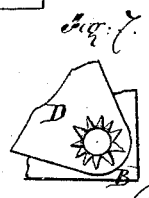
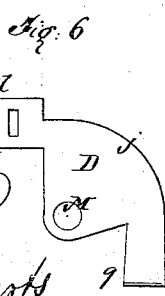
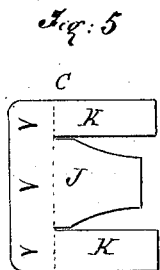
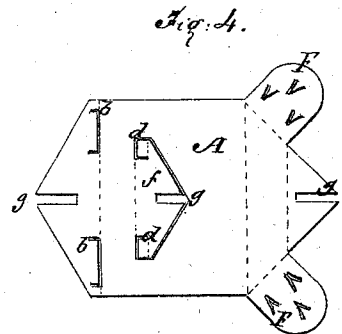
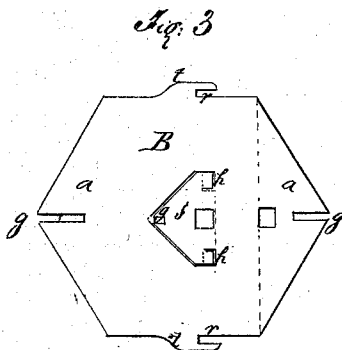
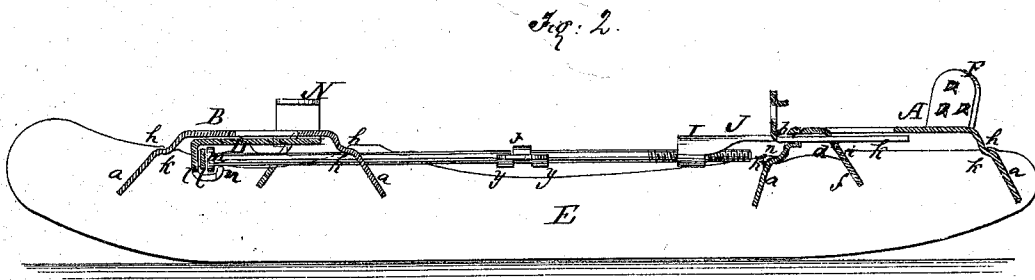
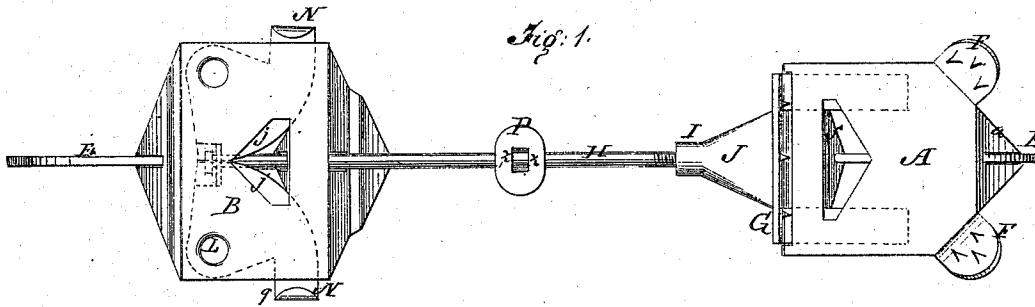


J. S. ARMSTRONG.  
Improvement in Skates.

No. 131,806.

Patented Oct. 1, 1872.



Witnesses:

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# UNITED STATES PATENT OFFICE.

JOHN SIMEON ARMSTRONG, OF ST. JOHN, CANADA.

## IMPROVEMENT IN SKATES.

Specification forming part of Letters Patent No. 131,806, dated October 1, 1872.

*To all whom it may concern:*

Be it known that I, JOHN SIMEON ARMSTRONG, of St. John, in the Province of New Brunswick and Dominion of Canada, have invented a new and useful Improvement in Skates, of which the following is a specification:

My invention relates to improvements in that class of skates which are constructed to be fastened to the shoe by stationary and movable heel-clamps and movable clamps at the ball of the foot, the latter and the movable heel-clamp being operated by a screw-rod extending from the ball-plate to the heel-plate and connected to them; and my said invention consists in the construction and arrangement of parts, as hereinafter described and specifically claimed.

Figure 1 is a plan view of my improved skate. Fig. 2 is a longitudinal sectional elevation. Fig. 3 is a plan view of the front foot-plate, when made of sheet metal, after being cut out of the plate and before being bent up into the finished form. Fig. 4 is a similar view. Fig. 5 is a similar view of the movable heel-clamp. Fig. 6 is a similar view of one of the clamps for the side of the shoe at the ball. Fig. 7 is a detail view, showing the manner of pivoting the clamps to the front plate.

Similar letters of reference indicate corresponding parts.

The heel-plate A, front plate B, movable heel-clamp C, and the front side clamps D are here represented as being made of sheet metal, being cut out of a sheet in blanks, as shown in the Figs. 3, 4, 5, and 6, respectively, and also punched and slotted, as shown, to be afterward shaped, as shown in Figs. 1 and 2, for connecting together and to the skate-iron E; but if preferred these parts may be formed out of wrought or rolled metal. The heel-plate A has a strong ear-plate, F, projecting upward from each rear quarter, with spurs on the inside to engage the side of the boot-heel when forced against it by the movable upwardly-projecting clamp-plate G, arranged to bear against the heel along the front wall of it and forced thereon by the screw-rod H, which works in a nut, I, attached to the tongue J of the said movable clamp piece so that the said rod may extend along to and under the front plate B to work the jaws D also. This movable clamp-

ing-plate G is fitted to the plate A by a long horizontal bar, K, at each end, extending through the front standard *a* in slots *b* and along notches *c* in the middle standard or brace *f* immediately under the horizontal part of said plate. When made of sheet metal this tongue J is formed of part of the plate, as shown in Fig. 5, which is bent up to the position shown in Figs. 1 and 2. The plates A and B are attached to the runner E by the pointed and slotted standard *a* and *f*, which, in case of being made of rolled metal, are bent downward from the plane of the horizontal parts, as shown in the drawing, the standards *f* being parts punched down from the middle of the plates. The slots *g* in the lower ends of these standards embrace the runner on each side, and the upper walls of these slots rest in notches *h i* in the upper edge thereof, into which the standards are sprung so as to be held fast by the upper walls of said notches. The standards *a* are bent to a horizontal line, or nearly so, immediately above the said shoulder of the slots, as shown at *k*, to afford broad and permanent seats on the edge of the runner. The front or ball-clamps D consist of segmental pieces which are pivoted to the plate B, on the under side, at L by any suitable means, or preferably by means of a slight serrated or notched tubular extension from the plate surrounding a hole formed through it, passing through an eye, M, in the clamps, and bent back and down upon the latter, as shown in Figs. 1 and 7. The ends of these clamps for acting upon the shoe project from under the plate B, one at each side, near the rear end, as shown in Fig. 2, and have a clip, N, bent up, in case of being made of sheet metal, but otherwise cast in the form shown. The other ends of the clamps, being at right angles to these having the lips N, meet together under the center of the front end of the plate B, and have each a flange, *l*, lapping each other for the head *m* of the rod H to act against in forcing the clamps against the boot, and one of said flanges has a curved extension, *n*, extending under and behind the head of the rod to be acted on by said head when screwing in the direction to open said clamps. But I also would reserve to myself the right to construct these clamps without the interlapping parts, both instead having a part to engage with the

head of the bar as it is drawn back. The inner curved edges *j* of these clamps swing in guiding-notches *p* in the edges of the standard *f*, and the edges *q* swing in notches *r* formed in the plate B at its outer edges, which said guide-notches, together with the pivots of the clamps, hold them firmly while allowing them to swing. These notches are formed in the standard *f* by bending down the cut lips shown at *p*, Fig. 3, and the ones on plate A by bending the notched pieces *t*, as indicated in the drawing, when the parts are made of sheet-metal. This rod has a thumb-bit, P, attached to it between the plates A and B for turning it to fasten the skate to the foot and unfasten it. Said thumb-bit consists of a small sheet-metal plate, which is attached by sliding the rod through a hole formed by bending the parts *x y*, which are separated by the two parallel slits *z*, in opposite directions, and it is fastened on said rod by pressing said parts hard upon it or into little notches or depressions previously formed in said rod.

It will be noted that this rod, which passes freely through a large hole in the rear standard *a* of the front plate, is not attached to either of the plates, and has no bearing or support except in the parts which it is used to operate, which simplifies and cheapens the construction considerably, while it provides equally as efficient an arrangement as any other.

*Claims.*

1. The front or sole-clamps D N pivoted to the plate B, as specified, combined with the adjusting-rod H, as set forth.
2. The combination of the plates A B, provided with slotted standards, with the runner E provided with notches to receive said standards, as set forth.

JOHN SIMEON ARMSTRONG.

Witnesses:

J. R. ARMSTRONG,  
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