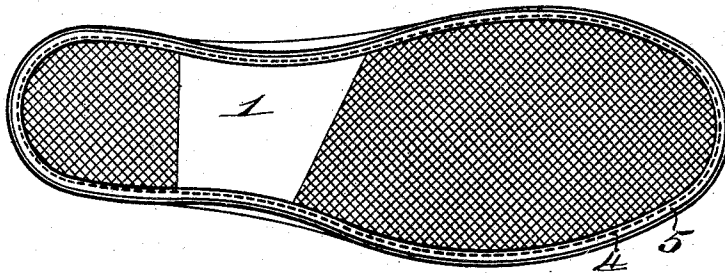
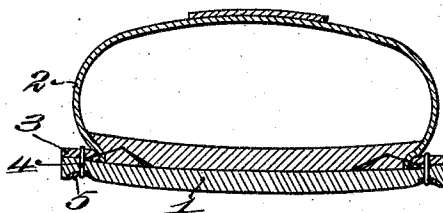


Fig. 2.



Witnesses
Edward S. Day
Farnum F. Dorsey

Inventor
Humphrey O'Sullivan
by his Attorneys
Phillips Van Euren & Fish

UNITED STATES PATENT OFFICE.

HUMPHREY O'SULLIVAN, OF LOWELL, MASSACHUSETTS.

RUBBER-SOLE SHOE.

981,106.

Specification of Letters Patent. Patented Jan. 10, 1911.

Application filed November 27, 1905. Serial No. 289,173.

To all whom it may concern:

Be it known that I, HUMPHREY O'SULLIVAN, a citizen of the United States, residing at Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Rubber-Sole Shoes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in rubber-soled shoes.

In the manufacture of rubber-soled shoes in which the shoe upper is made of leather or canvas, so that the rubber sole cannot be vulcanized to the upper, difficulty is found in attaching the sole to the upper in a secure and permanent manner, particularly when the sole is made of soft flexible rubber without the admixture of textile fabric. Such soles are usually secured by cement and also by a seam at the margin, but the cement becomes loosened after a short period of wear, and the seam also is unreliable, owing to the fact that if a heavy tension is used in sewing it the stitches cut into or through the rubber and weaken or destroy the sole, and when, on the other hand, a light tension is used the work is not drawn tightly together, and the stitches are not embedded in the surface of the sole, so that the tops of the stitches quickly wear off and the seam is weakened.

To avoid some of the disadvantages above pointed out it has been proposed to secure a rubber sole to a shoe by beveling or shouldering the edge of the sole and surrounding it with a strip of thick and stiff leather secured to the upper by a seam passing either through the leather alone or through both the leather and the reduced margin of the rubber sole. In such a construction, however, the characteristic advantages of the rubber sole are to a substantial extent sacrificed, since a wide marginal bearing surface of leather is substituted for the rubber, and the flexibility of the sole is impaired by the use of thick leather.

The object of the present invention is to produce a rubber-soled shoe in which the

sole may be secured by a tight and durable seam, but in which the characteristic advantages of a rubber sole are not sacrificed, the flexibility and extent of bearing surface being not substantially reduced, and to this end the invention contemplates the use, in connection with an ordinary rubber sole, of a narrow welt of thin and flexible material, applied to the bottom of the rubber sole prior to, or in the act of, stitching the sole, and serving as an anchor for the stitches, to prevent their cutting into or through the rubber. The flexibility of this welt is such that it does not materially affect the flexibility of the rubber sole and it need be of a width only sufficient to enable it to be handled and properly located with respect to the seam so that it does not substantially reduce the bearing surface of the rubber.

In the drawings Figure 1 is a side elevation of a shoe embodying the present invention, Fig. 2 is a vertical section on line $x-x$, Fig. 1, and Fig. 3 is a bottom view.

In the illustrated embodiment of the invention the rubber sole 1 is secured to the upper 2 by a welt 3 of the usual form, to which it is stitched by a seam 4. A narrow welt 5 of thin and flexible leather is placed between the stitches and the lower surface of the sole, being conveniently applied in the operation of stitching the sole by a suitable guide attached to the stitcher and acting to locate the welt properly without attention on the part of the operator. The seam may be sewed as tight as the material of the welt 5 will allow, and, owing to the flexibility of the rubber, the welt 5 and the tops of the stitches may be somewhat embedded in the rubber, as shown in Fig. 2 so that the stitches do not project beyond the general surface of the sole and are thus protected from wear. It is not necessary, however, to recess the sole for this purpose, and when the welt and the tops of the stitches have worn away at the margin of the sole, the sole will resume its full thickness and its wearing capacity will be undiminished.

Having now described my invention, I claim and desire to secure by Letters Patent of the United States the following:—

A rubber soled shoe, having, in combina-

tion, a rubber outsole, a seam securing the sole at its margin, and a welt of thin flexible material fastened to the bottom of the sole by the seam, the stitches of the seam being under tension and acting to press the welt into the sole until the outer surface of the welt is flush with the surface of the sole, whereby the stitches are prevented from cut-

ting into the sole of the shoe, substantially as described.

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

HUMPHREY O'SULLIVAN.

Witnesses:

FARNUM F. DORSEY,
ALFRED H. HILDRETH.