(No Model.)

4 Sheets—Sheet 1.

# C. L. PEIRCE.

## SKATE.

No. 342,457. Patented May 25, 1886.

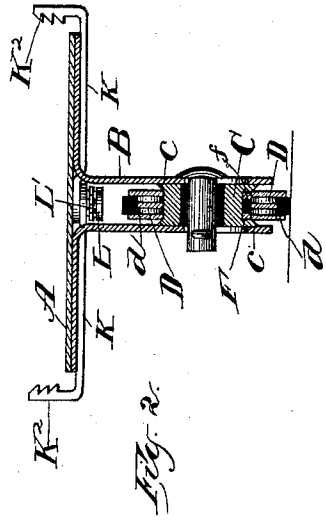


Fig. 2.

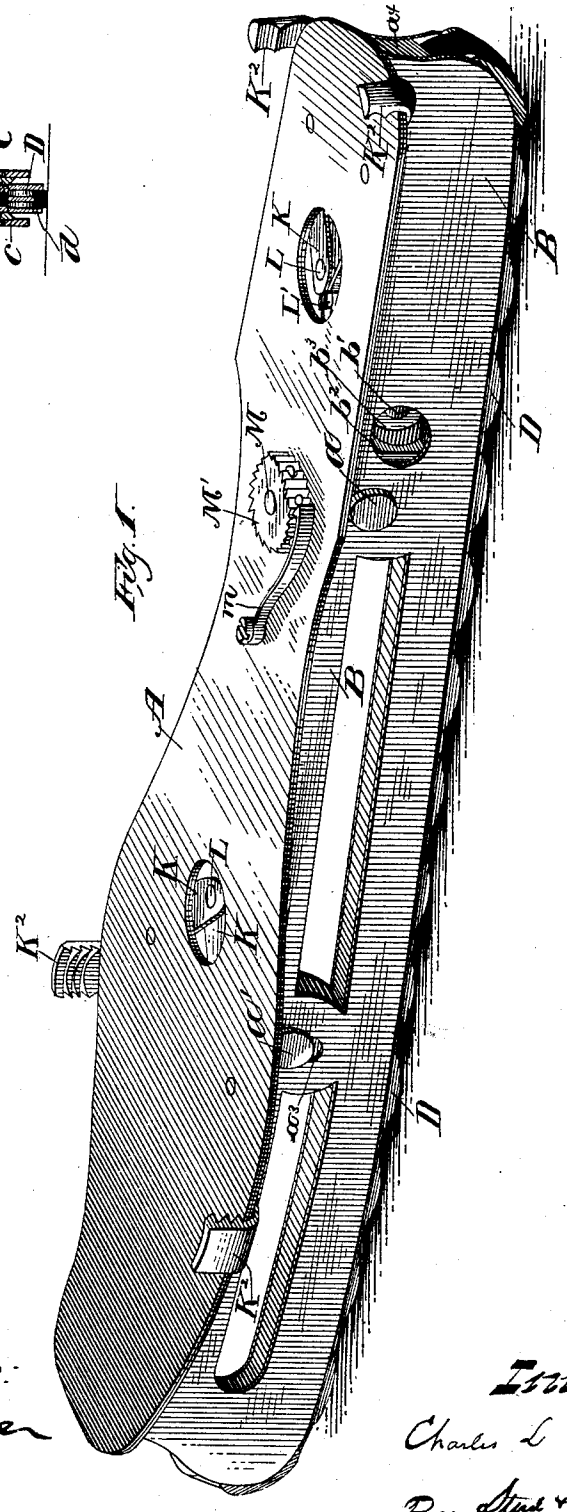


Fig. 1.

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(No Model.) 4 Sheets—Sheet 2.

# C. L. PEIRCE.

## SKATE.

No. 342,457. Patented May 25, 1886.

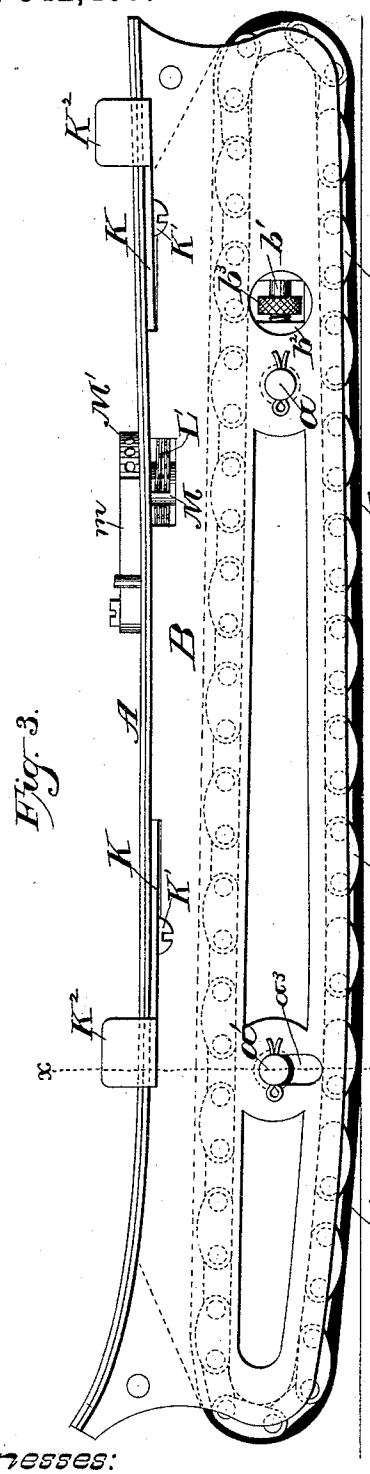


Fig. 3.

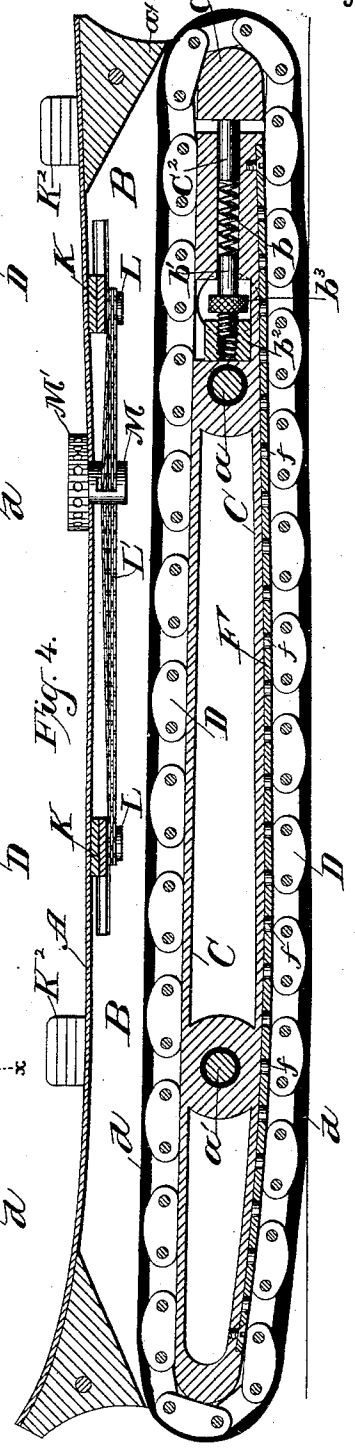


Fig. 4.

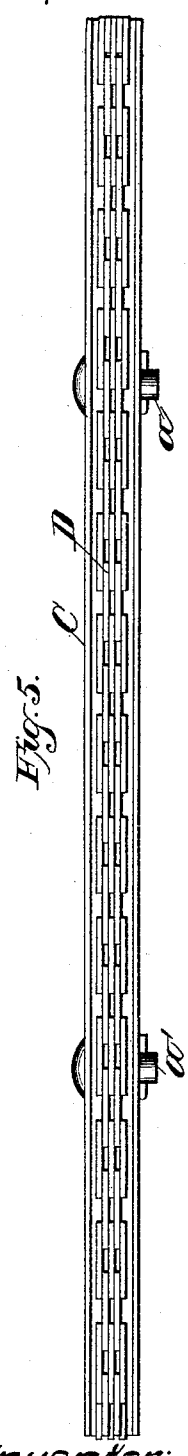


Fig. 5.

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(No Model.) 4 Sheets—Sheet 3.

# C. L. PEIRCE.

## SKATE.

No. 342,457. Patented May 25, 1886.

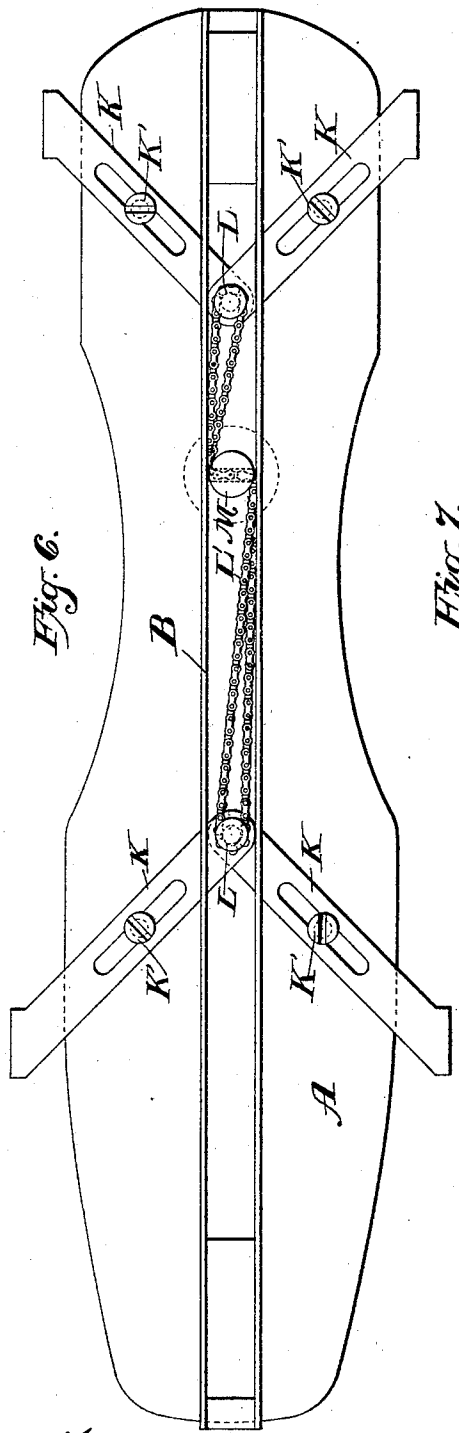



Fig. 6.

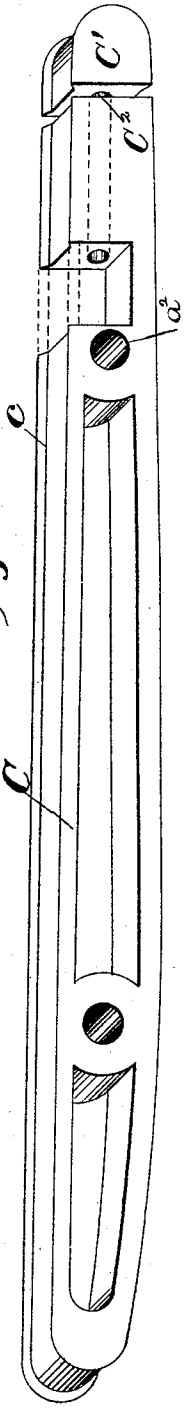



Fig. 7.

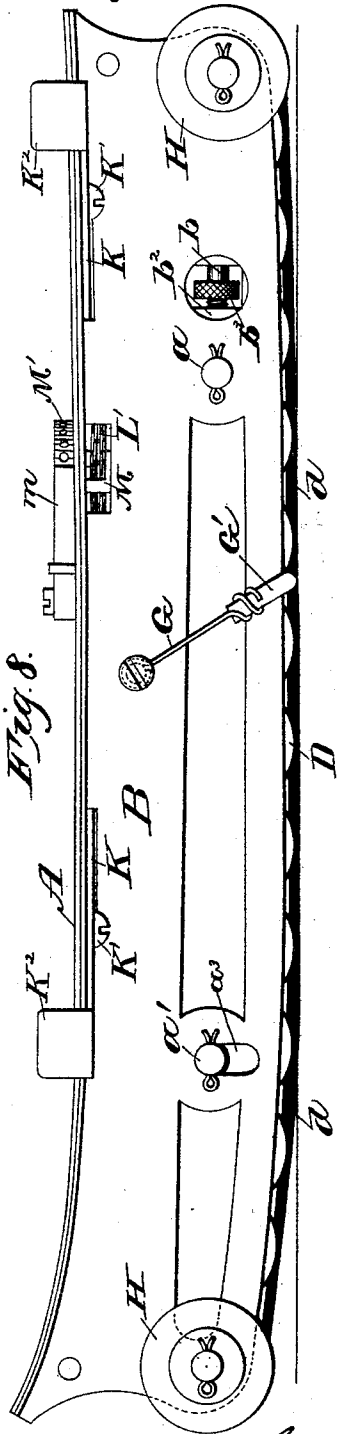



Fig. 8.

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(No Model.) 4 Sheets—Sheet 4.

# C. L. PEIRCE.

## SKATE.

No. 342,457. Patented May 25, 1886.

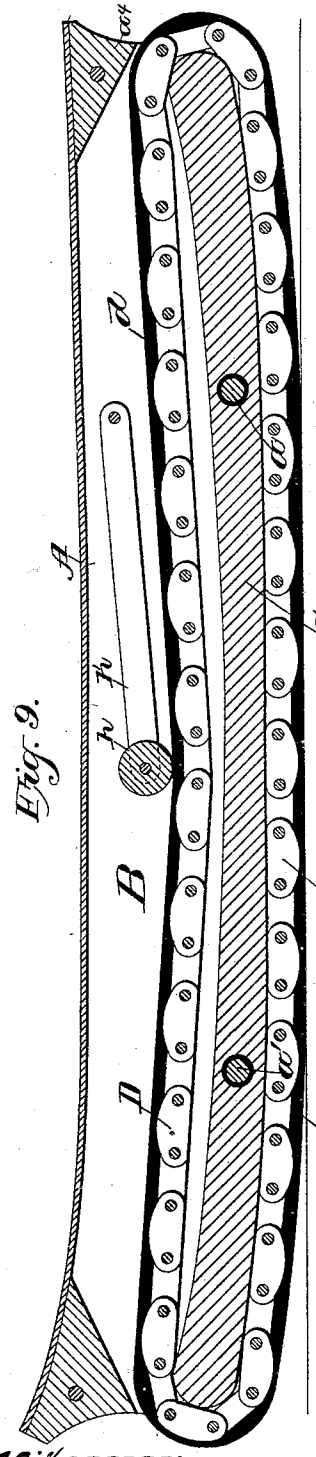


Fig. 9.

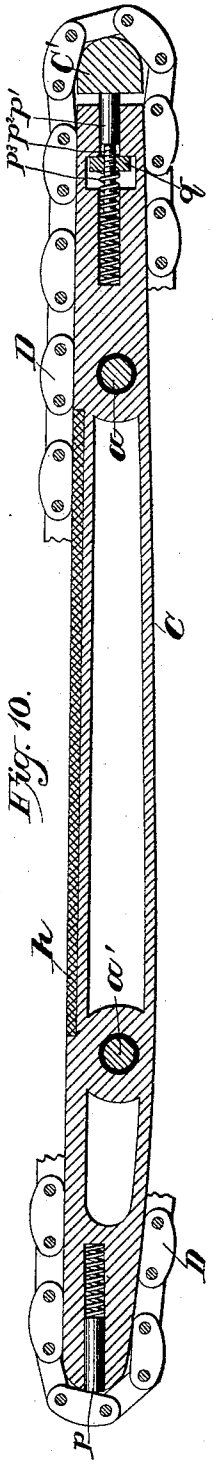


Fig. 10.

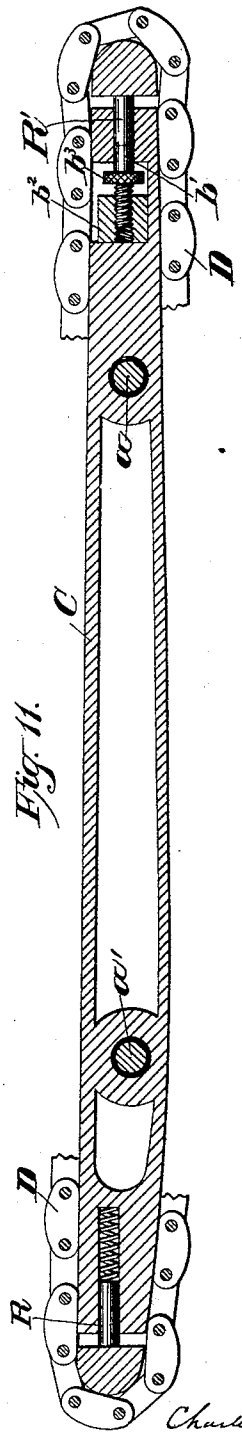


Fig. 11.

Witnesses:
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Inventor:
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# UNITED STATES PATENT OFFICE.

CHARLES L. PEIRCE, OF MILWAUKEE, WISCONSIN.

## SKATE.

SPECIFICATION forming part of Letters Patent No. 342,457, dated May 25, 1886.

Application filed May 29, 1885. Serial No. 167,013. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES L. PEIRCE, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Skates; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to parlor or rink skates, and will be fully described hereinafter.

In the drawings, Figure 1 is a perspective view of my improved skate. Fig. 2 is a cross-section on line *x x* of Fig. 1. Fig. 3 is a side view. Fig. 4 is a central vertical section of the same. Fig. 5 is a bottom view of the runner of my improved skate. Fig. 6 is a bottom view with the runner removed. Fig. 7 is a perspective view of the runner-frame. Fig. 8 is a side view of the skate with all attachments, and Figs. 9, 10, and 11 illustrate modifications in the construction of my improved skate.

A is the tread of my skate, and B is the web, which latter is made hollow to receive a frame, C, which is preferably grooved at *c* to receive a band or endless chain, D, and where the latter is used I may make the inner links more shallow than the outer ones to leave a groove for the reception of a band, *d*, of rubber or other suitable material. The frame C is held between the plates of the tread B by bolts *a a'*, the bolt *a* passing through round holes $a^2$ in the tread and frame, while bolt *a'* passes through slots $a^3$ in the web and a round hole in the frame.

It will be observed that while the bolt *a* will not permit any vertical play of the runner-frame in the web the bolt *a'* is allowed vertical play by the slots $a^3$. This allows the skater by heel-pressure to tip the web up in front and bring the rear upper portion into contact with a guard, $a^4$, that is fixed in the upper rear end of the web, and thus stop himself or reduce his speed by the motion habitual to ice-skaters. The bearings for the bolts *a a'* are preferably bushed to prevent rattling.

C' is a plunger, the stem $C^2$ of which is fitted in a suitable opening in one end of the frame C, so as to abut against a spring, *b*, and this spring *b* in turn abuts against one end of a bolt, *b'*, the other end of which screws into a block, $b^2$, that is fixed in the frame C, and a nut, $b^3$, is fixed on bolt *b'*, and by this nut the bolt *b'* can be turned in and out of the block $b^2$ to increase or decrease the tension of the spring, and thus tighten or loosen chain or band D. A similar or equivalent arrangement may be placed at the other end of the frame.

There are many ways of lubricating my skate. I show one in Fig. 4 of the drawings—viz., a perforated plate, F, having small cylinders or disks *f'* of compressed graphite or plumbago or other solid lubricant pressed into the perforations. This plate is attached to the under side of frame C, and forms a bearing for chain or band D, which, in passing beneath it, takes up enough of the lubricant to supply it for each revolution, and, in fact, after the skate has been run for a short time the entire bearing-surface will become glazed with the lubricant.

In the modification shown in Fig. 10 I provide a strip, *h*, of absorbent material, which it saturated with any desired lubricating mixture.

G in Fig. 8 is a spring chalk-holder, which is secured to the web at one side for carrying a piece of chalk, G', for tracing the movements of the skaters on the floor.

H are rollers, which are detachably secured to the web—a pair at each end or at either end—to be used in certain styles of fancy skating, and besides these, intermediate detachable rollers may be provided to aid a beginner in keeping his balance; but these should be sufficiently elevated to prevent their contact with the floor, except when the skate is tipped to the right or left.

If desired, I may provide the frame C with anti-friction rollers to act as bearings for the endless runner.

The front and rear foot-clamps consist each of two slotted slides, K, which are held up against the under side of the tread by bolts K', that pass through the slots. Each slide has a jaw, $K^2$, that projects around the edge of the tread, and the inner ends of each pair of slides are pivoted together by a sleeved bolt, L, and about this bolt is passed a strap or chain, L', that, passing into an axle, M, serves to connect the front and rear clamps together. The head M' of axle M lies on top of the tread, and has ratchet-teeth for engaging a spring-pawl, *m*, and is also perforated to receive an instrument for turning it, to draw the clamps together.

In Fig. 9 I show a modification of the band or runner tightener, which consists, simply, of a weighted roller or sheave, *h*, suspended to the web by a bail, *h'*, so that its weight will cause it to bear down upon the band or runner. When this modification is used, the frame C is made concaved on top, so that when the runner is depressed it will not bind.

In Fig. 10 I show two spring-plungers, *p p'*—one at each end. The plunger *p* is made of a lubricating material, while plunger *p'* has a stem, $p^2$, that passes back through a spring, $p^3$, and is screw-threaded to take a nut, *q*, by which it is regulated.

In Fig. 11 a spring-plunger, R, is used in one end, and positive adjustable plunger R' in the other, each plunger having a bearing-head similar to head C' in Fig. 4.

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

1. The combination, with the tread and web of the skate, of the frame secured in the web, the endless runner surrounding the frame, and a yielding device bearing upon the endless runner, whereby slack in said endless runner is taken up, as set forth.

2. The combination, with the tread, the web, the endless band, and the frame secured in the web over which the band runs, having one portion of its contact-surface formed of a yielding plunger, as set forth.

3. The combination of the frame C, endless chain D, and spring-plunger C', having screw adjustment with the tread and web of the skate, as set forth.

4. The combination of the tread, the web secured thereto, the frame C, secured between the plates of the web, the endless chain surrounding said frame, and the band *d*, surrounding the endless chain, as set forth.

5. The combination, with the tread and web of a skate, of an endless runner-frame pivoted to the web at the rear and vertically adjustable with relation thereto at the front, as set forth.

6. The combination, in a skate, of a tread, a web, and an endless runner-frame adjustably connected to the web at one end, the web being provided with a guard, $a^4$, for the purpose set forth.

7. In combination, the tread, the front and rear clamps, consisting of slotted bars turned up at $K^2$ and pivoted together by bolts L, the screws K', passing through the slots into the tread, the chain or cord L', connecting the bolts L, and the bolts M, through which the cord or chain L passes, as set forth.

8. The combination, with an endless runner and its frame, of a lubricating-bearing arranged in the path of said runner.

9. In a skate, the runner-frame pivoted to the web in the rear, and having a slotted connection with the same in front, as set forth.

10. The combination, with a skate, of a chalk-holder secured thereto, as set forth.

11. A skate having an endless runner having sliding contact with the body of the skate, and an immediate bearing on the floor, as set forth.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee, and State of Wisconsin, in the presence of two witnesses.

CHARLES L. PEIRCE.

Witnesses:
S. S. STOUT,
H. J. FORSYTH.