

(No Model.)

L. M. WISEWELL.

ROLLER SKATE.

No. 311,936.

Patented Feb. 10, 1885.

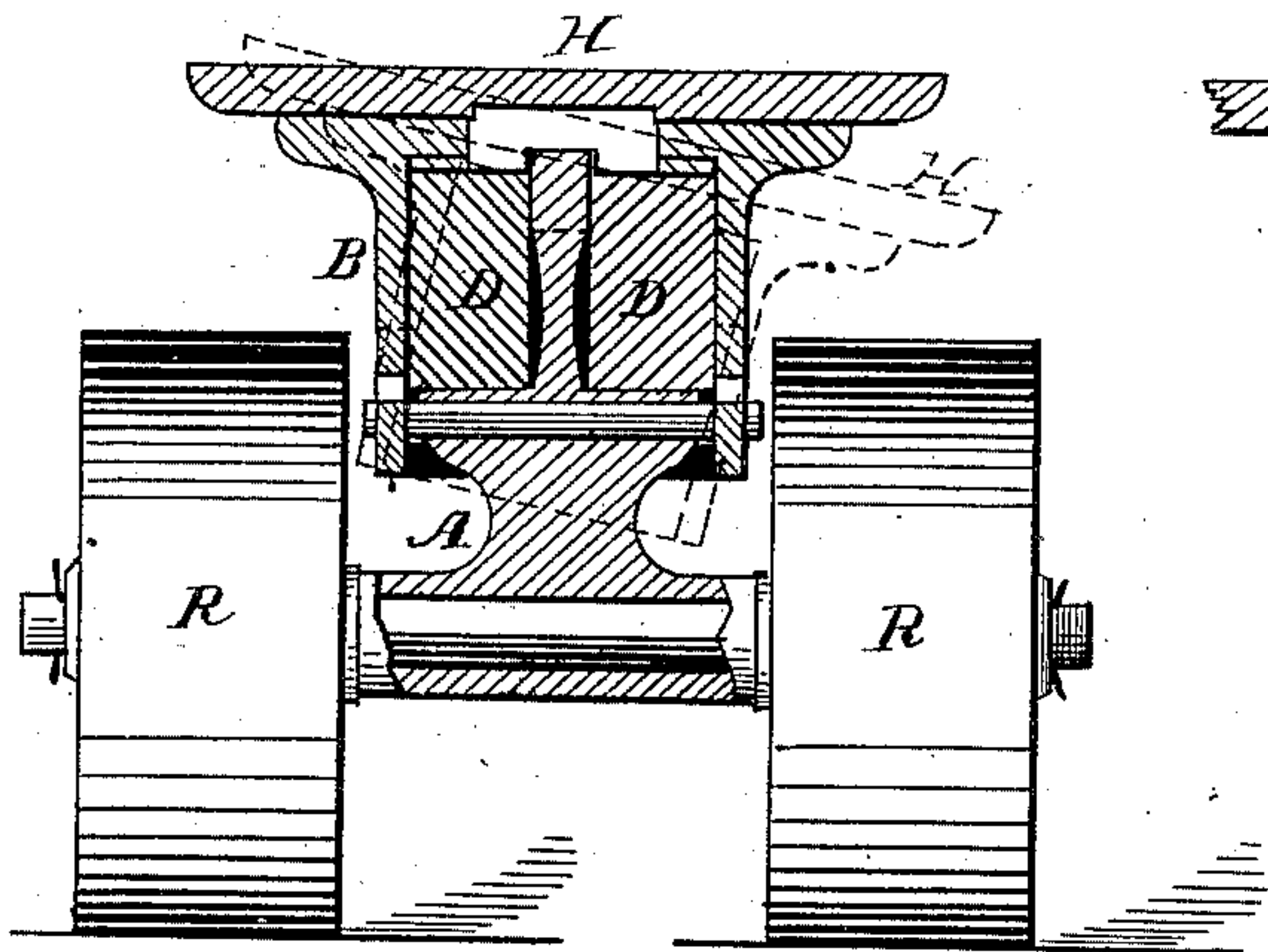


Fig. 1.

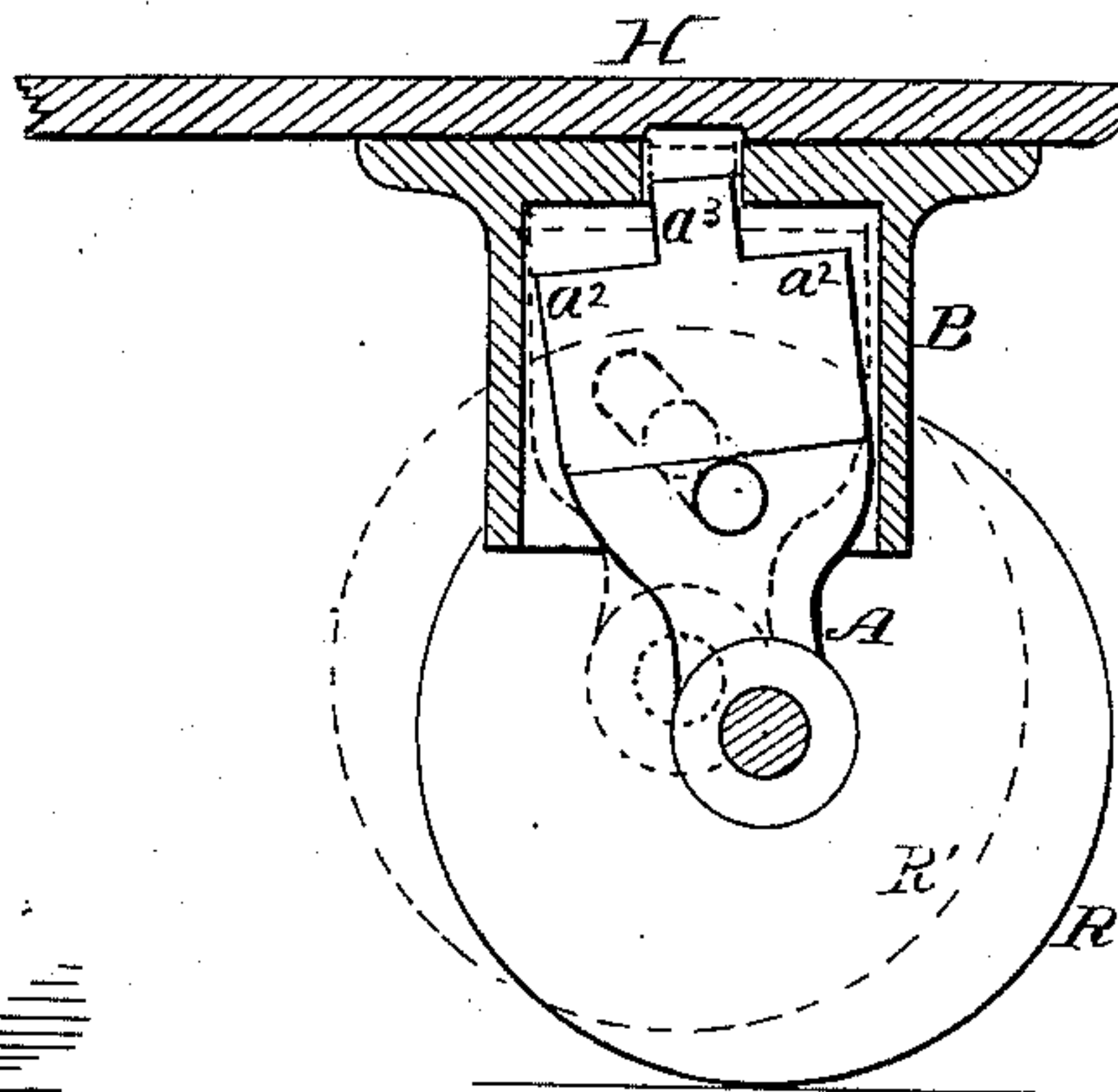


Fig. 2.

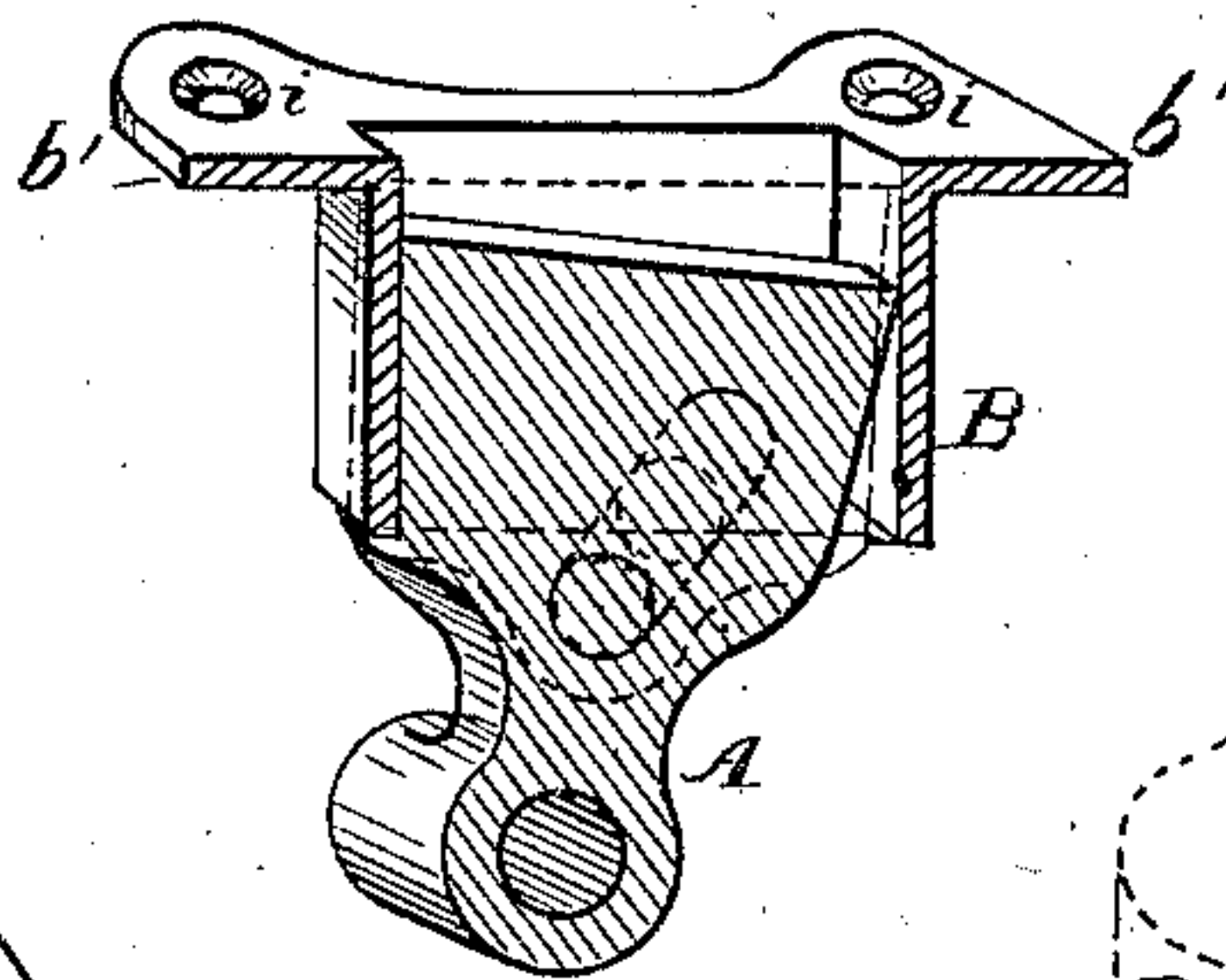


Fig. 3.

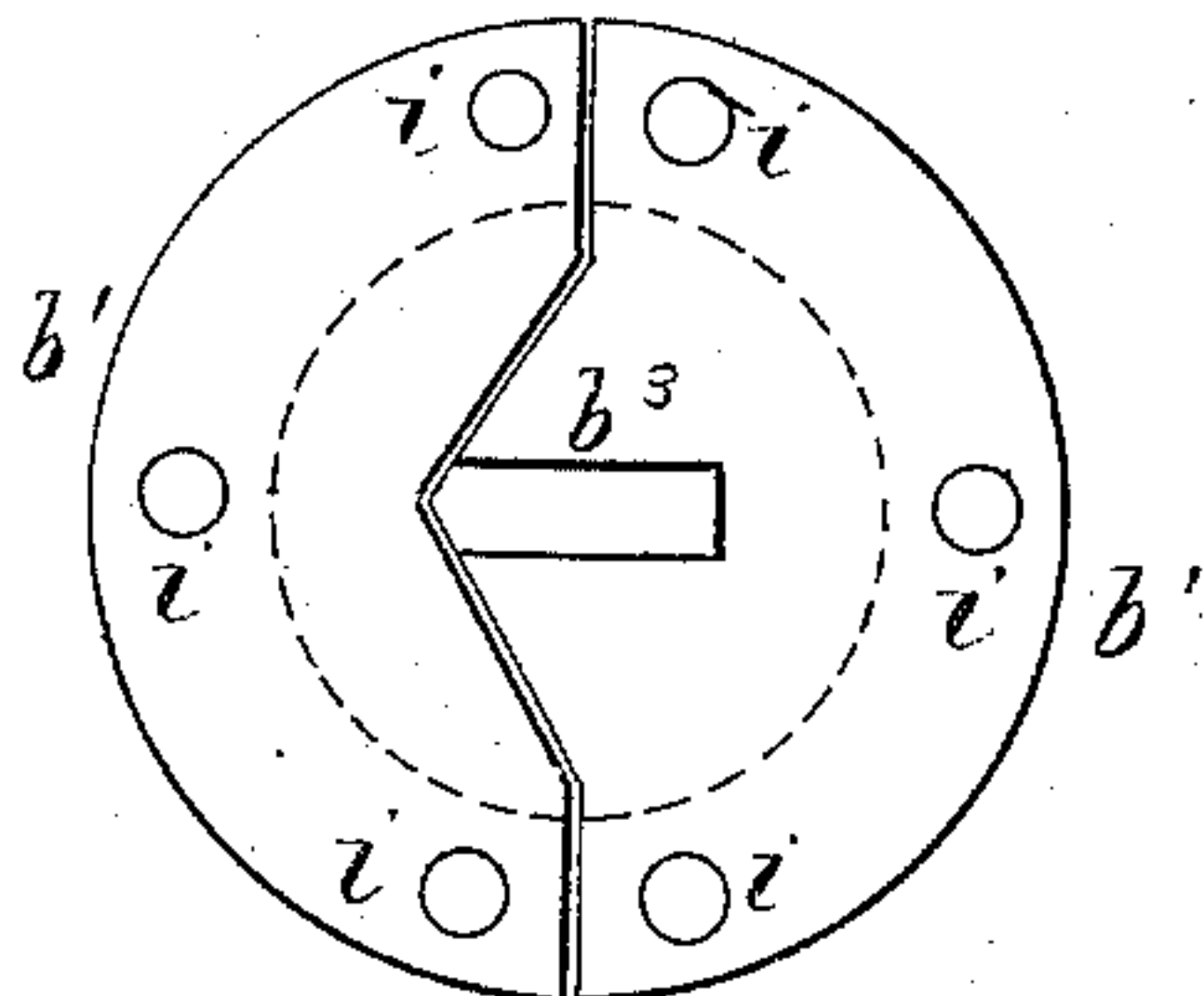


Fig. 4.

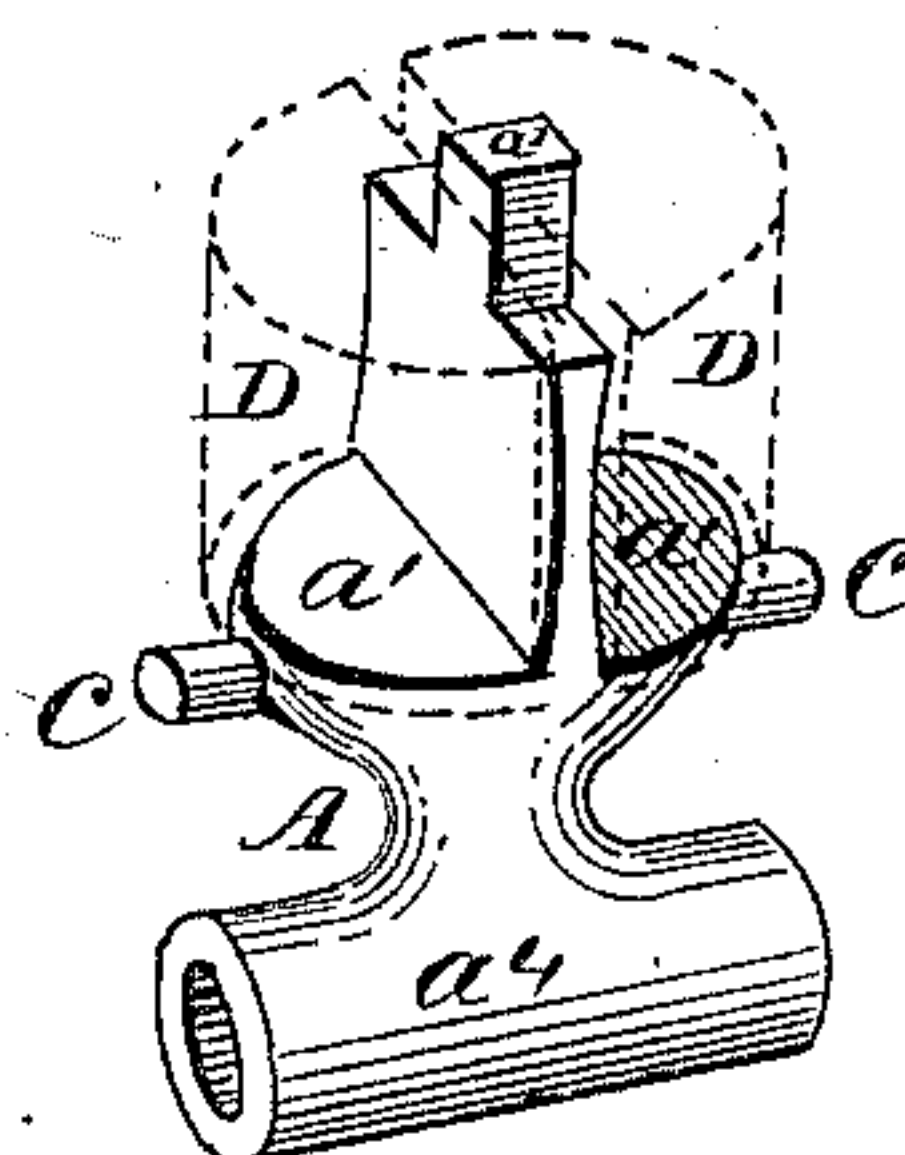


Fig. 5.

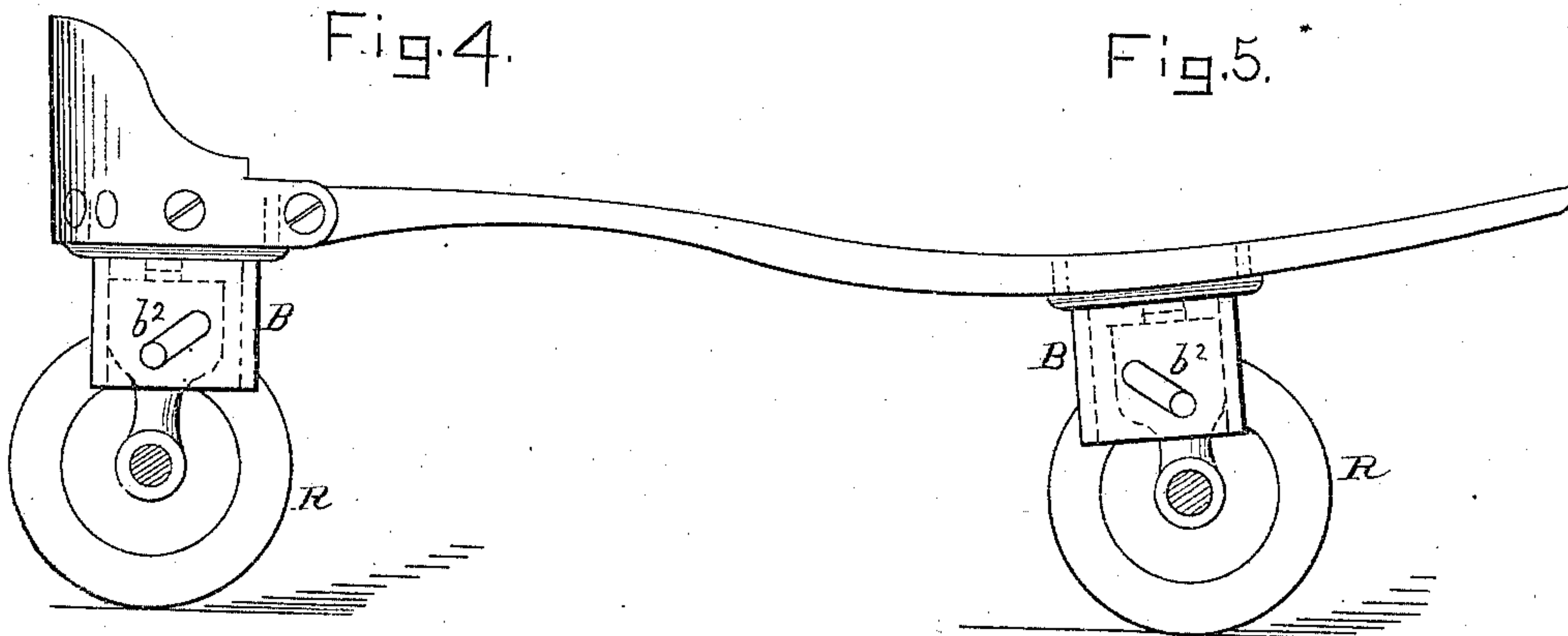


Fig. 6.

Witnesses:
Chas. E. Van Norman
Charles F. Stone

Inventor:
Lowell M. Wisewell

UNITED STATES PATENT OFFICE.

LOWELL M. WISEWELL, OF BOSTON, MASSACHUSETTS.

ROLLER-SKATE.

SPECIFICATION forming part of Letters Patent No. 311,936, dated February 10, 1885.

Application filed May 5, 1884. (No model.)

To all whom it may concern:

Be it known that I, LOWELL M. WISEWELL, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Roller-Skate, of which the following is a specification.

My invention relates to improvements in roller-skates having two trucks or two pairs of rollers to each skate, and so constructed as to be run at will of the skater either in a straight or a curved direction; and the objects of my improvements are, first, to render the skate self-adjusting to such extent as to adapt the same skate alike to persons of light or heavy weight; second, to render the skate steady and the adjustable parts secure against all undue backward or forward movement and still allow them to move elastically with freedom in all other directions; and, third, by making the elastic bearings to act both vertically and laterally, and making the weight of the skater to rest wholly on those elastic bearings, effectually to deaden all unpleasant jarring to the skater from passing over uneven places in a floor, and also to render the skate less liable to damage from sudden contact with any solid obstruction than is the case with skates that rest on either hinged, pivoted, or ball-and-socket bearings. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a transverse section of the leading parts of my invention, showing their positions when in place and at rest, and by the dotted lines showing the relative position of the outer shell with the foot-plate resting upon it to the other parts when thrown to one side. Fig. 2 is a side elevation of the axle-support or truck-hanger as at rest within its shell or casing, the shell being represented as in section and attached to a longitudinal section of the foot-plate, the axle being also in section. Fig. 3 is a vertical longitudinal section of a modified form of shell and axle support. Fig. 4 is a top plan of the shell or casing, (here represented as made in two parts, but may be made all in one piece, if so preferred.) Fig. 5 is a perspective view of the axle-support or truck-hanger, showing its general form, and by the dotted lines showing two elastic cush-

ions resting on rectangular ledges formed on the axle-support. Fig. 6 is a side elevation of a skate made on my improved plan, but with the axles in section and the inner or nearest rollers removed.

Similar letters refer to similar parts throughout the several views.

The axle-support A, with the cushions D D and the shell or casing B, constructed and combined in manner as hereinafter described, constitute the leading parts of my invention.

The shell B, which may be made in two parts, as represented in Fig. 4, or all in one piece, and may be circular, oval, or rectangular in form—preferably rectangular—is made with vertical inner walls, open at the bottom but closed at the top, and with flanges b' , or lugs equivalent thereto, around its top, with holes i i through them for attaching the shell to the under side of the foot-plate H, which may be of any suitable material and form, and attachable to the foot of the skater by straps or any other suitable means of attachment.

In two sides, opposite to each other, of the shell B are formed diagonal slots b^2 b^2 , for receiving and controlling the movements of the guide-pins C C of the axle-support A, and through the closed top of the shell B, in the direction of the diagonal slots b^2 b^2 , is formed the elongated slot b^3 for the reception of the steady-pin a^3 at the top of the axle-support.

The axle-support or truck-hanger A is made substantially as represented in Fig. 5, the lower part, a^1 , being suitably elongated, and having a longitudinal bore through it for holding the axle x , on which the rollers D D revolve, and from a little distance above the part a^1 the body of A is enlarged and made of size and form to fit somewhat loosely the chamber within the shell B, and from near the commencement of this enlarged part upward its sides are flatted off at right angles with the axle, so as to form the rectangular ledges a' a' for the rubber cushions D D to rest upon, and immediately below the ledges a' a' are placed in right line with the axle and parallel thereto the two guide-pins C C, which may be screwed into the body of A or attached to it in any other suitable way. The broad flatted part above the ledges a' a' is not made so

long but that ample room is allowed for upward movement of the hanger within the shell from compression of the rubber cushions by the weight of the skater without the corners a^2 a^2 coming into contact with the under side of the head of the shell, and the steady-pin a^3 in the center of the flatted part, at its top, which may be either round, square, or oval in form, is made of size to just move freely back and forth within the slot b^3 in the head of the shell; or the steady-pin a^3 and the slot b^3 may be dispensed with, and in substitution therefor, or as their equivalent, the edges of the flatted part, near its upper end, as shown in the section rectangular view, Fig. 3, may be made wide enough at its upper part to bear against the inner walls of the shell, and thus to serve the same purpose as the bearing of the steady-pin a^3 within the slot b^3 , the object of which being to prevent the axle-support from swaying unduly either backward or forward, while at the same time there remains perfect freedom of both vertical and lateral movement to the full extent allowed by the resistance thereto offered by the rubber cushions D D. Two pairs of rollers being required to each skate—one pair under the heel and the other under the ball of the foot—that under the heel in my invention is placed with the diagonal slots b^2 b^2 inclining forward, and that under the ball of the foot is reversed, so that the diagonal slots incline backward, as represented in Fig. 6.

In placing the axle-support or truck-hanger A into position within the shell B, the guide-pins C C having been removed for this purpose, the rubber cushions D D, which are of such size and form as, when together and in place, to quite fill the chamber within the shell, are placed on the ledges a' a' , and all together crowded into the shell, and when thus brought into proper position the guide-pins C C are respectively passed through the slots b^2 b^2 and again screwed into or attached to the hanger A; or, in case the shell is made in two parts, as represented in Fig. 4, the pins C C may be attached permanently to the hanger A, and the two parts of the shell be brought together over the cushions and the upper part of the hanger, with the pins C C projecting outward through the slots b^2 b^2 . It will thus be seen that when all the parts are together and fastened to place the guide-pins C C serve the double purpose of retaining the hanger and cushions within the shell and of controlling the relative changes of position of the axles as the cushions are compressed by the weight of the skater.

With external weight from above entirely withdrawn the elastic cushions D D will force the guide-pins C C to the bottom of the diagonal slots in the two sides of the shell, and the position of the hanger within the shell will assume substantially that represented in Fig. 2. If, however, vertical weight be applied centrally from above, the two cushions D D will be

compressed equally, and though the hanger, with the several parts attached to it, will thereby be changed more or less nearly to the positions shown by the dotted lines in Fig. 2, the axle will still remain at right angles with central longitudinal line of the foot-plate; but if the weight from above be thrown to one side, the cushion will be compressed correspondingly more on that side than on the other, and to like extent, supposing the truck to be that under the heel of the skate, will the guide-pin C be carried upward and forward within the diagonal slot on that side of the shell more than on the opposite side, and in like manner from same cause will the guide-pin C in the forward truck be carried upward and backward, the shell and foot-plate assuming to greater or less extent the positions shown by the dotted lines in Fig. 1.

From the description of the several parts of my invention and their combinations, as herein given, it will be seen, first, that the entire weight of the skater is made to rest on the cushions D D; second, that in running the skate the truck-hangers are prevented by the steady-pins a^3 , or their equivalents, from swaying unduly either backward or forward; third, that weight applied centrally of the shells B will compress the cushions D D within them equally, and hence the axles in the truck-hangers a a will still be carried parallel with each other, whatever the degree of weight, within proper limits thus applied; fourth, that by the skater throwing his weight to either side from a central line the cushions on that side will be compressed more than on the opposite side, and thus, through the control of the guide-pins C C in the diagonal slots b^2 b^2 , the rollers on that side will be brought closer together than on the other side, and just in proportion to this the movement of the skate will diverge from a straight to a curved direction; fifth, that by the skater throwing his weight to one side from central line each of the cushions D on that side will not only be compressed vertically between the ledge a' and the head of the shell, but also laterally between the flatted part of the truck-hanger and the side of the shell, thus giving to the cushion double action upon the truck-hanger; and, sixth, that inasmuch as the compression of the cushions will in all cases be in inverse ratio to the weight of the skater, the skate will adapt itself in this regard to the skater, whatever his weight.

I am aware that prior to my invention roller-skates have been made in which rubber springs or cushions, in combination with truck-hangers with guide-pins or axles working in diagonal grooves, were employed. I therefore do not claim, broadly, such a combination; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. The hollow shell B, with vertical inner walls open at bottom but closed at its top, and

with diagonal slots b^2 b^2 in its sides, and slot b^3 in its head, and with suitable provision for attaching it to the under side of the foot-plate H, with which it is in combination, all substantially as described, and for the purposes set forth.

2. The truck-hanger A, formed with rectangular ledges a' a' , and center piece above them terminated at its top by the steady-pin a^3 , or
10 its equivalent, and having the guide-pins C C at its sides, and carrying in the part a^4 the axle a , on which the rollers R R revolve, sub-

stantially as described, and for the purposes set forth.

3. The combination, in a roller-skate, of the truck-hanger A, with steady-pin a^3 , or its equivalent, at its top, and guide-pins C C at its sides, with the shell B and the cushions D D, substantially as and for the purposes set forth.

LOWELL M. WISEWELL.

Witnesses:

GEO. H. VAN NORMAN,
CHARLES F. STONE.