

G. S. ELLITHORPE.  
SHOE TREAD.  
APPLICATION FILED DEC. 22, 1916.

1,278,320.

Patented Sept. 10, 1918.

Fig. 1.

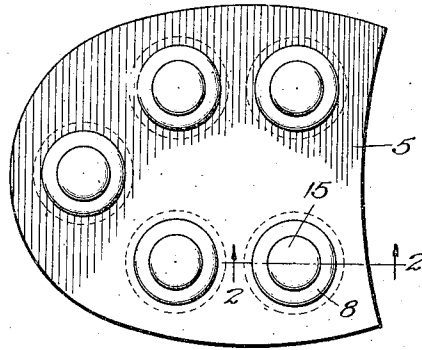


Fig. 3.

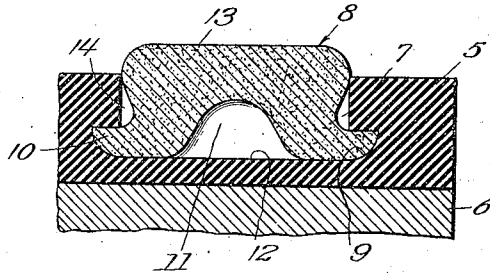
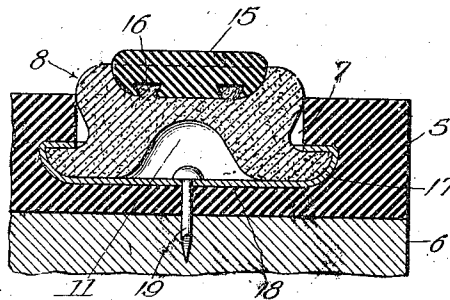


Fig. 2.



Witnesses:

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# UNITED STATES PATENT OFFICE.

GILBERT S. ELLITHORPE, OF ROGERS PARK, ILLINOIS.

## SHOE-TREAD.

1,278,320.

Specification of Letters Patent. Patented Sept. 10, 1918.

Application filed December 22, 1916. Serial No. 138,308.

*To all whom it may concern:*

Be it known that I, GILBERT S. ELLITHORPE, a citizen of the United States, residing at Rogers Park, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Shoe-Treads, of which the following is a specification.

My invention relates to improvements in shoe treads.

One of the objects of my invention is to provide resilient cushions for insertion in relatively hard or stiff shoe treads, such as the heel and sole of boots and shoes, whereby to absorb the shock usually imparted to the wearer by the impact, of the otherwise unyielding hard treads of stiff-soled shoes, to render walking more comfortable, quiet, certain and less fatiguing and to prolong the wear of the tread.

A specific object of my invention is to provide a resilient, durable plug, such as may be made of relatively soft, elastic rubber, preferably, having a wear-resisting surface for contact with the roadway, and compressible, for insertion within a restricted orifice provided for it, within the tread of the shoe, and so constructed as to provide a closed air space, between the plug and tread, to thereby produce an auxiliary, pneumatic cushion, coöperable with the yielding plug to accomplish the shock absorbing function.

Another object of my invention is to provide a metallic receptacle, for the cushion, insertible in the relatively unyielding portion of the tread, of the sole and heel of a shoe, and through which fastening means may be passed to secure the outer layer of the relatively stiff tread to the overlying portion of the shoe.

Other and further objects of my invention will become readily understood, by persons skilled in the art, from a consideration of the following description when taken in conjunction with the drawings, wherein—

Figure 1 is a plan view of the heel of a shoe showing my cushion inserted therein.

Fig. 2 is a cross-sectional view, taken on line 2—2 of Fig. 1, showing the preferred form of the cushion insert.

Fig. 3 is a modification of a cushion inserted in a tread.

In all the views the same reference characters are employed to indicate similar parts.

While I have shown, in Fig. 1, the cushion

inserted in the heel of a shoe, they are equally as well adapted for insertion in the soles of shoes, whereby to compensate, to some extent, in the latter instance, for the lack of spring of stiff soled shoes, in walking.

5 is the tread of the heel, or sole of a shoe, secured to a part 6 by any suitable means. The tread 5 may be made of relatively hard, or semi-vulcanized rubber, leather, wood, fiber or the like, provided on its outer surface with perforations 7 for inclusion of the cushion plug 8. The perforations 7 are annularly and laterally extended, as at 9, for the radially projecting flange 10 of the plug. The plug, or cushion 8, is provided with a central cavity, or depression 11, which, in connection with the inner surface 12 of the tread 5, forms an inclosed air space, or coöperating pneumatic cushion, when the cushion 8 is compressed, as by walking.

When pressure is applied to the tread surface 13, of the cushion plug, it is laterally compressed, as the result, of the vertically applied pressure, and the space 14 is provided, in the orifice 7, within which the resilient member 8 may laterally expand. The air within the space 11, is thereby compressed and contributes largely to the resilient effect of the cushion body 8.

In Fig. 2 I have shown a tread plate 15, embedded in the cushion portion 8, and composed of a relatively hard tough substance, of any suitable character to provide a larger and more refractory bearing surface for the cushion to take the wear, or prevent slipping, such as fiber, metal or other material, keyed to the cushion 8 by an annular dove-tail key 16, or otherwise fastened so as to be inseparably attached thereto. In the counter-bore 9, of the tread 5, I may in some structures, place a sheet metal receptacle 17, for the cushion 8. This reinforces the strength of the tread 5, bounding the orifice 7, and provides a larger surface 18, to connect the tread 5 to the overlying portion 6 of the shoe, which may be done, as by means of tacks or screws 19. The metallic cup-shaped receptacle 17 furthermore provides a relatively air-tight wall for the open space 11; when the inner surfaces of the cushion are pressed into contact therewith.

When the inserts are placed in the bearing surface of the sole of a shoe, their yielding effect, due to the pressure of the wearer compensates, to a large extent, for the lack of bending, in rigidly stiff soles, and when

they are used in the heel of a shoe they reduce the shocks normally imparted to the wearer by more rigid heels, and prevent slipping, thereby rendering walking much more comfortable and accompanied by less danger.

Having described my invention, what I claim is—

10 In combination with a shoe tread having a depression extending part way through the tread and having an annular enlargement near the bottom of the depression; a resilient plug having a body part fitting in

the body part of the depression and an annular flange to be received by said annular enlargement; said body part of the plug reduced in diameter near said flange to provide an annular space for its diametric expansion. 15

In testimony whereof I hereunto set my hand in the presence of two subscribing witnesses. 20

GILBERT S. ELLITHORPE.

In the presence of—

STANLEY W. COOK,  
MARY F. ALLEN.