J. M. LAMB.

SKATES.

No. 184,392. Patented Nov. 14, 1876.

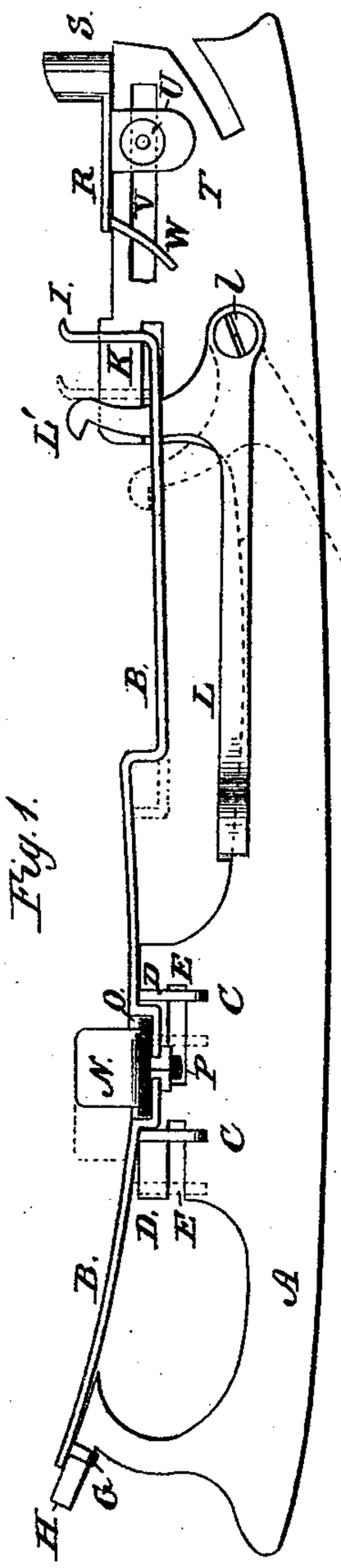

Fig. 1.

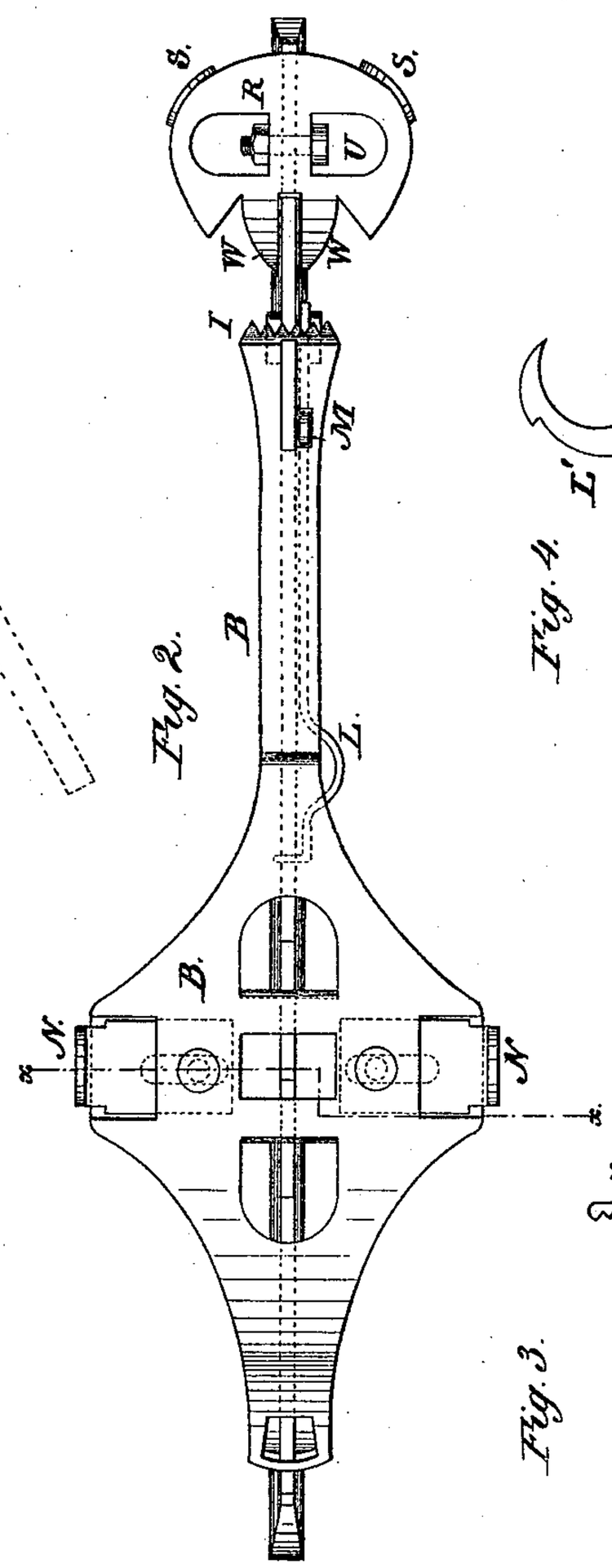

Fig. 2.

Fig. 4.

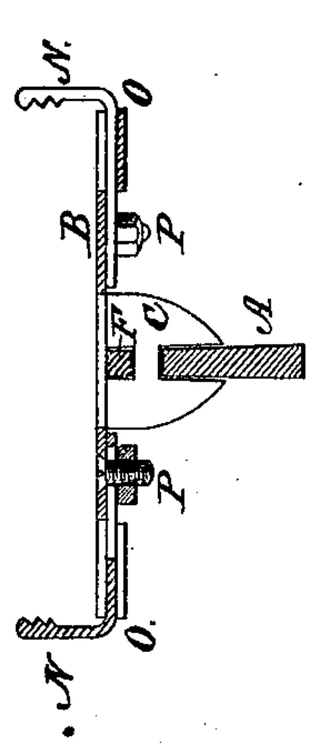

Fig. 3.

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IMPROVEMENT IN SKATES.

Specification forming part of Letters Patent No. **184,392**, dated November 14, 1876; application filed September 21, 1876.

To all whom it may concern:

Be it known that I, JOHN MARSON LAMB, of South Hampstead, in the county of Middlesex, England, have invented a new and Improved Skate; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a side elevation of the invention; Fig. 2, a plan of the same; Fig. 3, a transverse section on the line *x x* of Fig. 2; and Fig. 4, a detail view of a modification of the lever used to operate the sole-plate.

The invention relates to certain improvements in self-securing skates—that is to say, skates which are secured to the boot without the use of straps. Said improvements consist in fitting the sole-plate to slide to and fro on the runner, in order to secure or detach the skate, said sole-plate carrying adjustable toe-clamps, to embrace the side edges of the boot-sole, and extending backward to form the gripe or claw, which embeds itself in the front of the heel. The sole-plate is operated by a lever, and the object of fitting it to slide as above described is to enable the skate to be readily applied to the boot and secured. By sliding the sole-plate forward the toe-clamps are moved toward the toe of the boot, where the sole is narrow, said clamps readily admitting this narrow part between them, and then, by merely sliding the sole-plate back again, the toe-clamps are drawn back to and firmly gripe the wider part of the sole. At the same time the heel is clamped between the claws on the rear of the sole-plate and the stationary clips at the back of the heel-plate. The improvements also consist in the means of connecting the sole-plate to the runner, to admit of this sliding motion.

In the accompanying drawings, A represents the runner of a skate, and B the sole-plate, of the form shown in Fig. 2, connected to and sliding on the runner A. C C are two ears, flanges, or brackets, cut out of the front or wide part of the sole-plate, and bent downward at right angles. D D are two horizontal guides, formed on the upper edge of the runner by cutting therein the slots E E. The brackets C are provided with slots F, corresponding in shape to, and fitting accurately upon, the guides D, along which they slide freely to and fro. To strengthen the connection between the sole-plate and runner, the brackets C extend below the horizontal slots E, and are notched to embrace the sides of the runner. The sole-plate is also connected with the runner at the extremity of the toe or point by a similar ear, G, provided with a slot, through which a guide, H, formed at the toe of the runner, passes. Instead of this arrangement a vertical projection or stud may pass upward through a longitudinal slot in the sole-plate, near the point of the latter. The sole-plate B extends backward, contracting and bending downward near the middle of the skate, so as to form a narrow waist, the extremity of which is bent upward, forming the gripe I, which bears against the front of the heel. Said gripe is provided with a slot, fitting accurately, and sliding upon a horizontal guide, K, formed upon the runner. By means of the slots and guides heretofore described the sole-plate is connected firmly to the runner while free to slide longitudinally thereon. L L′ is a bell-crank lever, pivoted at its angle to the runner by the bolt *l*. Said lever is operated by its long horizontal arm L, which is curved outward, near its free end, to enable it to be readily grasped, and has its extremity bent inward across the runner, and notched to spring over and engage the top edge of the same when the lever is released after being raised, thus locking the lever and sole-plate in position. The other or short arm L′ of the lever curves upward and eccentrically backward, and passes through a slot, M, in the sole-plate, which, by this means, is pushed forward or pulled back when the arm L is lowered or raised. The extremity of the arm L′ is provided with a stop, to prevent it descending through the slot M. N N are the toe or side clamps, fitted into beds O O, formed on the sole-plate by cutting in the same T-shaped slits, and bending the adjacent parts down below the general level of said plate, the inner ends of the clamps, when in their beds, thus passing beneath the sole-plate. Said clamps are rendered transversely adjustable on the sole-plate by means of axial slots, with which they are provided, in conjunction with the

clamp-screws P P, provided with nuts below the sole-plate. The heads of said clamp-screws are countersunk flush with the sole-plate. The distance apart of the toe or side clamps may thus be increased or lessened, as circumstances require. R is the heel-plate, having two clips, S S, on each side of its central line, bent upward at right angles, in order to hold against the back of the heel. The heel-plate is connected with the runner by means of two ears or brackets, T T, cut out of it on each side of its central line, and bent downward at right angles to embrace said runner, which is also steadied by two flanges or brackets, W W, extending downward from the front of the heel-plate, with their edges close against its sides. The heel-plate is made longitudinally adjustable on the runner by means of the longitudinal slot V in the latter, and the clamp-screw U passing through said slot and the ears T T.

Fig. 4 shows the short arm L′ of the lever L L′ formed with a claw-shaped extremity, which embeds itself in the front of the heel, and which may be used either in addition to the clip I, or in lieu thereof.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a skate, the combination, with the runner, of longitudinally-adjustable sole and heel plates, the former provided on its rear with a front heel gripe, transversely adjustable side clamps, and a lever, pivoted to said runner, to adjust the sole-plate, and so formed as to make an additional gripe upon the front of the heel, substantially as herein shown and described.

2. In a skate, the combination, with the runner A, heel-plate R, clips S, and adjustable sole-plate B, of the brackets C, slots E, guides D, slotted toe-clamps N, beds O, and clamp-screws P, all constructed and arranged substantially as shown and described, for the purpose specified.

3. In a skate, the combination, with the runner A, heel-plate R, clips S, and adjustable sole-plate B, of the pivoted bell-crank lever L L′, slot M, front heel gripe I, formed on the rear of the sole-plate, and adjustable toe-clamps N N, all constructed and arranged substantially as shown and described, for the purpose specified.

4. In a skate, the combination, with the runner A, sole-plate B, provided with a heel-gripe, I, heel-plate R, and clips S, of the brackets T, slot V, bolt or clamp-screw U, and brackets W, all constructed and arranged substantially as shown and described, for the purpose specified.

The above specification of my invention signed by me this 19th day of July, 1876.

JOHN MARSON LAMB.

Witnesses:

WM. CLARK,

JOHN DEAN.