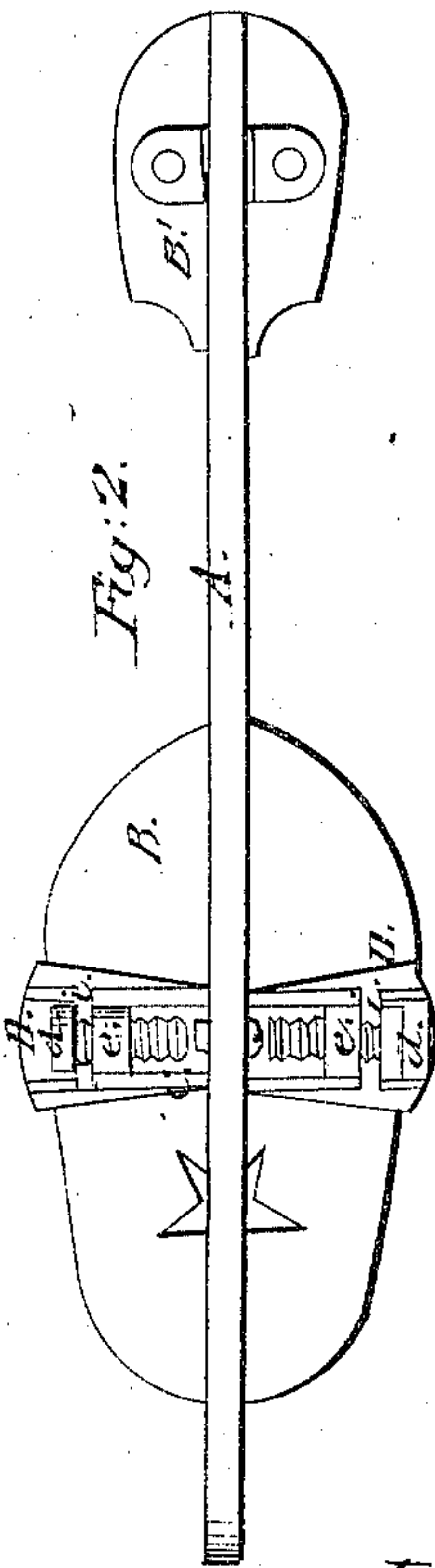
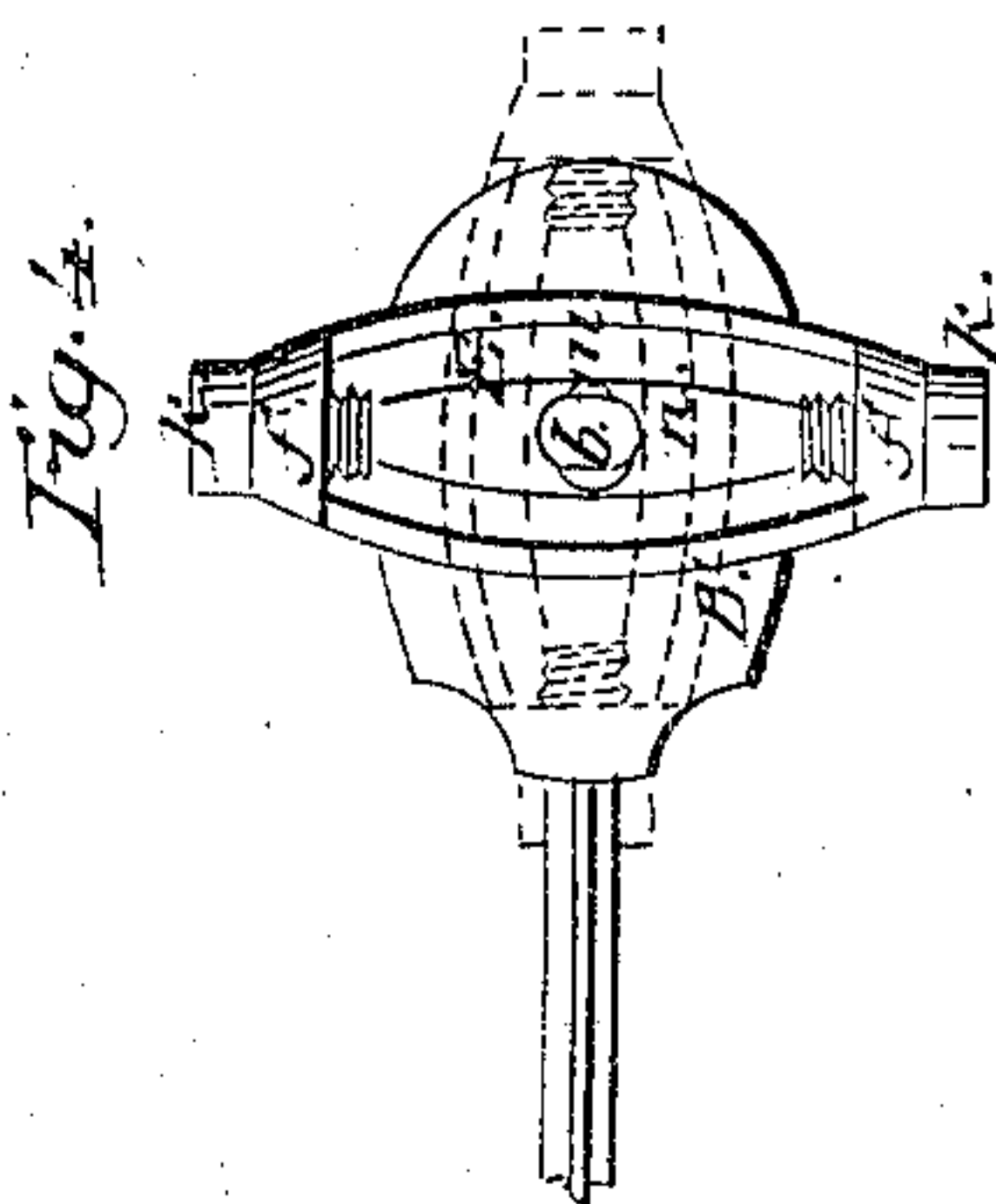
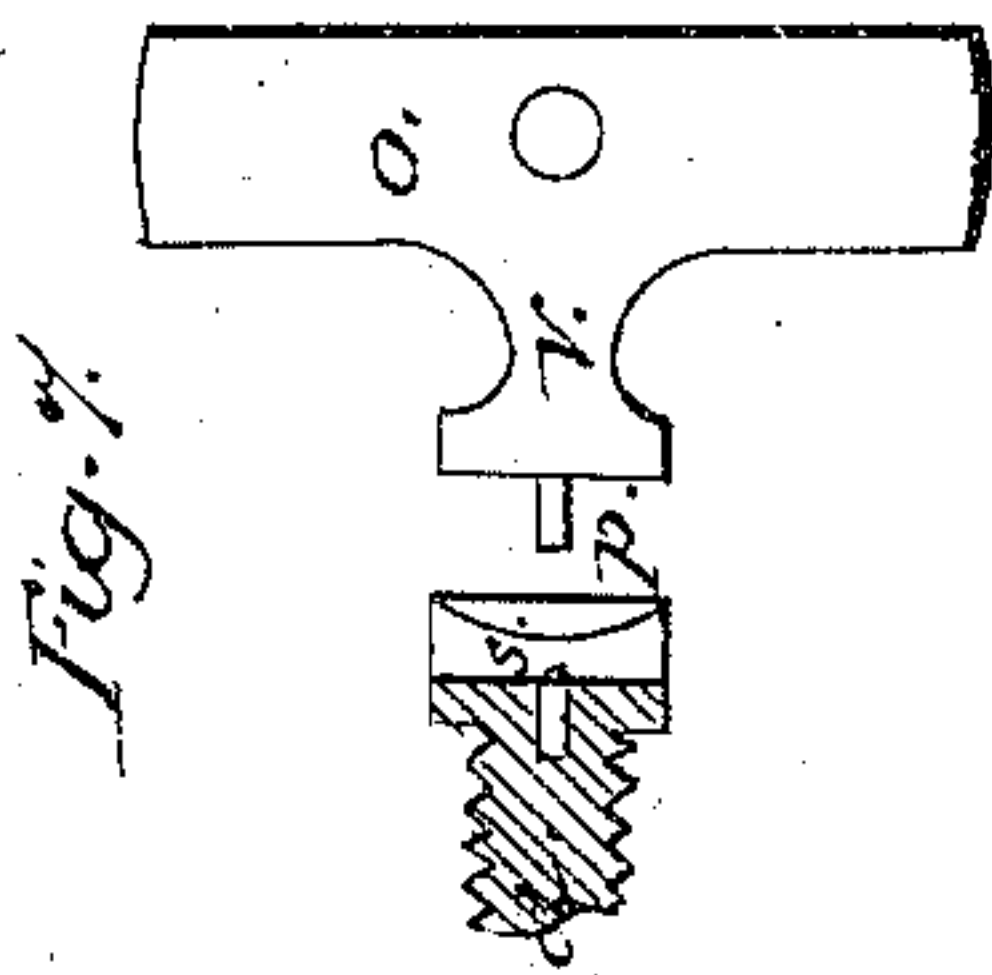
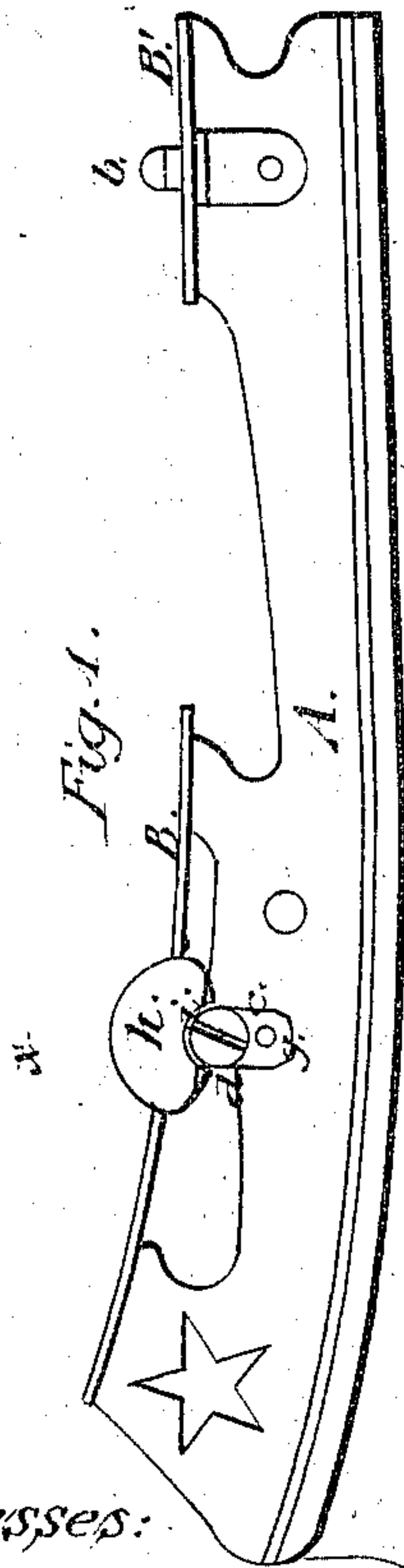
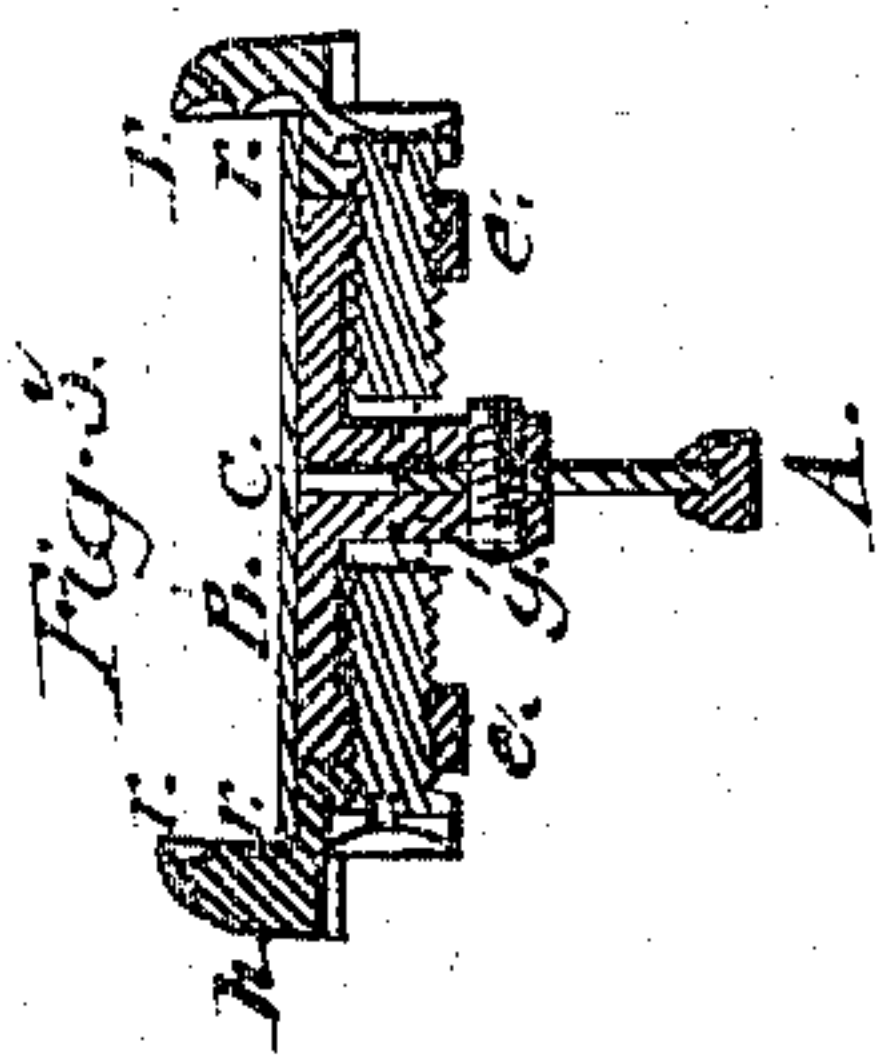
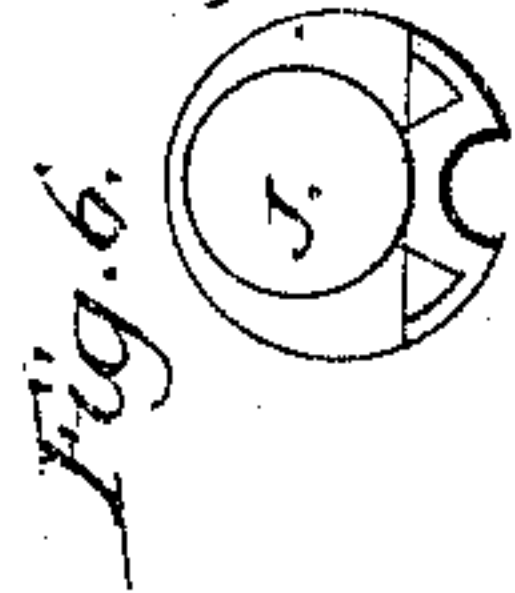


E. T. Starr.

N^o 89,804.

Skate.

Patented May 4, 1869.



Witnesses:

*A. de Clerc
A. Kinnier*

Inventor:

Eben T. Starr

United States Patent Office.

EBEN T. STARR, OF NEW YORK, N. Y.

Letters Patent No. 89,804, dated May 4, 1869.

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, EBEN T. STARR, of the city, county, and State of New York, have invented a new and useful Improvement in Skates; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

The object of this invention is to provide for the adjustment of the skate upon the boot, either by clamps or straps, and when by clamps, with less injury to the soles of boots, and also for the attachment to such boots as are not provided with slotted heel-plates, of such skates as are especially intended to be secured to a plate permanently placed on the boot heel.

The invention consists, first, in a transversely-arranged dovetailed guide-piece, secured to the runner and sole-plate, and carrying upon its extremities adjusting-screws, having centrally-pierced and concave heads, and supported within threaded lugs, whereby corresponding dovetailed sliders, having suitable clamping-jaws and shoulders, may be readily adjusted and secured thereon, or removed entirely, and replaced by similar sliders, with rings for straps.

It also consists in the arrangement of adjustable clamps with curvilinear serrated jaws, whereby the skate may be more securely retained upon the boot, and with less injury to the sole thereof than by the ordinary clamps.

It also consists in the arrangement upon the heel-plate of an attachable and removable heel-clamp, with central locking-slot for insertion of the locking-button of the heel-plate of the skate, and with suitable excavation for reception of the head of said locking-button, and with suitable set-screws for securing the same to the heel of the boot, whereby the said-skate may be adapted to boots not having a slotted heel-plate permanently inserted in the heel. And it furthermore consists in centrally-pierced concaved-headed adjusting-screws, operated by a screw-driver, suitably constructed, with a centrally-projecting pin for engaging with the cavity and concavity of the screw-head, whereby the engagement of the point of the screw-driver with the notch of the screw-head is more readily established and more easily retained, thereby rendering more convenient the operation of tightening the clamps when in a position inconvenient to be seen, as is especially the case when the skate is being adjusted upon the foot of females.

Figure 1 represents a side view of a skate constructed according to my improvement;

Figure 2 is an inverted plan of the same;

Figure 3 is a transverse section, taken through the line *x x*;

Figure 4 is a plan view of the heel, illustrating the improvements relating thereto;

Figures 5 and 6 represent end views of different kinds of fastening-arrangements for clamping or strapping, which may be used in connection therewith; and

Figure 7 represents the centrally-pierced concaved-headed adjusting-screw and corresponding screw-driver, illustrating their application to each other.

Similar letters of reference indicate corresponding parts in the several figures.

A represents the runner of the skate, of ordinary form and construction, and secured to the toe and heel-plates B B' by any suitable means.

C is a dovetailed guide-piece, secured transversely upon the under side of the toe-plate B, by means of screws or otherwise, and fitting astride or clamping the runner A, by means of a bisected downward extension, *c*, projecting centrally from the under side of the dovetailed guide-piece C, and which bisected extension, passing down upon each side of the runner A, is secured thereto by a screw, *g*, or other suitable means.

This dovetailed guide-piece C is provided at its extremities with adjusting-screws *d d*, fitting through threaded openings in lugs *e e*, at or near the ends of said guide-piece C.

Fitted to slide upon each end of this dovetailed guide-piece C, are corresponding dovetailed sliders D, having a reversed dovetailed formation for working over the dovetailed formation of the said guide-piece C.

The outer extremities of these sliders D are provided with upwardly-projecting clamping-jaws *h*, for engagement with the sole of the boot, and with shoulders *i i*, on the under side thereof, for engaging with the heads of the set-screws *d d*.

These sliders D may be removed, and replaced by similar ones, having rings J instead of clamps, so that when it is desirable, the skate may be secured to the boot by straps, and not by clamps.

The inner surface of these jaws, or clamps *h* are of a curvilinear serrated formation, or are provided with circular corrugations, or ridges *r*, so that the said corrugations or ridges engage with the edge of the sole in all directions, thereby holding it more firmly and with less liability of separating or tearing off the layers or thicknesses of leather composing the sole.

E is an attachable and removable heel-clamp, having in its centre a slotted opening, *m*, for reception of a locking-button *b*, which projects upward from the central portion of the heel-plate B.

A suitable excavation, *n*, is provided upon the upper side of the said heel-clamp E, and around the opening *m*, for reception of the said button *b*, after passing through the opening *m*.

At or near the extremities of this heel-clamp E, which is or may be of an elongated or other suitable formation, lugs *f f* are provided for reception of set-screws *k k*, which are fitted to work lengthwise of the said clamp E, and through threaded orifices in the said lugs *f*, so that the points of the said screws *k k* will point inwardly, for engaging with the heel of the boot upon opposite sides thereof at the same time.

These screws *k k*, as also the adjusting-screws *d d*, are intended to be operated by a portable, or pocket

screw-driver, *o*, which is provided with a cylindrical pin, or stud *p*, projecting from the central portion of the point thereof, and which, being guided by the concavity of the screw-head, enters into a corresponding hole, *s*, drilled into the centre of the screw-head, and midway the notch thereof, so that when the point of the screw-driver is placed upon the screw-head, and fitted to the notch therein, aided by the said concavity of the head, the cylindrical projection *p* of the said point will enter the central hole *s* in the screw-head, and prevent the end of the screw-driver from slipping out of the notch of the said screw.

The heads of the adjusting-screws *d d* are also intended to act as a preventive to lateral sliding of the runner, by cutting into the surface of the ice when the skate is turned too far to one side or the other, thereby tending, in that direction, toward securing the wearer against falling.

The driving-end of the screw-driver *o* is constructed of suitable width for entering the central locking-slot *m*, and is reduced a little way above, thereby forming a neck, *V*, so that upon the said end of the screw-driver being inserted into said slot *m*, it may be easily turned within said slot, whereby the upper cavity between the slotted heel-plate and the boot may be freed from all obstructing substances.

In the adjustment of this skate upon the boot, the heel-clamp *E* is first secured to the heel-plate *B'* by passing the slotted opening *m* thereof over the locking-button *b* of the said heel-plate, which may be done by turning the heel-clamp *E* in a position lengthwise of the heel-plate *B'*, as illustrated by those parts of fig. 4 represented in red outline.

When the slot *m* is placed over the locking-button *b*, a quarter turn of the heel-clamp *E* serves to hold it securely to the heel-plate *B'*, whereupon the skate may be adjusted to the boot, and the adjusting-screws *d d* and *k k* tightened, by means of the screw-driver *o*, until the clamps *D* properly engage with the edge of the sole, while the inner extremities of the set-screws *k k* engage with the opposite sides of the heel. Or the heel-clamp *E* may first be secured to the heel of the boot, which is done by tightening the set-screws *k k* upon the opposite sides of the heel, as above described; after which the skate may be adjusted to the

boot, after the usual manner of securing skates to boots provided with slotted plates permanently secured to the bottom of the heel, namely, by placing the heel-plate *B'* of the skate against the bottom of the heel, and at right-angle to the foot, so that the locking-button *b*, coming against the central portion of the clamp *E*, will enter the slotted opening *m*.

After the insertion of the button *b* within the slot *m*, the toe of the skate is turned toward the toe of the boot, placing the skate lengthwise of the foot, which locks the said button *b* in the said slot *m*, thereby securing the rear part of the skate to the heel of the boot, after which the front part or toe may be secured to the sole of the boot by clamps *D*, or straps suitably arranged to pass over the instep.

The set-screws *k k* of the heel-plate are constructed with concave inner ends, having sharp edges, and are thereby enabled to bite more securely upon the heel of the boot.

What I claim as my invention, and desire to have secured by Letters Patent, is—

1. The dovetailed guide-piece *O*, transversely arranged, and clamping the runner *A*, and secured to the sole-plate *B* of a skate, and constructed with lugs *f f*, for the reception of adjusting-screws *d d*, for operating clamping-jaws or strap-rings, substantially as herein described.
2. The sliding-clamps *D D*, having jaws with curvilinear serrated inner surfaces, substantially as specified.
3. The combination of the clamps *D D* and guide-piece *O*, extending all across the foot-plate, substantially as herein specified.
4. The attachable and removable heel-plate *E*, constructed independently of the heel-plate of the skate and of the boot-heel, and arranged for operating substantially as herein set forth.
5. The centrally-pierced concave-headed adjusting-screws *d d*, *k k*, substantially as described, and for the purposes herein set forth.

EBEN T. STARR.

Witnesses:

HENRY T. BROWN,
A. LECLERC.