(No Model.)

J. A. WHELPLEY.

SKATE.

No. 399,365. Patented Mar. 12, 1889.

Fig. 1.

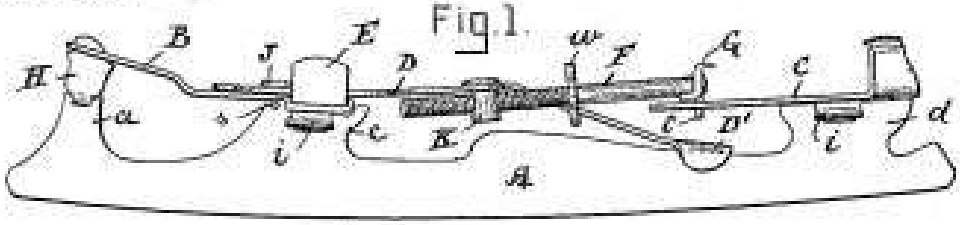

Fig. 2.

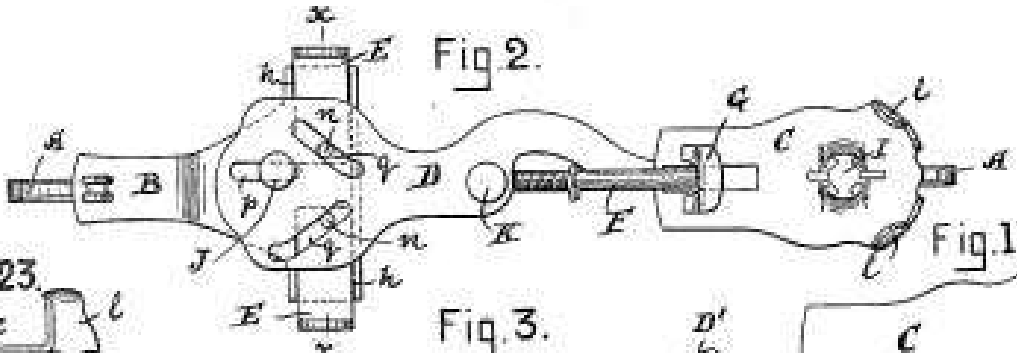

Fig. 23.

Fig. 24.

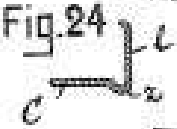

Fig. 3.

Fig. 11.

Fig. 12.

Fig. 5.

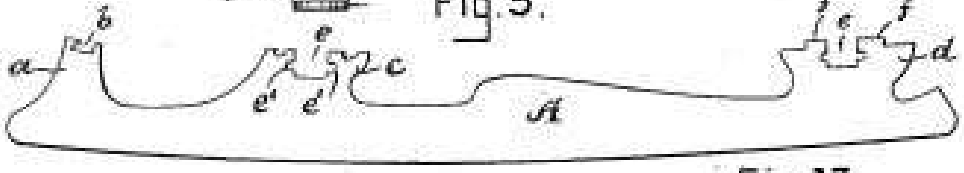

Fig. 4.

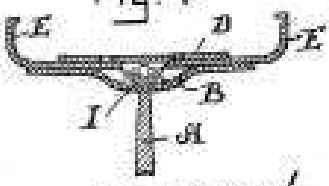

Fig. 6.

Fig. 17.

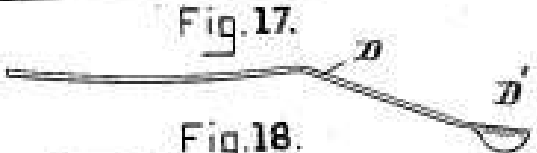

Fig. 13.

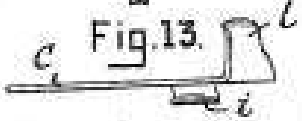

Fig. 7.

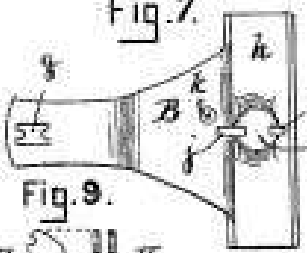

Fig. 18.

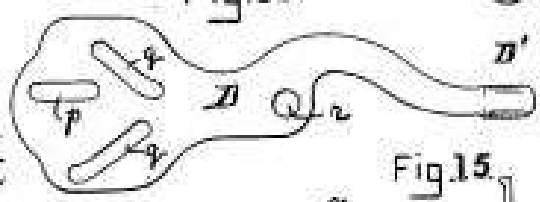

Fig. 15.

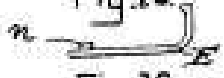

Fig. 14.

Fig. 9.

Fig. 16.

Fig. 21.

Fig. 22.

Fig. 8.

Fig. 10

Fig. 20

Fig. 19.

Witnesses.
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UNITED STATES PATENT OFFICE.

JAMES A. WHELPLEY, OF KEENE, NEW HAMPSHIRE.

SKATE.

SPECIFICATION forming part of Letters Patent No. 399,365, dated March 12, 1889.

Application filed April 2, 1888. Serial No. 269,270. (No model.)

To all whom it may concern:

Be it known that I, JAMES ALBERT WHELPLEY, a citizen of Canada, residing at Keene, in the county of Cheshire and State of New Hampshire, have invented a new and useful Improvement in Skates, of which the following is a specification.

My invention relates to an improvement in that class of skates in which clamps are employed to secure the skate to the boot or shoe without the aid of straps; and the invention consists in certain details of construction, hereinafter fully described, and set forth in the claims.

Referring to the accompanying drawings, Figure 1 represents a side view of a skate embodying my invention. Fig. 2 is a plan or top view of the same with the clamps and actuating-lever in a closed position. Fig. 3 is a similar view with the clamps and actuating-lever in an open position. Fig. 4 is a transverse vertical section taken on the line *x x* of Fig. 2. Figs. 5 to 24 are detail views of various parts of the skate.

A represents the skate-runner; B, the toe-plate; C, the heel-plate; D, the actuating-lever; E E, the toe-clamps; F, a screw-threaded regulating-bar, and G the adjustable heel-clamp.

The runner A is of about the same height at the toe as at the heel, (see Fig. 5,) whereby I am enabled to cut the runner from a much narrower bar than used for runners of ordinary construction. The upwardly-projecting toe portion *a* is provided with a recess, *b*, of hook form, as shown, and both the center and heel projecting pieces *c d* are provided with a recess, *e*, and the heel projecting piece *d* is also provided with studs or projecting pieces *f f*.

The toe-plate B is made of thin metal stamped out and bent to the form shown. (See Figs. 6 and 7, which are respectively a side view and plan of the plate.) Near the forward end a hole, *g*, is cut, and at the rear end is formed a channel, *h*, for the toe-clamps E to slide in. This channel is slightly curved transversely of the skate to allow for the curve of the boot or shoe, and in the center of this channel a depression, *i*, and two holes, *j j*, are formed. A round hole, *k*, is also made on one side near the center, as shown. To build up from the front projecting piece, *a*, of the runner to the front of the toe-plate, I employ a small piece of metal, H, stamped to the shape shown in Fig. 8 and then bent to the form shown in Fig. 9.

The toe-plate is secured to the runner in the following manner: The piece H is first placed in the hooked recess *b* in the runner. The toe-plate is then hooked onto the top of the piece H, the upper ends of which pass through the hole *g*. The rear end of the toe-plate is then passed over the center projecting piece, *c*, of the runner A, the depressed portion *i* resting on the bottom of the recess *e*. A flat key, I, of the form shown in Fig. 10, is then dropped into the depression *i* and turned a short distance, which brings its projecting edges into the notches *e'* in the projecting piece *c*, thereby securely locking the toe-plate onto the runner.

The heel-plate C is also made of thin metal stamped out to the form shown in Fig. 11 and then bent to the form shown in Figs. 13 and 14, which are respectively side view and plan of the heel-plate. The outer edge of the portions *l*, which form the rear heel-clamps, is thickened and slightly bent up in the stamping, so as to form the spur, as will be best seen in Fig. 12, which is a section taken on line *y y* of Fig. 11. The heel-plate is also provided with a depression, *i*, and holes *j j*, and it is fastened to the runner by a key, I, in the same manner as that described with reference to the toe-plate. It is also provided with a long slot, *m*, in which slides the adjustable heel-clamp G.

The toe-clamps E are stamped and bent to the form shown in Figs. 15 and 16, which are respectively side view and plan of one of the toe-clamps. The spur on these clamps is formed when they are stamped out the same as described with reference to the heel-clamps, and each of these clamps is provided with a small stud, *n*. They are also made slightly curved longitudinally, so as to conform to the shape of the curved channel *h* in the toe-plate B, in which they slide.

The actuating-lever D is stamped and bent to the form shown in Figs. 17 and 18, which are respectively side view and plan of the le-

ver. The portion of this lever upon which the sole rests is curved longitudinally to follow the curve of the boot or shoe, and in the wide or front portion are formed three slots, *p q q*. Through the straight slot *p* is passed a bolt, J, (shown detached in Fig. 19,) which also passes through the hole *h* in the toe-plate, and is secured by a pin, *s*, (see Fig. 1,) passing through a hole in the bolt just under the toe-plate B. This bolt forms the fulcrum upon which the lever D swings. The studs *n n* on the toe-clamps E pass up into the slots *q q*, which are on an angle to each other in the form of a V, and are each curved slightly at one end, as shown. The tail end D′ of the lever is formed saddle-shaped to fit over the upper edge of the runner to lock the lever when in a closed position. The lever D is also provided with a hole, *r*, through which is passed a headed block or bolt, K, (shown detached in Fig. 20,) provided with a screw-threaded hole, through which the screw-threaded regulating-bar F passes. This bar is at its other end secured to the adjustable heel-clamp G. (See Figs. 21 and 22, which are respectively a plan view and end view of the bar and clamp.) The bar F is also provided at the end of the screw-threaded portion with a thumb-piece, *w*, which, when the lever D is in the locked position, comes against the edge of the lever and prevents the rod F from turning.

The clamp G is stamped out and bent to the form shown, the lower portion forming a button, *l*, which is passed through the slot *m* in the heel-plate before the bar E and lever D are connected together. The portion of metal that was on each side of the button *l*, being bent up, forms a rest or support on the top of the heel-plate, and the upper edge of the clamp is bent over to form a knife-edge.

To strengthen the heel-clamps *l*, I form a bulb or depression at the center, where they are bent up, as shown in Figs. 23 and 24, which are respectively a side view and section through a clamp and a portion of the heel-plate. This bulb or depression *z* acts as a brace and prevents the clamp from being broken off.

To secure the skate to a boot or shoe, the heel-clamp G and toe-clamps E E are first adjusted to the required size by turning the regulating-bar F. The skate is then placed on the boot or shoe in an open position, as shown in Fig. 3. Then upon pressing the lever D inward the heel-clamp G comes into contact with the heel of the boot or shoe, and as the lever is pressed farther in it is also pushed forward, the clamp G acting as a fulcrum, and the toe-clamps E E are drawn inward by the studs *n*, working in the slots *q*, being drawn toward the inner ends of the slots *q*, which are set at an angle to each other in the form of a V, as shown.

It will be seen that the fulcrum J is on one side of the center of the skate—viz., on the side the levers open—whereby the toe-clamps are caused to open and close in unison with each other.

What I claim as my invention is—

1. The toe-plate B, formed of a single piece of metal and provided with a hole, *g*, channel *h*, depression *i*, and holes *j j*, in combination with the piece H, runner A, and key I, substantially as shown and described.

2. A toe or heel plate provided with a depression, *i*, and holes *j j*, in combination with a runner having upwardly-projecting pieces provided with recesses *e* and notches *e′*, and the nut I, substantially as and for the purpose set forth.

3. The lever D, provided with a straight slot, *p*, and two slots, *q q*, set at an angle to each other, the regulating screw-threaded bar F, bolt K, and adjustable heel-clamp G, in combination with the toe-clamps E E, provided with studs *n*, toe-plate B, provided with curved channel *h*, bolt J, upon which the lever D is free to turn, and also to travel longitudinally, and heel-plate C, provided with a slot, *m*, substantially as and for the purposes set forth.

4. The regulating-bar F, provided with a thumb-piece, *w*, in combination with the lever D, whereby the bar F is prevented from turning when the lever is locked, substantially as set forth.

5. The piece H, in combination with the runner A, provided with the hooked recess *b*, and toe-plate B, provided with the hole *g*, substantially as and for the purpose set forth.

6. Toe or heel clamps provided at their upper edges with spurs that are upset in the process of stamping out the blank, substantially as set forth.

7. The toe-plate B, provided with the channel *h*, said channel being bent on a slight curve transversely of the skate, in combination with the toe-clamps D, bent to correspond thereto, substantially as and for the purpose set forth.

8. The actuating-lever D, provided at its forward end with a straight slot, through which is passed a bolt to secure it to the toe-plate, so that it is free to turn, and also to travel longitudinally, and also provided with two slots set at an angle to each other for operating the toe-clamps, the rear end of the lever being formed saddle-shaped to lock it onto the runner, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES A. WHELPLEY.

Witnesses:
L. W. HOWES,
E. PLANTA.