(No Model.)

G. D. BURTON.

ROLLER SKATE.

No. 282,156. Patented July 31, 1883.

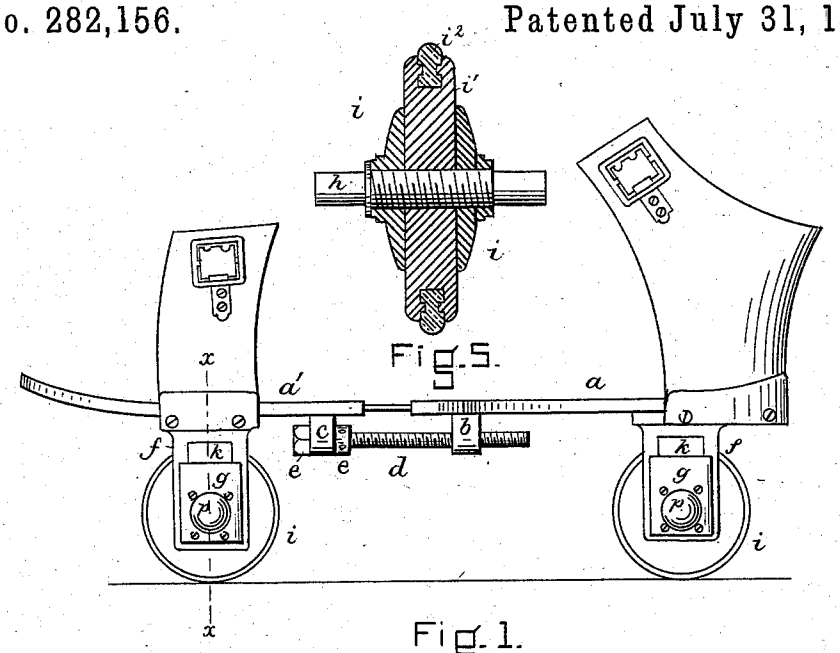


Fig. 5.

Fig. 1.

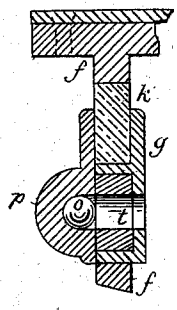


Fig. 4.

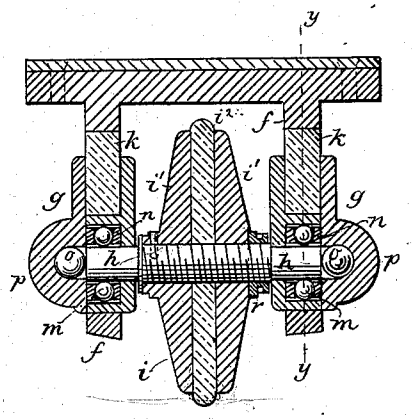


Fig. 2.

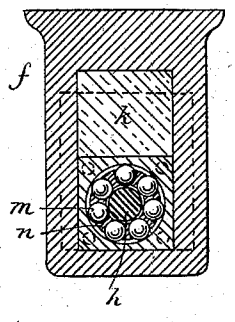


Fig. 3.

WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE D. BURTON, OF BOSTON, MASSACHUSETTS.

ROLLER-SKATE.

SPECIFICATION forming part of Letters Patent No. 282,156, dated July 31, 1883.

Application filed January 11, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE D. BURTON, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Roller-Skates, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention relating to roller-skates has for its object to produce a skate having its rollers bear upon the floor in line with one another in a narrow space, and with their axes of rotation unchanged in angular position relative to the body of the skate, so that the operation will be almost the same as that of the runner of a skate used upon ice.

The rollers or wheels of the roller-skate have heretofore had broad peripheries, so as to give as large a bearing portion as possible to prevent them from cutting the floors; and this construction necessitates a rocking movement of the body of the foot-receiving portion of the skate relative to the rollers, which have to remain in a substantially vertical position, and which, in consequence, also have their axles movable, so as to enable them to move in curved paths, the angular position of the axle being changed by rocking the body of the skate upon the rollers.

The rollers of the skate forming the subject of the present invention have the bearing portion of their peripheries of soft rubber, projecting slightly beyond the body of the roller, which is of hard material, the said rubber thus compressing or spreading out sufficiently to afford a considerable bearing-surface, and being, moreover, of such soft nature as not to cut the floors, while the proximity of the hard material forming the body of the roller and projecting laterally at either side of the rubber, prevents the latter from spreading sufficiently to impede the movement of the skate to an objectionable degree. The axles of the rollers bear upon a series of balls contained in an annular chamber in bearing-boxes mounted in pedestals at either side of the skate beneath the heel and ball of the foot of the wearer, springs being interposed between the said bearing-boxes and the body of the skate, to absorb the jar derived from the uneven surfaces. The pedestals guide the bearing-boxes, which thus have a vertical movement to and from the body of the skate as the springs yield, but in the said movement always remain parallel, or, in other words, never change their angular position relative to the skate-body. Balls are also placed at the ends of the axles to receive the end-pressure when the skate and roller are inclined from the vertical position. The body of the skate is divided in two portions, one of which receives the heel and the other the ball of the foot of the wearer, the said portions being movable relative to one another, and adjusted by means of a bolt, so as to vary the length of the skate to fit the foot of the wearer; but thus broadly stated such a skate is old, and my invention relates to a particular means, as hereinafter specified and claimed, for accomplishing the object stated.

Some features of the present invention are the same as shown and claimed in a former application filed by me November 17, 1882, and are not claimed in the present application.

Figure 1 is a side elevation of a skate embodying this invention; Fig. 2, transverse section thereof on line *x x*, on a larger scale; Fig. 3, a vertical section on line *y y*, Fig. 2; Fig. 4, a modification of the bearing for the roller-axle, and Fig. 5 a sectional view of a modified form of roller.

The body of the skate is made in two portions, *a a'*, the former adapted to receive the heel and the latter the ball portion of the foot of the wearer, the said portions being movable toward and from one another, by means substantially as follows: The portion *a* is provided with an internally-threaded lug or nut, *b*, and the portion *a'* with a lug or socket, *c*, co-operating with a bolt, *d*, working in the nut *b*, and having a rotary movement in the socket *c*, its longitudinal movement being prevented by collars *e*, one of which may be squared or otherwise adapted to receive a key or wrench for rotating the said bolt, and thus adjusting the length of the skate. Each portion *a a'* of the skate is provided at each side with bearing-pedestals *f*, having a passage which receives and serves as a guide for the bearing-boxes *g* of the axles *h* of the rollers *i*, permitting them to move toward and from the skate-

body without change in angular position relative thereto. Springs or cushions *k* are inserted in the pedestals *f*, above the boxes *g*, to absorb jar caused by the roller passing over an uneven surface and prevent it from being transmitted to the wearer of the skate. The bearing-boxes *g* are provided with an annular chamber containing a series of balls, *m*, surrounding and forming a bearing for the axles *h*, the said balls being kept apart by a ring, *n*, having sockets to receive the said balls, which are thus prevented from rubbing against one another as they revolve in the spaces between the axles and bearing-boxes. The ends of the axles *h* rest against balls *o*, held in chambers *p* at the end of the bearing-boxes, and serving as pivots to receive end pressure of the axle *h*, when the skate, with its roller, is inclined from the vertical position.

The rollers *i* consist of a body-portion, *i'*, of wood, metal, or other hard material, and the bearing portion i^2 of rubber projecting radially beyond the said hard portion, which is thus prevented from coming in contact with the floor, the said projecting portion of the rubber being expanded laterally and overlying the edges of the hard portion when pressure is brought upon it. The hard portion *i'* of the skate preferably consists of two flanges, as shown in Fig. 2, one of them being fixed upon the axle *h*, and the other movable longitudinally thereon and adapted to be pressed toward the other by a nut, *r*, mounted upon the axle *h*, which is threaded to receive it. In this construction the bearing portion i^2 consists of a disk of rubber or equivalent yielding and preferably elastic material placed between the flanges *i' i'*, which are pressed together to hold the rubber securely and give it the requisite compression.

In the modification shown in Fig. 5 the rubber bearing portion consists of a band placed in a suitable-shaped socket in the periphery of the hard or main portion *i'* of the roller, the said hard portion projecting laterally at either side of the rubber and preventing it from yielding too much.

In the modification shown in Fig. 4 the bearing-balls *m* and their separating-ring *n* are omitted and a bushing, *t*, of suitable material employed in their place.

I claim—

1. In a roller-skate, the body having independent sole and heel supporting portions, one provided with a nut and the other with a corresponding socket, combined with the adjusting-bolt *d*, working in the said nut, and having a rotary without longitudinal movement in the said socket, substantially as and for the purpose described.

2. The combination, substantially as shown and described, of the skate-body, the bearing-pedestals thereto attached, boxes movable in and guided by said pedestals, springs interposed between the boxes and pedestals, the roller-shafts journaled in said boxes, and rollers mounted by their said shafts in said boxes in line with one another and at about the middle of the skate-body, the said rollers consisting of a body of hard material and a narrow rim of yielding material, whereby the rollers have a cushioned movement toward and from the body of the skate without change in angular position relative thereto, as set forth.

3. The skate-body and bearing-pedestals fixed at either side thereof, combined with the rollers and their bearing-boxes guided by the said pedestals, as described, and the springs co-operating with the said boxes, whereby the rollers have a cushioned movement toward and from the body of the skate without change in angular position relative thereto, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEO. D. BURTON.

Witnesses:

JOS. P. LIVERMORE,

BERNICE J. NOYES.