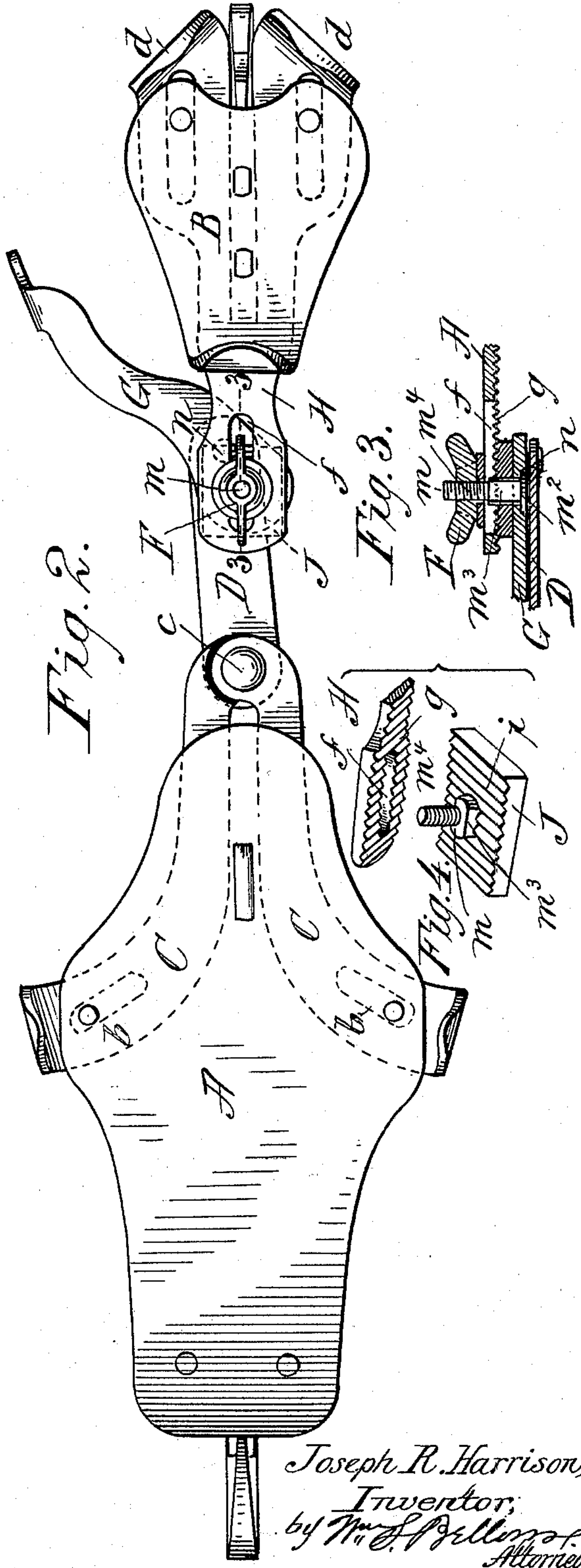


Patented July 6, 1897.



Joseph R. Harrison,  
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# UNITED STATES PATENT OFFICE.

JOSEPH R. HARRISON, OF CHICOPEE, MASSACHUSETTS.

## SKATE.

SPECIFICATION forming part of Letters Patent No. 585,866, dated July 6, 1897.

Application filed October 29, 1896. Serial No. 610,518. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH R. HARRISON, a citizen of the United States of America, residing at Chicopee, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Skates, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to improvements in that class of skates in which the movable heel-clamp member and the paired sole-clamps are united by a cam-shaped lever pivotally connected to the one clamp and by a link pivotally connected to both the lever and the other clamp, whereby the swinging of the lever in one direction distends the sole-clamps sideways and the heel-clamp endwise, and the swinging of the lever in the opposite direction contracts the clamp members.

A peculiarity in the clamp mechanism of the class aforesaid consists in the double fulcrum as constituted by the pivot connecting the lever to the link, and the pivot connecting the pivot which in substance connects the lever to one of the clamps so that both sets of clamps may be brought to their proper bind on the sole and heel, because, for instance, after the lever has swung for its center of motion on the pivot, which connects it with the link which is pivoted to the sole-clamp, and has drawn the heel-clamp to bearing on the heel, the fulcrum is then changed to the pivot connecting lever with heel-clamp, whereupon the aforesaid lever and link uniting pivot as the lever is further swung derives movement to operate through the link the sole-clamps.

The present invention relates to an improved adjustable connection between the lever and one of the clamps whereby the maximum distention of both sets of clamps may be varied at pleasure to adapt the skate to boots or shoes having soles of varying widths and heels of various lengths; and the invention consists in constructions and combinations of parts, all substantially as will hereinafter fully appear, and be set forth in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of a skate having my present improvements applied thereon, and Fig. 2 is a plan view of the same. Fig. 3 is a sectional view through the novel parts as taken on the line 3 3, Fig. 2. Fig. 4 is a perspective view of parts in detail—namely, of a portion of the heel-clamp, the adjustable interlocking connection block or plate, and the connecting-bolt.

Similar letters of reference indicate corresponding parts in all of the views.

In the drawings, A represents the foot-plate of the skate, and B the heel-plate, having at its forward end the fixed heel-clamp member *a*.

C C are the sole-clamps, having the stud-and-slot guiding engagement with the sole-plate at *b b*, and at their rear ends pivotally united, as shown at *c*, one to the other and both with the link D, which is rearwardly extended from its place of connection with the sole-clamps.

G represents the operating-lever.

The longitudinally-movable and suitably-guided heel-clamp members *d d* are formed integrally with the forwardly-extended heel-clamp body or bar-shaped portion H, which is provided with the longitudinal slot *f* at its forward end portion, which slotted portion is also on its under side provided with the series of teeth or serrations *g*. With this serrated portion of the heel-clamp the block or plate J has, by the serrations *i* provided on its top, an adjustable and interlocking engagement.

The flat lever G carries the standing bolt *m*, the base thereof being upset, as shown at *m*<sup>2</sup>, and loosely seated in a countersunk opening therefor within the under side of the lever, this construction permitting the lever to swing on and relatively to the bolt. The bolt for a portion of its height has its side or sides squared, as shown at *m*<sup>3</sup>, and passes through an aperture in the plate J of corresponding form, so that there may be no rotary motion of the bolt and plate, the one relative to the other. The upper end portion of the bolt is of somewhat decreased diameter and screw-threaded, as seen at *m*<sup>4</sup>, and projects through and upwardly beyond the slotted portion H of the heel-clamp. The squared or flattened portion of the bolt does not reach quite to the top of the heel-clamp bar H, whereby the



thumb-nut F, which screws on the threaded portion of the bolt, may seat itself firmly against the top of the clamp-bar H, effectually insuring the connection of the serrated plate J for any desired length of time as one with the clamp-bar.

The lever G has its pivot *n*, which connects it with the link, a short distance to one side of the bolt which constitutes the pivot between the lever and block-and-heel clamp, which block and clamp to all intents and purposes are as one, except at such times as it is desired to alter the degree of distention of the clamps, when of course it is understood by loosening the thumb-nut sufficiently on the bolt, allowing the block to separate from the clamp-bar as much as the distance of the depth of the serrations, the block may be slid forwardly or rearwardly relatively to the clamp-bar or the clamp-bar to it. By adjustably confining the block and bolt rearwardly relatively to the heel-clamp provides for a lessened distention of both the sets of clamps, while the forward setting and confinement provides for an increased limit of the distention.

I claim—

1. The combination, in a skate of the character described, with the sole-clamps and the link pivotally connected thereto, of the heel-clamp longitudinally slotted, the block having an adjustable interlocking engagement with the heel-clamp, the lever pivotally connected to said link, and a bolt having an engagement with the lever, passed through the block and the slot in the heel-clamp and receiving the binding-nut, substantially as and for the purpose set forth.

2. In a skate of the character described, the combination with the sole-clamps and the link

pivotally connected thereto, of the heel-clamp having on its under side the series of serrations, the block having on its upper side a series of serrations and having a squared opening through it, the lever pivotally connected to said link, and the bolt having on its lower end an enlargement loosely seated in a countersink therefor in the lever, having a portion thereof extending upwardly through the slot squared, whereby the block may not rotate on the bolt, and said bolt having its upper extremity threaded, receiving thereon the thumb-nut which is adapted to seat itself upon the upper side of the slotted heel-clamp, all substantially as and for the purposes set forth.

3. In a skate the sole-clamps, the link pivotally connected thereto, the operating-lever, G, provided with a pivot N which passes through the rear end of the link; and the bolt M, by which the parts are connected, combined with a separate bolt J serrated upon its upper face, and the heel-clamp provided at its front end with a slot F, and having its under surface serrated so as to engage with the block; and a thumb-nut which is applied to the upper end of the bolt for clamping the parts together; the block J being stationary on the bolt while the heel-clamp is adjusted back and forth in relation to the block so as to regulate the distance the clamp shall be moved substantially as shown.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 26th day of September, A. D. 1896.

JOSEPH R. HARRISON.

Witnesses:

WM. S. BELLOWS,  
E. C. DUMBLETON.