(No Model.)

G. D. BURTON.

ROLLER SKATE.

No. 329,532. Patented Nov. 3, 1885.

Fig. 1.

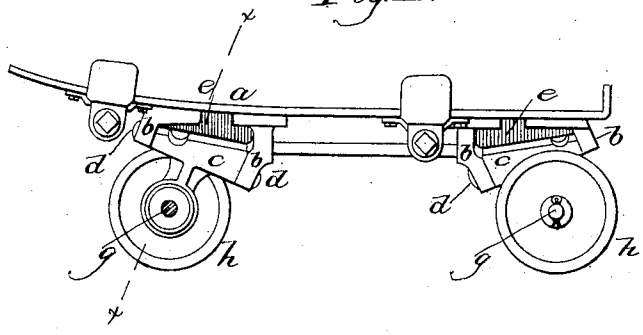


Fig. 2.

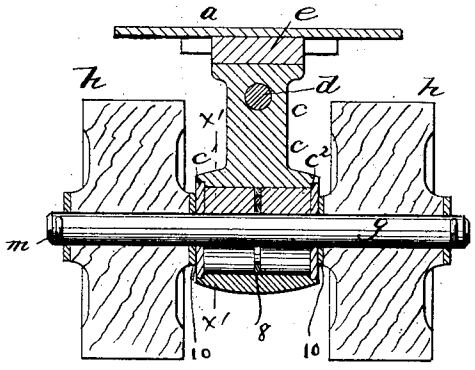


Fig. 4.

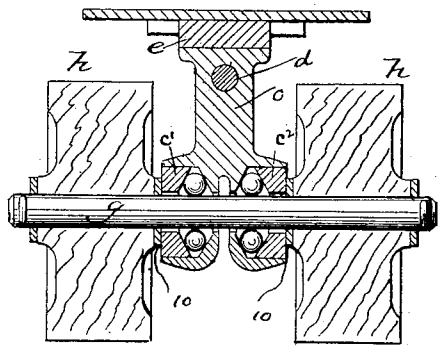
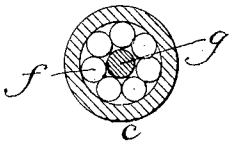


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE D. BURTON, OF BOSTON, MASSACHUSETTS.

ROLLER-SKATE.

SPECIFICATION forming part of Letters Patent No. 329,532, dated November 3, 1885.

Application filed April 13, 1885. Serial No. 162,093. (No model.)

To all whom it may concern:

Be it known that I, GEORGE D. BURTON, of Boston, county of Suffolk, and 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 in roller-skates has for its object to reduce the friction between the moving parts, and especially that due to the rotation of the axle in the bearing-pedestals pivoted below the sole-plate of the skate, and to provide a bearing which will run smoothly practically without wear and without the employment of lubricants.

In accordance with my invention the bearing-pedestals of the skate mounted to rock on inclined pivots or axles are provided with a transverse cylindrical opening for the reception of the axle and a series of bearing rollers or cylinders or balls, which are arranged about the axle and within the said cylindrical opening, the said rollers or cylinders being held in the bearings by heads, both of which will preferably be made detachable, and preferably the skate-rollers will be loose on the axles and be mounted on the said axles in any usual manner, or by the interposition of any usual bearings employed in roller-skates; but, if desired, the skate-rollers may be fixed to the said axles and the said heads, and consequently the rollers are held in place in the pedestals without the necessity of additional fastenings by washers interposed between said heads and the wheels.

Figure 1 in side elevation represents a roller-skate embodying my invention, one skate-wheel at front being omitted. Fig. 2 is an enlarged section in the dotted line $x\ x$, Fig. 1, both wheels being retained on the axle; Fig. 3, a section in the dotted line $x'\ x'$, Fig. 2, looking toward the right; and Fig. 4, a section similar to Fig. 2, showing a modification of my invention.

The sole plate or body a, of usual shape and material, and provided with usual devices by which to clamp the skate to the sole, has at its under side lugs b, that receive the inclined pivots d, which support the bearing-pedestals c, the latter being normally held in substantially vertical position below the sole-plate by springs e, preferably of india-rubber, interposed between the sole-plate and the upper end of the bearing-pedestal. The bearing-pedestals being alike, but one need be described. The pedestal c, having at its lower end a hub or head, is provided with a cylindrical opening, preferably formed by casting a cylindrical hole therein, and then boring or finishing the same true and smooth. The cylindrical opening or box so produced is closed at its opposite ends by means of heads $c'\ c^2$, herein shown as both removable and resting against shoulders formed in the said cylindrical opening. The axle g (see Figs. 2 and 3) is surrounded by the series of rollers or cylinders f, which latter fit the inner wall of the cylindrical opening or chamber of the bearing-pedestal c and fill the space between the said inner wall and the exterior of the axle, the latter being then sustained by and turning on rolling surfaces. The rollers or cylinders f having been placed with the axles in the bearing-pedestals the heads $c'\ c^2$ will be applied, as shown, and the skate-rollers h will then be applied loosely to the axles and be held thereon by pins m, or in any usual manner. If desired, the skate-rollers may be lined with metal tubing or be provided with any bearings commonly used in skate-rollers—as, for instance, in patents heretofore granted to me. The heads $c'\ c^2$ will preferably be kept in place by the ends of the skate-rollers. If desired, one of the heads c' or c^2 might form an integral part of the bearing-pedestal c.

In Fig. 4 I have shown a modification wherein balls are used instead of rollers, and wherein the bearing-pedestal, instead of having a cylindrical opening of uniform diameter from end to end, has two cylindrical chambers or openings one from each side of the bearing-pedestal, portions of the rear walls of the said chambers being beveled or inclined with relation to the center of the axle g, the inner sides of the heads $c'\ c^2$ used in Fig. 4 being correspondingly beveled or inclined.

A roller-skate having its axles supported on anti-friction or rolling bearings, substantially as shown and described, instead of by a close-fitting tube, or sleeve, as heretofore commonly employed in roller-skates, adds very materially to the ease of movement of the skate and greatly improves the same, re-

ducing the friction to the minimum and avoiding the use of oil, which is very essential.

Great advantage is gained by supporting the axle on rolling supports, and also permitting the skate-rollers to rotate on the axles as is necessary for the best results, for when the skate is traveling in a curve the rollers at opposite ends of the axle rotate or travel at different surface speeds.

In Fig. 2 the rolls or cylinders are separated by a washer, 8.

If desired, washers 10 may be used between the heads c' c^2 and the inner ends of the hubs of the wheels.

I claim—

1. A roller-skate provided with the pedestal c, having heads bored, as shown and described, to receive the axle of the wheels and the rollers surrounding the axles, the heads c' c^2, let in the openings in said heads to close them and hold the rollers in place, and the washers 10 10, interposed between said heads and the wheels to hold the heads in place without the necessity of additional fastenings for said heads, and consequently retain the rollers in the pedestal-heads, substantially as shown and described.

2. The skate body, wheels, and axle combined with a pedestal having a head or hub bored from either side, and having internal beveled walls, rolls, or balls placed in said head and secured therein around and in immediate contact with the axle by heads c' c^2, having inner beveled faces, substantially as shown and described.

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

GEO. D. BURTON.

Witnesses:
G. W. GREGORY,
B. J. NOYES.