(Model.)

2 Sheets—Sheet 1.

T. L. MELONE.

ROLLER SKATE.

No. 272,298. Patented Feb. 13, 1883.

Fig 1.

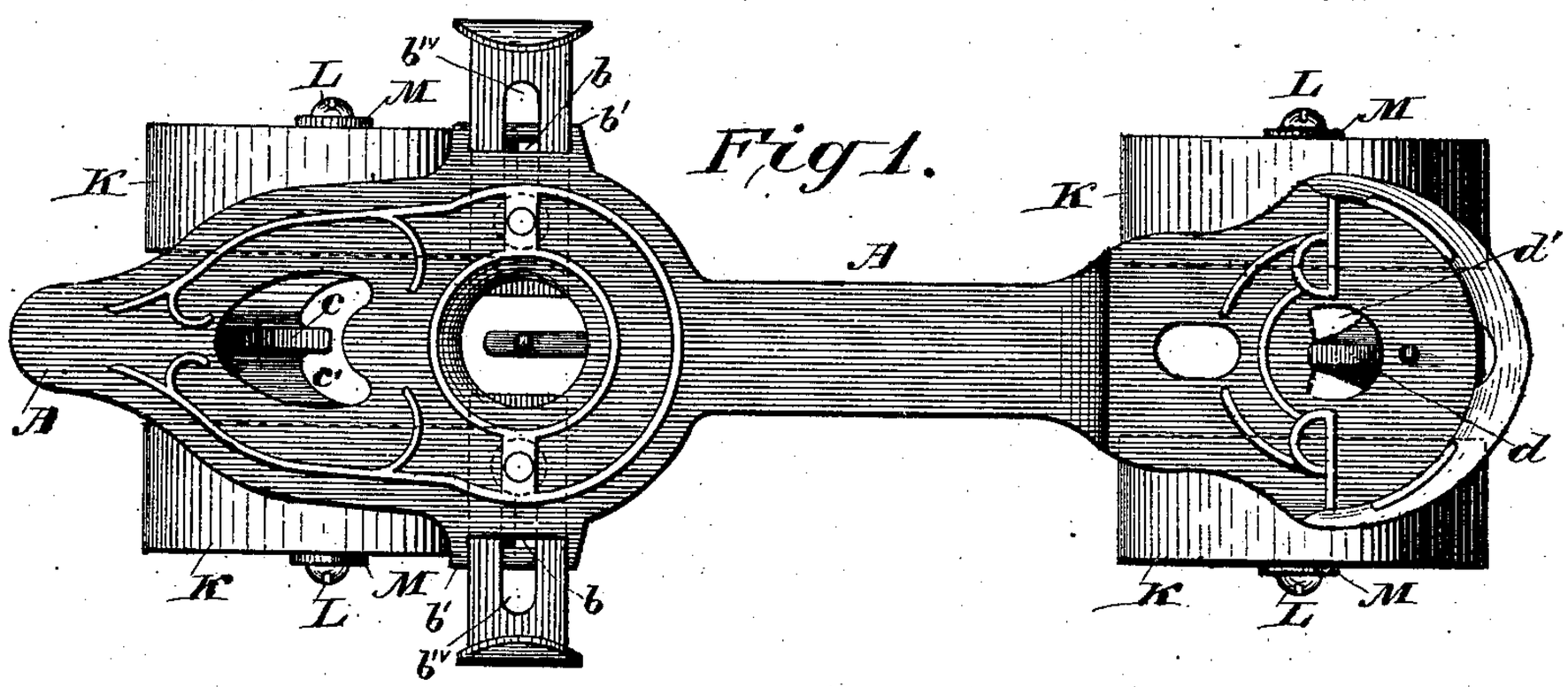


Fig 2.

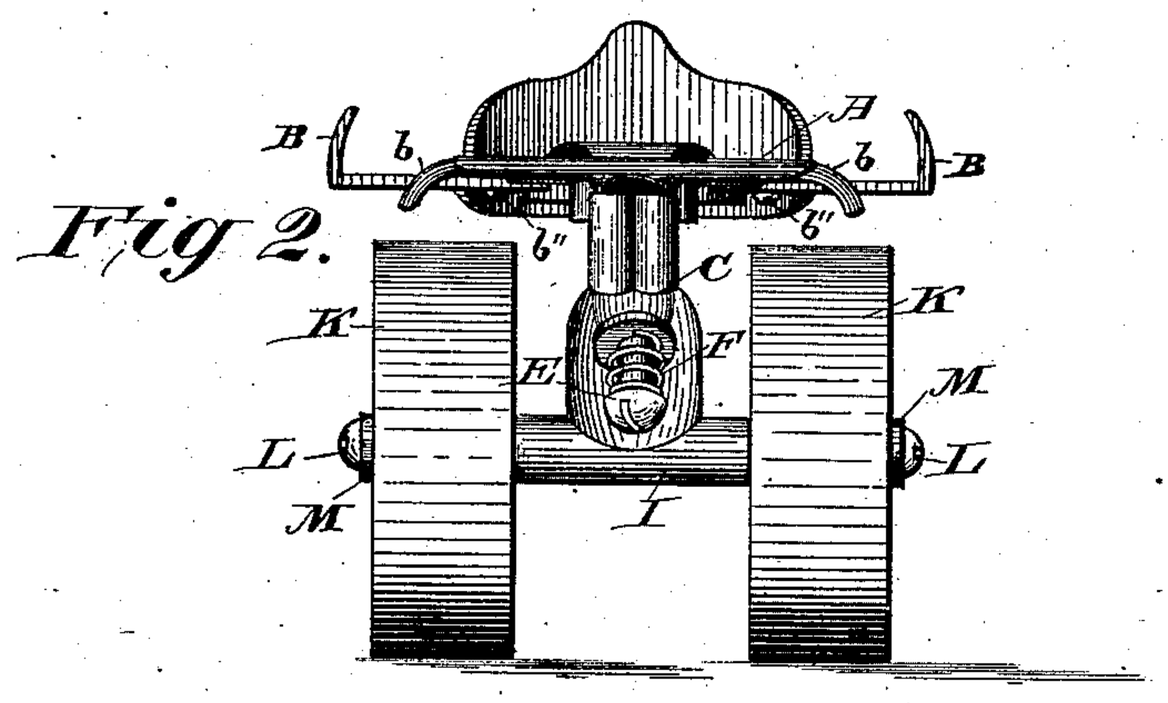
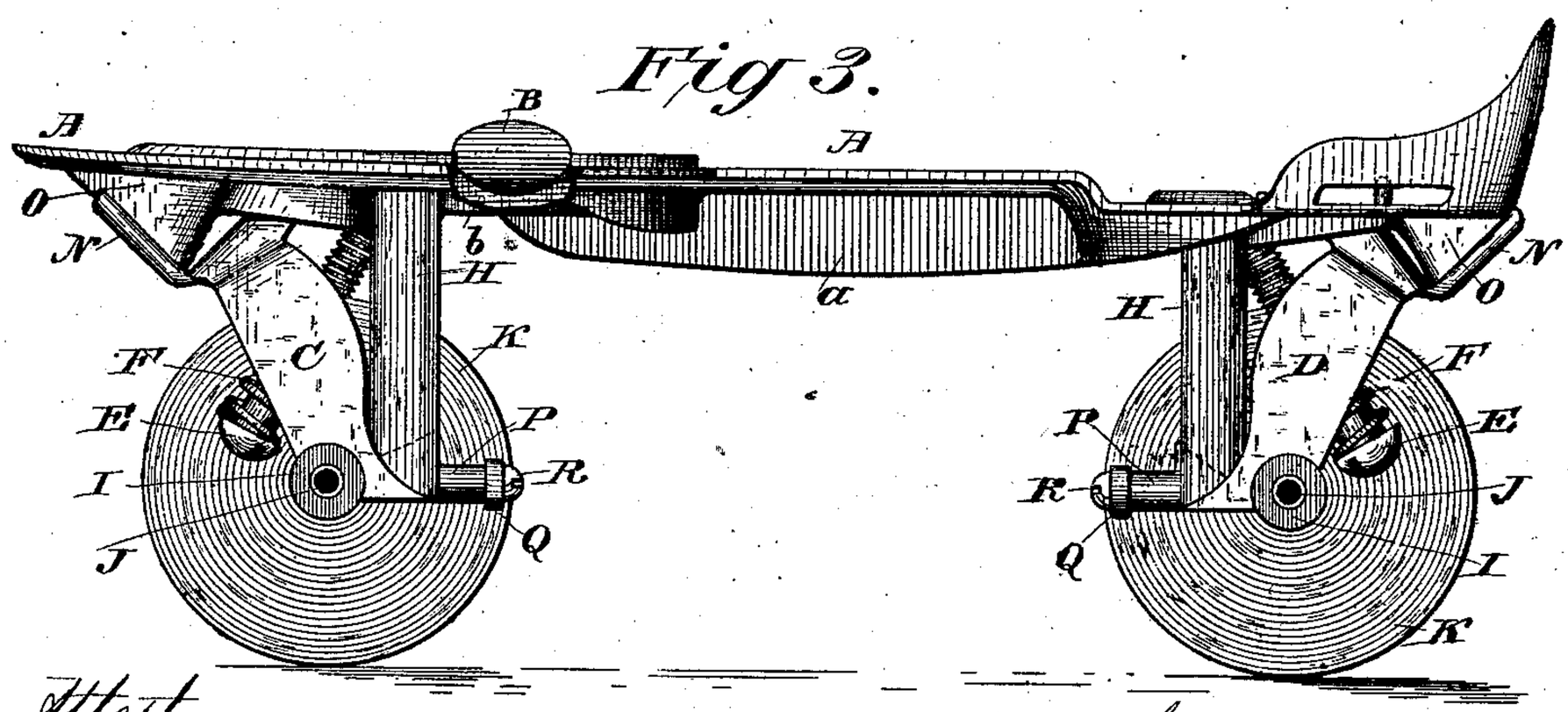


Fig 3.



Attest:

Geo. T. Smallwood Jr

L. M. Hopkins.

Inventor:

Thomas L. Melone.

By Knight Bros

attys.

(Model.) 2 Sheets—Sheet 2.

T. L. MELONE.

ROLLER SKATE.

No. 272,298. Patented Feb. 13, 1883.

Fig 4.

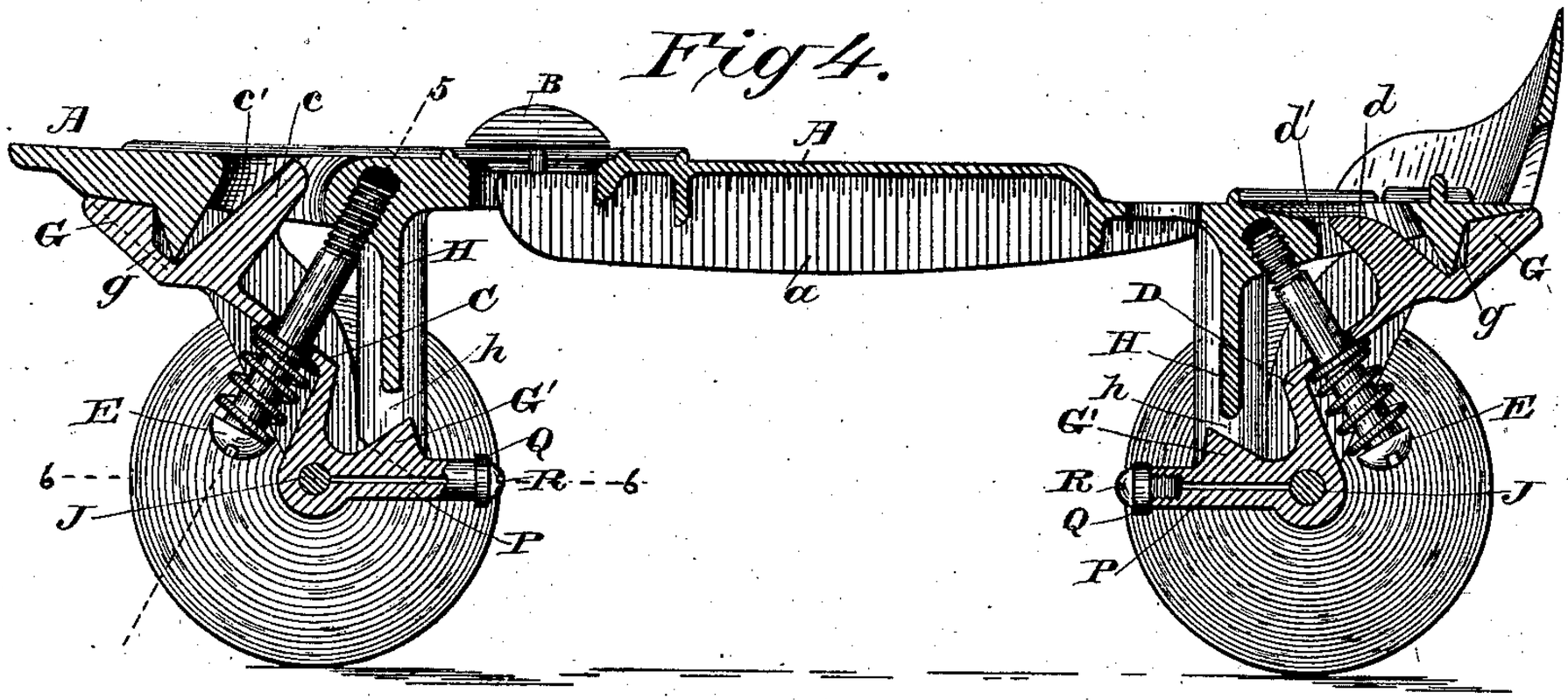


Fig 5.

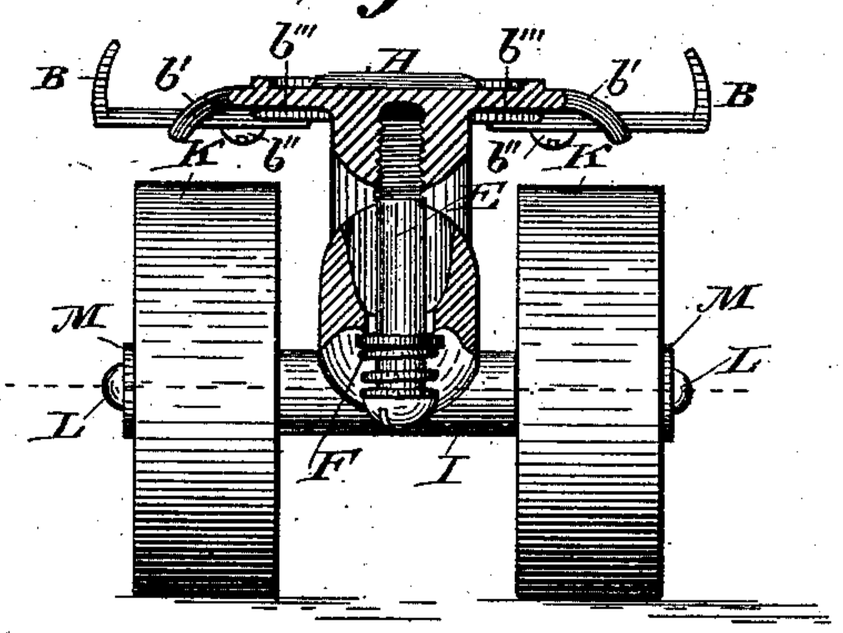


Fig 6.

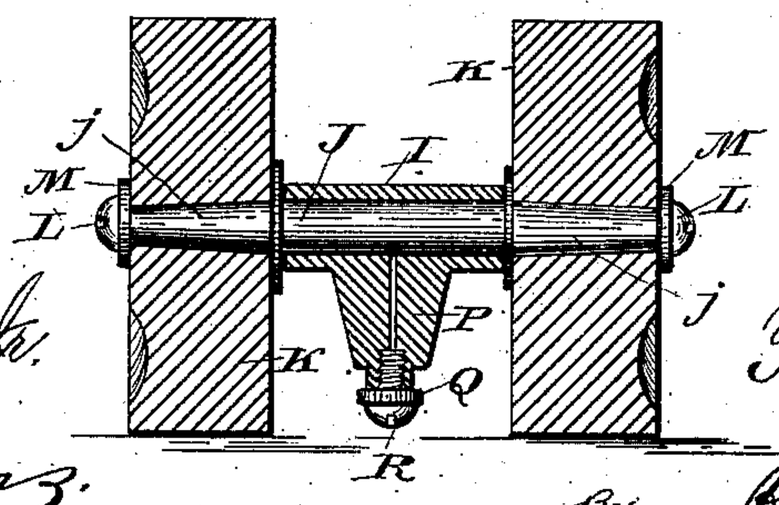
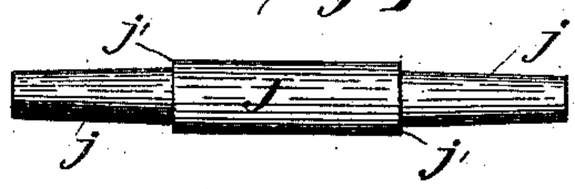


Fig 7.



Attest:
Geo. P. Smallwood Jr.
L. M. Hopkins.

Inventor:
Thomas L. Melone.
By Knight Bros.
Attys.

UNITED STATES PATENT OFFICE.

THOMAS L. MELONE, OF CHILLICOTHE, OHIO.

ROLLER-SKATE.

SPECIFICATION forming part of Letters Patent No. 272,298, dated February 13, 1883.

Application filed June 9, 1882. (Model.)

To all whom it may concern:

Be it known that I, THOMAS L. MELONE, a citizen of the United States, residing at Chillicothe, in the county of Ross and State of Ohio, have invented certain new and useful Improvements in Roller-Skates, of which the following is a specification.

My invention relates to the class of roller-skates in which pressure on either side of the center deflects the rollers from their parallel position, causing the skate to describe a curve to the right or left.

My improved skate has two centers of motion for producing the curves, situated on opposite sides of the skate, and forming a level plane on which the sole-plate rests, as hereinafter described. The sole-plate is preferably of cast metal, with downwardly-projecting lugs or posts, for the reception and bearing of the roller trucks or frames, which may also be of cast metal. The trucks have a yielding connection with the sole-plate in all parts, including the center-line, which is usually attached in fixed contact with the sole-plate. The trucks, when deflected, are restored to their central or parallel position by springs located beneath and bearing on the under surface of the trucks in or near the axis of curving motion. The trucks are secured against slipping longitudinally or laterally by lugs fitting into corresponding notches, which lugs, together with lugs projecting from the top of the respective trucks into cavities in the sole-plate, limit the deflection or curving movement of the rollers. The rollers are fixed to a conical-ended spindle running freely in a central box, lubricated by an oil-cavity in the truck, which is closed by a screw and washer.

In order that the invention may be fully understood, I will proceed to describe it in detail, with reference to the accompanying drawings; in which—

Figure 1 is a plan view; Fig. 2, a front view; Fig. 3, a side elevation; Fig. 4, a longitudinal section; Fig. 5, an oblique transverse section on the line 5 5, Fig. 4. Fig. 6 is a horizontal section on the line 6 6, Fig. 4. Fig. 7 is a side view of the spindle detached.

A represents the sole-plate of the skate, which I prefer to form of cast metal, with a longitudinal strengthening-rib, *a*, at bottom, suitable loops or apertures, *b*, in the downturned portions or lugs *b'*, for the reception of the toe-clamps B B or suitable straps. The toe-clamps slide in guides *b'''*, and are secured at desired distance apart by screws *b''*, passing through slots b^{iv} in the clamps. Apertures *c' d'*, near the toe and heel, receive and permit a moderate lateral play to lugs *c d*, projecting upward from the toe and heel wheel trucks C D. These trucks are also preferably made of cast metal. They are attached to the sole by oblique bolts E, between the head of which and the under surface of the truck is a spring, F, having its bearing in line with the oblique axes of oscillation of the truck, or nearly so.

On the upper face of each truck, being the rear face of the toe and the front face of the heel truck, are teeth or projections G G', fitting in corresponding notches *g h*, the notches *h*, which receive the lower teeth, G', being in the extremities of downwardly-projecting posts H H, which may be cast in one piece with the sole-plate A. The teeth G G' and upwardly-projecting lugs *c d* combine to sustain the trucks against slipping longitudinally or laterally, and to limit the proper lateral deflection of the trucks and rollers for producing curved movement.

The truck is further provided with a central box, I, forming the bearing of the roller-spindles J. These spindles have shoulders *j'*, and are made with conical ends *j*, to receive the rollers K K, which may be fixed thereon so as to rotate together. The conical spindle ends secure the rollers against endwise pressure against the bearings I, which would interfere with their free rotation. The wheels are confined on the spindles by screws L and washers M, the screws entering the ends of the spindle and the washers being jammed against the same by the pressure of the screws and holding the latter against jarring loose.

If preferred, the spindles may be fixed and the wheels adapted to run loosely thereon, bearing against abutting collars on their inner faces; or one wheel may be fixed to the spindle and the other run independently.

A closed oil-cavity, P, is formed within the interior of the truck, communicating with the inside of the bearing I, and closed by a washer, Q, and screw R, so as to confine the oil.

The trucks are also provided at each end

with parallel longitudinal grooves N, for the reception of lugs or flanges O, projecting downward from the base of the sole and from the extremities of the posts H. This provision effectually retains the trucks in their proper position when deflected, and causes them to resume their normal central position in line with each other when released from lateral pressure. These double bearings at each end of the truck, on opposite sides of its longitudinal center, afford a broad support for the sole-plate, rendering the skate stanch and strong, as well as very steady in its movement.

The bearing of the spring F upon the truck being in the axis of oscillation of the latter, besides affording great freedom of motion, completely relieves the attaching-bolt E of lateral or transverse strain. The only stress to which it is subjected is direct tension. From this it will be seen that the only office performed by the bolt and spring is to hold the parts of the skate in contact and prevent them from separating when the foot of the skater is raised.

The parts would remain in proper juxtaposition and perform their several functions equally well without the attaching-bolts E and springs F if the skate were not lifted from the surface, the mechanical construction being such as to effectually prevent the trucks from slipping relatively to the sole-plate. The bolt and spring, as herein described, provide a yielding quality in the center and in the entire truck. This, together with the bearing post and sole lugs or flanges O, on opposite sides of the longitudinal centers of the trucks, while affording the greatest freedom of oscillation, provides at the same time a broad and flat foundation, completely obviating any disposition to wabble, which is so serious a defect in many styles of roller-skates. By these opposite bearings I also provide two centers of motion for shifting the direction of the rollers, the bearings on one or the other side being used alone in curving.

When the skater leans to one side, the bearings on the other side are out of contact, and when both bearings are in contact the rollers are in line, so as to move straight forward. By reason of the broad support provided by the bearings on opposite sides of the longitudinal center, to which the bearings of the trucks are restored instantly by the pressure of the springs F and by the weight of the skater, their tendency is to remain fixed in this position, without inclination to wabble or to swerve to the right or left until the skater voluntarily breaks the contact by shifting his weight to one or the other side of the center as it is desired to curve to the right or left. These bearings may also be provided by continuous flat surfaces, the corners serving as centers of motion to produce the curve; but it is preferred to form them of the lugs or flanges O, as is herein described.

The described construction of skate will be seen to be adapted for the use of rollers of unusually large size, the advantages of which in ease and rapidity of movement are self-evident.

Instead of connecting the trucks to the sole-plate by a fixed axis of oscillation on which the trucks must be deflected to the right or left, and thus necessitating the blocking up of each side of the truck with some description of spring, as is the practice with many forms of skates in use, they are so connected that the center moves away from the sole-plate when making a curve, the motion being on an axis on either side of the longitudinal center, as already described.

Without shoulders on the spindle, the bevel has been found insufficient to keep the wheels from crowding up the spindle and against their central bearings on the truck and locking them, the disposition to crowd being greater than anticipated by reason of the twist of the wheels upon the floor, one on each truck twisting forward and the other backward, and screwing them against the end of their central bearings until, as stated, they are locked. The bevel assists in resisting this strain, and, more important, enables the spindle to be driven straight into the hole provided in the wheel to receive it, thus preserving the center. The point of bearing upon which our rollers revolve is the top of the spindle, while in roller-skates as ordinarily built, with the wheels revolving on the spindle, the point on which they revolve is the bottom of the spindle. This gives additional purchase for revolving the wheels equal to the diameter of the spindle, which is equivalent to increasing of the wheel twice the diameter of the spindle.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. A roller-skate constructed with bearings on opposite sides of the longitudinal center, forming two axes of oscillation for each of the wheel-trucks, as herein described.

2. A roller-skate consisting of a sole-plate, A, and wheel-trucks C D, without fixed or permanent connection in their longitudinal center.

3. A roller-skate consisting of a sole-plate and wheel-trucks connected thereto by bolts and springs bearing upward underneath the trucks and resting against the bottom thereof in line with the axes of oscillation, or nearly so, substantially as and for the purposes set forth.

4. A truck for roller-skates having a fixed central bearing, I, for the spindle, and an oil-chamber, P, communicating therewith and closed to confine the oil.

5. In a roller-skate, a spindle formed with conical ends for the reception of the rollers, substantially as described.

THOMAS L. MELONE.

Witnesses:
JOHN T. RAPER,
H. W. WOODROW.