P. C. FRANKE.

Skates.

No. 206,170. Patented July 23, 1878.

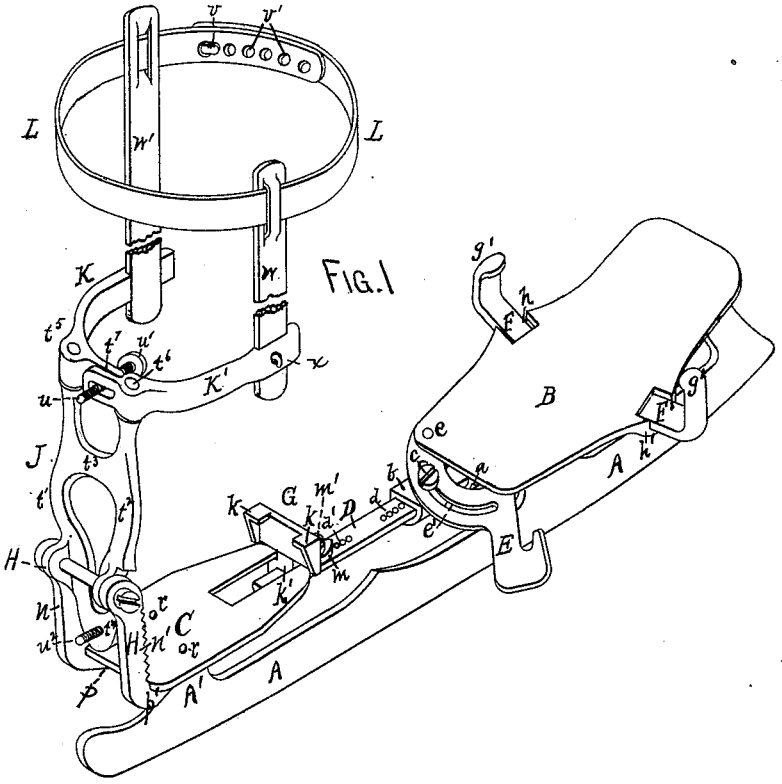

FIG. I

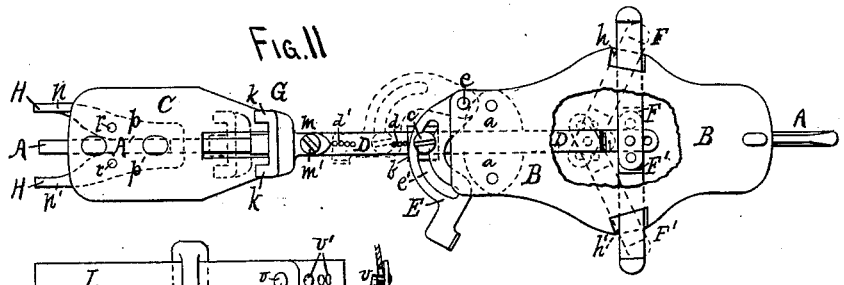

FIG. II

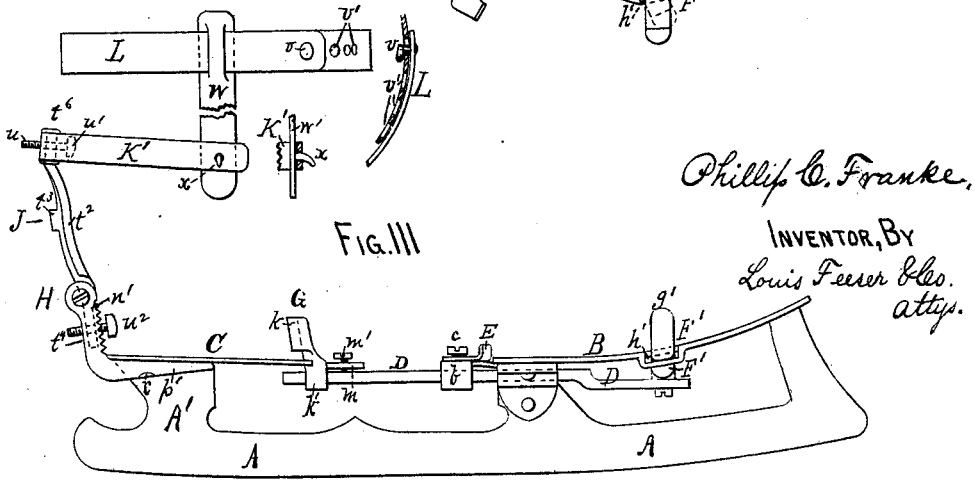

FIG. III

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WITNESSES.
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C. M. Fitch

UNITED STATES PATENT OFFICE.

PHILLIP C. FRANKE, OF ST. PAUL, MINNESOTA.

IMPROVEMENT IN SKATES.

Specification forming part of Letters Patent No. **206,170**, dated July 23, 1878; application filed March 22, 1878.

To all whom it may concern:

Be it known that I, PHILLIP CHRISTIAN FRANKE, of St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Skates, which are fully set forth in the following specification and accompanying drawing, in which—

Figure 1 is a perspective view. Fig. 2 is a plan view, with the ankle and leg clamps removed. Fig. 3 is a side elevation.

This invention relates to that class of skates which are secured to the foot of the wearer by clamps, and without the use of straps; and consists in a single longitudinal rod actuated by a lever, whereby the toe and heel clamps are both set at once by one movement of the lever, as hereinafter specified.

The invention further consists in the arrangement of the clamps and lever, whereby the skate may be adapted to any-sized foot, as hereinafter shown.

The invention further consists in an adjustable ankle and leg clamp, whereby weak ankles may be strengthened and protected, as hereinafter specified.

A is the runner, B the toe-plate, and C the heel-plate, all arranged in the usual manner.

D is a rod or bar, running in a guide, *a*, beneath the toe-plate, and extending backward a short distance beneath the heel-plate, as shown.

b is a collar, surrounding the bar D near the rear of the toe-plate, and provided with a set-screw, *c*, with its lower end pointed and adapted to fit into countersunk indentations *d* in the bar D, by which the collar may be securely held at any desired point upon the bar.

E is a slotted lever, pivoted at *e* to the left-hand rear corner of the toe-plate, the slot *e'* therein fitting over the screw *c*, as shown. By this means the slot *e'*, acting upon the collar *b*, serves to slide the bar D back and forth beneath the toe and heel plates.

F F′ are two levers, having clamps *g' g'* upon their outer ends to clasp the sole of the boot of the wearer, and, passing inward beneath the toe-plate over guides *h h'*, are pivoted to the end of the rod D, as shown in Figs. 2 and 3. These levers F F′, by running through the guides *h h'*, are held in one position at the outer edges of the toe-plate.

It will be readily seen that by the movement of the bar D, through the action of the lever E, the clamps *g' g'* will be drawn inward, and thus clasp the toe of the boot of the wearer, as shown by dotted lines in Fig. 2.

The inner ends of the levers F F′ and the forward end of the bar D will be provided with a number of holes, so that the pin holding them together may be set in any pair of the holes, and thus adjust the levers for different widths of boots.

G is a heel-clamp, consisting of a dog, *k*, which rests against the front of the heel, and a collar, *k'*, surrounding the bar D, and a lug, *m*, provided with a set-screw, *m'*, by which the clamp may be secured rigidly to the bar D at any desired point to fit the heel of the wearer. The bar D is provided at this point with indentations *d'*, similar to *d*, in which the pointed end of the set-screw *m'* sits, to prevent slipping.

H is a stationary heel-stop, consisting of two uprights, *n n'*, having serrations in their front sides to assist in holding them against the heel, and a connecting-bar, *p p'*, passing forward around the top of the standard A′ of the runner A, as shown in Figs. 2 and 3, and riveted to the heel-plate at *r*. By this means the heel-stop is made in one piece with the brace for supporting the heel-plate.

J is a supporting-frame, consisting of two standards, t^1 t^2, pivoted to the upper ends of the stationary heel-stop H, and connected together by bars t^3 t^4.

K K′ are two metallic pieces, curved to conform to the shape of the heel or ankle, and pivoted to the tops of the standards t^1 t^2 at t^5 t^6. This clamp K K′ is so made that the rear ends lap by each other, (see Fig. 1,) and are provided with a set-screw, *u*, with a rounded head, u^1, which is tapped through the end of piece K, and passes through a slot in piece K′. By running the screw *u* out or in, the head u^1 may be made to press against the heel of the wearer, when the heel is pressed against it by the clamp G, and thus throw the forward points of the clamp inward, and press them against

the ankle as hard as desired. By this adjustment the clamps K K′ may be adapted to any-sized heel.

u^2 is another screw, tapped through the lower connecting-bar t^4, to prevent the frame H from tipping backward when the clamps G and g' g' are released.

L is a hoop or band, made adjustable by a catch, r, and holes r', (see Figs 1 and 3,) and connected by metallic straps w w' to the clamps K K′, as shown by bent or hooked pins x x', so that it may be readily removed or attached, the pressure of the clamp upon the ankle keeping it in place when in use. This band is used as a leg-support, and will be made high enough to encompass the calf of the leg of the wearer.

I am aware that skates made with an actuating-rod, made in two pieces and connected together by a knuckle joint and operated by a slotted lever, are old; but this construction I do not claim; but

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

1. The single longitudinal rod D, actuated by the adjustable slotted lever E e', in combination with the adjustable clamping-levers F F′ g' g' and toe-plate B of a skate, arranged and operating substantially as hereinbefore shown and described.

2. The single longitudinal rod D, actuated by the adjustable slotted lever E e', in combination with the adjustable heel-clamp G and heel-plate C, arranged and operated substantially as hereinbefore specified.

3. The stationary heel-stop H, formed with the connecting-bar p p', adapted to straddle the standard A′, and secured in place by a screw, r, substantially as and for the purposes set forth.

4. The adjustable ankle-clamp K K′, arranged as described, in combination with the stationary heel-stop H, substantially as hereinbefore set forth.

5. The adjustable leg-support L, and metal straps w w', in combination with the adjustable ankle-clamp K K′ and supporting-frame J, arranged and operating substantially as hereinbefore set forth.

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

PHILLIP CHRISTIAN FRANKE.

Witnesses:
C. N. WOODWARD,
LOUIS FIESER.