

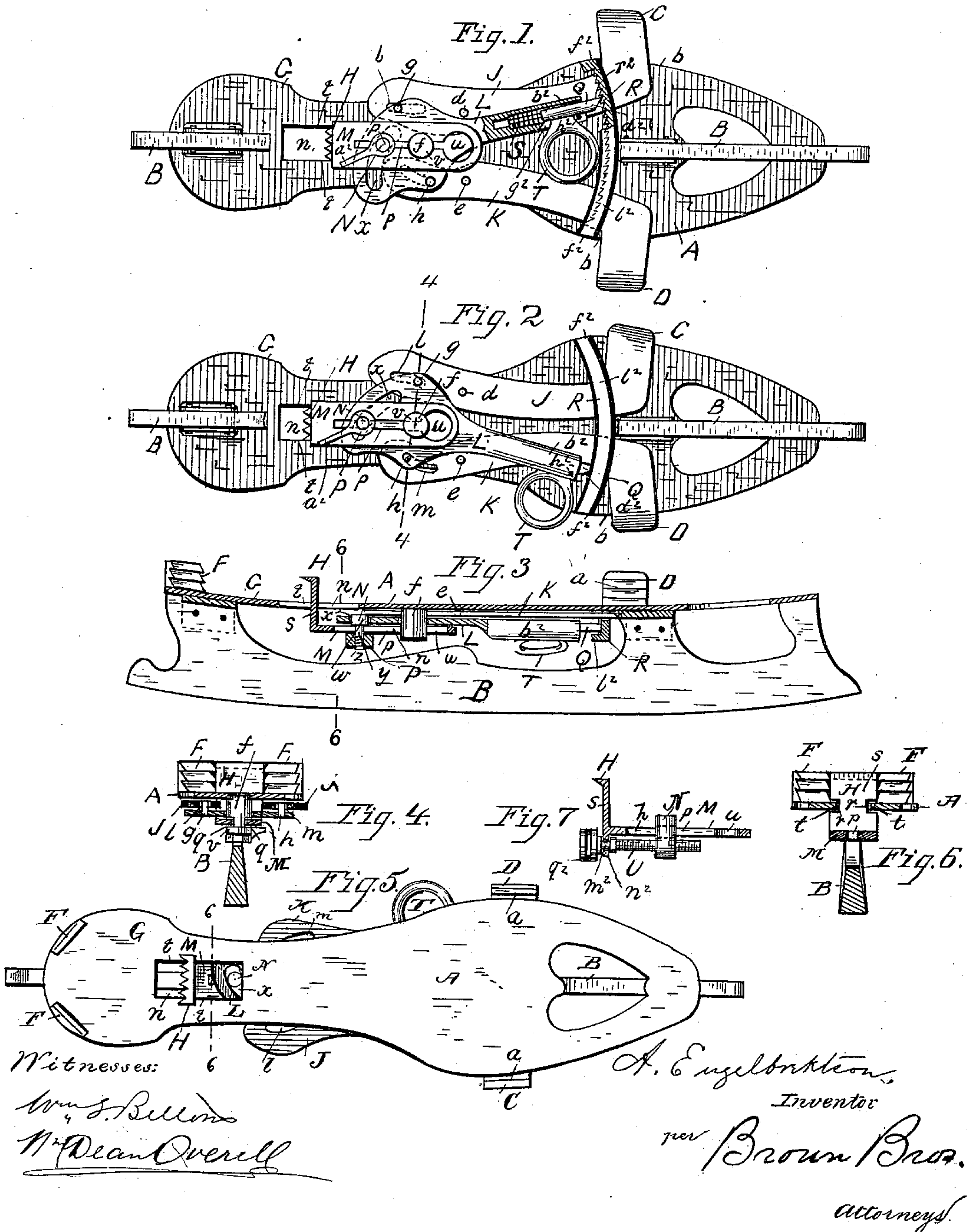
(No Model.)

A. ENGELBREKTSON.

SKATE.

No. 335,438.

Patented Feb. 2, 1886.





# UNITED STATES PATENT OFFICE.

ANDREW ENGELBREKTSON, OF WORCESTER, MASSACHUSETTS.

## SKATE.

SPECIFICATION forming part of Letters Patent No. 335,438, dated February 2, 1886.

Application filed February 25, 1884. Serial No. 121,977. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW ENGELBREKTSON, of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Skates, of which the following is a full, clear, and exact description.

This invention relates to improvements in that class of skates which are secured to the foot without straps; and the invention consists in a construction and arrangement of parts, in combination with the clamping-jaws for the sole and heel of the boot, all substantially as hereinafter fully described.

In the accompanying plate of drawings this improved skate is illustrated.

Figures 1 and 2 are views of the under side of the skate, the runner being broken away, showing the operating parts of the fastening device in two positions. Fig. 3 is a longitudinal vertical section of the skate in its upright position; Fig. 4, a cross-section on line 4 4, Fig. 2; Fig. 5, a plan view of Fig. 2; Fig. 6, a detail vertical section on line 6 6, Fig. 3; Fig. 7, a detail sectional view in modification.

In the drawings, A represents the bed-plate of the skate, to which the runner B is attached in any suitable manner, as usual.

C D are two jaws or clamps, located one each side of the toe portion E of the skate, on which the sole of the boot rests, and adapted by their inner faces, *a*, to bear against and clasp the edges of the sole of the boot.

F F are two jaws on the heel portion G of the skate at the back edge or round of the heel, and H a jaw in front of the jaws F and F, arranged to bear against the front edge or straight portion of the heel, and between these jaws F H the heel of the boot is firmly clamped and held to the skate. The jaws C D are formed by the continuation, respectively, of levers J K, which levers are located under the plate A and extend back toward the heel portion G, and are pivoted at *de*, respectively, to the under side of plate A, on which pivots the levers swing horizontally and move their respective jaws to or from each other, for the purpose of this invention. The jaw H at the heel portion extends downwardly through a longitudinal opening, *n*, in the plate, and it then extends under and parallel with the plate A toward the toe of the skate, and is arranged to slide back

and forth in said opening *n*, being guided in such movements by a central longitudinal slot, *p*, in its plate portion M, the edges of which slide in grooves *q* in the pin or pivot *f*, on which the lever L swings, and by grooves *r*, in the vertical portion *s* of the jaw H, sliding over the edges *t* of the opening *n*. The end of the slot *p* is enlarged, as at *u*, so that the plate M and jaw H can be removed from the plate A by passing it over the head *v* of the pin *f* and through such opening *n*. The head *v*, when the plate M is in position, keeps it from escape.

Attached to the plate M of jaw H is a pin, N, having a round portion, *w*, which fits and is arranged to play in a curved slot, *x*, in the lever L, which slot *x* is eccentric to the center pin, *f*, on which the lever turns. The pin N also has a square portion, *y*, fitting in the slot *p*, in which it can freely slide, being prevented from turning by such square portion, and its outer end, *z*, is screw-threaded, on which is a screw-nut, P, having a handle, *a*<sup>2</sup>, for operating it. Turning this screw-nut secures the pin N to the plate M and prevents its movement thereon. The other end, *b*<sup>2</sup>, of lever L is of tube form, and has located therein a bolt, Q, its outer end beveled, as at *d*<sup>2</sup>, and arranged to engage with a curved ratchet-bar, R, concentric with the pivot *f*, secured at each end *f*<sup>2</sup> to the under side of the plate A, and being held to such engagement by a coiled spring, S, bearing against the inner end of the bolt Q in the tube end *b*<sup>2</sup>.

To disengage the bolt Q from its ratchet-bar R, the bolt is provided with a handle, T, passing through a slot, *g*<sup>2</sup>, in the tube; and to prevent the bolt from escape, a pin, *h*<sup>2</sup>, is provided across the slot *g*<sup>2</sup>. Swinging the lever L from its position as shown in Fig. 1 to its position shown in Fig. 2, through its pin and slot *g h* and *l m* connections with the arms of each jaw C D and slot *x*, and pin N with the jaw H, will cause the jaws C D to move toward each other, and the jaw H move toward the jaws F F, and thus, if the skate is placed upon the sole and heel of the boot, with the jaws C D on the edges of the ball portion of the sole and the jaws F F H at the heel, the skate will be firmly clamped to the boot.

To accommodate various length of heels, the jaw H is arranged to be adjusted by its pin N by unscrewing the nut P and moving the jaw H to the place desired, when screwing up the



nut the jaw will be set for such heel, and need not be altered without the skate is to be attached to a boot heel of a different size. The ratchet-bar R has a plate,  $l^2$ , extending over  
 5 its edge, which serves to keep the bolt in place, and this bar R also serves as a guide for the arms J K of the jaws C D, between it and the bed-plate.

In Fig. 7 is shown a modification of the  
 10 means of adjusting the jaw H to different sizes or lengths of heel, and in such view the pin N has a screw, U, extending parallel with the plate M, and screwing through it at right angles thereto, the screw engaging by its circum-  
 15 ferential groove  $m^2$  with a projection,  $n^2$ , of the plate, preventing its movement longitudinally on the plate, but causing the pin N to be moved back and forth in its slot  $p$ , whereby the distance of the jaw H from the jaws F can be regulated. The screw U has a milled head,  $q^2$ , for  
 20 operating it.

A skate constructed and arranged to be attached to a boot or shoe, as herein described, is efficient, practical, easy of operation, and  
 25 only requires one movement of the lever L to secure it firmly to the boot sole and heel, and one movement to release it. In moving the lever to secure the skate to the boot, the bevel  $d^2$  of the bolt Q allows it to pass freely over  
 30 the teeth of the ratchet-bar R; but it is prevented by the shape of the teeth and straight portion  $r^2$  of the bolt end and the tension of the spring from any backward movement of itself. To move it back, force the spring S back by  
 35 pressing the bolt by its handle T, when it can

freely be moved back, which will loosen the skate from the foot or put it in position to be fastened on the boot again.

Having thus described my invention, what I claim is—

1. In a skate, the combination, with the jaws C D, having arms J K, pivoted to the bed-plate by pivots  $d e$ , and provided with slots  $l m$ , of a pivoted lever, L, having pins  $g h$ , engaging with the slots  $l m$  of the jaws J K, a spring  
 45 bolt, Q, secured in lever L, and a ratchet-bar, R, secured to the bed-plate, with which said spring-bolt engages, substantially as described.

2. In a skate, the combination, with the jaws C D, with the levers or arms J K, pivoted to the bed-plate A by pivots  $d e$ , and provided with slots  $l m$ , of the pivoted lever L, having  
 50 slot  $x$ , the pins  $g h$ , engaging with slots  $l m$ , and the adjustable jaw H, provided with pin N, engaging with slot  $x$ , substantially as described.

3. In a skate, the combination, with the jaw H, and its plate-arm M, having longitudinal slot  $p$ , of the operating-lever L, having slot  $x$ , the pin N, having head  $w$ , engaging with slot  
 55  $x$ , and screw-threaded at its lower end to engage with screw-thread in the plate M substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ANDREW ENGELBREKTSON.

Witnesses:

GEORGE S. ADAMS,  
 JOHN A. CORNELI.