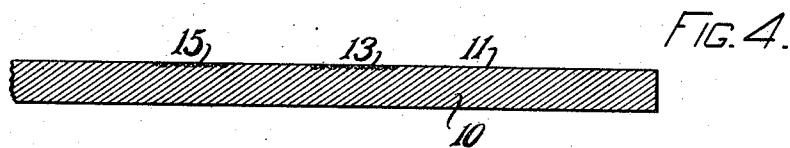
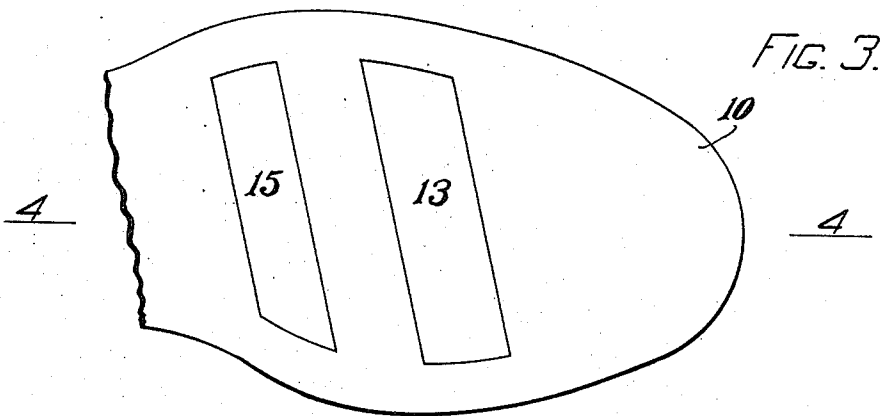
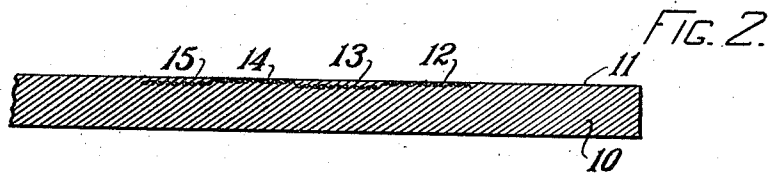
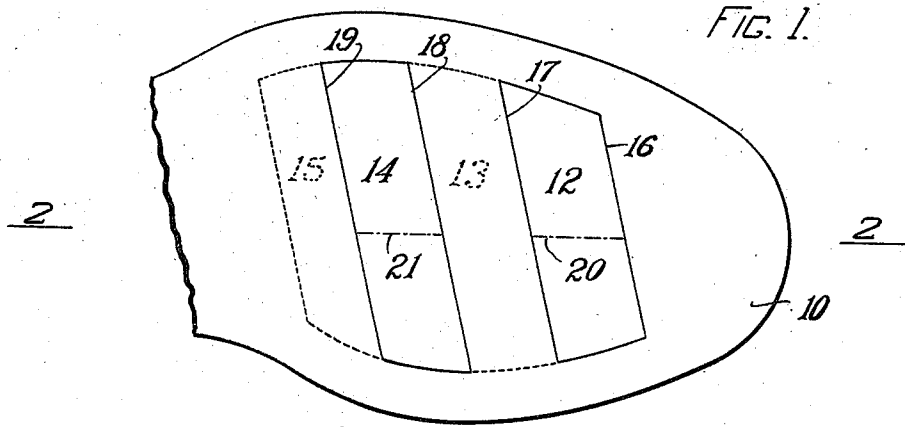


R. E. FOSTER.
RUBBER SOLE.
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984,806.

Patented Feb. 21, 1911.



WITNESSES

Alice Ackroyd
Annie C. Richardson.

INVENTOR

Rolon E. Foster
by his Attorneys
Phillips, Van Emmer & Fish

UNITED STATES PATENT OFFICE.

ROLON E. FOSTER, OF HYDE PARK, MASSACHUSETTS.

RUBBER SOLE.

984,806.

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To all whom it may concern:

Be it known that I, ROLON E. FOSTER, a citizen of the United States, residing at Hyde Park, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Rubber Soles; 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.

The present invention relates to an improvement in rubber soles. Heretofore attempts have been made to render rubber soles more durable by incorporating pieces of canvas in the rubber. In some instances this has been done by securing pieces of canvas to the tread surface of the sole; in some instances, as in the Foster treads, by incorporating in the sole plugs of canvas and rubber, with the edge of the canvas extended toward the tread surface of the sole; and in some instances by the use of folded pieces of canvas or textile material embedded in the rubber of the sole. The sole provided with a piece of canvas secured on the tread surface is liable to wear through under the ball of the sole and then loosen over the remainder of the sole in such a way as to form a baggy attachment liable to catch on the surface of the ground or to become detached at its edges and gradually roll loose from the sole. In the case of plugs of textile material and rubber let into the sole the objection of stiffness and lack of elasticity has been found to arise, which for certain uses is undesirable. In case of folded textile fabric embedded in the rubber, the difficulty has been to produce a sole having sufficient strength to maintain its integrity.

The general object of the present invention is to produce a rubber sole provided with textile wear and friction surfaces arranged in such a manner as to present substantial areas of the textile material to the tread at one time and yet of such construction that the sole will resist long continued wear without substantial deterioration.

To this end the invention consists in the rubber sole hereinafter described and particularly defined in the claim.

In the accompanying drawings illustrating the preferred form of the invention, Figure 1 is an underside plan view of a sole embodying the invention, Fig. 2 is a longitudinal

section of the sole on line 2—2 of Fig. 1, showing the sole in its original condition before it has been worn, Fig. 3 is an underside plan of the sole after it has been worn for some time, and Fig. 4 is a longitudinal section of the sole on the line 4—4 of Fig. 3.

In the embodiment of the invention illustrated in the drawings, the body of the sole 10 is made of rubber. The sole is provided at its tread side 11 with exposed and buried textile wear spots. The exposed wear spots 12 and 14 consist of pieces of textile material, such as canvas, properly frictioned and vulcanized to the tread surface of the sole. These exposed wear spots come into use when the sole is first used, being exposed on the surface when the sole is new as shown in Fig. 1. Buried wear spots 13 and 15 are provided, which when the sole is new are located below the tread surface of the sole, but which become exposed on the tread surface by the wearing off of such surface. The exposed and buried wear spots are arranged so that the buried wear spots first appear upon the surface of the sole when the exposed wear spots shall have been worn off. This is secured by having them buried under the tread of the sole at the depth of the thickness of the exposed wear spots, then when the exposed wear spots 12 and 14 have been worn off, the buried wear spots 13 and 15 appear upon the tread surface of the sole and become the operative wear spots. The appearance of the sole under these conditions is that illustrated in Figs. 3 and 4.

In the illustrative embodiment of the invention, the wear spots are comprised in a continuous piece of canvas which is incorporated by vulcanization in the tread surface of the sole, the portions 12 and 14 of the piece of canvas being exposed upon the surface of the sole when the shoe is new and the portions 13 and 15 thereof at this time being embedded in the sole at the depth of the thickness of the canvas.

The number, arrangement, and shape of the exposed and buried wear spots is a matter of indifference in the carrying out of this invention. The arrangement shown is the one preferred for the reason that this relation of the wear spots arranges them in the best place to subserve the function for which they are designed. In this preferred arrangement, the principal wear spot 14 extends across the ball of the sole where the wear is greatest at first, and the wear spots

13 and 15, which come to the surface after some wear, lie next adjacent to the wear spot 14. It is obviously immaterial whether the wear spots be made in one or a number of
5 pieces of canvas.

It is to be understood that, while this invention is principally adapted for use on the foreparts of soles, it may also be used on the heel parts of soles or in heels alone, and as a
10 consequence where, in the claim, the word sole is employed to name the article claimed, it is intended thereby to define the generic class of treads used on soles of boots, shoes, sandals, moccasins or other footwear.

15 In the manufacture of the hereinbefore described sole, it is convenient to proceed as follows:—A piece of sheet rubber compound of substantially the thickness of the piece of canvas to be employed and shaped to correspond to the forepart of the sole is slitted
20 along the lines 16, 17, 18 and 19 and along the dot and dash lines 20 and 21. The loose tongues of rubber compound thus formed are folded outward from the center line of
25 the sole and a piece of canvas corresponding in shape to the total area of the four wear spots 12, 13, 14 and 15, having its lateral edges folded inward, is laid in position on this piece of rubber compound and the out-

turned flaps are bent back into their former
30 position, then the layer thus prepared is laid in the bottom of the usual sole mold and a second piece of rubber compound of the proper thickness for the remainder of the sole is laid in the mold and the complemental
35 part of the mold is put in place and is then placed in a vulcanizing press and under the influence of the heat and pressure the rubber compound is vulcanized with the piece
40 of canvas incorporated in place therein.

Having thus described the invention, what is claimed is:—

A rubber sole for boots or shoes having vulcanized therein canvas exposed over a
45 substantial area on the tread surface of the sole to form a wear and friction surface and canvas vulcanized in the body of the sole near but underneath the tread surface thereof and of such substantial size as to
50 form a wear and friction surface when the rubber thereover is worn away, substantially as described.

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

ROLON E. FOSTER.

Witnesses:

ANNIE C. RICHARDSON,
ALICE ACKROYD.