(No Model.)

C. ENGBERG.

ANKLE BRACE FOR SKATES.

No. 589,253. Patented Aug. 31, 1897.

Fig. 1.

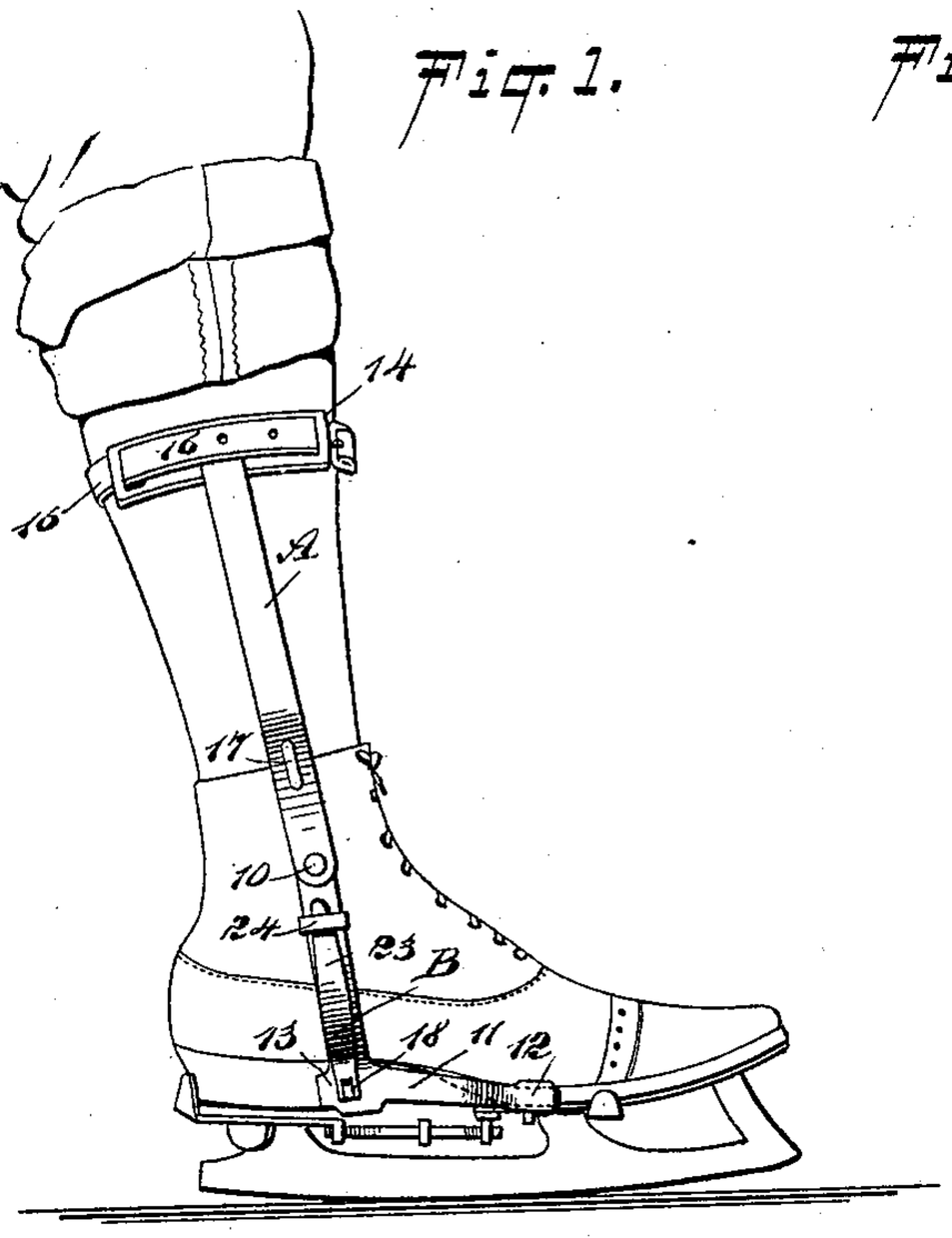


Fig. 2.

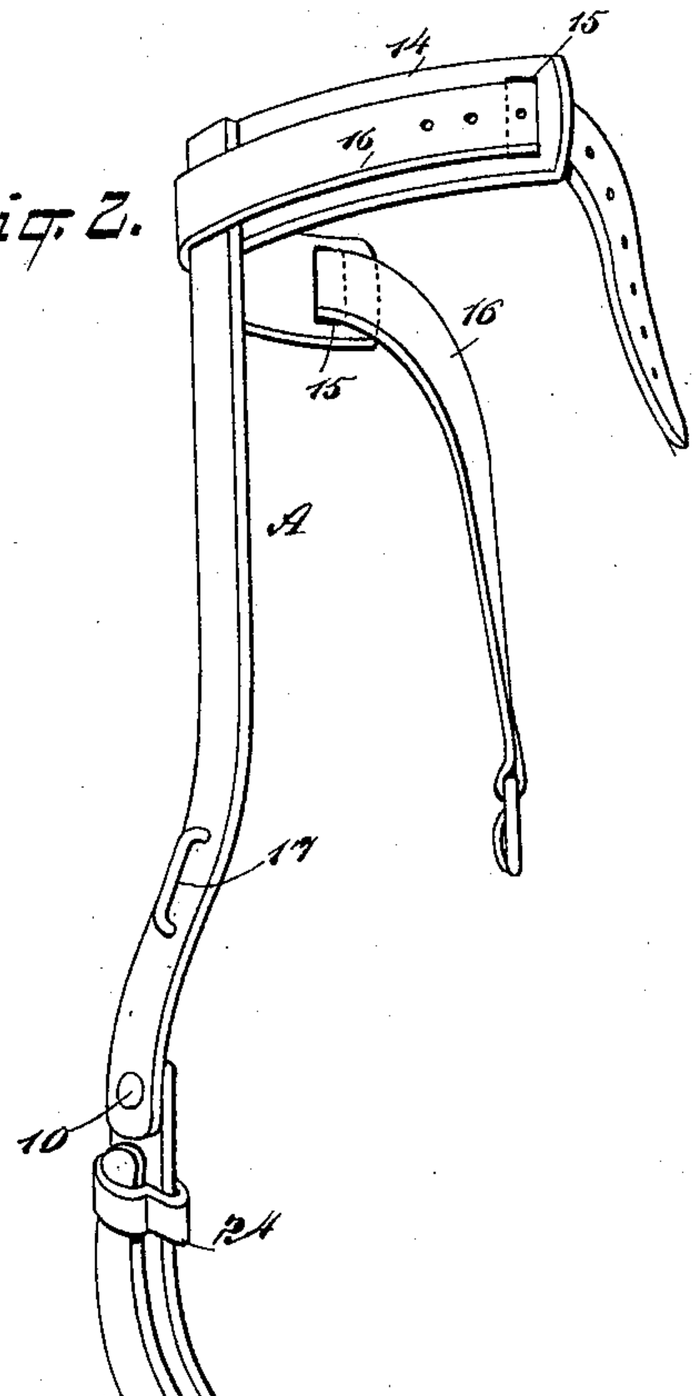
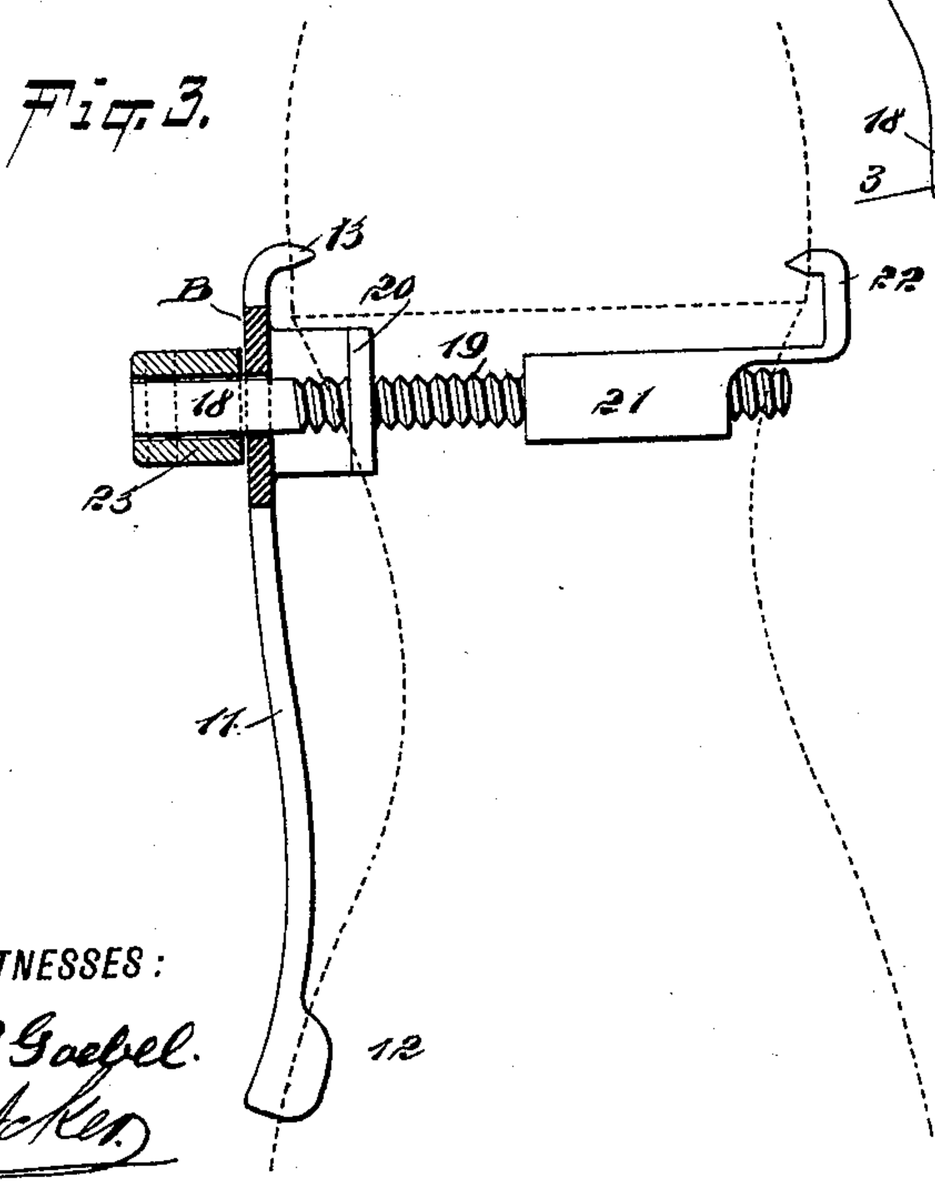


Fig. 3.



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CARL ENGBERG, OF ST. JOSEPH, MICHIGAN.

ANKLE-BRACE FOR SKATES.

SPECIFICATION forming part of Letters Patent No. 589,253, dated August 31, 1897.

Application filed January 27, 1897. Serial No. 620,986. (No model.)

To all whom it may concern:

Be it known that I, CARL ENGBERG, of St. Joseph, in the county of Berrien and State of Michigan, have invented a new and Improved Ankle-Brace, of which the following is a full, clear, and exact description.

The object of my invention is to provide an ankle-brace especially adapted to be used by skaters, the said brace being not only adapted as a support for weak ankles, but being also intended to give a skater better control over the skates and prevent the ankle from tiring during an extended period of exercise.

A further object of the invention is to provide an ankle-support for skaters' use which may be placed at the inner surface of the ankle and limb and whereby its presence will not readily be detected; and a further object of the invention is to so construct the support that it may be expeditiously and conveniently adjusted to a boot or shoe, and when adjusted therein the support will be so firmly held to the shoe that it will not have the slightest movement thereon, thus preventing the device from injuring the shoe beyond the natural wear.

It is another object of the invention to construct the supporting device in a simple, durable, and economic manner.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the device applied. Fig. 2 is a perspective view of the device, and Fig. 3 is a horizontal section taken on the line 3 3 of Fig. 2.

The device is especially adapted to be applied, as stated, to the inner surface of the limb of the skater and extends from the sole and heel of the shoe to a point above the ankle. The body portion of the device is a shank which is made in two sections—an upper section A and a lower section B. The upper section A is substantially straight at its upper portion, its lower portion being curved to conform to the contour of the limb above the ankle, and the upper section terminates at the ankle-joint, where it is connected by a pivot-pin 10 with the lower section B. The lower section B is curved in a manner to carry it down along the inner face of the upper of the shoe below the ankle to the instep at the bottom of the shoe, at which latter point the lower section B is preferably made integral with a horizontal arm 11. This arm extends forwardly a sufficient distance to enable its forward end to engage with the edge of the sole of the shoe at the instep of the foot, terminating at its outer end in a jaw 12, the members whereof clamp the edge of the sole at the top and bottom of its welt. The arm 11 likewise extends rearward a slight distance, as is particularly shown in Fig. 3, terminating in a claw 13, adapted for engagement with the inner side surface of the heel near its front edge, the claw 13 having preferably a number of teeth.

At the top of the upper section A of the shank a segmental band 14 is horizontally secured, which is adapted to pass around the limb of the skater at or near the calf. Openings 15 are made in the ends of this band, through which openings the ends of a strap 16 are passed, the strap being provided with a suitable buckle in order that the upper part of the brace may be securely fastened to the limb. In order to prevent movement of the upper section A of the shank near the instep, and in order to hold the lower portion of the upper shank-section close to the limb, a loop 17 is formed on the shank, through which a second strap may be passed if found necessary.

Immediately below the lower section B of the shank the smooth head 18 of a screw 19 is passed loosely through a suitable aperture, as shown in Fig. 3, and the screw 19 is likewise loosely passed through an opening in a bracket 20, formed at the bottom of the arm 11 immediately below the lower shank-section, as shown in Figs. 2 and 3. The screw 19 enters a correspondingly-threaded bore in a sleeve 21, and the said sleeve at its outer end terminates in a claw 22, provided also with a number of teeth, as shown in Fig. 2, which claw is adapted to enter the outer side surface of the heel of the shoe at a point opposite the entrance of the opposing claw 13 on the arm 11.

The arm 11 is virtually a clamping-arm, and a second arm 23, which may be termed an "adjusting-arm," is pivotally attached to the

head 18 of the screw 19 where the head extends beyond the clamping-arm 11. The adjusting-arm has a shape corresponding to the shape of the lower shank-section B, but its inner face at its lower end is provided with a cam-surface 23ª. After the adjusting-arm has been turned to effect a ready engagement of the claw 22 with the heel the said adjusting-arm is carried upward to an engagement with the lower section of the shank, as shown in Figs. 1 and 2, and is held in that position by a sliding loop 24 or the equivalent of the same. When the adjusting-arm is thus carried upward, its cam-surface 23ª, engaging with the clamping-arm 11, will draw and hold the claw 22 firmly upon the heel.

It is obvious that when the device is secured upon the shoe and the limb of the skater the device will be practically an integral portion of the shoe and that the upper portion of the device will move only with the movement of the limb above the ankle, while the lower portion of the device will move only with the movement of the foot.

Such a device not only serves to strengthen a weak ankle, but will rest a strong ankle when the skater prolongs the exercise. The device is furthermore so placed that its presence will be rarely detected, and the shoe will not be injured or the limb chafed by the application of said device.

It is obvious that after the claw 22 has once been adjusted to the heel a second adjustment need not be made, as the upward movement of the adjusting-arm 23 will draw the claw 22 inward sufficiently to embed it in the heel.

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

1. An ankle-support, consisting of a shank, a screw carried by the lower end of the shank, a claw adjustable on the said screw, an adjusting-arm connected with the screw, and a keeper for the arm and carried by the shank, as and for the purpose specified.

2. An ankle-support, consisting of a shank, a screw carried by the lower end of the shank, a claw adjustable on said screw, an adjusting-arm connected with the screw having a cam-surface at its connected ends engaging with the shank, and a keeper for the adjusting-arm, substantially as described.

3. An ankle-support, consisting of a shank arranged for engagement with one side of the sole of a boot or shoe, an adjustable claw connected with said shank and arranged for engagement with the opposite side of the sole, an adjusting-arm connected with said claw and means for locking said claw in its adjusted position, substantially as described.

4. In an ankle-support, a shank, an arm forwardly projected from the lower end of the shank, adapted for engagement with the sole of a boot or shoe, a claw carried by the rear end of the said arm, a screw held to turn in the lower end of the shank, a claw adjustable on the said screw and facing the claw of the arm attached to the shank, an adjusting-arm attached to the screw, and a keeper for the said adjusting-arm, substantially as described.

5. In an ankle-support, a shank constructed in pivotally-connected sections, the upper section being provided with a fastening device, a screw held to turn in the lower portion of the lower section, a claw adjustable on the said screw, a second claw projected rearward from the lower section of the shank and facing the adjustable claw, and means, substantially as described, for turning the screw and locking the same against turning, as and for the purpose set forth.

6. An ankle-support, consisting of a shank constructed in pivotally-connected sections, the upper section being provided with a fastening device, an arm projected forwardly and slightly rearwardly from the lower section of the shank, the forward end of the arm terminating in a jaw and the rear end in a claw, a screw held to turn in the lower portion of the lower section of the shank, a claw adjustable on the said screw, and means, substantially as described, for turning the screw and holding said screw against turning when an adjustment has been made, as and for the purpose set forth.

7. An ankle-support, consisting of a shank constructed in two sections pivotally connected, the upper section being provided with a fastening device, an arm extending from the lower portion of the lower shank-section at an angle thereto, projecting forwardly and rearwardly therefrom, terminating at its forward end in a jaw and at its rear end in a claw, a screw held to turn in the lower portion of the lower shank-section, a claw adjustably connected with the screw, facing the claw on the arm extending from the shank, an adjusting-arm attached to the said screw, and a keeper held to slide on the lower section of the shank, arranged for engagement with the aforesaid adjusting-arm, substantially as specified.

8. An ankle-support, consisting of a shank, a screw carried by the lower end of said shank, a claw adjustable on said screw, and adjusting and locking devices for said screw, substantially as described.

9. An ankle-support, consisting of a shank, clamping-arms integral with said shank and arranged for engagement with one side of the heel and sole of a boot or shoe, an adjustable claw extending through the lower end of said shank and at right angles to the aforesaid clamping-arms, said claw being arranged for engagement with the opposite side of the heel, an adjusting-arm connected with the said claw, and means for locking said claw in its adjusted position, as described.

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