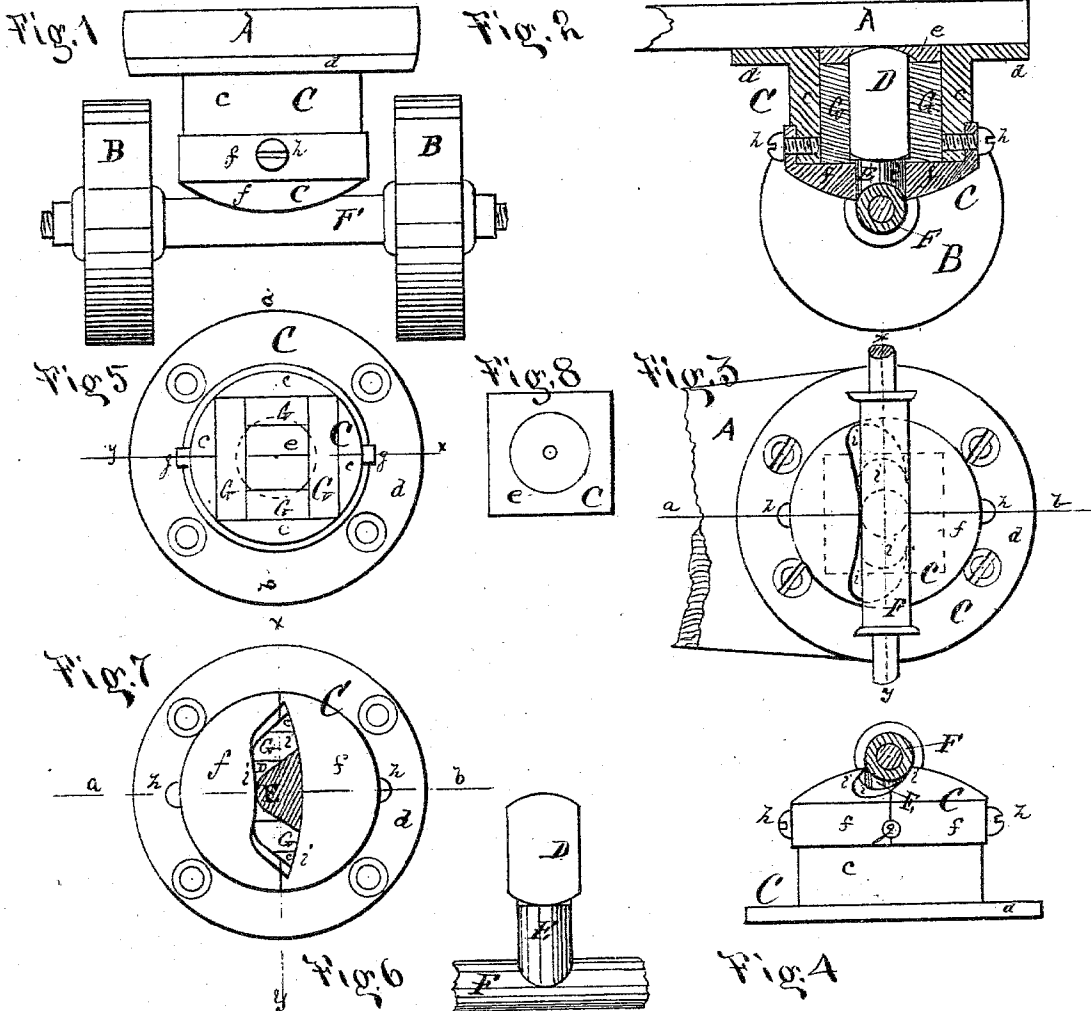


O. B. OAKLEY.

Improvement in Parlor Skates.

No. 115,767.

Patented June 6, 1871.



Witnesses

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UNITED STATES PATENT OFFICE.

OLIVER BENJAMIN OAKLEY, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR
OF ONE-HALF HIS RIGHT TO PETER THOMAS GANNON, OF SAME PLACE.

IMPROVEMENT IN PARLOR-SKATES.

Specification forming part of Letters Patent No. 115,767, dated June 6, 1871.

To all whom it may concern:

Be it known that I, OLIVER BENJAMIN OAKLEY, of San Francisco, in the county of San Francisco and in the State of California, have invented an Improved Parlor-Skate, of which the following is a specification, reference being had to the accompanying drawing.

My invention relates to that class of roller or parlor skates in which the axes of the wheels are forced into the position of radii to the circle in which the skate moves by the tilting of the sole-plate toward the center of said circle. Many of the skates of this class heretofore used are quite complicated in their construction, owing to a supposed necessity for several joints or hinges to provide for the required motion. One object of my invention is to provide a single joint that will give all the flexibility required, and therewith produce a skate that will be more durable and less liable to fracture or derangement than skates of more complicated construction. A second object of my invention is to combine with such a joint, when provided, a powerful spring, so arranged as to bring the axes instantly back to their original position parallel with each other as soon as released from the pressure caused by tilting the sole-plate. A third object of my invention is to provide an improved device that may be employed with a single joint for converting the tilting or oscillating motion of the sole-plate into the required motion of the axes of the wheels or rollers. The first two objects above set forth I accomplish by the employment of a peculiar modification of the well-known ball-and-socket joint, both the ball and socket of which I form with flat vertical faces, or their equivalent, with a space between said faces, into which I insert India-rubber springs. The upper and lower portions only of the ball are necessarily spherical or convex. The upper part of the ball, upon which the entire weight of the skater is thrown, fits into a corresponding concave surface in the upper part of the socket of sufficient extent to allow the necessary amount of motion in any required direction. The lower part of the socket is closed by a cap, through an opening in which passes a vertical shaft proceeding from the ball and rigidly attached to or cast or wrought in one piece with the axle of the wheels. The

third object of my invention is accomplished by giving a suitable form to the aforesaid opening through the cap, and to the part of the vertical shaft that passes through said opening, or to the adjacent parts of the axle of the wheels or rollers that may come in contact with the faces or edges of said opening.

In the drawing, Figure 1 is an end elevation of a skate having my improvements. Fig. 2 is a vertical longitudinal section of one end of the same. Fig. 3 is a view of under side of same with the wheels removed and the ends of the axle broken off. Fig. 4 is an elevation of the ball-and-socket joint, showing the axle in section. This figure is in an inverted position. Fig. 5 is a view of under side of socket and springs with the cap removed. Fig. 6 represents the central part of the axle, united to the ball by the vertical shaft, said axle, vertical shaft, and ball being formed in one piece. Fig. 7 is a view of the under side of ball and socket and springs, showing a suitable form for the opening through the cap, and a corresponding form of section for the vertical shaft, to be employed when the said vertical shaft is so long that the axle does not come in contact with the cap. Fig. 8 is a view of under side of plate in which the convex upper end of the ball works.

Each part is indicated by the same letter whenever it appears in the drawing.

A is the sole-plate. B are the wheels. C is the socket. D is the ball; E, the vertical shaft; F, the axle; G, the springs. The socket C consists of the side casing *c*, flanges *d*, plate *e*, and cap *f*. The inner surfaces of the side casing *c* inclose a rectangular space, having nearly the form of a cube. This space is made rectangular in section, as that form is preferable to others for preventing the turning of the springs, but any form may be adopted that varies sufficiently from the cylindrical to prevent the springs from slipping around in the socket; but the square or rectangular form is preferable for the vertical sides of both the ball and socket, because with that form the springs may be cut out with great economy and facility from flat sheets of India rubber. The flanges *d* are for securing the ball and socket to the sole-plate. The plate *e* has a concavity on its under side, into which the top of the ball fits; its

upper surface rests against the sole-plate, and its sides or edges fit the sides of the space in the casing *c*. The cap *f* is formed in two pieces, and is secured to the casing *c* by means of the studs *g* and screws *h*. Between the vertical sides of the ball *D* and inner faces of the socket *c* are placed the rubber springs *G*, and the ball *D* is rigidly connected to the axle *F* by the vertical shaft *E* in such relative position that when the sole-plate is in a horizontal position and the springs uncompressed the line *x y* of the axle is at right angles to the line *a b* of the sole-plate and the position of the shaft *E* vertical.

Now, by reference to Fig. 7, it will be evident that if the vertical shaft *E* have the form of section shown in that figure, and the curved opening *i* through the cap *f* have the form therein shown, the tilting of the sole-plate will carry the shaft *E* toward one or other end of the opening *i*, and, compressing the springs, cause a partial revolution of the shaft *E* on its axis, and thereby change the angle of intersection of the lines *a b* and *x y*, which is the accomplishment of the third object of my invention; but, in practice, in order to reduce the height of the sole-plate, I make a bearing point on the surface of the axle act with a

bearing point on the vertical shaft on the edges or faces of the opening *i'*, as shown in the other figures, instead of having a broad curved face on the shaft, as shown in Fig. 7, and in this case the modification in the edges or faces of the opening *i*, shown in Figs. 3 and 4, becomes necessary.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the ball *D* and plate *e* with springs *G*, inclosed in a suitable socket, substantially as and for the purposes set forth.

2. The ball *D*, plate *e*, springs *G*, in combination with the casing *c* having flanges *d*, substantially as and for the purposes set forth.

3. The ball *D* and shaft *E*, when provided with springs *G*, in combination with the socket *C* having a suitable opening through the cap *f* for the passage of the shaft *E*.

In testimony whereof I have hereunto set my hand this 21st day of February, A. D. 1871.

OLIVER BENJAMIN ^{his} + OAKLEY.
mark.

Witnesses:

E. J. THIBAUT,
EDWD. CHATTIN.