

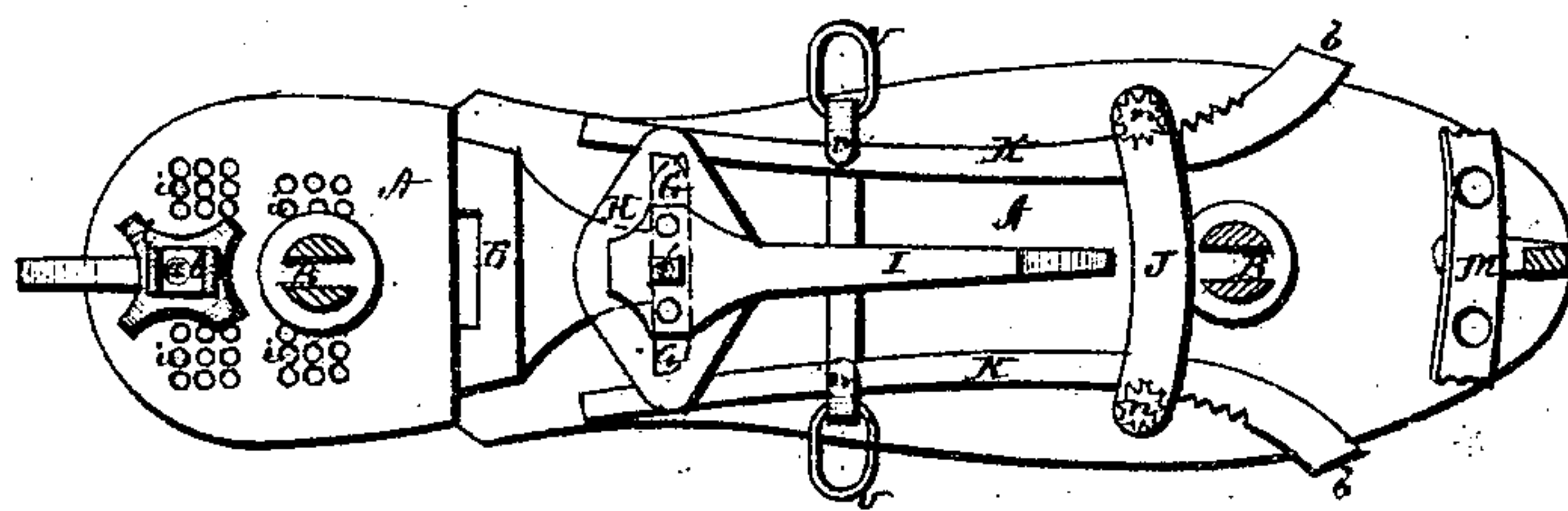
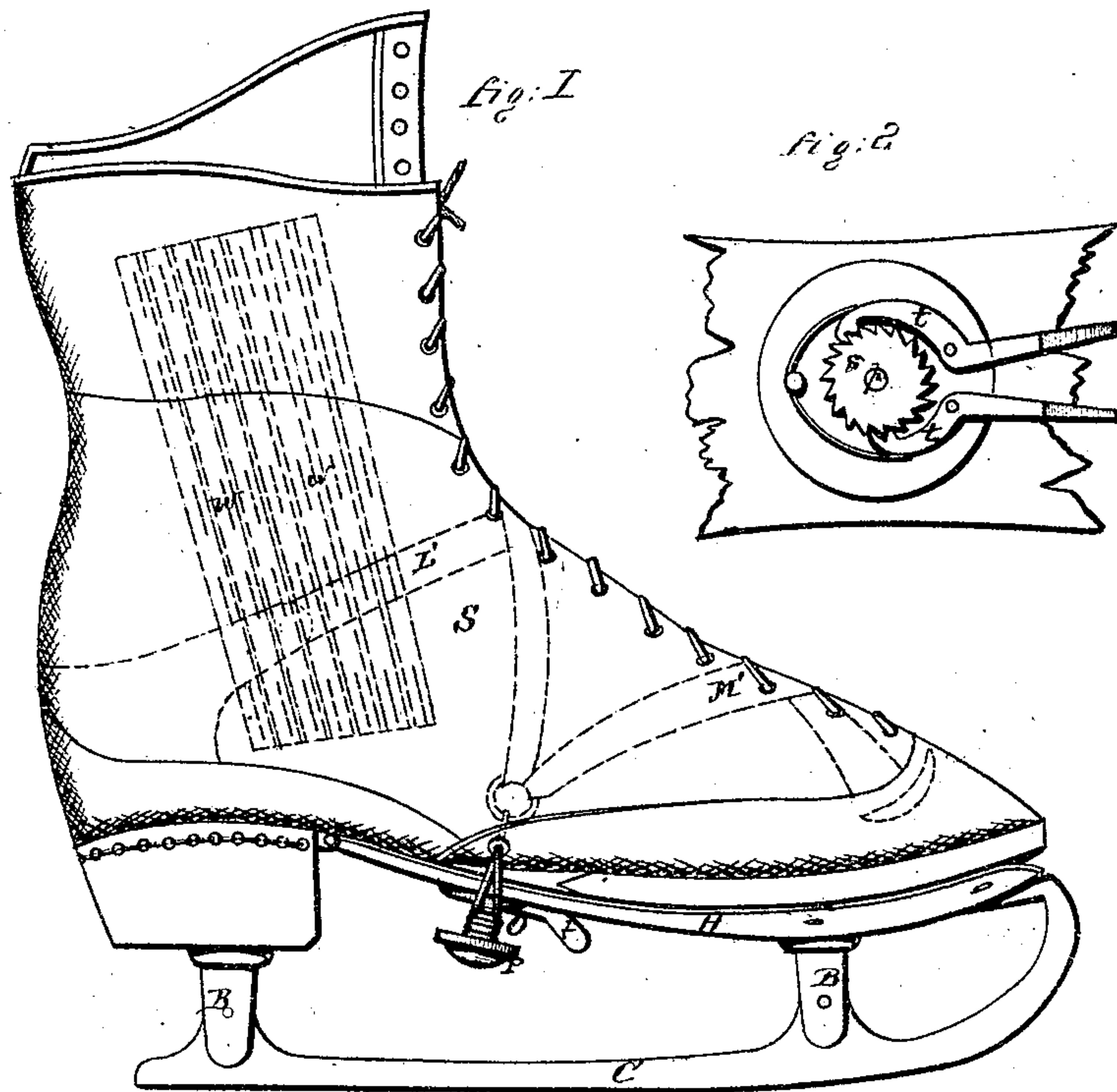
A.C. Platt,

2. Sheets. Sheet. 1.

Skate.

No. 106,725.

Patented Aug. 23. 1870.



Witnesses

A. J. Young
C. L. Curtis

Inventor

Alfred C. Platt,
per
Alexander Mason

Atty.

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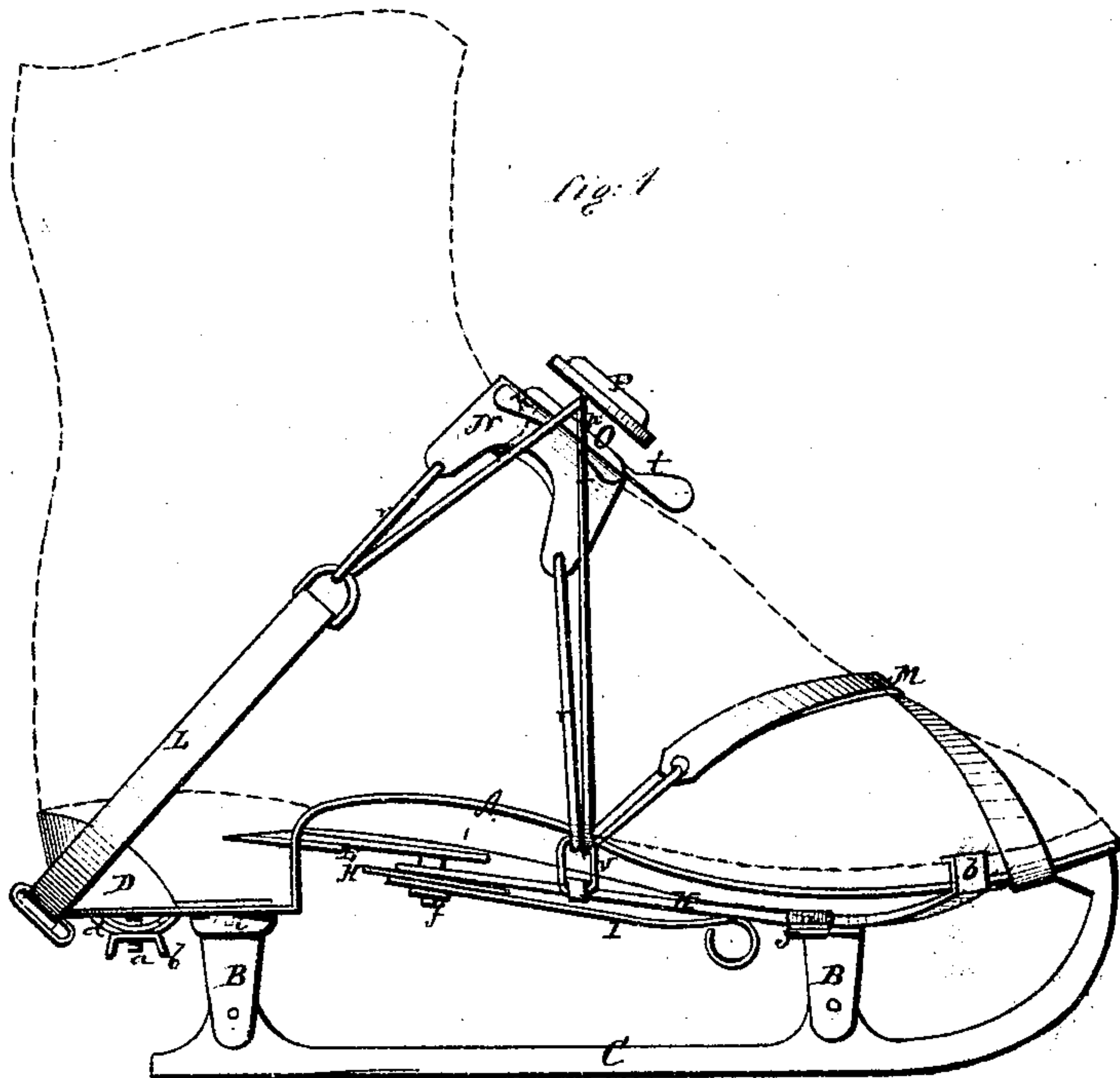
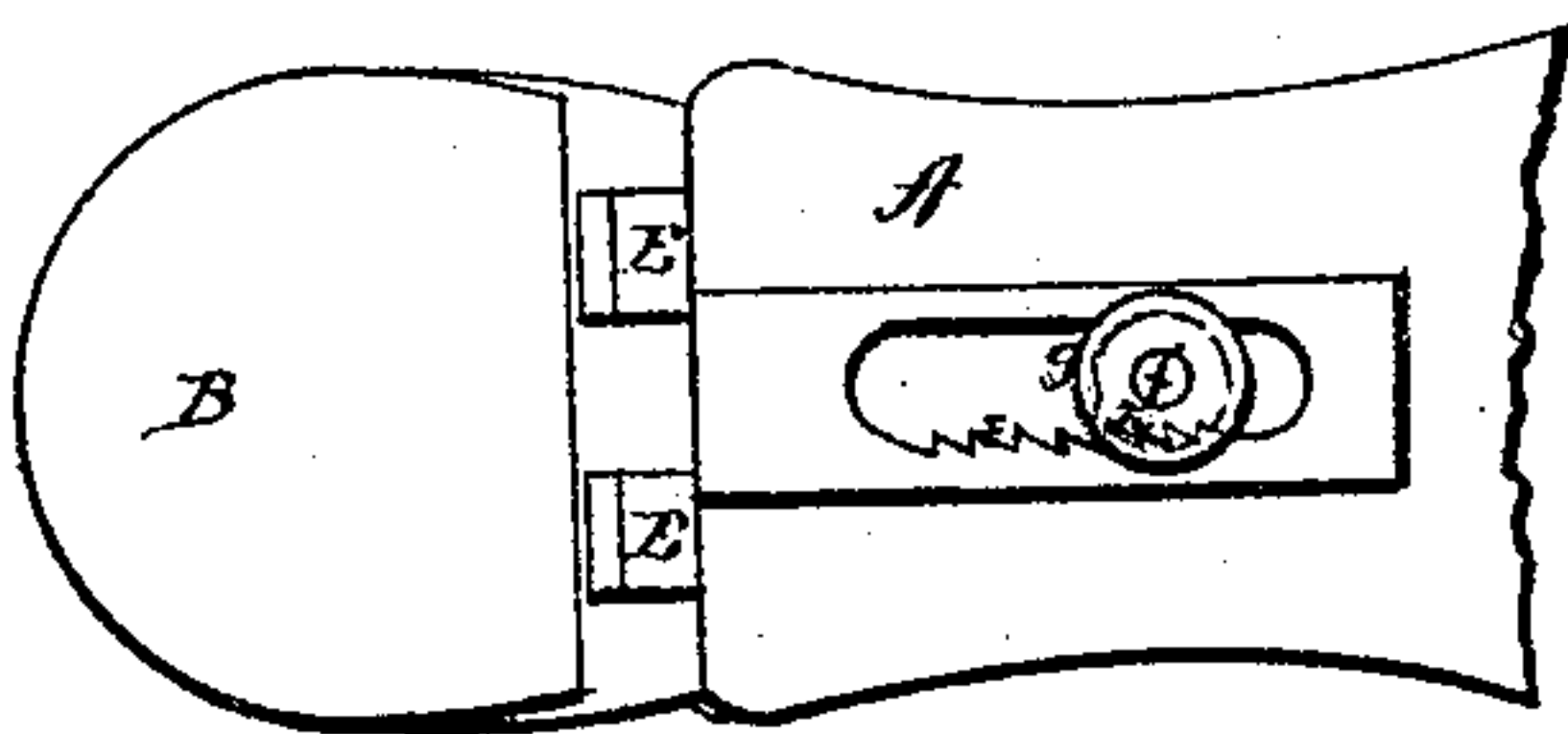


Fig. 1



Witnesses

My Sealman
L. A. Curtis.

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United States Patent Office.

ALFRED C. PLATT, OF SANDUSKY, OHIO.

Letters Patent No. 106,725, dated August 23, 1870.

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, ALFRED C. PLATT, of Sandusky, in the county of Erie and in the State of Ohio, have invented certain new and useful Improvements in Skates; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon, making a part of this specification.

The modes of securing skates to the foot at present in use, do not meet the requirements of convenience, comfort, and beauty.

In the use of straps, as now applied, much time is required to fasten and unfasten them, which, with ungloved hands, as is usually required, is anything but agreeable in the cold.

These straps have to be encumbered with clumsy buckles, loops, and bunches, which not only prevent their resting easily upon the foot, but destroy whatever beauty of contour or elegance of form it may possess.

The securing of these buckles requires long ends of straps, to take hold of, which are in the way, and add still further to the clumsy appearance of the foot. Besides, if the holes are not punched right the skate is left too loose, or drawn so tight as to be painful. Some slack is also required for the tongue of the buckle to enter the hole in the strap. This necessitates a strong pull and severe compression of the foot to render the skate sufficiently tight when on.

No method of securing skates now in use admits of wearing an over-shoe; and the straps contracting around the feet prevent the free circulation of the blood, and, consequently, cold feet is a common complaint among skaters, even when the remainder of the body is kept in a glow of warmth by the exhilarating exercise.

In securing the heel with a screw, as is common with men's skates, holes have to be made purposely, with some instrument not always readily obtained, and then much time is required to screw on and unscrew the skate, and the operation is very awkward and irksome. These holes being on the bottom of the sole, become filled with sand, gravel, or frozen earth, which renders the operation of securing the skate very difficult, if not impossible, without obtaining an instrument for reopening the hole.

Where skates are secured without screw or straps, boots or shoes are required purposely for them, or an extra plate is required to be attached to the heel, which, if the boot is worn when not skating, is liable to become kicked off, or the opening in it rendered useless by becoming filled with frozen earth, sand, or gravel.

The toe has to be secured by the slow process of turning a screw with a wrench, and the same tedious way of taking it off is required. This method always brings the foot in the same unalterable position upon the skate, whether it is that which is the most comfortable or not.

When the weight of the body is removed from the broad base of the foot to the narrow edge of the skate, muscles unused to such a strain are brought into play, and soon become exhausted, rendering skating very irksome and difficult. This is especially the case with new beginners, with those who seldom skate, or those who, from any cause, have weak ankles. Skates, as now made, are provided with no adequate support for the ankle.

My improvements, as will be hereinafter described, obviate these disadvantages and difficulties, and greatly facilitate the application and detachment of the skate, and render it comfortable to the foot and elegant in appearance.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a side view of a skate, with my improvement, attached to an over-shoe;

Figure 2 is an enlarged view of the mechanism for tightening and holding the straps;

Figure 3 is a bottom view of the skate;

Figure 4 is a side view of the skate fastened to the foot; and

Figure 5 is a plan view of the heel and rear portion of the foot-plate.

A represents the foot-plate, bent so as to form the heel-plate, and provided, on its under side, with posts, B B, to which the runner C is secured in any suitable manner.

Upon the portion of the plate A which forms the heel, is placed a heel-plate, D, from which descends a screw-bolt, *a*, through an opening in the plate A.

On the under side of the plate D are also four pins, *i i*, which are inserted in holes upon the plate A. There are a large number of such holes, as shown in fig. 3, so that the plate D can be readily adjusted in any desired direction.

It is secured by means of a thumb-nut, *b*, placed on the lower end of the bolt *a*, a washer, *d*, being interposed between said nut and the under side of the plate A.

The heel-plate E is first adjusted, so as to bring the heel in the position which best suits the skate. If the heel of the boot or shoe is run over, or if, as is frequently the case, the skater prefers the skate a little on the inner side of the foot from the center, or

further forward or back, the heel-plate can be adjusted to the position wanted: and secured by the thumb-nut *b*.

In the plate *A*, a suitable distance in front of the heel, is a longitudinal slot, having ratchet-teeth, *e e*, on one side, as shown in fig. 5.

Through this slot is passed a bolt, *f*, the head of which rests upon a washer, *g*, placed over the slot, and on said bolt, immediately below the washer, is formed a small spur-wheel, *h*, which engages with the ratchet *e*.

Below the plate *A* the bolt *f* passes through a spur, *E*, the rear end of which is forked, and passes out through slots in the bent-down portion of the foot-plate *A*.

Under the spur *E* on the bolt *f* is secured a cam, *G*, and a plate, *H*, with lever *I*, as shown.

In rear of the front post *B* is secured a guide-bar, *J*, above which run two clamps, *K K*, the front ends of which are curved outward and there bent outward, forming the lips *k k*, while their rear ends extend under the plate *H*.

At a suitable point on the under side of the foot-plate *A*, between the guide-bar *J* and the cams *G*, are hooks, *m*, to hold the clamps.

The heel-plate *D* being adjusted as above described, the clamps *K K* are drawn out, and the foot placed upon the skate in the position wanted, either centrally or a little toward the inside, or in any position that is preferred, when the clamps are slid back against the edges of the sole of the boot or shoe, on each side, and the spur *E* is slid against the front of the heel. The spring lever *I* is then turned toward the toe, brought under the foot, and drops between the clamps *K K*.

In turning this lever the spur *E* is crowded into the front of the heel, by the spur-wheel *h* and ratchet *e*, and by the cams *G G*, acting upon the back ends of the clamps *K K*, it presses the lips *k k* into the edges of the sole, and the skate is quickly and very rigidly and firmly secured to the boot or shoe.

The spur *E* is made wedging downward, so that, as it is crowded in, it presses down and secures the heel firmly in its place.

The clamps *K K* are provided with notches, as shown in fig. 3, which fit projections upon the fulcrums at *n n*, and are thereby prevented from slipping. These clamps being curved, as the cams *G* press upon them, the ends which clasp the sole are drawn down as well as pressed inward, and thereby the front part of the skate is very firmly secured to the boot or shoe.

For further security, where the boot or shoe is not sufficiently tight upon the foot, or being made of thin leather or cloth, is too weak to sustain the skate sufficiently firm, the straps *L* and *M* are used in combination with the pad *N* and tightening device *O*.

The tightening device *O* consists of a post, shaft, or spindle, *p*, around which are wound two cords, *r r*, connecting with the straps *L* and *M*.

Upon the lower end of this spindle is the ratchet-wheel *s*, in which gear two spring ratchets, *t t*.

The upper or outer end of the shaft or spindle *p* is provided with an ornamental knob, *P*, permanently secured to it, or it may be made square to receive a key or wrench, for winding it up, which may be carried in the pocket.

To loosen the skate, the outer ends of the ratchet-pawls *t t* are pressed together with the thumb and finger, when the cords immediately unwind, and, the lever *I* being turned back, the skate is free.

The shaft *p*, with ratchet-wheel *s* and pawls *t t*, are placed in a box upon the plate *R*, which is secured to the pad *N*.

The strap *L* passes through a loop formed at the

heel end of the foot-plate *A*, and has a ring secured at each end.

The strap *M* is secured in its middle on the under side of the foot-plate *A*, near the toe, the ends crossing each other above and passing through rings *v v*, attached in the hooks *n n*, as shown.

The ends of the strap *M* are provided either with rings or eyelets, for the cords *r r* to pass through.

The cords *r r* pass through holes in the shaft or spindle *p*, one end passing through the ring at one end of the heel-strap *L*, and there attached to the corner of the pad *N*, the other end passing through the eyelet in the end of the strap *M*, on the opposite side, and secured to the opposite corner of the pad.

This arrangement of the straps *L M* combines elegance and comfort to the foot, with the line of draft where, and only where, most needed.

In the ordinary skate, heavy double straps pass over the toes, where but little force is needed.

These wide straps are required to prevent injury to the foot, on account of their position, crossing, as they do, the joints of the toes, while the heel is secured by a single strap, which, owing to its diagonal position to the line of draft, does not give the requisite security to the heel, where the greatest force is needed.

By my arrangement the front straps cross the foot between the outer joints of the toes, and do not cramp them together, yet press the foot easily but firmly to the skate. Passing back they connect again near the center, and, being tightened over the foot at this point, help to secure the heel, as will readily be perceived.

In fig. 1, I have represented a combined skate and over-shoe, which is designed to prevent cold feet, arising from causes previously described.

The upper part is made of elastic material, to readily admit the foot, without lacing, and conform to its shape when on.

The shoe *S* is lined with a loose or elastic lining, and, between it and the outer covering, the straps *L* and *M* are arranged, as shown.

These straps may be tightened by the device *O*, placed under the foot, as represented, or it may be placed upon the top of the foot, the post or shaft projecting through the laces, upon which a knob of any ornamental design may be placed, for turning it, as above described.

In the device *O* I use two pawls, *t t*, so that, if one is accidentally hit and loosened, the other will hold the skate.

Attached to the lining, on each side of the ankle, are the elastic ankle-supports, *w w*. The lining is padded where these supports are, to render them easy to the ankle.

Between the lining and outer covering of the shoe is a stiff piece of leather, passing up behind the heel. To the top of this the heel-straps *L* are attached, and, when the skate is tightened, these straps draw around the ankle-supports *w w*, and compress them tightly on each side of the ankle, and thereby support it.

The top of the skate forms the sole of the over-shoe, the heel being made hollow, to receive the heel of the shoe.

The advantages of the hollow heel are—

First, securing the heel of the boot or shoe from moving in any direction when in.

Second, this form allows the spur *E* passing through in front of and into the heel of the boot or shoe, thereby assisting to secure the skate where the straps *L* and *M* are insufficient.

Third, it permits the form of the over-shoe to conform to that of the shoe or boot, by permitting the hollow of the over-shoe to come up to that within it, thus retaining the elegance of form of the foot, not

causing it to look bungling, as overshoes now in use do.

Having thus fully described my invention,

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

1. The adjustable heel-plate D, constructed as described, so as to be capable of adjustment in any direction desired, substantially as and for the purposes herein set forth.

2. The wedge-shaped spur E, constructed as described, and operated by means of the ratchet *c* and spur-wheel *h*, substantially as and for the purposes herein set forth.

3. The notched clamps K K, constructed as described, and operated by means of the cams G G, substantially as and for the purposes herein set forth.

4. The combination of the bolt *f*, spur-wheel *h*, ratchet *c*, cams G G, and spring lever I, all constructed

and arranged as described, to operate the spur E and clamps K K, with one motion of the lever, substantially as herein set forth.

5. The stem or spindle *p*, provided with ratchet-wheel *s* and one or more spring pawls *t*, for the purpose of winding one or more cords or straps around said spindle, to tighten the skate, substantially as herein set forth.

6. In combination with the tightening device O, the pad N, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing, I have hereunto set my hand this 20th day of May, 1870.

ALFRED C. PLATT.

Witnesses:

E. M. COLVER,

D. S. WORTHINGTON.