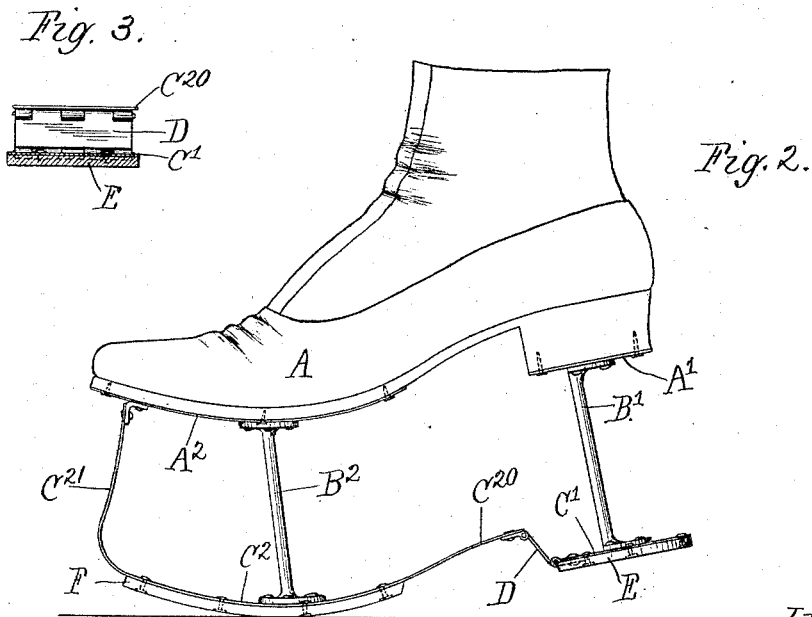
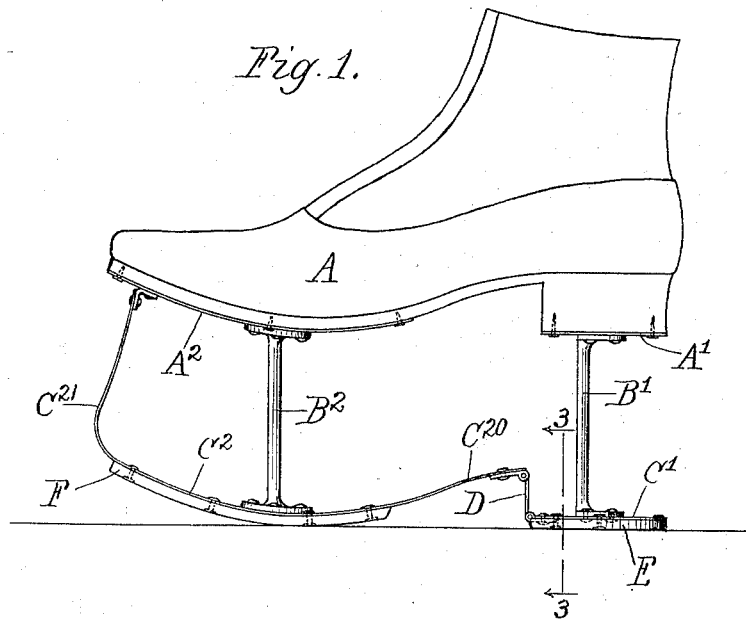


(No Model.)

W. R. STEUART.
SHOE STILT.

No. 493,663.

Patented Mar. 21, 1893.



Witnesses.

Jean Elliott
E. T. Wray.

Inventor.

William R. Stewart
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UNITED STATES PATENT OFFICE.

WILLIAM R. STEUART, OF CHICAGO, ILLINOIS.

SHOE-STILT.

SPECIFICATION forming part of Letters Patent No. 493,663, dated March 21, 1893.

Application filed November 7, 1892. Serial No. 451,221. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. STEUART, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Shoe-Stilts, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part thereof.

The purpose of this invention is to provide an improved device to be attached to the bottom of a shoe worn by one having one limb shorter than the other.

Some devices heretofore employed for this purpose, both in skeleton form and solid, are entirely rigid lengthwise, so that the portion which supports the heel has no capacity for movement relatively to the portion which supports the sole of the foot, to accommodate the natural bending of the foot at the instep or of the shoe at the shank. These compel the foot to be carried rigidly in all the movements of walking and thereby cripple the movement of the person almost as much as the shortness of the limb would do.

Other devices have entirely disconnected supports for the heel and sole. These devices permit the flexure of the foot and shank of the shoe in a natural manner, but each support in that case operates as a lever arm of the heel or sole of the shoe, by which such heel or sole is liable to severe side wrenches whenever the support strikes the ground otherwise than with a direct vertical stroke or pressure, and impose severe strain upon the joints and muscles of the foot and ankle, especially because neither part of the foot can assist the other in the case of such strain, the two supports being disconnected. A similar defect is experienced in this class of devices in respect to the longitudinal strain, against which there is no restraint except the stiffness of the shoe or foot, and the leverage afforded by the length of the support or lift under either heel or sole tends to severely strain the shank of the shoe, and the foot as well.

My invention aims at curing these defects of the two classes of appliances above indicated, and it consists in the combination of a heel and a sole support with a link connecting them, preferably located at the usual po-

sition of the forward vertical face of the heel in the position of a normal shoe on the ground, such link being of sufficient length to permit the longitudinal movement of the heel and sole of the stilt relatively to each other which is necessary to permit the hinge-like action of the foot at the instep or of the shoe at the shank, in view of the vertical distance between the heel and sole respectively, of the shoe, and the heel and sole of the stilt.

In the drawings, Figure 1 is a side elevation of a shoe with my stilt attached thereto in the position of complete rest upon the ground, as when the wearer stands upright, at rest. Fig. 2 is a side elevation of the same, showing the position of the shoe and stilt when the foot is bent at the instep in walking, the heel being lifted from the ground by such movement of the foot.

A represents a shoe.

A' is a heel plate and A² a sole plate constituting the top of the stilt and adapted to be secured, respectively, to the heel and sole of the shoe.

B' and B² are vertical upright posts connecting the heel plate and sole plate respectively with the heel C' and sole C² of the stilt, and rigidly secured at their ends respectively to the parts which they thus connect, so that the heel plate A' and the heel C' are rigid, and the sole plate A² and the sole C² are rigid. The sole C² is extended at C²⁰ in the usual form and position of the shank of the shoe, and at the forward end in the tongue C²¹ it is extended up to the forward end of the sole plate A², and there made fast to the latter, increasing the rigidity of the connection between the sole-plate A² and the stilt sole C². At the rear end of the shank part C²⁰ of the sole C², it is directly above the forward edge of the heel C', and the plate D is hinged at the upper end to the rear of the shank tongue C²⁰, and at the lower end to the forward edge of the heel C', thereby linking the two parts together by a link as broad as the situation admits, and having, therefore, long hinge joints at the upper and lower edge, whereby the two parts thus linked together are transversely rigid and capable of relative movement only longitudinally. By this means, the bending of the foot and shank of the shoe in the natu-

ral manner in walking is accommodated by the swinging of the link D, as shown in Fig. 2, while, at the same time, the transverse strain which may be brought upon the parts by an oblique step or stroke upon the ground in walking is resisted as completely as if the entire device were a rigid block, except in so far as the shank part C²⁰ of the stilt sole may have capacity for yielding, and this capacity may be reduced to the minimum at the sacrifice only of lightness to the extent that the shank is thickened for such purpose.

It will be evident that the skeleton form of this device, which is obtained by the specific structure herein illustrated, is not essential to its operativeness, the hinge or link connection between the parts at the bottom, as distinguished from the structure in which the only hinge connection is that which is obtained by connecting the parts separately to the heel and sole of the shoe which may be said to be hinged at the shank, and as distinguished from the rigid stilt, in which the heel and sole portions have absolutely no capacity for relative movement, being the fundamental feature, and the particular form of that hinge connection, consisting of a vertical link whereby longitudinal as well as mere pivotal movement of the parts is permitted, being next of importance, and the location of such hinge-connection at the front of the heel, whereby the customary and desirable contour of the bottom of the shoe is preserved, being thirdly important as a distinction from prior devices. Both the heel and sole of the stilt may be suitably shod with leather or other suitable material represented at E and F, respectively.

I claim—

1. In a stilt the heel-support and the sole-support provided at their upper ends with suitable means for attaching them rigidly to the heel and sole respectively of the shoe, and being flexibly connected together at the bot-

tom or end remote from the heel and sole of the shoe, substantially as set forth.

2. In a stilt in combination with the heel-support and the sole-support adapted at their upper ends to be rigidly attached to the heel and sole respectively of the shoe, and a link interposed between and connected to their proximate edges at the lower ends whereby they are flexibly connected at the lower ends and have a limited range of fore-and-aft relative movement, substantially as set forth.

3. In a stilt, in combination substantially as set forth, a heel support adapted to be made rigid with the heel of the shoe, and a sole support adapted to be made rigid with the sole of the shoe, and a broad link horizontally pivoted transversely to the rear of the sole support at the bottom and to the forward edge of the heel support at the bottom, whereby relative movement of the two parts longitudinally is permitted and transverse and torsional movement relatively is restrained.

4. In a stilt, in combination with the heel plate and a post extending vertically therefrom to the heel of the stilt, and the sole plate and a post extending vertically therefrom to the sole of the stilt, the latter being extended and up-bent rearwardly to form the shank piece of the stilt; and the link D, broadly hinged transversely to the rear end of the shank-piece and to the forward edge of the heel, and normally extending vertically between said two pivotal lines; substantially as set forth.

In testimony whereof I have hereunto set my hand, in the presence of two witnesses, at Chicago, Illinois, this 4th day of November, 1892.

WILLIAM R. STEUART.

Witnesses:

JOHN VAN HOUSEN,
CHAS. S. BURTON.