(No Model.) 2 Sheets—Sheet 1.

E. H. BARNEY.

ROLLER SKATE.

No. 293,299. Patented Feb. 12, 1884.

Fig 1

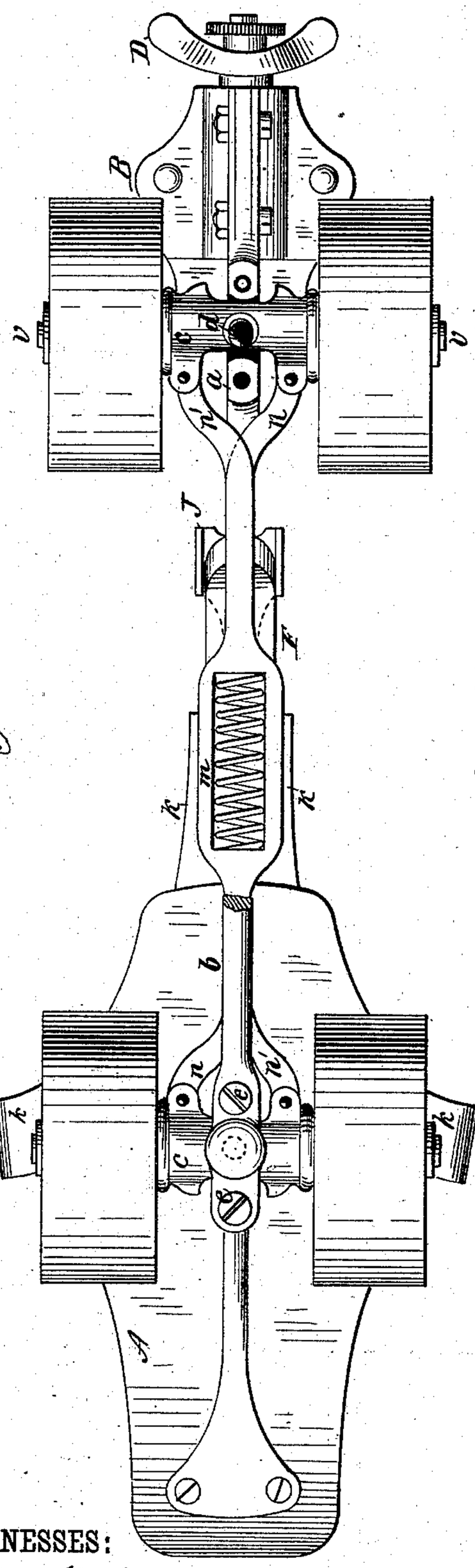
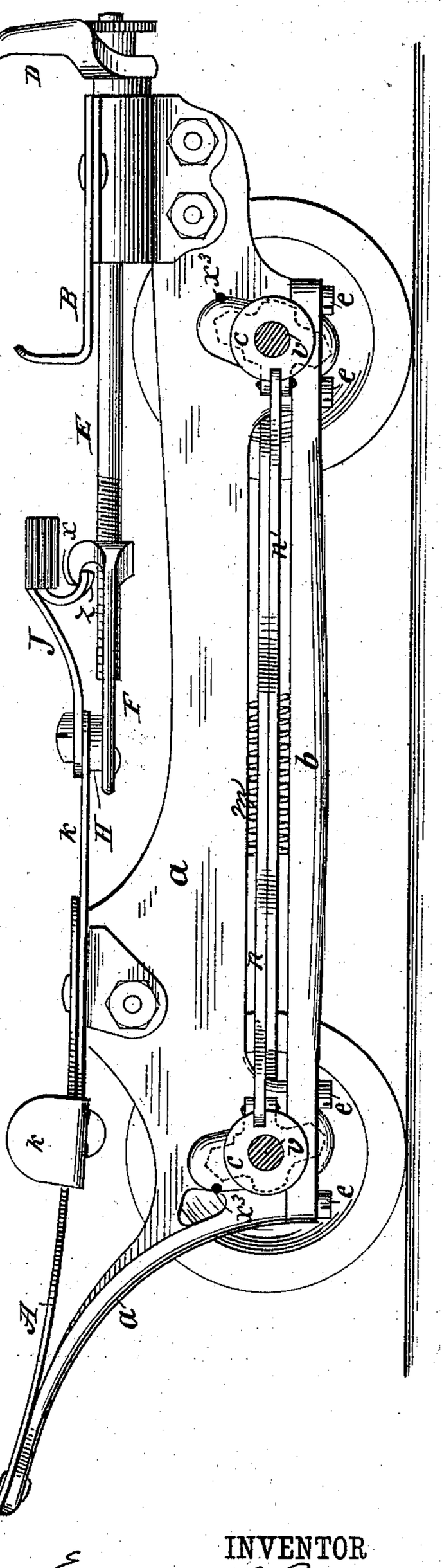


Fig 2



WITNESSES:

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M. C. Buck

INVENTOR

Everett H Barney

BY Henry A Chaffin

ATTORNEY

(No Model.)

2 Sheets—Sheet 2.

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ROLLER SKATE.

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Fig 3

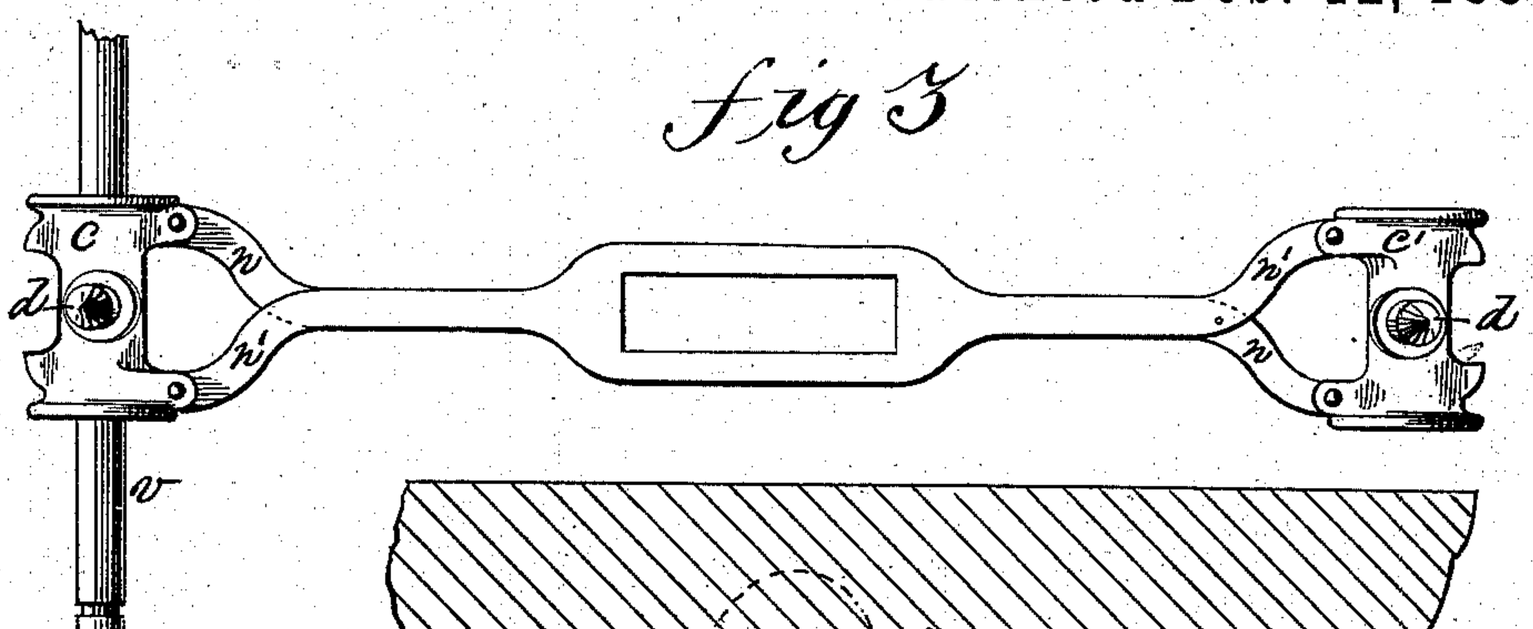


Fig 4

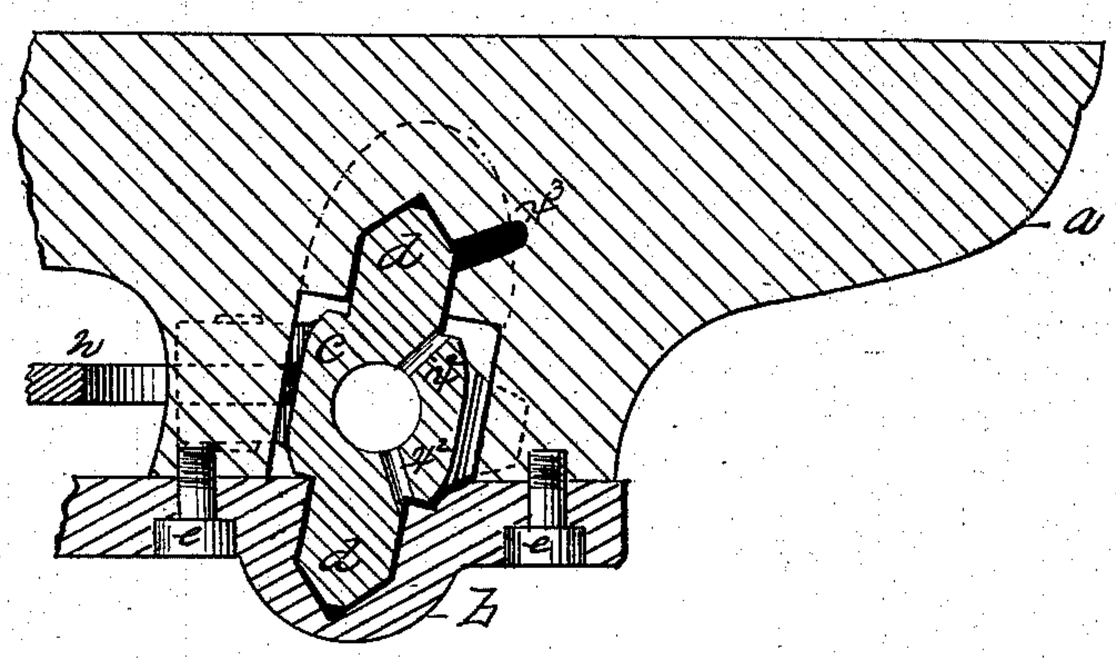


Fig 5

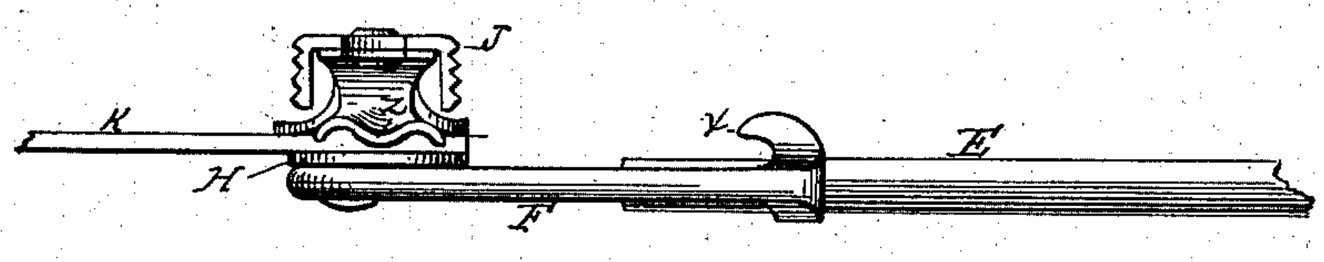
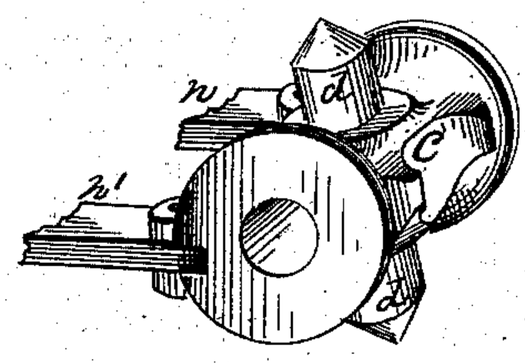


Fig 6



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UNITED STATES PATENT OFFICE.

EVERETT H. BARNEY, OF SPRINGFIELD, MASSACHUSETTS.

ROLLER-SKATE.

SPECIFICATION forming part of Letters Patent No. 292,299, dated February 12, 1884.

Application filed December 5, 1883. (No model.)

To all whom it may concern:

Be it known that I, EVERETT H. BARNEY, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Roller-Skates, of which the following is a specification.

This invention relates to improvements in the construction of roller-skates; and it consists in improved means for supporting the axles of such skates and for controlling their oscillatory movements, the object being to provide for this class of skates such a construction of axle-supports that the axles and rollers are free to rotate together or independently of each other; to provide improved axle-connections, whereby the axles and rollers are made more sensitive to the deflection of one edge of the foot-support, and made quickly to resume their parallel positions when said support is brought to a level, thereby providing a roller-skate with which the skater can with great facility turn quickly and easily either upon both axles or one, and which possesses such solid elements of construction as conduce to great durability and prevent frequent breakage.

In the drawings forming part of this specification, Figure 1 is a plan view, partly in section, and Fig. 2 is a side elevation showing two rollers removed, of a roller-skate embodying my improvements. Figs. 3, 4, 5, and 6 are detail views.

The construction and operation of the metal-skate parts—consisting of the sole-plate A, the heel-plate B, heel-clamp D, screw-rod E, link F, crank-stud H, lever J, and the sole-clamps K K—are substantially those shown and described in my United States Patent No. 274,254, of March 20, 1883, to which reference may be had, excepting the means herein shown and described for securing the lever J in a locked position, and which consist of a hook *x*, formed on the rear end of the link F, bending toward the crank-stud H, or the pivot of lever J. Said lever is provided with a curved lip, *z*, under its rear end, having a central depression in it, in which the point of hook *x* catches when lever J is swung to the position shown in Fig. 2; and when brought to that position its free end is sprung down a little to slip the higher side of said lip under the hook. The lever then springs up, causing said depression in the lip to be held up against the under side of the hook, thereby keeping the lever from being jarred or shaken out of place as the skate rolls over the floor.

The lever and hook above referred to are shown in detached positions in Fig. 5, the lever there being shown in end view, whereby the form of the lip *z* is clearly seen.

The above-named metal-skate parts are mounted on a metal frame, *a*, much in the manner in which they are secured to the runner of an ice-skate, and the upper portion of said frame is similar in form to such a runner; but its lower edge is adapted to have the requisite roller-skate parts attached thereto, as hereinafter described.

The front and rear axles, *v*, are supported in two axle-cases, *c c*, which are substantially alike, and each one is perforated longitudinally to let an axle pass through and rotate in it. The axle-case *c* is provided with pivots *d d* on opposite sides thereof, and with ears on one side, to which are pivoted the ends of two connecting-bars, *n n'*.

The frame *a* has an opening made in its lower edge near each end, of rectangular form, and a socket is made in the frame in the upper side of said opening, of proper shape to receive one of the pivots *d* on the axle-case. That part of frame *a* in which said socket is made is made slightly thicker than it is elsewhere, to provide therefor. A strap, *b*, is secured to the lower edge of frame *a* by the screws *e e*, and those portions of the strap which are opposite said openings in frame *a* are provided with sockets nearly opposite to those in the frame, to receive the pivots *d* of the cases *c*, which are on the under sides of the latter. Thus the said axle-cases are supported on the pivots *d*, within rectangular openings in the lower edge of frame *a*, and are free to have a certain oscillating or vibratory motion therein. The axial lines of the pivots *d* in both the front and rear axle-cases run at an incline to each other, separating as they extend upward, as shown in Figs. 2 and 4.

In Fig. 4 is shown a longitudinal sectional view of the rear end of frame *a*, together with the rear axle-case and strap *b*. Said figure is

enlarged to more clearly show the construction of the parts and the means for lubricating the pivots and axle-bearings. An oil-hole, x^3, leading from the surface of frame *a*, serves to convey oil to the pivot-socket and pivot in the frame, whence it runs downward through passages x^2 x^2 to the axle-bearing, and thence to the socket of the lower pivot *d* in the strap *b*. Thus the bearing-points of the case *c* in the frame and the axle-bearing in the case are conveniently and suitably lubricated, and more or less oil finds its way along the axles to the rollers; but in this way of hanging the axles it is not material that the rollers themselves be lubricated much, if any, and thereby the danger of soiling garments by contact with the rollers is removed.

The axle-cases *c* are connected one to the other by the connections *n n'*, the ends of which are pivotally secured to the above-mentioned ears on the cases. Said connections are attached near the ends of the cases, and lie one against the other between the strap *b* and the lower edge of the frame *a*. A rectangular opening is made through each connection *n n'*, of corresponding dimensions, and so arranged that when the axle-cases stand parallel to each other and at right angles to the frame said openings are exactly opposite each other, as shown in Fig. 3. The spring *m*, made of strong spring-wire, is compressed and forced into the opening in the said connections, and therefore the force of its expansion is exerted against the ends of said opening and equally against each connection, thereby presenting a spring resistance against a sliding movement of the connections in opposite directions, and through the latter against the vibrations of the axle-cases and axles, and furnishing a constantly acting power to (in combination with said connections) swing the axles to a position at right angles to the frame. The manner of attaching the connections *n n'* and axle-cases to each other is shown in Fig. 3.

The operation of the skate is as follows: The devices for adjusting and fastening the skate to the boot are such as are described in my said patent. When the skater desires to turn from a right line, he bears harder upon one side of the skate, and, by reason of the inclined position of the pivots of the axle-cases throwing the weight onto one side of the skate, causes the cases and axles to vibrate under the frame and bring the axes of the axles to positions representing diverging radial lines of the circle in which the skate is moving, the connections *n n'* compelling both axles to vibrate simultaneously. As soon as the side pressure on the skate is removed, spring *m* forces both axles back to a parallel position.

In this skate it is not necessary that the skater keep both the front and rear rollers on the floor when he would move in a circle, but he may bear his weight entirely on one axle, and operating as before, the skate will move in a circular line.

The parts of the frame which constitute the front and rear edges of the openings in which the axle-cases vibrate are brought near enough to the sides of the latter to constitute efficient and firm stops, against which the cases strike to limit the swing of the axles, and since the opposite sides of the case strike said stops, there is not such a strain brought upon the pivots *d* as makes them or other parts likely to break.

What I claim as my invention is—

1. In a roller-skate, a frame, substantially as described, to support the fastening devices thereof, two axles and rollers therefor, two axle-cases pivoted to vibrate in said frame in a horizontal plane whose vibratory axes stand at an incline to each other, two connections pivoted to and uniting said axle-cases, and a spring to act through said connections upon both axle-cases simultaneously, combined and operating substantially as set forth.

2. In a roller-skate, the frame *a* and the strap *b*, each provided with a corresponding pivot-socket, the axle-case *c*, having pivots *d d* to fit said sockets, and a suitable axle and rollers, combined and operating substantially as set forth.

3. In a roller-skate, the frame *a* and the strap *b*, each provided with corresponding pivot-sockets, two axle-cases *c*, each having pivots *d d* to fit said sockets, the connections *n n'*, the spring *m*, and suitable axles and rollers, combined and operating substantially as set forth.

4. The lever J, having the lip *z* thereon, and the link F, having the hook *x*, combined and operating substantially as set forth.

EVERETT H. BARNEY.

Witnesses:
H. A. CHAPIN,
J. D. GARFIELD.