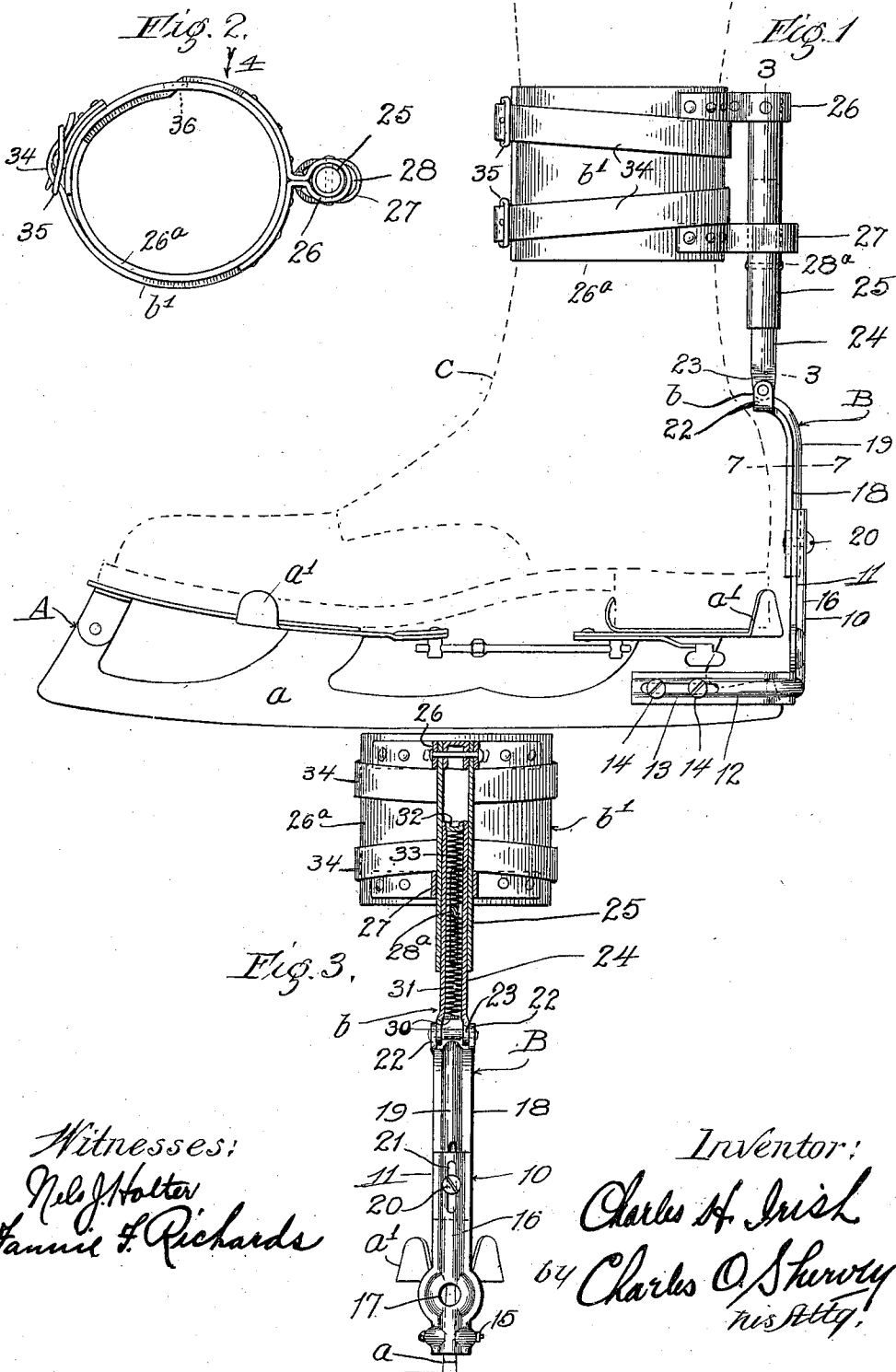


C. H. IRISH.
ANKLE BRACE.
APPLICATION FILED DEC. 23, 1909.

983,721.

Patented Feb. 7, 1911.

2 SHEETS—SHEET 1.



Witnesses:
Nels J. Holter
Fannie H. Richards

Inventor:
Charles H. Irish
Charles O. Sherry
his atty.

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2 SHEETS—SHEET 2.

Fig. 4.

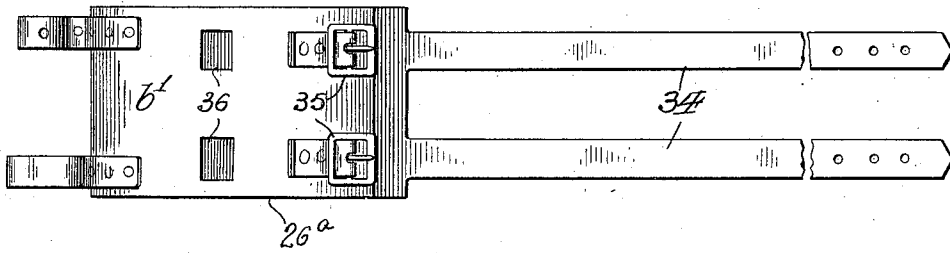


Fig. 5.

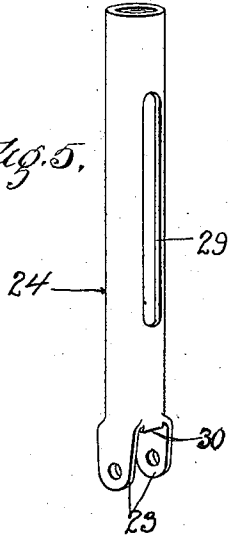


Fig. 7.

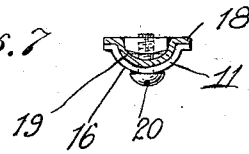


Fig. 6.

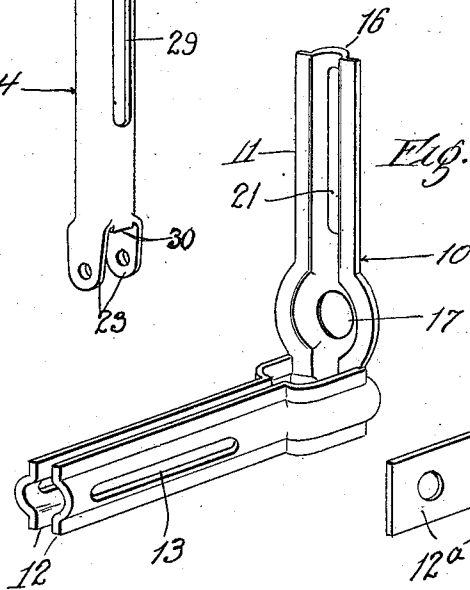
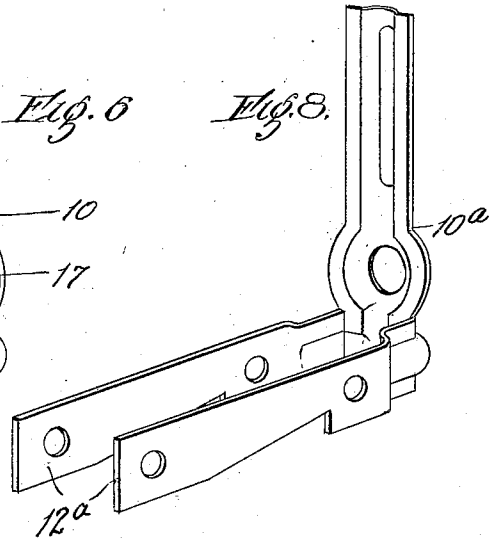


Fig. 8.



Witnesses:
Nels J. Holten
Samuel F. Richards

Inventor:
Charles H. Irish.
by Charles O. Sherry
his atty.

UNITED STATES PATENT OFFICE.

CHARLES H. IRISH, OF ZION CITY, ILLINOIS.

ANKLE-BRACE.

983,721.

Specification of Letters Patent.

Patented Feb. 7, 1911.

Application filed December 23, 1909. Serial No. 534,664.

To all whom it may concern:

Be it known that I, CHARLES H. IRISH, a citizen of the United States, residing at Zion City, in the county of Lake and State of Illinois, have invented new and useful Improvements in Ankle-Braces, of which the following is a specification.

This invention relates to ankle braces, and more particularly to that class of ankle braces adapted for use in connection with skates.

The object of the invention is to provide a simple form of brace which may be readily applied to any standard skate, and constructed and arranged to prevent the ankle from bending or twisting sidewise.

Another object is to provide an ankle brace which may be adjusted to accommodate ankles of different size.

Another object is to simplify and otherwise improve on devices of this class, and to such ends the invention consists in certain novel features of construction and arrangement, which are fully described in this specification, and the essential features of which are particularly pointed out in the claims.

The invention is clearly illustrated in the drawings furnished herewith in which—

Figure 1 is a side view of the ankle brace attached to a skate and showing a person's shoe and part of the leg in dotted lines, Fig. 2 is a plane view of the ankle band and certain other parts of the device, Fig. 3 is a view partly in rear elevation and partly in vertical cross section, the line or section being taken at 3—3, Fig. 1, Fig. 4 is a side view of the ankle band that secures the upper end of the device to the leg of the user, Fig. 5 is a perspective view of one member of a certain standard, Fig. 6 is a perspective view of a bracket which forms part of the standard, Fig. 7 is a detail horizontal section taken on the line 7—7, Fig. 1, and Fig. 8 is a perspective view of a modified form of the bracket.

Referring to the drawings, A, represents an ice skate of ordinary form provided with the usual runner *a*, and the clamps *a*¹, for attaching it to the shoe of the user.

The ankle brace is shown at B, and in the preferred form is arranged to be removably attached to the runner of the skate. The brace comprises in general a jointed standard *b*, and an ankle band *b*¹, pivotally secured thereto. A bracket 10, is provided at the lower end of the standard which bracket

may be of any suitable construction, here shown as comprising a sheet metal bracket having an upright post 11, from which projects two horizontal members 12, that are adapted to lie on the sides of the runner *a*, and be secured thereto in any desirable manner. I have shown longitudinal slots 13, in the horizontal members 12, through which extend fastening means, here shown as screws 14, that have nuts 15, upon their threaded ends for clamping the bracket 10, to the runner. This merely illustrates one form of means for attaching the device to a skate and it is obvious that various other simple means may be substituted in its place. In order to obtain greater strength, the bracket 10, is stamped up with a bead 16, that extends longitudinally of the upright or post 11, as well as of the horizontal members 12. An opening 17, is provided in the post 11, to accommodate a skate key in case the device is to be attached to a "hockey" skate.

Adjustably secured to the upper end of the post 11, is an extension 18, which has a longitudinally extending bead 19, that seats in the bead 16, of the post 11. A bolt and nut 20, clamp the two parts together and one or both of said parts are formed with a longitudinally extending slot 21, to permit of the adjustment of one part upon the other. The upper end of the extension 18, is formed with ears 22, between which are pivotally secured the ears 23, of a stem 24, which is slidably mounted in a sleeve 25, pivoted at its upper end to the bracket 26, that projects rearwardly from the upper side of the ankle band *b*¹. A bracket 27, is secured near the lower edge of the ankle band, and has a rearwardly extending elongated eye 28, surrounding the sleeve 25. Said brackets 26, 27, provide a long bearing for the standard, and guide it to move solely in a direction longitudinal of the skate.

The stem and sleeve have a limited amount of longitudinal movement with respect to each other and as shown said movement is regulated by a pin 28^a, which is secured in the sleeve 25, and extends through a longitudinally extending slot 29, formed in the wall of the stem 24. The lower end of the stem may be bent up to form shoulders 30, and between said shoulders and the pin 28^a, is interposed a coiled spring 31. The upper end of the stem 24, is closed by a cap 32, and between said cap and the pin 28, is interposed

a second coiled spring 33. Said springs operate to hold the ankle band in a normal position and by adjusting the extension 18, up or down the band can be brought into position just at the top edge of the shoe C, as I have found that the most efficient results are obtained by placing the ankle band at the upper edge of the shoe.

Any form of ankle band may be employed, but the one which I have shown is particularly advantageous in a device of this class. As shown it comprises a leather band 26^a, that passes around the leg of the wearer and a plurality of straps 34, which extend out from one of the edges of the band and are arranged for engagement with buckles 35, secured to the other edge of the band. It may be found desirable to wrap the straps one or more times around the leg and for this reason I have provided holes 36, in the band 26, through which said straps may be passed, as shown in Fig. 2, and then brought around and secured in place by the buckles 35.

Fig. 8 shows a bracket 10^a, in which the members 12^a, are separated to a greater extent than are the members 12, of the preferred form, thereby enabling said bracket 10^a, to be attached to a roller skate. Roller skates usually have a bracket or block of some sort projecting down from the supporting plate which bracket or block is arranged to carry the rear rollers. The members 12^a, may be bolted or otherwise secured to said block.

It will be noted that the hinge or joint between the upper and lower parts of the device is located just to the rear of the shoe and approximately on a horizontal line with the ankle joint. This permits the ankle to bend freely in a forward or backward direction, but by reason of the rigidity of the parts the ankle cannot bend sidewise, but is held in alinement. By reason of the sliding connection between the two parts of the arm, the ankle band does not slip up or down, thereby avoiding the danger of chafing the leg.

I realize that various alterations and modifications of this device are possible without departing from the spirit of my invention, and I do not therefore desire to limit myself to the exact form of construction and arrangement shown and described.

I claim as new and desire to secure by Letters Patent:

1. The combination with a standard arranged to be detachably secured in fixed position upon a skate so as to extend up from the rear thereof and behind the foot of the user, of an ankle band having upper and lower bearing brackets arranged to provide a long bearing for the upper end of said standard, said standard being pivotally secured to one of said brackets.

2. The combination with a standard comprising two members pivotally connected together upon a pivot which extends transverse to the skate upon which the standard is attached, one of said members being detachably secured in fixed position upon a skate so as to extend up from the rear thereof and behind the foot of the user and being longitudinally extensible, an ankle band adapted to be secured to the leg of the user and a pivot connection between the upper end of the standard and said ankle band.

3. The combination with a standard comprising two members pivotally connected together upon a pivot which extends transversely of the skate upon which said standard is attached, one of said members being detachably secured in fixed position upon a skate so as to project up from the rear end thereof and behind the foot of the user and being longitudinally extensible, of an ankle band adapted to be secured to the leg of the user, upper and lower brackets extending rearward from said ankle band and adapted to maintain said standard against lateral play with respect to the ankle band and a pivot pin for pivotally securing said standard to the upper bracket.

4. The construction with a bracket, having attachment means constructed and arranged to detachably secure said bracket in fixed position upon a skate, a vertically adjustable extension secured to said bracket, an ankle band adapted to be secured to the leg of a user, and a two part connecting device between said extension and ankle band, said connecting device being hinged upon the band and extension and having a sliding connection between its two parts.

5. The combination with a bracket having an upright post and two slotted horizontal members arranged to lie on the sides of a skate runner, and means extending through said slots for securing the bracket to the skate runner, of an extension adjustably secured to said post, a two part arm hinged to said extension on an axis transverse to the skate, an ankle band, a bracket secured thereto, a pivotal connection between the upper end of said arm and the bracket on the ankle band, and a guide below the bracket on the ankle band and adapted to guide the lower end of said arm against lateral movement.

6. The combination with a bracket adapted to be secured to a skate and an extension adjustably secured thereto, of an arm hinged to said extension on an axis which extends transversely to the skate and comprising a telescoping stem and sleeve, an ankle band adapted to be secured to the leg of the user, and connections between said band and arm.

7. The combination with a bracket, adapted to be secured to a skate and an extension adjustably secured thereto, an arm pivoted

to said extension and comprising a stem, a sleeve slidably mounted on said stem, a pin secured to the sleeve and extending through a longitudinally extending slot in the stem and springs on the opposite sides of said pin, an ankle band and means for pivotally securing said sleeve to said ankle band.

8. In an ankle brace of the class described, the combination with an ankle band, of an arm pivoted thereon and comprising two members, one of which is longitudinally movable upon the other and longitudinally adjustable attachment means pivoted to the lower end of said arm and adapted to be detachably secured upon a skate.

9. In an ankle brace of the class described, the combination with a post extending up

from the rear of a skate, and an ankle band, of a two part arm, one part of which is pivotally connected with the post, and the other part of which is pivotally connected with the ankle band, the one part being guided upon and slidable upon the other, and means for limiting the movement of one part upon the other, including a resilient element.

In witness whereof, I have hereunto subscribed my name at Chicago, county of Cook, and State of Illinois, this 8th day of December, 1909.

CHARLES H. IRISH.

Witnesses:

FANNIE F. RICHARDS,
CHARLES O. SHERVEY.