P. C. T. LARSEN.

SHOE CONSTRUCTION.

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1,172,613. Patented Feb. 22, 1916.

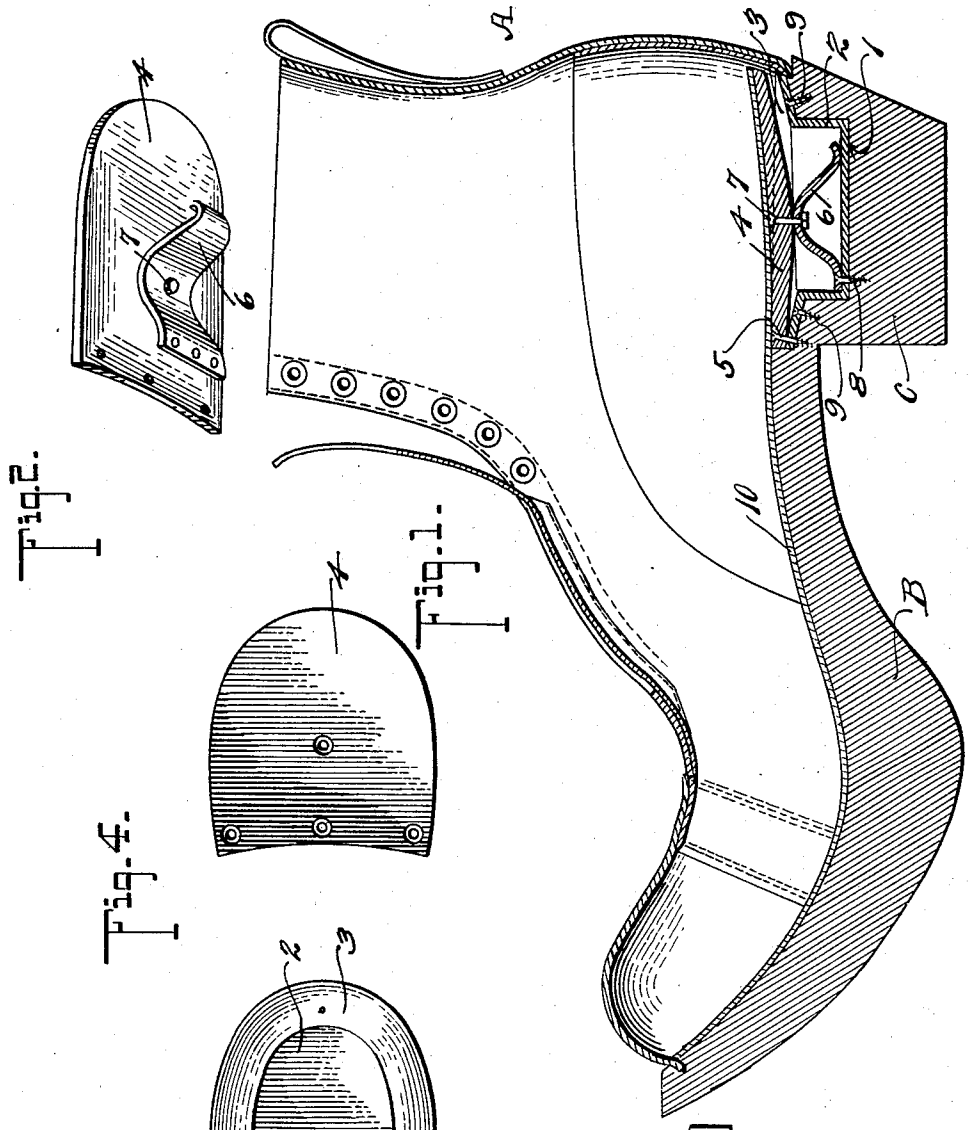


Fig. 1.

Fig. 2.

Fig. 4.

Fig. 3.

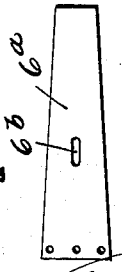


Fig. 5.

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UNITED STATES PATENT OFFICE.

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SHOE CONSTRUCTION.

1,172,613. Specification of Letters Patent. Patented Feb. 22, 1916.

Application filed December 28, 1914. Serial No. 879,346.

To all whom it may concern:

Be it known that I, PEDER CHRISTIAN TRONDRUP LARSEN, a citizen of Denmark, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Shoe Constructions, of which the following is a specification.

The present invention appertains broadly to improvements in shoe constructions, its object being to provide cushioning means for a boot or shoe which performs a dual function of absorbing shocks or jars incident to walking and imparting flexibility to what would otherwise be a rigid or non-flexible sole.

The invention consists primarily of a heel plate or member having pivotal connection at one side to the heel of the shoe and a cushion element therebeneath to receive the weight of the wearer in the act of walking, said cushion comprising a spring having connection with the plate and the heel to permit of sliding action thereof.

This and such other objects as may hereinafter appear are attained by the novel construction, combination and arrangement of parts to be hereinafter specifically described and claimed.

Reference will now be had to the accompanying drawings forming a part of this specification, wherein:—

Figure 1 is a longitudinal sectional view through the shoe showing an embodiment of my invention, Fig. 2 is a perspective view of the cushioning means of this device, Fig. 3 is a plan view of the casing element with which the cushioning member coacts, Fig. 4 is a plan view of the heel plate, and Fig. 5 is a slightly modified form of spring designed to be used with my device.

Referring to the drawing, A represents the upper of a shoe which is secured in any desired manner to the sole B having at its rear portion the heel C.

It may be mentioned that the illustration of the drawings depicts a wooden or non-flexible sole but it will be obvious that the invention may be used in conjunction with the ordinary type of shoe with equally satisfactory results. A shoe consisting of a wooden sole necessarily renders walking somewhat difficult by reason of its rigidity and therefore the use of my shock absorbing arrangement causes said shoe to work as if it were flexible; it therefore follows that walking will be as easy as if the sole were of leather as in the common type of footwear. The heel C is provided with a recess indicated by 1 and disposed in and conforming to said recess is a metallic casing 2. This casing is preferably metallic and consisting for example of aluminum and at its upper portion the casing is provided with a peripheral extension constituting a seat designated by the reference numeral 3. A heel plate 4 similarly constructed of metal is connected with said casing by means of fastening members 5 at one end or edge, extending through the casing into the heel, said connection being pivotal in action with respect to the plate. Disposed within the casing 2 is a bowed spring or cushion element 6, the said spring being connected by a fastening member 7 to the central portion of the heel plate 4 and also connected to the casing at one side by fastening members 8 passing along into the heel. The opposite end or side of the spring 6 has sliding contact with the bottom of the casing 2 as will be obvious by reference to Fig. 1 of the drawing. The spring 6 normally holds the heel plate 4 elevated at one side which is at the rear portion of the heel and thus as the wearer of the shoe walks the plate 4 is rocked on its pivot at each step, the spring taking up the jar which would ordinarily be incidental to the use of a hard heel C. The movement of the plate is limited by contact of the free end thereof with the seat 3 of the casing as well as contact of the free end of the spring 6 with the side wall thereof. This pivotal movement of the heel plate imparts flexibility, as it were, to the wooden sole.

Under certain conditions it may be desirable to provide a spring formed after the manner disclosed in Fig. 5 of the drawing and designated 6^a, said spring being provided centrally thereof with a slot 6^b, being otherwise formed and arranged in the manner depicted in the preferred form of the device. The fastening member 7 when the modified form of spring is employed passes through the slot 6^b and is designed to prevent any buckling of the spring due to its positive connection with the casing by the fastening members 8. The casing is preferably secured in place in the recess 1 by screws or like fastening members 9 and preferably the inner lining 10 of the sole extends over the heel plate 4 as shown in Fig. 1.

Having thus described the invention, what I claim as new is:—

1. A shoe comprising a sole and a heel, the latter being formed with a recess in its upper side, a casing disposed in said recess and having an outwardly projecting flange seated on the heel and disposed in a plane lower than the adjacent portion of the sole, a heel plate arranged above said casing with its upper surface substantially the same plane as the adjacent portion of the sole, a connection intermediate the front end portion of said heel plate and the front portion of the flange of said casing affording yielding movement of the plate, a bowed spring arranged longitudinally of the shoe and disposed between the heel plate and the bottom of the said casing, and a connection between the front end of the said spring and said casing, the rear end of said spring being disposed in spaced relation to the rear end of the casing but freely movable toward and from the same.

2. A shoe comprising a sole and a heel, the latter being formed with a recess, a heel plate disposed above said recess and having its upper surface substantially in the same plane as the adjacent upper surface portion of the sole, a connection between the front end of said heel plate and the sole permitting slight upward and downward movement of the plate, a spring disposed in said recess and of bowed form, a connection between the central portion of said spring and the central portion of the heel plate with the under side of which the spring engages, and a connection between the front end of said spring and the heel coacting to hold the heel plate in proper position and to hold the spring with its rear end spaced from the rear end portion of the recess but freely movable toward and from the same.

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

PEDER CHRISTIAN TRONDRUP LARSEN.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."