E. H. BARNEY.

SKATE-FASTENING.

No. 187,584. Patented Feb. 20, 1877.

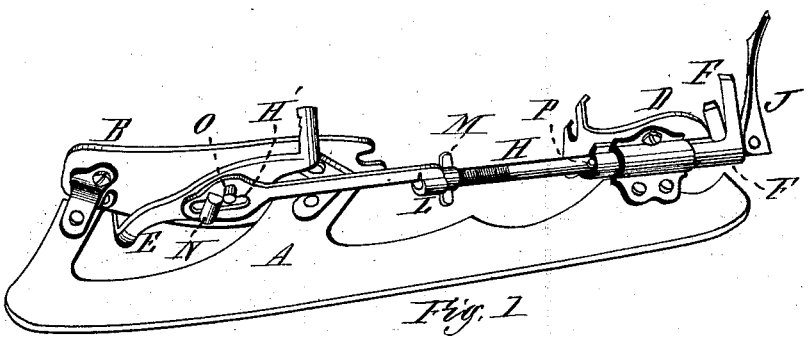

Fig. I

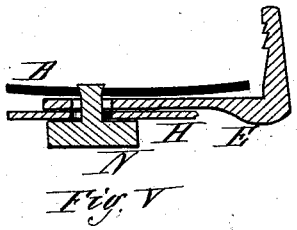

Fig. V

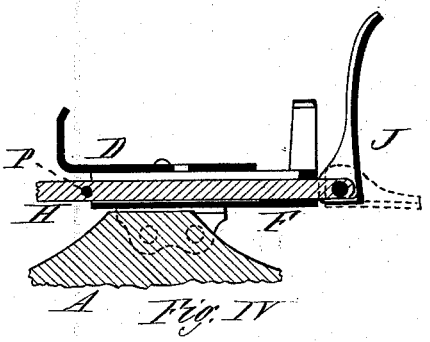

Fig. IV

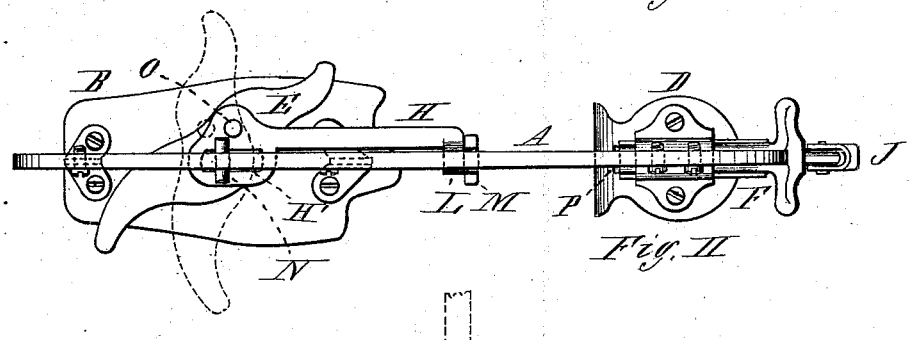

Fig. II

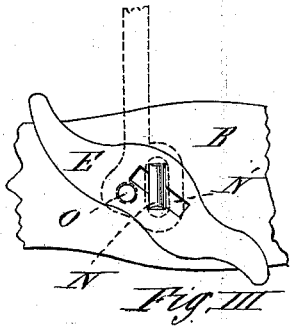

Fig. III

Witnesses—

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IMPROVEMENT IN SKATE-FASTENINGS.

Specification forming part of Letters Patent No. **187,584**, dated February 20, 1877; application filed November 27, 1876.

To all whom it may concern:

Be it known that I, EVERETT H. BARNEY, of Springfield, in the State of Massachusetts, have invented a new and useful Improvement in Skate-Fastenings; and that the following is a full, clear, and exact description therof, reference being had to the accompanying drawings, making a part of this specification, and to the letters of reference marked thereon.

My invention relates to the fastenings attached to a skate for securing the skate to the foot; and it consists, first, of a bar-clamp swinging upon a pivot, having an elongated head, and actuated by a slotted draw-bar, by means of which, in connection with the said pivot, the clamp is secured and held to the foot-plate; and it consists also of a movable heel-clamp combined with a draw-bar, and the latter provided with a cam to actuate said clamp, and also to actuate the toe or bar-clamp, to which the forward part of the draw-bar is attached, as will be more fully hereinafter described.

Figure I is a perspective view of a skate, having my invention applied thereto. Fig. II is a reverse plan view of the skate, showing the arrangement of the fastenings thereon. Fig. III is a reverse plan view of a part of the foot-plate, showing the bar-clamp and the pivot upon which it swings. Fig. IV is a longitudinal vertical section through the heel part of the skate, and Fig. V is a transverse vertical section through a portion of the foot-plate, and the pivot which holds the bar-clamp in place, and upon which it swings.

In the drawings, A represents the blade of a metallic skate; B, the foot-plate, provided on its lower side with a pivot, N, having an elongated head, and D is the heel-plate, beneath which extends the heel-clamp F, sliding to and fro between the brackets which secure the heel-plate to the blade, said clamp terminating at the rear end in the ordinary flanges, which project up behind the heel-plate to grasp the heel of the boot.

The draw-bar H is provided at the forward end, with a slot, H′, to permit that end of the bar to be placed over the elongated head of the pivot N, and is also provided with a hole to receive the stud O made upon the bar-clamp E, and the draw-bar is made in two parts, connected together at L by a screw-thread and nut, or by any other convenient means, and extends back beneath the heel-plate through the heel-clamp F with a cam, J, secured to its end. A bar, E, provided with projecting flanges at each end, which turn upward to grasp the opposite sides of the sole of the boot, swings freely upon the pivot N attached to the foot-plate, and is provided with a slot, N′, so that when the bar is placed with the slot extending in the same direction as the elongated head of the pivot N, the bar may be placed upon the pivot or removed therefrom, as shown in dotted lines in Fig. III. This bar, swinging upon the pivot N, I denominate the bar-clamp, and it is provided with a stud, O, which is inserted into a hole in the forward end of the draw-bar H; and when both the bar-clamp and the forward part of the draw-bar are in place upon the pivot N, the latter secures the former in place, inasmuch as the slot in the bar-clamp and the slot in the draw-bar are not in any part of their joint operation brought into the same relative position.

A check-nut, M, may be used, if desired, upon the screw-thread of the draw-bar, to be turned up against the nut L, when making a permanent approximate adjustment of the skate to the boot, as will be more fully hereinafter explained.

The bar-clamp E is readily put in place upon the pivot N, or removed therefrom, by disconnecting the draw-bar at L, and turning its forward part into the position shown in dotted lines in Fig. III. That part of the draw-bar may then be removed, and the bar-clamp then being turned into the position shown in dotted lines in Fig. II, its slot and the elongated head of the pivot N are then in the same relative position, and the clamp may then be removed and be replaced upon its pivot. When put in place the clamp is turned into the position shown in Fig. III, and the forward end of the draw-bar is placed over the pivot N and stud O, and when turned into any other position both are held in place upon the pivot.

The operation of my invention is as follows: All the parts being in place, the check-nut M (if one is used) is turned back upon the draw-bar, and the latter turned out of the nut L un-

til the projecting flanges of the heel-clamp F are sufficiently moved to the rear to place the heel of the boot in between them and those on the front end of the heel-plate D, and the bar-clamp E is in such position that the sole of the boot may be placed between the flanges at its ends. The cam J is then used as a key to turn the draw-bar H into the nut L until the flanges at the ends of the bar-clamp E impinge against the sides or edges of the boot, and the flanges of the heel-clamp F are carried forward to force the heel of the boot against the flanges on the forward end of the heel-plate. When these flanges are all brought up to a bearing against the sole and heel of the boot, the check-nut M may be turned forward firmly against the nut L, and the cam J (which, when used as a key to turn the draw-bar may be in a horizontal position, as shown in dotted lines in Fig. II) is then brought up to a vertical position against the rear of the heel of the boot, and the skate is, by this last movement of the cam, made perfectly fast and tight to the boot, both the bar-clamp E and the heel-clamp F moving up together by the action of the cam J.

In removing the skate from the boot, if the ice and snow should collect around the fastenings to such an extent as to prevent their working freely, the draw-bar H may be turned back a little, and the projection P on the draw-bar will force back the heel-clamp F from the heel of the boot, although this projection is not essential, because, if the draw-bar be so turned back, the skate will be easily removed by shaking it, or working it to and fro a little.

I use the check-nut M not as an essential feature of the invention, but to facilitate the first approximate and permanent adjustment of the skate to the same boot, which is done by turning the rear part of the draw-bar into the nut, at L, until the clamps will almost, or just, grasp the sole and heel of the boot, and then turning the check-nut up firmly against the nut L, and the skate will be secured fast by moving up the cam, as before described, and is removed from the boot by turning it down to a horizontal position. After this approximate adjustment is once made the check-nut need not be moved so long as the skate is used with the same boot.

The rear part of the draw-bar H, in connection with the cam J attached, may, as well, be used as a fastening for the heel-clamp alone, by attaching a threaded nut to the skate beneath the heel-plate, making the draw-bar of a proper length to turn into it, so that by turning the draw-bar in or out, to approximately adjust the clamps to the size of the heel, the clamps may be tightened to the heel by raising the cam J, as hereinbefore described, and, by moving the cam down into a horizontal position, the clamps would be released.

It is obvious that the stud O may be made upon the draw-bar H instead of upon the clamp, and the hole made in the latter to receive it; and it is also evident that the head of the pivot N may be made oval, or of any other desirable elongated form, with a corresponding form of the holes in the clamp and draw-bar, without departing from the principle of operation.

The two parts of the draw-bar H may be secured together, so as to be adjustable one with the other, by ratchet-teeth, which shall be held together by any suitable means, or by any other convenient method, as well as by the screw and nut L, as above described.

It will be seen that the draw-bar H extends longitudinally along the skate, passing through the heel-clamp, and moving freely therein, so that it is more direct-acting in its operation upon the clamps than it arranged to act in an oblique direction.

Having described my invention, what I claim as new is—

1. The swinging bar-clamp E, in combination with the pivot N and foot-plate B of a skate, substantially as described.

2. The combination of the swinging bar-clamp E, the pivot N, the foot-plate B, and the slotted draw-bar H, whereby the said clamp is secured to and operated upon the skate, and may be removed therefrom by moving the said draw-bar out of its longitudinal position with the skate, substantially as described.

3. The combination of the movable heel-clamp F, the draw-bar H, and the cam J, attached to the rear end of said draw-bar, and arranged to operate against the rear end of said heel-clamp, the latter having a longitudinal motion independently of said draw-bar and cam, substantially as described.

4. A longitudinal draw-bar, H, made in two parts, and adjustable one part with the other at L, the forward part attached to and operating the bar-clamp, and the rear part passing through the movable heel-clamp F, and provided with a cam, J, on its rear end, which operates against the rear end of the heel-clamp, to actuate both the bar-clamp and heel-clamp, substantially as set forth.

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