No. 713,912. Patented Nov. 18, 1902.

B. NATHAN.

COMBINED ANKLE PROTECTOR AND ARCH SUPPORT.

(Application filed Dec. 18, 1901.)

(No Model.)

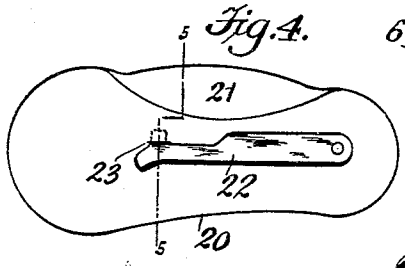


Fig. 4.

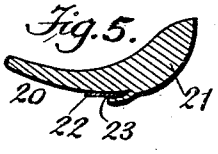


Fig. 5.

Fig. 1.

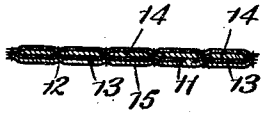


Fig. 3.

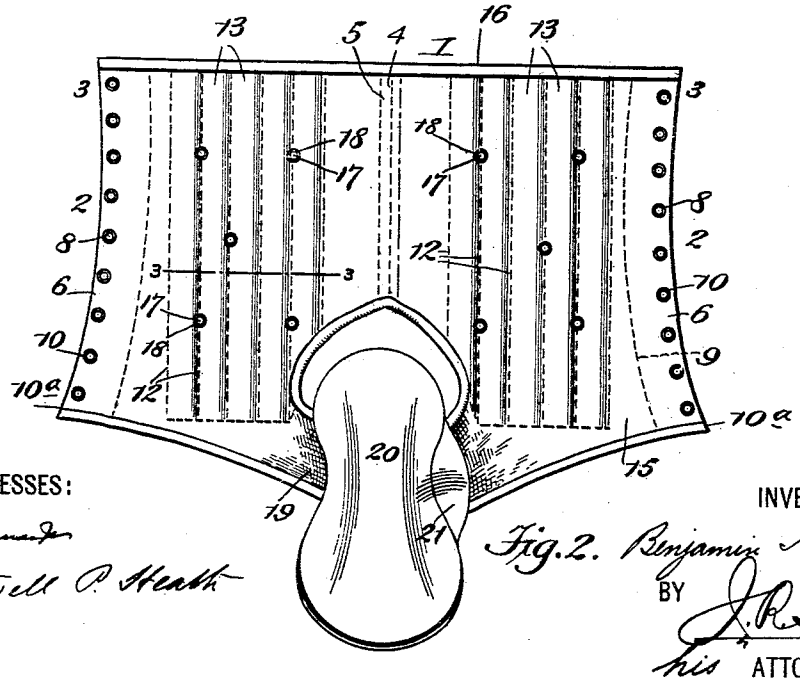


Fig. 2.

WITNESSES:

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UNITED STATES PATENT OFFICE.

BENJAMIN NATHAN, OF NEW YORK, N. Y.

COMBINED ANKLE-PROTECTOR AND ARCH-SUPPORT.

SPECIFICATION forming part of Letters Patent No. 713,912, dated November 18, 1902.

Application filed December 18, 1901. Serial No. 86,409. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN NATHAN, a citizen of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in a Combined Ankle-Protector and Arch-Support, of which the following is a specification.

This invention relates to a combined ankle-protector and arch-support, and has for its object to provide a device of the class described which will possess points of advantage in convenience, simplicity, inexpensiveness, effectiveness, and general efficiency.

Another object of the invention is to provide an improved device of the class described which will firmly support the arch of the foot and securely protect the ankle and at the same time will conform more or less to the ankle of the wearer.

Another object of the invention is to provide an improved device of the class described which will not only effectively protect the ankle, but which will operate to brace and strengthen the same.

In the drawings, Figure 1 is a perspective view of a combined ankle-protector and arch-support embodying my improvements. Fig. 2 is a view of the inside of the device, showing the same opened. Fig. 3 is a sectional view through the ankle portion of the device on the line 3 3, Fig. 2. Fig. 4 is a bottom plan view of the arch-support detached. Fig. 5 is a sectional view on the line 5 5, Fig. 4.

Corresponding parts in all the figures are denoted by the same reference characters.

Referring to the drawings, 1 designates the body of the ankle-protector, which is formed of suitable flexible material and which comprises two side portions 2, adapted to surround the ankle portion of the foot, which side portions are extended at the top a suitable distance, as at 3, so that they surround the portion of the leg immediately above the ankle. The side portions 2 of the body 1 are preferably respectively formed of separate pieces, which are secured together by a vertical back seam, as at 4, interiorly reinforced by a longitudinal strip, as at 5, the front edges of said side portions 2, as at 6, being left open and provided with a lacing 7, by means of which the device is adapted to be secured in position. The lacing 7 preferably consists of an ordinary lacing-cord passed through a series of openings 8, provided at the front edge portions of the side portions 2, said perforated front edge portions being preferably reinforced by a strip, as at 9, extending longitudinally and exteriorly of said perforated edges and secured by stitching or otherwise to the side portions 2. The openings 8 are preferably provided with eyelets 10 or other suitable metallic devices to prevent the openings 8 being torn or damaged by the drawing of the laces 7. The lower portion of the side members 2, at the front just beneath the lacing edges 6, is preferably extended forwardly, as at 10^a, so that the side members 2 of the body project to a limited extent over the instep portion of the foot. The side portions 2 are provided on their inner surfaces with a textile lining 11. Between the linings 11 and the side portions 2 and at desired distances apart are formed by stitching 12 a series of pockets 13, running in this instance from top to bottom, but which may be of any desired depth. Within the series of pockets 13 thus formed are inserted a series of pliant whalebone or other flexible ribs 14, which fit snugly within the same. If desired, in order to prevent the ribs 14 from paining or injuring the wearer an additional and final covering 15, of soft thin material, preferably kid, is provided, which covering may be stitched to the side portions 2 or linings 11 at any desired convenient points. At the top of the side portions 2 is formed the usual binding flap or facing 16, which also forms a covering for the tops of the ribs 14, the covering 15 extending to or above the lower edge thereof and being stitched thereto. Now should it become apparent that the support is too rigid and unyielding for the wearer as many of the ribs 14 as may be deemed necessary may be removed by simply ripping the binding-flap 16, lifting the same, and withdrawing one or more ribs 14, and in like manner stronger ones may be inserted as occasion may require. Between the pockets 13 are provided a series of perforations 17 for ventilation, which perforations 17 are preferably provided with eyelets 18 to prevent tearing or enlargement thereof.

It will of course be understood that the

whole device is relatively soft and flexible and that the side members 2 of the body 1 are cut in pattern, so that they neatly and effectively conform to the ankle portion, which the device is adapted to compress and inclose, and it will be further noted that the device is adapted for compression at all points. The ankle-protector thus formed will be found to furnish complete protection, while at the same time giving support to the ankles, and yet sufficiently flexible to yield to motion of the ankle in any direction whatever. From the lower edges of the side portions 2 there extends downwardly a loop 19, which is adapted to extend under the foot of the wearer just in advance of the heel and to assist in retaining the device in position and against upward and vertical movement or displacement. It will be noted that the lower portion of the body 1, embodying the loop 19, is of skeleton form, so that the heel and the lower part of the front portion of the foot are left free and unhampered in their mobile action.

An arch-support 20, adapted to be detachably secured on the inside of the loop 19, is provided. The arch-support 20 consists, preferably, of a substantially rigid material, such as sole-leather or similar material, and is shaped to conform to the arch of the wearer's foot. The arch-support 20 is preferably made thicker on the inner side, as at 21, and is provided with suitable means of detachably securing it within the loop 19, herein shown as a flat hook 22, pivoted to the lower part of the arch-support 20 and adapted to engage a suitable opening 23 in the lower part of the forward portion of the arch-support 20, extending, preferably, from the pivot of the hook 22 to its keeper at 23.

The operation and advantages of my invention will be readily understood and appreciated.

The device may be readily applied in position and will operate in connection with a shoe or slipper or without, as desired. When in use, it will effectively protect the full ankle portion and compress and brace the same without causing friction or abrasion, and at the same time it is adapted by its flexibility to permit the full mobility of the ankle. It also will firmly support the arch of the foot and prevent the tendency of the foot to flatten as the weight of the foot is placed upon it.

The invention is particularly adapted to service in athletic sports, in which there is danger of the ankle being struck by balls or other implements used in the games or in which there is liability of straining or wrenching the ankle and in which the arch of the foot especially needs support. In this connection the device, being flexible throughout its whole structure, is adapted to be worn inside the shoe when used in games of this character.

I do not desire to be understood as limiting myself to the details of construction and arrangement as herein described and illustrated, as it is manifest that variations and modifications may be made in the features of construction and arrangement in the adaptation of the device to various conditions of use without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variation and modification as properly fall within the scope of my invention and the terms of the following claims.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. In a combined ankle-protector and arch-support, a detachable arch-support.

2. The combination with a reinforced flexible ventilated ankle-protector of a detachable arch-support.

3. A combined ankle-protector and arch-support, comprising a top portion fitting about the ankle portion of the foot and provided with a loop extending under the foot, and an arch-support supported by said loop and detachably secured thereon by a flat pivoted hook attached to the under side of the arch-support.

4. A combined ankle-protector and arch-support, comprising a flexible body adapted to inclose and conform to the ankle portion of the foot and provided with a loop extending beneath the foot, and an arch-support detachably carried by said loop.

In testimony whereof I have signed my name in the presence of the subscribing witnesses.

BENJAMIN NATHAN.

Witnesses:
HARTWELL P. HEATH,
L. DUANE.