No. 645,270. Patented Mar. 13, 1900.

L. M. RICHARDSON.

ROLLER SKATE.

(Application filed May 22, 1899.)

(No Model.)

Fig. 1.

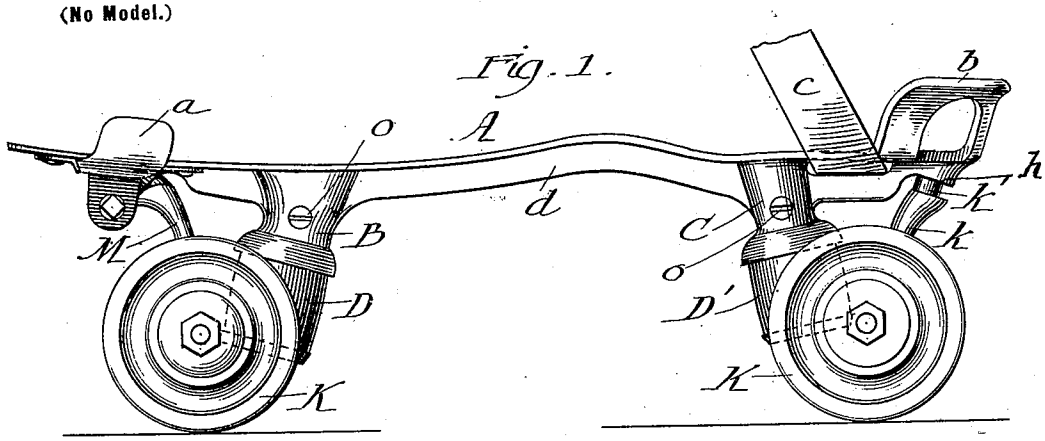


Fig. 2.

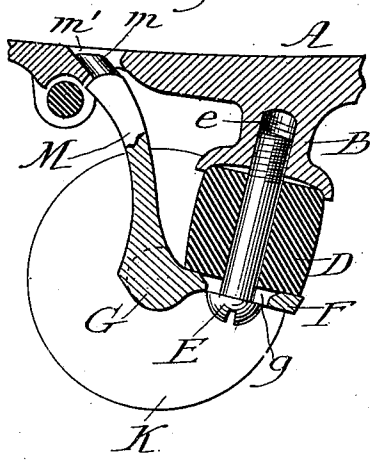
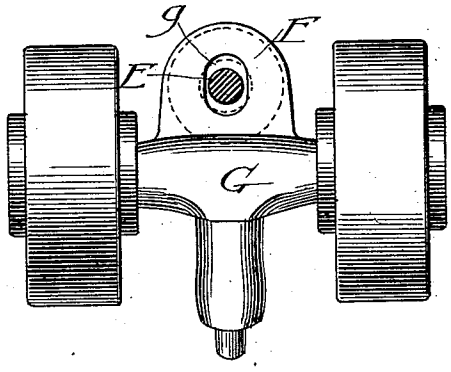


Fig. 3.



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LEVANT M. RICHARDSON, OF CHICAGO, ILLINOIS.

ROLLER-SKATE.

SPECIFICATION forming part of Letters Patent No. 645,270, dated March 13, 1900.

Application filed May 22, 1899. Serial No. 717,734. (No model.)

To all whom it may concern:

Be it known that I, LEVANT M. RICHARDSON, a citizen of the United States, and a resident of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Roller-Skates, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

Heretofore the construction of roller-skates has been such that the means for changing the alinement of the rollers according to the shifting of the weight of the skater did not afford the least resiliency or spring to overcome the effect of any jar the skater experienced during their use.

The object of my invention is to provide simple and effective means that supplies not only the needed resiliency to avoid the concussion incident to their use, but produces that perfect alinement of the rollers necessary to give the wearer absolute control of his movements. This I accomplish by the means hereinafter fully described, and as particularly pointed out in the claims.

In the drawings, Figure 1 is a side view of a roller-skate having my improvements applied thereto. Fig. 2 is a longitudinal central section through the forward hanger, the portion of the foot-plate to which the same is connected, and conjunctive parts through the medium of which such connection is effected. Fig. 3 is a plan view of the under side of said hanger.

In the drawings, A represents a suitably-shaped foot-plate, which is, according as desired, provided with toe-clamps *a* of approved pattern, and a heel-guard *b* and strap *c*, and between said toe-clamps and heel is provided, preferably, with a longitudinal central rib *d*, projecting from its under side to reinforce the same. Projecting downward from this foot-plate at points immediately in front of the place of attachment thereto of the heel-strap *c* and, say, an inch and a half to the rear of the toe-clamps are studs B and C of corresponding length, the lower ends of which are provided with downwardly-curved circumferential flanges and are countersunk or dished to provide a seat in which the upper end of cushions D or D′, of rubber, coil-wire, or other suitable material, is retained by a screw E. The screws E pass centrally through cushions D D′ and are tapped into the longitudinal screw-threaded opening *e* in said studs, and the alining axes of these studs B, the screws E, and cushions D D′ are inclined at an angle of, say, ten degrees, those in front leaning to the rear and those at the rear leaning to the front of the skate, as shown. The lower end of cushions D D′ rests upon the flat upper surface of a lug or bracket F, made integral with and projecting from the axle portion of the hanger G, normally in a plane at right angles to that of the axes of the cushion and screw E. The screws E extend downward through the longitudinally-elongated openings *g* in said lugs, which are of such width as to permit of a limited lateral movement of the barrels of the screws in them, but prevent the passage of the heads of said screws therethrough.

The hangers G consist chiefly of an axle portion which has its ends suitably reduced and extended to form journals for the rollers K K. In the rear hanger this axle portion is located to the rear of the cushion D′ and has an arm *k* projecting rearwardly and upwardly from its center of length, whose upper extremity is provided with a pivotal stud *k′*, that is swiveled in a suitable socket or opening *h* in the foot-plate next the heel-guard thereof. In the forward hanger the axle portion thereof comes in front of the cushion D and is provided with an arm M, projecting upwardly and forwardly from its center of length, which has a pivotal stud *m* extending from its upper end, that is swiveled in the socket or opening *m′* in the center of width of said foot-plate just back of the transverse bolt of the toe-clamps about as shown. Now it will be noticed that the pivotal stud *m* of arm M and stud *k′* of arm *k* are loosely articulated with plate A, but nevertheless must follow the lateral movement thereof, whereas the presence of the cushion will permit of the lateral movement of tilting of said plate without affecting the hanger. The consequence is that as the normal vertical plane of the axis of the rollers is about midway between the vertical planes of the pivotal studs and the center of the cushions arms M and *k* act as helms, as it were, to steer the rollers into their proper course to reëstablish the center of gravity of the shifting weight of the skater borne upon

them. While the operation of the skate in this respect is as stated, yet the cushions interposed between the brackets of the hangers and the foot-plate always provide and insure such a degree of elasticity or resiliency as to cushion the weight of the skater and neutralize and absorb the jar or concussion which might otherwise be imparted to him.

If desired, other forms of cushions may be substituted between the brackets of the hangers and the foot-plate than those shown, and it is apparent there might be changes of design in so far as the shape of the skate and the parts thereof are concerned. All such changes, however, when they do not effect a departure from the principles of construction and operation of my improvements, I desire to be considered as contemplated within the spirit of my invention.

I can, if deemed advisable, lock the screws E so as to prevent their independently becoming loose by the employment of the set-screws *o o*. Their use is entirely optional, however.

What I claim as new is—

1. In a roller-skate, the combination with the foot-plate, of a roller-hanger consisting of a transverse axle portion having an arm extending upward therefrom and articulated at its upper end with the foot-plate, and having a lug projecting from the side opposite said arm, a cushion interposed between the lug and the foot-plate, and means for retaining said parts in position and directing the movements thereof, said means being rigidly connected with the foot-plate and loosely connected with the lug and cushion, whereby the lug is free to move longitudinally of said retaining means to permit the contraction and expansion of the cushion.

2. In a roller-skate, the combination with the foot-plate, of a roller-hanger consisting of a transverse axle portion, an arm extending upward therefrom and articulated with the foot-plate at its upper end, a lug projecting from said axle portion on the side opposite such arm, a cushion interposed between the lug and the foot-plate, and a retaining-screw for uniting said parts and directing their movements, said screw being rigidly attached to the foot-plate and loosely connected to said lug, whereby said lug is free to move longitudinally of said screw to permit the contraction and expansion of the cushion.

3. The combination in a roller-skate with the foot-plate, of the forward and rear roller-hangers each consisting of a transverse axle portion having an arm extending therefrom toward the nearest end of the foot-plate and articulated therewith, and having a lug projecting from the side thereof opposite said arm, said lug having formed therein a longitudinally elongated and widened opening, a cushion interposed between said lug and plate, a screw extended up through the opening in said lug and through said cushion and rigidly secured to said foot-plate at its upper end.

4. In a roller-skate, the combination with a foot-plate having a stud projecting from the under side thereof, of a roller-bracket comprising a transverse axle portion, an arm extending upward therefrom to the foot-plate and loosely articulated therewith, a lug projecting from said axle portion in the side opposite said arm, said lug being provided with a longitudinally-elongated slot, a cushion interposed between the lug and the stud on the foot-plate, and a headed screw secured at its upper end to said foot-plate and extending downward through said cushion and the slot in the lug, whereby said lug is free to move longitudinally of said screw to contact the cushion, its range of movement being limited by the length of the slot in the lug.

5. The combination in a roller-skate with the foot-plate having studs projecting from the under side thereof of the forward and rear roller-hangers each consisting of a transverse axle portion having an arm extending therefrom toward the nearest end of the foot-plate and articulated therewith, and having a lug projecting from the side thereof opposite said arm, said lug having formed therein a longitudinally elongated and widened opening, a cushion interposed between said lug and plate, a screw extended up through the opening in said lug and through said cushion into the adjacent stud of the plate, said screw, cushion and stud being arranged in alinement at a suitable vertically-disposed angle to the vertical plane of the axis of the rollers, and said rollers.

6. In a roller-skate, the combination with the foot-plate, of a roller-hanger suitably articulated thereto at one side of the roller-axis, said roller-hanger having a lug projecting from the other side thereof, a vertically-disposed cushion placed between the foot-plate and lug as upper and lower retaining members, respectively, and a screw passing through the cushion rigidly attached to one of said members, and loosely connected to the other of said members.

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