(No Model.)

C. H. DOTY.

ROLLER SKATE.

No. 324,309. Patented Aug. 11, 1885.

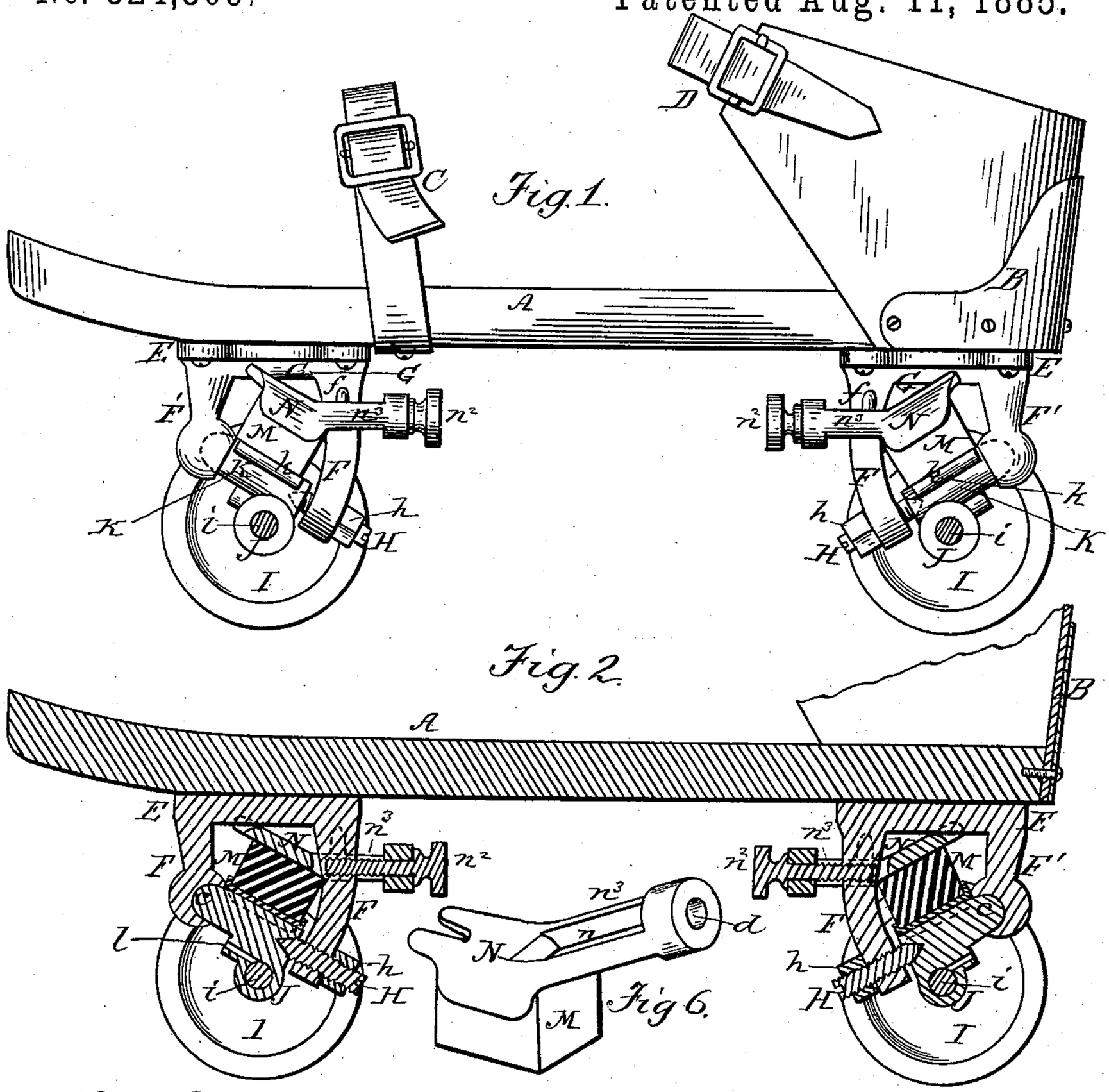

Fig. 1.

Fig. 2.

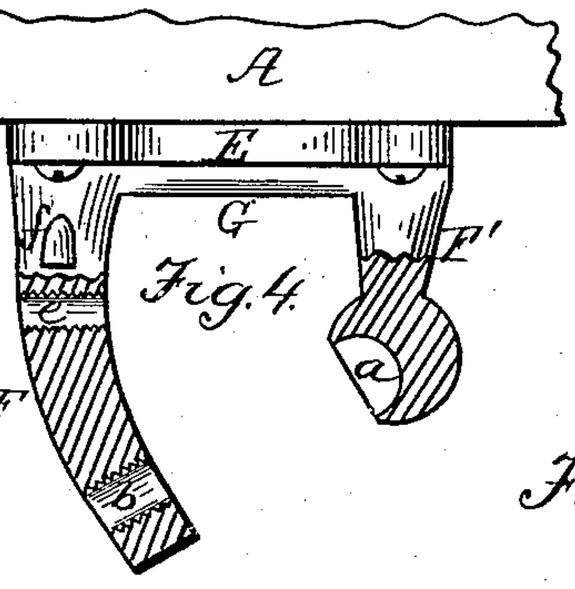

Fig. 4.

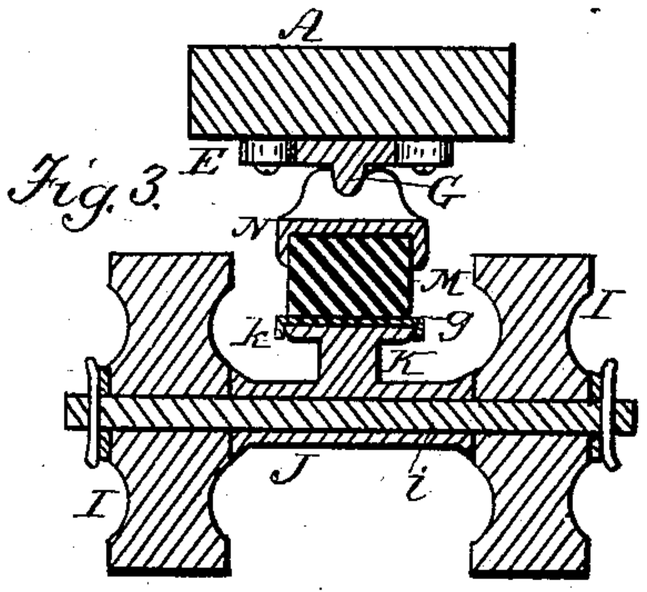

Fig. 3.

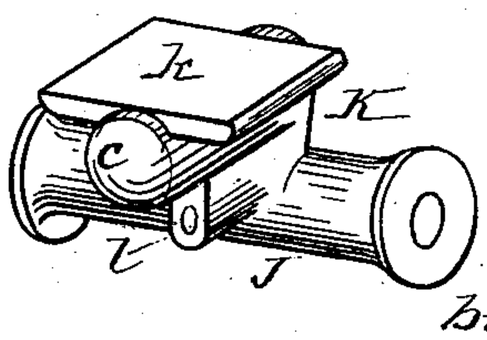

Fig. 5.

Fig. 6.

Witnesses:
R. E. Grant
J. E. Tucker.

Inventor:
Charles H. Doty
by Johnson & Johnson
Attys

UNITED STATES PATENT OFFICE.

CHARLES H. DOTY, OF COLUMBUS, OHIO, ASSIGNOR OF ONE-HALF TO SAMUEL M. LUTMAN, OF SAME PLACE.

ROLLER-SKATE.

SPECIFICATION forming part of Letters Patent No. 324,309, dated August 11, 1885.

Application filed March 18, 1885. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. DOTY, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented new and useful Improvements in Roller-Skates, of which the following is a specification.

My invention relates to roller-skates; and my improvements are directed to a construction whereby the adjustment of the parts to regulate the rubber cushions and to take up or regulate the wear of the cushions is effected, and to a construction whereby the tension-plate is adjusted upon an inclined cushion-seat in a line parallel to the foot-rest, whereby to avoid crushing or injuring the cushion by unequal compression, and to afford durable connections and supports for the tension-plate, and provision for its adjustment. These objects I attain by the construction shown in the accompanying drawings, in which—

Figure 1 represents a side elevation of a roller-skate with my improved trucks and with my improved truck attachments. Fig. 2 represents a central longitudinal section of the truck attachments, and Fig. 3 a cross-section of the same. Fig. 4 shows the hanger; Fig. 5, the truck-attaching axle-box and hanger-bearing, and Fig. 6 shows the tension-plate for the cushion.

In the drawings, A represents the foot-rest, B the heel-iron, C the foot-strap, and D the ankle-strap, of well-known construction.

To the underside of the foot-rest is secured the hanger-plate E, having the pendent supports F F′ and ridge G integrally cast therewith. The hanger-supports are of unequal length. The end of the shortest hanger-support, F′, has an enlargement, in which is formed a recess, *a*, preferably of conoidal form, as it affords a better bearing. The end of the longest support, F, has a threaded eye, *b*, through which passes a set-screw, H, provided with a jam-nut, *h*.

I are the rollers, loosely mounted on the opposite ends of an axle, *i*, which is loosely journaled in a long tubular box, J, filling the space between the rollers, the inner sides of which revolve against the opposite ends of said box.

The box at its middle point is provided with a top projection, K, extending at right angles to the box, one end, *c*, being preferably conoidal in form to enter the recess *a* in the short hanger-support F′, and its other end recessed to receive the end of the set-screw H in the long hanger-support, the jam-nut *h* being screwed home to securely hold the truck-connections with the axle-box.

The box-projection K on its upper side is provided with lateral extensions *k*, to form a plate on which the cushion-block M, of any elastic material, is seated. The cushion M is held between the side flanges of a tension-plate, N, having a bifurcated end to embrace the ridge G of the hanger-plate, which prevents any lateral displacement, while the other end or arm of the tension-plate has a slot, *n*, to receive the long hanger-support F, through the outer end of which tension-plate, in a non-threaded opening, *d*, therein, passes a shouldered screw, n^2, which engages with a threaded aperture, *e*, in said hanger-support. The slotted arm n^3 of the tension-plate when in position extends in a horizontal plane or parallel with the hanger-plate E, and the cushion-bearing part of the tension-plate runs parallel with the face of the cushion-seat on the box J, so that the arms n^3 and tension-plate N are at an inclination to each other equal to the angle formed between the hanger-plate E and the box J. When the tension-plate is advanced by the screw n^2, the distance between the tension-plate N and the cushion-seat *k* on the box is lessened, thus compressing the cushioning-block M, confined between the two. Slackening said screw increases this distance, thus permitting the tension of the cushioning- k to be adjusted to take up wear or to suit the weight of the wearer.

The strain on the tension-plate N is sustained by lugs *f*, extending from either side of the hanger-support F, and bearing on the arms n^3, and by its bifurcated end bearing on the hanger-plate E.

As the tension-plate N has a longitudinal movement in its adjustment and carries with it the cushioning-block M, in order to prevent displacement of the cushion or rubber block M, a piece of sheet metal, *g*, is interposed be-

tween the cushion and its inclined seat, and has flanges projecting upward in the front and rear of the block to hold it in place, while downwardly-projecting flanges, embracing the edges of the seat K, serve to guide the block in its movement upon its seat. A lubricating-aperture, *l*, stands upwardly inclined from the bore of the box to retain a lubricant, which is fed therefrom only as needed to the box, along which it passes in both directions, and is fed to the boxes of the wheels.

In skates of this class where the bracket-supports are of unequal length and the roller-axle box is mounted between ends thereof, so that a tilt or inclination of the foot-rest will cause the rollers, by reason of their inclined mountings, to assume an angular position in relation to the foot-rest proportionally to the tilt in order to describe greater or less curves, great difficulty has been experienced in having the cushioning-block to quickly perform its function, owing to the great amount of friction in the journaling of the truck to the bracket-supports, and also to the great amount of play occasioned between the wearing parts, there being no provision to adjust the parts to take up such wear. These objections are overcome by my construction, as the friction between the roller-bearings and their bracket-supports is reduced to a minimum by having said truck-bearings at the ends of the axle-projections, and in providing one of said brackets with an adjustable bearing-support to take up the wear of the parts, thereby permitting the cushioning-block to quickly react on the rollers according to the successive tilts of the foot-rest.

The hanger socket-bearing may be made of spheroidal form, and the box-projection K with a corresponding bearing, so as to act in the manner of a ball-and-socket joint.

Instead of the flanged plate for the rubber block, the tension-plate may have flange-projection at the front and back, the object being to hold the rubber block in place and to admit of moving the pressure-plate without producing strain or damage to the rubber block.

I claim—

1. The combination, with the axle-box J, having a seat-plate connected therewith, and the bracket-plate E, having the guide-ridge G, of the tension-plate N and the cushioning-block, the said tension-plate provided with a bifurcated end, and the support F, provided with lugs *f*, and means for advancing the plate N parallel to the plate E, as and for the purposes set forth.

2. The combination, with the axle-box and the foot-rest bracket connected therewith by suitable bearings, of the rubber block seated upon the axle-box and a tension-plate seated upon said block rigidly supported upon a bracket-guide at one end and upon the bracket-arm lugs at its other end against the upward pressure of the rubber block, and a screw for moving said tension-plate in a line parallel to the foot-rest, substantially as described, for the purpose specified.

3. In a roller-skate, a tension-plate having a bifurcated end and a slotted arm, in combination with the cushion and a foot-rest plate having a guide-ridge and a pendent bracket-support passing through the slotted arm of said tension-plate, and provided with lugs bearing upon the arms of said plate as a means for guiding and taking the strain off the plate in its adjusting movement, and a screw passing through the slotted arm of said plate into a threaded opening in said bracket-support, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CHAS. H. DOTY.

Witnesses:
T. B. RUFF,
GEO. L. ARTZ.