# Lovelidge & Grindrod.

## Skates.

No. 76214 Patented Mar. 31, 1868.

Fig: 1.

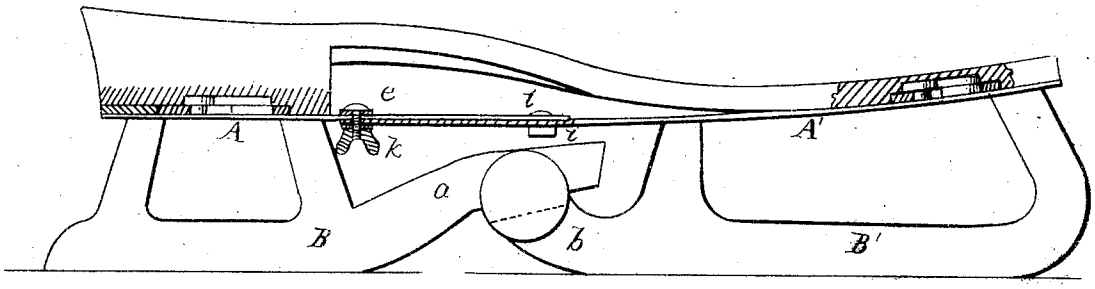



Fig: 2.

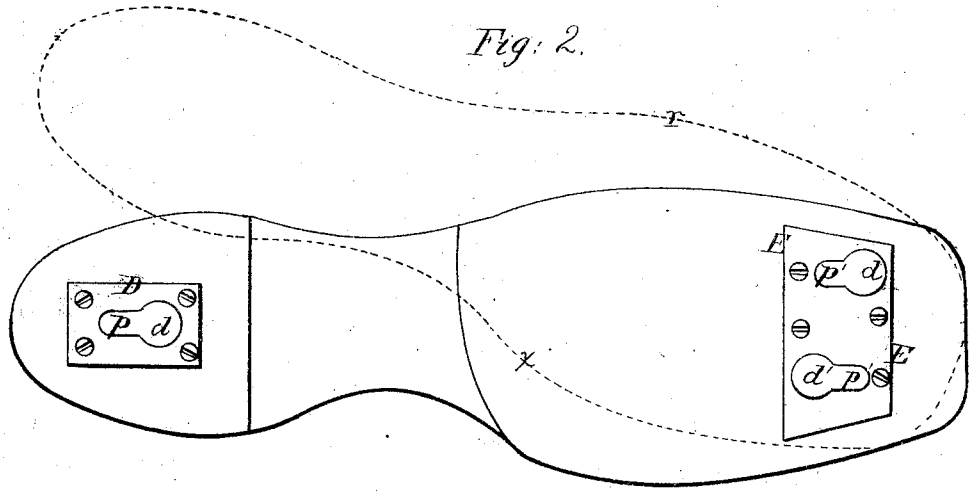
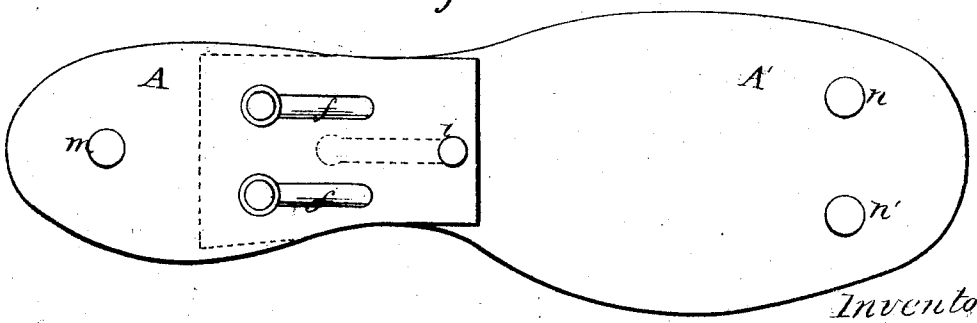
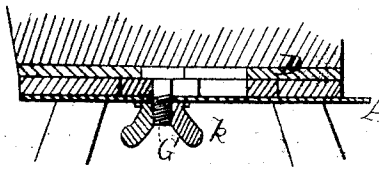



Fig: 3




Witnesses:

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T. Lovelidge and
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By their Atty
H. Howson

# United States Patent Office.

THOMAS LOVELIDGE AND JOHN GRINDROD, OF PHILADELPHIA, PENNSYLVANIA.

*Letters Patent No.* 76,214, *dated March* 31, 1868.

## IMPROVEMENT IN SKATES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, THOMAS LOVELIDGE and JOHN GRINDROD, of Philadelphia, Pennsylvania, have invented an Improved Skate; and we do hereby declare the following to be a full, clear, and exact description of the same.

Our improvements, which are fully described hereafter, have for their objects adjustability of the skate to boots of different sizes, the yielding of the skate (which has two runners) so that it will accommodate itself to the movements of the wearer's foot, and ready means of attaching the skate to the boot without the aid of straps and other inconvenient fastenings.

In order to enable others skilled in the art to make and use our invention, we will now proceed to describe its construction and operation, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figure 1 is a side view, partly in section, of our improved skate.

Figure 2, an inverted view of the sole of a boot prepared for receiving the skate.

Figure 3, a plan view of the skate, and

Figure 4 a sectional view, showing a modification of our invention.

The rest for the foot in our improved skate consists of the heel-plate A and sole-plate A′, the former overlapping the latter, as seen in figs. 1 and 3. To the heel-plate A is secured the runner B, a projection, *a*, on which fits snugly, but so as to slide and vibrate freely in a slot in a projection, *b*, of a runner, B′, secured to the sole-plate A′. The plates are secured together by two bolts, *e e*, fitting snugly in holes in the plates A′, but passing through slots *f f* in the plate A, so that, after loosening the thumb-nuts with which the bolts are provided, the plate A is at liberty to be moved to and fro over the plate A′. In addition to the bolts, the stem of a stud, *i*, is secured to the upper plate A, and passes through a slot in the plate A′, which is underlapped by the head of the stud, thereby assisting to maintain the two plates in proper contact with each other, without preventing the movement of one plate independent of the other, when such movement is necessary, and is permitted by loosening the thumb-nut of the bolts *e*. A stud, *m*, is secured to the heel-plate A, and two similar studs, *n* and *n′*, to the sole-plate A′.

The boot is prepared in the following manner for the attachment of the skate: A plate, D, is let into and properly secured to the heel of the boot, which is recessed above the plate for the free movement to and fro of the head of the stud *m*, this head being passed through the hole *d* of the plate, and the stem of the stud passing into the recess *p*, which communicates with the said hole *d*, so that the head of the stud will overlap the plate, and the skate be thereby secured to the heel. A plate, F, is let into and secured to the sole of the boot, near the toe, and in this plate are two holes, *d′ d′*, of a character similar to those in the plate D, these holes being adapted to the reception and retention of the studs *n* and *n′*.

The above-described skate is applied to the boot in the following manner: It will be observed that the holes *d′*, in the plate E of the boot, are so situated, the reverse of each other, that before the studs can enter the enlarged portions of the holes, the skate must be held in the inclined position shown by dotted lines, (fig. 2,) in respect to the sole of the boot. After the studs have been introduced, however, the skate is turned, so as to coincide with the boot, this act of turning the skate causing the stems of the studs to enter the narrow portions of the holes in the plate, and the heads of the studs to overlap the same. The front end of the skate having thus been secured to the sole of the boot, the heel-plate A is so adjusted that the head of the stud *m* will enter the enlarged portion *d* of the hole in the plate D, after which the heel-plate A is moved back, until the stem of the stud enters the narrow portion *p* of the hole in the said plate D, when the thumb-nuts *h* are tightened, and the skate is firmly secured to the boot. The method of removing the skate will be readily understood without description.

There are several advantages in our improved skate, which may be referred to as follows: First, it can be applied to boots of different sizes, owing to the longitudinal adjustability of one plate in respect to the other; second, the only connection between the two runners being the thin elastic plates, the said runners can move independently of each other, and accommodate themselves to the movements of the wearer's foot; third, the attachment of the skate to the boot may be accomplished with rapidity; and, fourth, the attachment is secure.

Instead of using two plates, A and B, one to overlap the other, one elastic plate only may be used as a foot-rest, and for connecting the two runners together, in which case the stud *m* may be replaced by a bolt, G, arranged to slide in a slot in the plate A, the head of the bolt, after it has been moved back from the enlarged to the narrow portion of the hole in the plate D, overlapping the said plate, in which position the bolt is secured by a thumb-nut, *k*. When the skate has to be detached from the boot, the thumb-nut *k* is loosened, the bolt drawn forward, until it can be released from the plate D. The skate is then depressed at the heel, and turned laterally, until its studs *n* and *n'* can be released from the plate E.

We claim as our invention, and desire to secure by Letters Patent—

1. A skate, having an elastic foot-plate and two runners, arranged to move independently of each other in a vertical direction, but to guide each other laterally, all substantially as and for the purpose herein set forth.

2. Securing a skate to a boot solely by studs on the skate, adapted to holes in plates on the sole and heel of the boot, substantially as described.

3. The sole-plate A, and its runner B, in combination with the heel-plate A′ and runner B′, when the said plates and runners are rendered adjustable, to suit boots of different sizes, substantially in the manner described.

4. The studs *n n'*, either fixed to or arranged to slide on the foot-plate of the skate, near the toe, in combination with the plate E on the boot, and holes so formed and arranged therein as to admit and retain the said studs, substantially as specified.

5. The stud *m*, in conjunction with a plate, D, on the heel of the boot, the said plate having a hole of the character described, into which hole the head of the stud can be introduced, and in which it can be secured, either by moving the plate to which the stud is attached backwards, or by moving the stud itself in a slot in the plate, all substantially as specified.

In testimony whereof, we have signed our names to this specification, in the presence of two subscribing witnesses.

THOMAS LOVELIDGE,
JOHN GRINDROD.

Witnesses:
H. HOWSON,
C. B. PRICE.