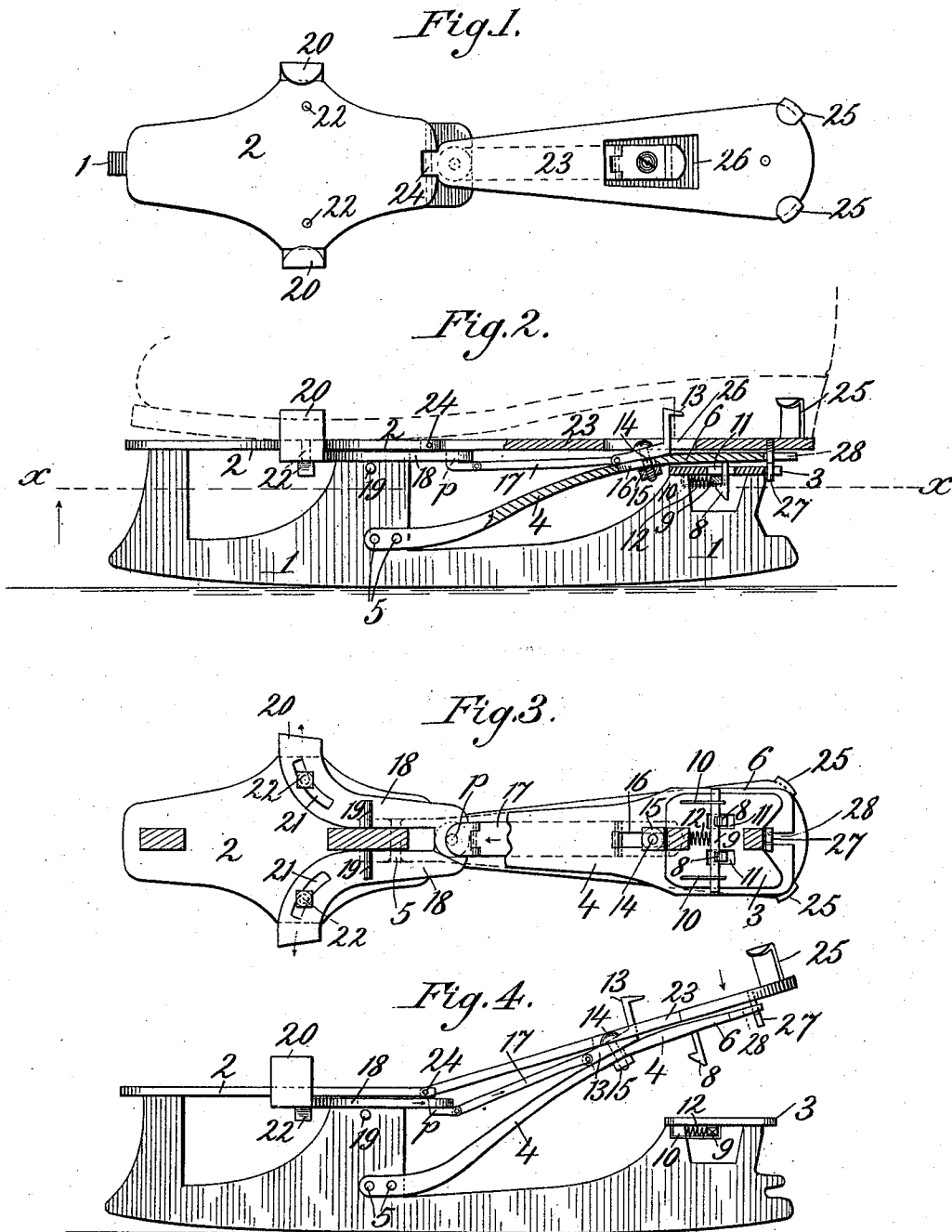


(No Model.)

R. R. NORTON & H. HALL.
SKATE.

No. 486,120.

Patented Nov. 15, 1892.



Attest:

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UNITED STATES PATENT OFFICE.

ROBERT R. NORTON AND HAMILTON HALL, OF SANDY HILL, NEW YORK.

SKATE.

SPECIFICATION forming part of Letters Patent No. 486,120, dated November 15, 1892.

Application filed April 22, 1892. Serial No. 430,262. (No model.)

To all whom it may concern:

Be it known that we, ROBERT R. NORTON and HAMILTON HALL, citizens of the United States, residing at Sandy Hill, in the county of Washington and State of New York, have invented certain new and useful Improvements in Skates; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Our invention relates to skates of that class in which the clamps are automatically locked upon the boot or shoe by the pressure of the foot upon the skate, and has for its objects, first, to provide simple and effective mechanism for operating the clamps, and, second, to afford a ready means for quickly adjusting both sole and heel clamps simultaneously to suit different sizes of boots or shoes; and our invention consists in certain mechanism for carrying out these objects, as will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a plan view of our improved skate; Fig. 2, a side elevation of the same, partly in section, showing it clamped to the shoe. Fig. 3 is a horizontal section on line *xx* of Fig. 2; and Fig. 4 is a side elevation of the skate, showing it in position to be clamped upon the shoe.

The numeral 1 indicates the runner of the skate, formed of cast-steel or other suitable material and which has rigidly secured to it upon upright projections the sole-plate 2 and heel-plate 3. This heel-plate 3 is on a plane somewhat lower than plate 2 and serves a purpose to be hereinafter described.

4 represents a flat or plate spring, which is firmly secured to the central upright of the runner, as shown, at the points 5 5. This spring extends upward and backward, being bent slightly downward at its free end 6, so as to lie horizontally over and upon the heel-plate 3 when the spring 4 is locked to the said plate, as indicated in Fig. 2. The end 6 is made slightly wider and longer than plate 3, as shown in Fig. 3. Hooks or catches 8 8 project from the under side of the spring 4, being fastened to the part 6, one on each side of

the center of said part. These hooks engage with a locking-bar 9, movably located in guides 10 10, secured to the under side of the heel-plate 3. Plate 3 is further provided with slots 11 11, so located as to permit the passage of the hooks when the spring is depressed. Bar 9 extends transversely across the under side of heel-plate and is acted upon by a spring 12, which keeps it in contact with the hooks when the spring is depressed, thus locking the spring to the heel-plate. The spring 4 is connected to and operates the clamps in a manner to be now described.

13 represents the front heel-clamp, which is adjustably secured to the upper side of the spring 4 by means of a bolt 14 and nut 15 at a point just in front of the bend in said spring. The bolt 14 passes through slot 16 in the spring, thus allowing of an adjustment of the heel-clamp 13. A link 17 is pivotally connected to the lower end of the front heel-clamp 13, being similarly connected at its other end to the hinge or pivot pin *p* of a pair of jaws or levers 18 18. Levers 18 18 may be termed the "sole-clamp" levers, and extend beneath the sole-plate 2, resting upon projections or pins 19 19 on the central upright of the runner. These levers are curved outwardly beyond the sole-plate and are upturned at their ends, forming the sole-clamps proper, which are designated by the numerals 20 20. Each lever 18 has a curved slot 21 formed in it, through which depends a pin or bolt 22 from the under side of the sole-plate. A heel-lever 23 is pivoted or hinged at 24 to the rear end of the sole-plate 2 and has secured to its curved free end the rear heel clamps or points 25 25. It is further provided with a slot 26, through which the front heel-clamp 13 projects. This lever is loosely connected with the spring 4, so as to move with it, by means of a headed pin or bolt 27, passing through the slot 28 in the end of said spring, the bolt being screwed fast to the heel-lever.

The operation of clamping the skate to the shoe or boot is as follows, the parts being in the position shown in Fig. 4: The heel of the shoe being pressed upon the heel-lever depresses it and also the spring 4, with which it is loosely connected. This downward movement of the spring 4 causes the front heel-clamp to approach the rear heel-clamps and

also by means of the link 17 to draw back the sole-clamp levers, which are forced inward at the same time by the pins 22, working against the sides of the slots 21, thus closing the clamps 20 upon the sole. The further depression of the spring 4 causes its hooks 8 8 to pass through the slotted heel-plate 3 and engage with the locking-bar 9, and thereby the spring will hold the clamps locked firmly upon the shoe. To release the skate, it is only necessary to press back the locking-bar 9 with the thumb and forefingers sufficiently to release the spring 4, which will fly upward, taking with it the parts above it, which movement will cause the clamps to spread and release the skate from the foot, as will be readily understood. By simply loosening nut 15 the front heel-clamp can be adjusted on the spring 4 to suit any size of heel, its bolt 14 moving in slot 16 in said spring. The sole-clamps, being connected with the heel-clamp by link 17, will of course be adjusted at the same time—that is to say, when the heel-clamp is moved inward to suit a smaller-sized heel the sole-clamps will be simultaneously moved inward to suit a narrower sole, and vice versa. Tightening up nut 15 will hold the clamps in their adjusted positions.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a skate, the combination, with a fixed sole-plate having depending pins, of a heel-lever pivoted to said sole-plate and having heel-clamps and a bolt for loosely connecting it with a plate-spring, a front heel-clamp adjustably secured to the plate-spring and linked to a pair of sole-clamp levers, the sole-clamp levers provided with slots to engage with the pins depending from the sole-plate, a plate-spring provided with catches, a heel-plate having slots, and a locking-bar adapted to engage with the catches of the plate-spring for locking the clamps, substantially as shown and described.

2. The combination, in a skate, with a sole-plate and hinged heel-lever provided with

clamps, of an independent spring-plate located beneath the heel-lever and secured to the runner and adjustably connected to the sole and front heel-clamps and provided with catches, a heel-plate fixed to the runner and provided with slots for the passage of the catches on said spring-plate, and a spring-actuated locking-bar working in guides on the under side of said heel-plate and adapted to engage with the catches on the spring-plate, and thereby hold the clamps in their locked positions, substantially as set forth.

3. The combination, in a skate, with a sole-plate having depending pins, of a slotted heel-lever hinged to said sole-plate and provided with heel-clamps and a bolt on its under side for loosely connecting it with a spring-plate, a front heel-clamp adjustably connected to said spring-plate, the sole-clamp levers connected by a link with said heel-clamps and adapted to engage with the depending pins of the sole-plate, the spring-plate slotted at its free end and provided with catches, a heel-plate slotted for the passage of the catches on the spring-plate and provided with suitable guides for a sliding locking-bar, and the sliding locking-bar adapted to engage with the catches of the spring-plate and lock the same to the heel-plate, for the purposes shown and described.

4. In a skate, the combination, with a spring-plate secured to the runner and provided with a slot for the passage of an adjusting-bolt, of a front heel-clamp and adjusting bolt and nut for adjustably connecting said heel-clamp with said spring-plate, and a link connecting said heel-clamp with the sole-clamp levers, and the sole-clamp levers, whereby said sole and heel-clamps can be simultaneously adjusted, substantially as shown and described.

In testimony whereof we affix our signatures in presence of two witnesses.

ROBERT R. NORTON.
HAMILTON HALL.

Witnesses:

CHARLES B. GIBSON,
JOHN G. RICH.