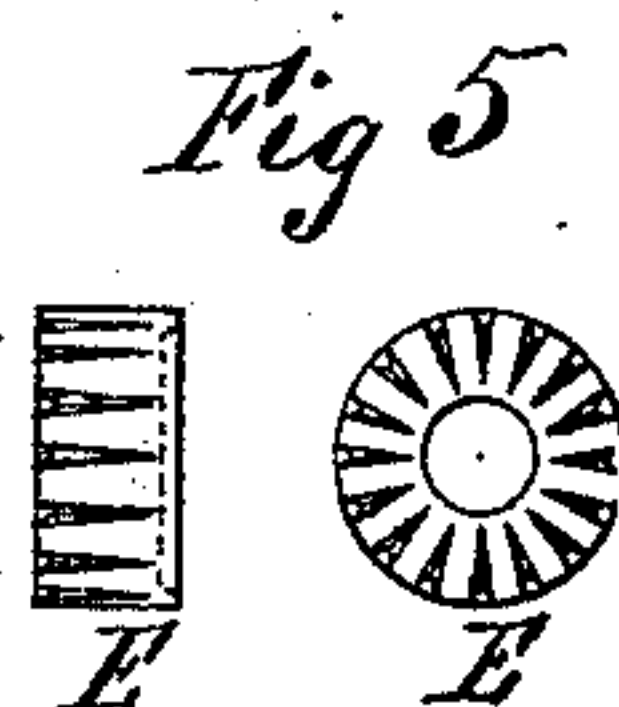
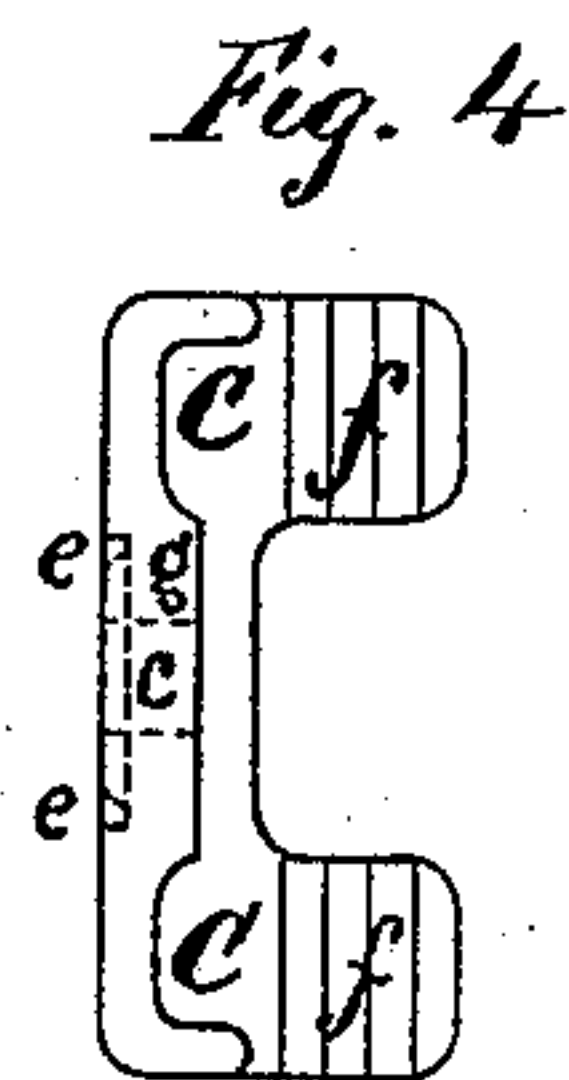
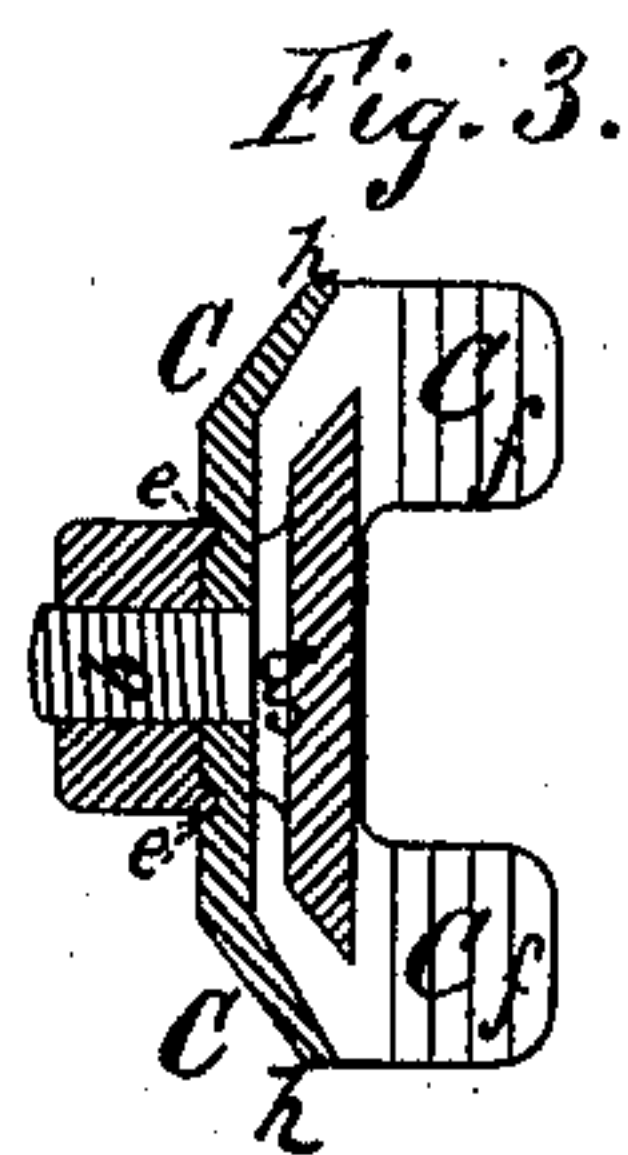
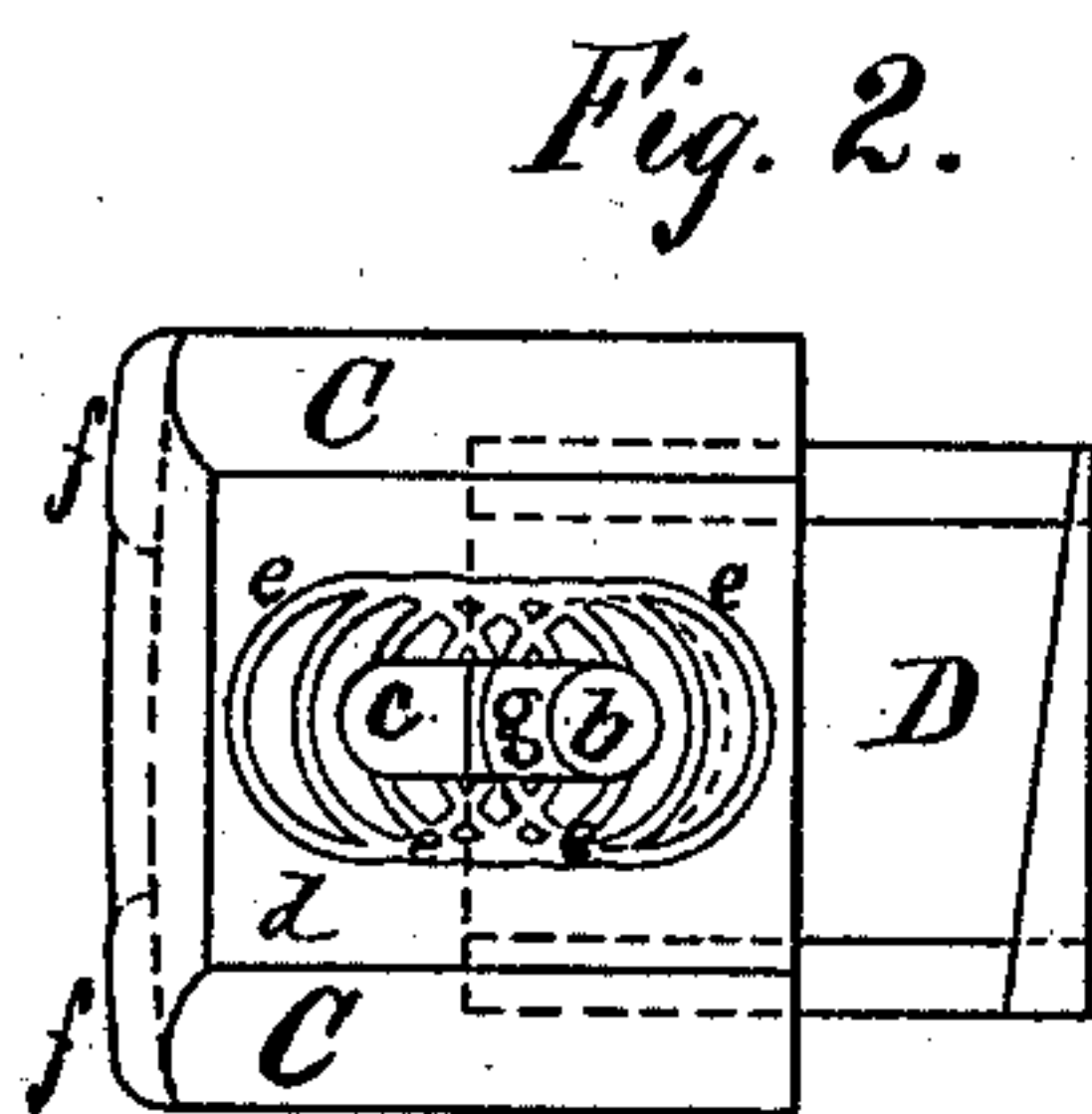
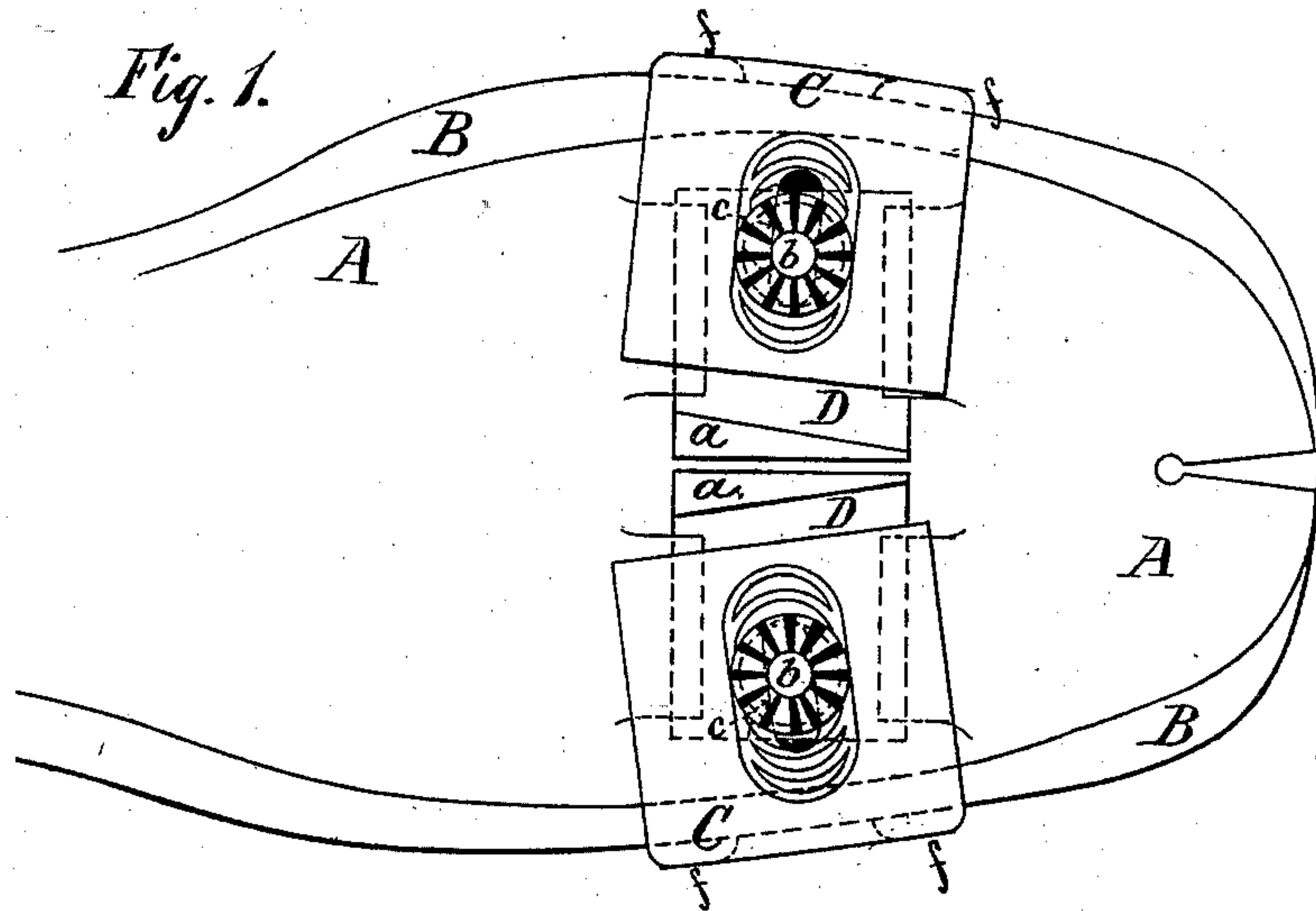


(Model.)

J. H. FORSHAY.
Skate Clamp.

No. 231,905.

Patented Sept. 7, 1880.



Witnesses:-
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UNITED STATES PATENT OFFICE.

JACOB H. FORSHAY, OF NEW YORK, N. Y.

SKATE-CLAMP.

SPECIFICATION forming part of Letters Patent No. 231,905, dated September 7, 1880.

Application filed June 7, 1880. (Model.)

To all whom it may concern:

Be it known that I, JACOB H. FORSHAY, of the city and county of New York, in the State of New York, have invented a new and useful
5 Improvement in Skate-Clamps; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

10 This invention relates to an improvement in the toe-clamps of skates—that is, clamps for clasp-
ing the opposite edges of the boot or shoe sole at or near the ball of the foot; and although my improved toe-clamp is especially
15 intended for use in connection with certain improvements in skates secured to me by Letters Patent of the United States bearing date March 9, 1880, and numbered 225,276, yet it is applicable to skates of other and different
20 forms and constructions.

By reference to my said Letters Patent it will be seen that the toe-clamps of the skate therein described and claimed are each provided with two gripe-pieces, and that, as with
25 other well-known toe-clamps, they are adjustable to and from each other, and capable of being secured at any distance apart to suit any width of sole of the boot or shoe to which the skate is to be applied; and while toe-clamps so constructed answer well for clamp-
30 ing and securing boots or shoes having soles of uniform width, yet it has been found in practice that when boots or shoes are worn having tapering or pointed soles, by reason of the clamps not being capable of lateral adjust-
35 ment they are unable to adapt themselves to the variations in the width of such soles, and hence only one gripe-piece of each clamp will take hold or bear upon the edge of the sole, thus forming but an imperfect connection or union between the skate and the foot.

The object of my invention is to remedy the defects of the toe-clamps as heretofore constructed; and to this end it consists of an im-
45 proved toe-clamp for skates which shall not only be adjustable back and forth at right angles to the length of the sole-plate to suit any width of sole, but also laterally to adapt it to any variations in the width of the sole, whereby both gripe-pieces of the clamp will be
50 caused to take hold and bear equally against

the edge of the sole, and a perfectly reliable connection be insured between the skate and the foot, irrespective of the shape of the boot or shoe worn; and my invention also consists
55 in a novel and efficient means of securing the clamp against accidental displacement after it has been adjusted, thus preventing all liability of the skate becoming detached from the foot by reason of the clamp working loose or
60 unclamping, as frequently occurs with the toe-clamps now in use.

Referring to the accompanying drawings, Figure 1 represents a portion of the sole-plate of a skate attached to a boot or shoe having
65 my improved toe-clamp applied thereto. Fig. 2 is a view of the under side of my improved clamp. Fig. 3 is a transverse section of the same. Fig. 4 is a sectional view of the gripe-pieces; and Fig. 5 represents the channel-nut
70 for securing the clamp in place after adjustment.

In the said drawings, A represents a portion of the sole-plate of a skate applied to the sole of a boot or shoe, B, and C my improved toe-
75 clamp attached, one at each side, to the sole-plate A.

D is a slide whose beveled edges are held under parallel guides formed on the under side of the sole-plate, and which is free to move
80 back and forth under said guides at right angles to the length of the sole-plate, as shown and described in my Letters Patent hereinabove referred to.

On the inner end of the slide D is secured
85 a downwardly-projecting dovetailed piece, *a*, extending in the direction of the length of the sole-plate and at right angles to the slide, which engages with a dovetailed slot in the skate-runner, whereby the clamp is drawn and
90 held against the edge of the boot or shoe sole by the act of drawing the runner in place on the sole-plate, as will be fully understood by reference to my said Letters Patent. The slide D is also provided with a threaded stud
95 or bolt, *b*, which extends up through a slot, *c*, in the plate *d* of the clamp, and by means of which the slide and plate are connected so as to move together, the stud or bolt *b* being fitted with a nut, *E*, hollowed out on its under
100 face, so as to form a single annular rib or projection of suitable size to fit into and engage

with any one of a series of overlapping annular grooves, *e*, cut or formed on the under face of the plate *d*.

ff (see Figs. 3 and 4) are two gripe-pieces 5 attached to the outer end of plate *d* and projecting up a sufficient distance above the edge of the sole-plate, and at right angles thereto, to embrace and clasp the edge of the boot or shoe sole at or near the ball of the foot; and *g* 10 is a shoulder secured to the slide *D*, which in the present example I have shown as being square and loosely fitted to the slide; but it may, of course, be made round or of other shape, and permanently attached to the slide, 15 if desired, the sole object of this shoulder being to raise the flanges *h* of plate *d* sufficiently above the parallel guides in the sole-plate to permit the toe-clamp to move or turn sidewise or laterally on said guides, for a purpose to 20 be presently described.

From the foregoing it will be seen that by unscrewing or loosening the channel-nut *E* on the stud or bolt *b* the plate *d* can be moved in 25 or out on the slide *D* to the extent of the slot *c*, to adjust the clamp to the width of the boot or shoe sole, and then by screwing down the channel-nut on the stud or bolt its annular rib or projection will enter and engage one of the 30 annular grooves *e* of plate *d*, and thereby securely fasten the plate and slide together, while by the lateral movement or play allowed the plate *d* the clamp can adapt itself to any variations in the width of the boot or shoe sole, (see Fig. 1,) whereby both the gripe- 35 pieces *ff* will be caused to take hold and bear equally, one gripe-piece against the wide part and the other against the narrow part of the sole, thus forming a more perfect and reliable connection between the skate and the 40 foot of the wearer than can be effected by any toe-clamp heretofore known or used.

After the toe-clamp has been properly adjusted, as above described, it is drawn in and forcibly held against the edge of the sole by 45 the dovetailed projections *a* engaging with the corresponding dovetailed groove in the skate-runner in the act of drawing the runner in place on the sole-plate, as fully set forth and described in my said Letters Patent; and it 50 will be obvious that the above-described mode of fastening the clamp after adjustment by means of the channel-nut *E*, provided with an annular rib or projection which enters and engages with corresponding annular grooves in the plate *d*, is not only novel, but more effectually 55 secures the clamp against accidental displacement than any other mode of fastening

heretofore known or used, as, no matter at what angle the clamp may be turned, the pull on the same will always be at right angles to 60 the length of the sole-plate, and the harder the pull or strain on the clamp the tighter the annular rib or projection of the nut will become jammed in the annular groove with which it 65 engages, thus locking the nut on the stud or bolt *b*, and preventing the accidental unclamping of the skate from the foot by reason of the nut turning and working loose, as frequently takes place with the toe-clamps now in use; and it will also be obvious that by construct- 70 ing plate *d* without flanges the shoulder *g* on the slide may be dispensed with, as when so constructed the plate *d* will have the necessary lateral movement or play for adjustment to soles of varying width, as above described; 75 and although I have herein described the construction and operation of my invention as designed for use with the improved skate secured to me by the Letters Patent hereinabove referred to, and as a substitute for the toe-clamp 80 therein shown and described, it will be obvious that the same may be applied to skates differently constructed by simply dispensing with the dovetailed projecting piece *a* on slide *D*, and providing a screw or other well-known 85 means for drawing and holding the clamp after adjustment against the edge of the boot or shoe sole.

What I claim as my invention, and desire to secure by Letters Patent, is— 90

1. In toe-clamps for skates, the combination of the slide *D*, provided with a dovetailed projection, *a*, stud or bolt *b*, and shoulder *g*, the plate *d*, provided with two gripe-pieces, *ff*, a slot, *c*, and a series of annular grooves, *e*, and 95 the channel-nut *E*, substantially as and for the purpose described.

2. The combination of the slide *D*, provided with a stud or bolt, *b*, the plate *d*, provided with two gripe-pieces, *ff*, a slot, *c*, and a series 100 of annular grooves, *e*, and the channel-nut *E*, substantially as described.

3. The channel-nut *E*, having an annular rib or projection adapted to enter and engage a corresponding annular groove or grooves in 105 the plate *d*, whereby the nut is securely locked and prevented from turning or working loose when subjected to strain, substantially as described.

JACOB H. FORSHAY.

Witnesses:

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