(No Model.)

J. S. RICHARDSON.

ROLLER SKATE.

No. 301,522. Patented July 8, 1884.

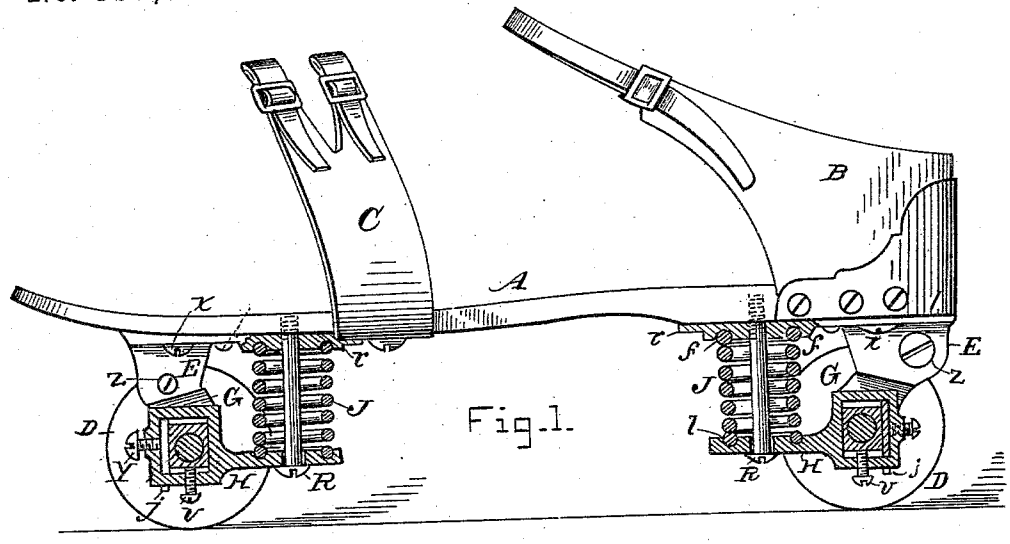


Fig. 1.

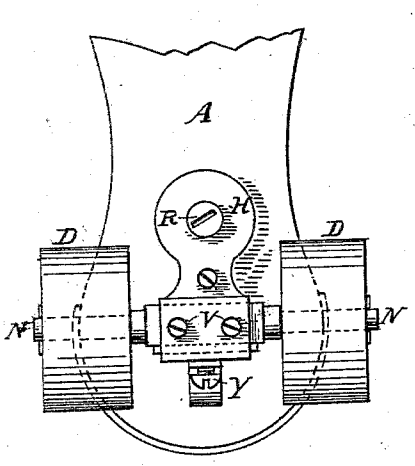


Fig. 2.

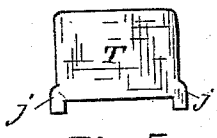


Fig. 5.

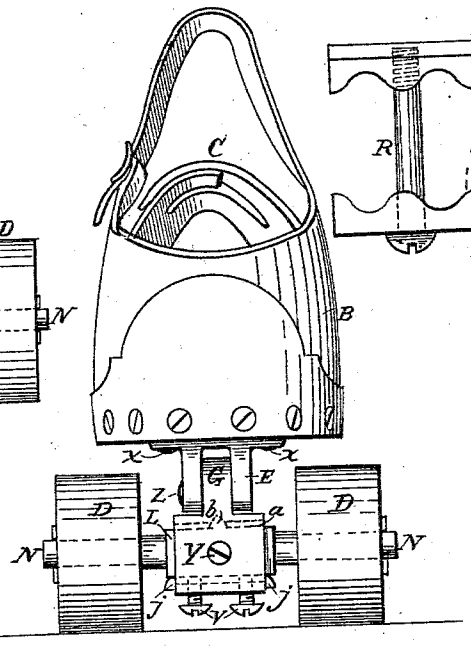


Fig. 3.

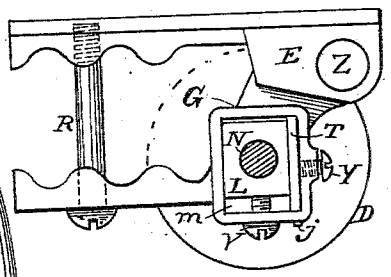


Fig. 4.

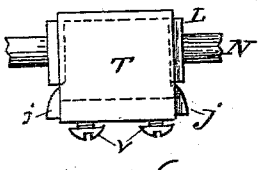


Fig. 6.

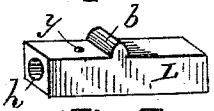


Fig. 7.

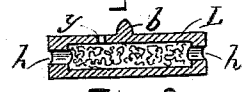


Fig. 8.

Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN S. RICHARDSON, OF LOWELL, MASSACHUSETTS.

ROLLER-SKATE.

SPECIFICATION forming part of Letters Patent No. 301,522, dated July 8, 1884.

Application filed May 10, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. RICHARDSON, of Lowell, in the county of Middlesex, State of Massachusetts, have invented a certain new and useful Improvement in Roller-Skates, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of my improved skate, certain portions being shown in section; Fig. 2, a bottom plan view of the heel; Fig. 3, a rear end elevation; Fig. 4, a sectional side elevation; Fig. 5, a view of the plate detached; Fig. 6, a sectional view showing the plate in position; Fig. 7, an isometrical perspective view of the journal-box detached, and Fig. 8 a vertical longitudinal section of the same.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

My invention relates exclusively to the class of skates known as "roller-skates;" and it consists in a novel construction and arrangement of the parts, as hereinafter fully set forth and claimed, by which a more desirable and efficient article of this character is produced than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the body of the skate; B, the heel-strap; C, the toe-strap; D, the rollers or trucks, and N the axle, all of these parts being constructed of any suitable materials and in the usual form. A bifurcated bracket, E, is secured to the under side of the heel portion of the body A by the screws *x*, said bracket being extended forward to form the plate *r*, which is provided on its lower side with the socket or groove *f*.

Disposed beneath the bracket E there is a double-armed lever, G, one of its arms being pivoted in the forks of said bracket at *z*, and the other extending forward and terminating in the plate H, which is provided on its upper side with the groove or socket *l*, and corresponds with the plate *r*, arranged immediately above it. A stout coiled spring, J, is disposed between the plates *r* H, its upper end resting in the socket *f* and its lower end in the socket *l*, the spring acting expansively to force the plates apart, and being held in position by the screw R, which passes upwardly through a slot, *i*, in the plate H, and is screwed into the plate *r* and body A. The central portion of the lever G is enlarged, and preferably formed square, and is provided with a square hole or mortise, *m*, extending entirely through it from side to side. Disposed in this mortise there is an axle-box, L, provided with a hole, *h*, for receiving the axle N, and a chamber, *y*, for holding cotton-waste or any other suitable material for absorbing and retaining the oil with which the axle is lubricated. A transversely-arranged knife-edge flange or fulcrum, *b*, projects from the upper side of the box L, said flange fitting into a corresponding notch or groove, *a*, in the top or ceiling of the mortise *m*.

Passing upwardly through the bottom of the lever G into the mortise *m* there are two screws, *v*, adapted to force the box L upwardly in said mortise and keep the fulcrum or flange *b* in the groove *a*. The fulcrum *b* is higher than the depth of the groove *a*, so that the box may be racked or tilted longitudinally when the screws *v* are properly adjusted, the screws preventing the fulcrum from escaping from the groove. The box L is somewhat narrower than the width of the mortise *m*, and to keep it properly in place and compensate for any wear that may occur in use a plate, T, is employed, which is placed at one side of the box in the mortise and prevented from escaping by a lip or overhanging projection, *j*, at either end, the plate being provided with a set-screw, Y, for forcing it against the box L. The screws *v* are not turned in to the fullest extent when the skate is in use, but only as far as may be necessary to prevent the fulcrum or flange *b* from escaping from the notch or groove *a*, and at the same time permit the body of the skate to be rocked laterally on said fulcrum, as desired.

The lever G is so constructed and arranged that a vertical line drawn through its pivotal

support or center of motion at *z*, when the body A is in a horizontal position, will pass at one side, or a short distance to the rear, of the central axial line of the rollers or trucks D, so that when the skate is in use the pressure at the heel of the same will be divided between the pivot *z* and spring J, in a manner which will be readily obvious without a more explicit description.

The description given of the bracket E, lever G, spring J, and their immediately-connected parts at the heel of the skate also applies to corresponding parts disposed at the toe of the skate, but arranged in reverse order, the plate *r* of the bracket E and the plate H of the lever G at the heel of the skate projecting toward the toe of the body A, and the plate *r* of the bracket E and plate H of the lever G at the toe of the skate projecting toward the heel, as shown in Fig. 1. The object of the springs J is to yieldingly resist the approach of the rollers toward the body A when the skate is in use, and thereby relieve the disagreeable jarring sensation produced by skating on a slightly-uneven floor or other surface, and also to prevent the sudden shock produced when walking or running on the skates. The springs also enable the skater to make the stroke with greater ease, and throw himself forward or backward to a greater distance, than is possible with skates of the ordinary construction.

It will be obvious that when the axle-boxes L or plates T become worn or broken they may be easily replaced with but very slight expense; also, that the axles may be kept lubricated by means of an absorbent saturated with oil and disposed in the chambers *y* of the boxes without danger of oiling the other parts of the skate or getting the oil onto the floor.

I do not confine myself to the use of a spring acting expansively, or arranged precisely as described for resisting the approach of the axle toward the body of the skate when the skate is under pressure or in use, as a spring acting contractively may be employed in connection with other necessary appliances and perform substantially the same functions. Neither do I confine myself to locating either or both of the springs between the rear and forward axles, as shown, although I deem this preferable; or to the use of straps for fastening the body to the foot of the wearer; or to the use of an axle-box in the lever, as the axle may be fitted into a hole passing through the lever, or be immovably cast into the lever, as preferred, other means for rocking the body of the skate being provided. One pair of the rollers may also be journaled in a pivoted lever and provided with a spring, as described, and the other attached in any ordinary manner, although it is preferable to have both pairs of the rollers mounted and arranged as shown.

Having thus explained my invention, what I claim is—

1. In a roller-skate, the lever G, bracket E, spring J, axle N, rollers D, screw R, and body A, combined and arranged to operate substantially as set forth.

2. In a roller-skate, the axle-box L, provided with the fulcrum or flange *b*, in combination with the lever G, provided with the mortise *m*, notch or groove *a*, and screws *v*, substantially as set forth.

3. In a roller-skate, the plate T, in combination with the box L and screw Y, substantially as and for the purpose specified.

4. In a roller-skate, the axle-box L, provided with the hole *h* and chamber *y*, substantially as and for the purpose set forth.

JOHN S. RICHARDSON.

Witnesses:
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L. J. WHITE.