

P. Smith,
Shoemaker.

No. 87,799.

Patented Mar. 16, 1869.

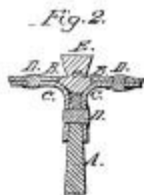
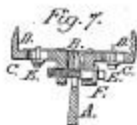
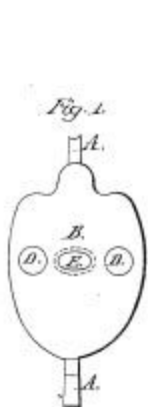
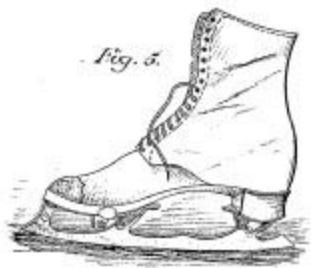
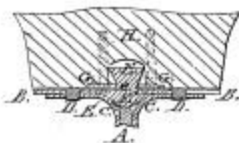


Fig. 3.



Witnesses:
W. C. [Signature]
C. C. [Signature]

Inventor:
Phineas Smith

United States Patent Office.

PHINEAS SMITH, OF NEW YORK, N. Y.

Letters Patent No. 87,799, dated March 16, 1869; antedated February 27, 1868.

IMPROVEMENT IN SKATES.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, PHINEAS SMITH, of the city and county of New York, in the State of New York, have invented certain new and useful Improvements in Skates; and I do hereby declare that the following is a full and exact description thereof.

My invention relates to the means of securing the heels of the skate to the boot or the shoe of the user.

It is applicable to all varieties of what is generally known as the "New York and Philadelphia Club Skate."

In the skates known by this name, the heel of each skate is provided with a small but stout button, which projects upward therefrom, and the heel of which is elongated transversely, to secure the skate to the foot. This button is introduced into a correspondingly-elongated hole, made in a plate previously prepared and fixed on the basis of the boot. After introducing the head of the button through such hole in the plate, the skate is turned a quarter around, under the foot, and the toe is afterward secured to the foot by other means.

It will be of course understood, that if the button stands with its longest line transversely to the skate, the hole of the plate in the boot must stand with its line lengthwise to the foot. Then, in order to introduce the button through the hole, the skate must be held in a position at right angles to the foot, and after it is introduced in such a position, the skate being turned one-quarter around, brings it in line with the foot, and the head of the button stands crosswise of the hole, so that it cannot come out.

This mode of fastening is very convenient, and is highly approved, but, as heretofore constructed, it has been open to the objection that the skate is liable to rattle, or be held loosely. The neck of the button has been usually too long.

It is impossible, in practice, to so directly and exactly adjust the length of the neck to the thickness of the plate, and the fitting of the plate to the boot, that the button shall be introduced easily and yet lock the skate tightly.

The shoulder, where the head of the button unites with the stem, must pass easily above the plate when the head of the button is introduced through the hole, or that part of the operation cannot be conveniently performed; and it is evident that if it passes freely any considerable distance above the upper surface of the plate, there will be a liability to rattle, and an uncomfortable and disagreeable shaking of the skate on the boot. In other words, the heel of the skate will be held strongly, but not with absolute firmness—it can move a little.

The object of my invention is to avoid this movement of the skate upon the boot, and to make it fit with absolute firmness, without involving any difficulty in the application of the skate, and leaving a reasonable allowance for the ordinary imperfections in the workmanship.

I effect this by the modification of the form of the under-face of the button. Instead of making it flat, as heretofore, I make it conoidal.

I will proceed to describe in detail what I consider the best means of carrying out my invention, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a top view of the heel-portion of the skate;

Figure 2 is a cross-section; and

Figure 3 is a section showing the skate confined to the boot.

The additional views are useful mainly in illustrating the general construction and arrangement of the club skate.

Figure 4, which is a rear view, is the only one which represents the peculiarity of my invention.

Similar letters of reference indicate like parts in all the figures.

A is the skate-iron, or runner, which travels on the ice.

B is the heel-plate.

C are braces, which connect the heel-plate to the runner, by the aid of rivets, D.

The button is fixed to the heel-plate B by introducing it from below. The part remaining below the plate B is smaller than the head of the button, and presses firmly up against the basis of the foot, as indicated.

E is the head of the button.

e is the neck, or most contracted portion, and

F is an enlargement, which exactly fills the hole in the plate B.

G is the larger plate below, which serves to secure the button firmly, by pressing up against the under side of the plate B.

H is the plate, of steel, or other metal, which is screwed, or otherwise firmly fixed on the heel H of the boot. A suitable cavity should be made in the leather of the heel, immediately over the hole in the plate G, to allow the head of the button to enter and turn freely.

The form of the button E, as seen in fig. 1, is elongated, with rounded sides, forming, in fact, an elongated, or oval figure, substantially the same as the most approved buttons heretofore employed, but the construction, between the top of the button and the upper surface of the plate B, has a novel and conoidal form.

In the ordinary form of the button, the cylindrical neck e is extended up to an extent something greater than the thickness of the plate G, which is attached to the boot H. In my improved form, the neck E is extended up in this manner to a less extent, and the button then becomes conoidal, flaring outward its sides gradually, until it obtains its full height and full dimensions.

In applying my skate to the foot, it is turned at right angles to the foot, as usual, and the button is inserted in the hole by the simple force of the hand, as usual.

It is now turned around into the line of the foot. It turns but a short distance, before the conoidal base of the button E begins to bind tightly in the hole of the plate G. The conoidal form of the button induces the button to rise in the cavity in the heel of the boot; in other words, it draws the skate tighter and tighter to the boot, as the skate is turned, and on arriving in its true position, in line with the foot, it holds the skate up immovably.

It is not absolutely essential to the temporary success of my invention that the under face of the button be conoidal. It may be made pyramidal, that is, with angles, instead of rounded surfaces; but if angles are allowed to exist, they are obviously liable to abrade the plate G, around the hole therein.

Imperfections in the workmanship make it impossible to match these parts with absolute perfection, but I have determined, by trial, that the ordinary elasticity of the parts will allow for all the irregularities that need occur in practice, with fair workmanship. In other words, if the button is made larger, or smaller, than is desirable, or the taper is a little more, or less, or the

hole in the plate is a little larger, or smaller, or the thickness of the plate, or the head of the button, is too large, or too small, the boot will, in such cases, come to a tight fit against the skate at an earlier or later period in the quarter revolution of one upon the other, but the spring of the parts will be sufficient to allow the motion to be complete, and to insure not only a strong, but a tight and immovable connection.

Having now fully described my invention,

What I claim as new therein, and desire to secure by Letters Patent, is—

The within-described tapering form of the button E, when combined and arranged to operate relatively to a skate and to the receiving-part on the boot or shoe, substantially as and for the purposes herein set forth.

In testimony whereof, I have hereunto set my name, in presence of two subscribing witnesses.

PHINEAS SMITH.

Witnesses:

THOMAS D. STRYSON,
C. C. LIVINGG.