

(No Model.)

D. RICHMOND.

CASTER.

No. 344,988.

Patented July 6, 1886.

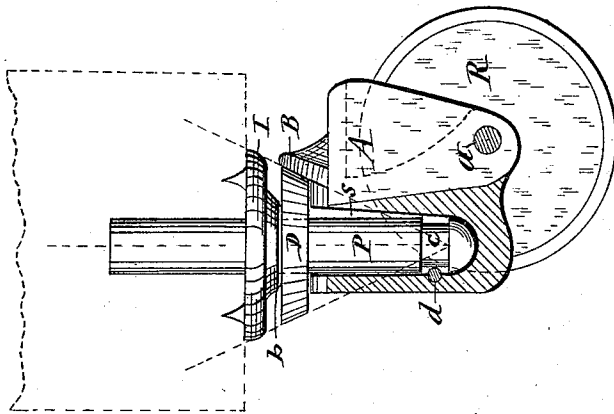


Fig. 1

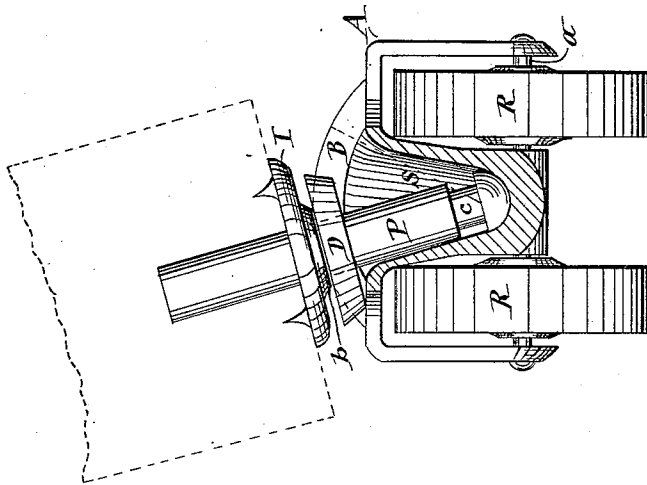


Fig. 2

WITNESSES:

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INVENTOR:

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per Smith, Lassar & Co.
his Atty

UNITED STATES PATENT OFFICE.

DENISON RICHMOND, OF SYRACUSE, NEW YORK.

CASTER.

SPECIFICATION forming part of Letters Patent No. 344,988, dated July 6, 1886.

Application filed May 27, 1886. Serial No. 203,376. (No model.)

To all whom it may concern:

Be it known that I, DENISON RICHMOND, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Casters, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of casters which have two floor rollers or wheels, and the roller-frame swiveled on a vertical pintle, so as to allow said frame to turn and bring the rollers in position to run in different directions. In such casters the roller-frame is subjected to more or less vertically-oscillatory movement when the caster travels over an uneven floor, owing to the two separate and distinct bearings afforded by the two rollers at opposite sides of the vertical pintle. Various devices have been resorted to to allow the necessary oscillatory movement to the roller-frame and at the same time retain a suitable bearing for the top of said roller-frame, so as to confine the vertical-oscillatory movement thereof within a plane parallel with the axis of the floor-rollers. Such devices usually consisted of anti-friction rollers pivoted to the upper part of the roller-frame, and bearing either on the usual collar surrounding the vertical pintle above the frame or on the side of the said pintle; but such casters are not only expensive to manufacture, but also subject to considerable friction, especially when the anti-friction roller is arranged to bear on the side of the pintle, inasmuch as the pivots of said roller are at fixed points on the frame, and consequently as the caster-frame tilts the anti-friction roller is thrown out of contact with the vertical pintle, and the latter has to slide on a bearing provided in the frame. In fact, such anti-friction rollers as last referred to are designed to serve only during the rotation of the roller-frame in a horizontal plane about the vertical pintle.

The object of my invention is to provide a caster which shall be simple and comparatively inexpensive to manufacture, and in which a single anti-friction roller pivoted on the vertical pintle of the caster shall be maintained in perfect and uniform bearings on the roller-frame during the vertical oscillations of said frame, and the friction of the vertical pintle

shall be reduced to a minimum; and to that end my invention consists in the improved construction and combination of the component parts of the caster, as hereinafter fully described, and specifically set forth in the claims.

In the annexed drawings, Figures 1 and 2 are vertical transverse sections of my improved caster, taken in planes, respectively, at right angles to the axis of the floor-rollers, and parallel with said axis.

Similar letters of reference indicate corresponding parts.

R R represent the two floor rollers or wheels journaled on an axle, *a*, secured to the frame A, which is in the form of a yoke or housing striding the rollers, and having the aforesaid axle extending through the vertical wall of said yoke.

Between the two rollers R R is the socket *s*, formed on the central vertical wall of the frame A, and in said socket is stepped the vertical pintle P, which is secured in any suitable and well-known manner to the base of the article to be supported by the caster.

The socket *s* is made flaring in a plane parallel with the axes of the rollers R R, as illustrated in Fig. 2 of the drawings, so as to allow the caster-frame A to freely rock in a vertical plane.

Across the top of the frame A is formed an arch, B, whose outline is described from the pivotal point of the socket, and the face of said arch adjacent to the socket is beveled on a line intersecting the aforesaid pivotal point, as indicated by dotted lines in Fig. 1 of the drawings.

On the pintle P, above the frame A, is journaled the horizontal roller D, which is of the requisite diameter to abut with its peripheral face against the side of the arch B, and has said face beveled corresponding to the beveled side of the arch.

By beveling or mitering the arch B and roller D in the manner described and shown I effectually obviate friction between the engaging-faces thereof during the vertical oscillations of the frame A.

The top of the roller D is provided with a shoulder, *b*, by which it abuts against the collar I, which rests against the under side of the article to which the caster is attached. Said

abutment resists the upward crowding of the roller, incidental to the engagement of the beveled faces of said roller and arch.

The lower end of the pintle P is provided with a wide circumferential groove, *c*, and transversely through the side of the socket *s* and through the groove *e* passes a pin, *d*, which serves to couple the frame A to the pintle P.

I do not claim, broadly, the combination of a horizontal roller pivoted on the vertical pintle and bearing on an abutment on the roller-frame, as I am aware that such a combination has been embodied in a single-roller caster in which the vertical pintle has no lateral play in the socket, and the aforesaid horizontal roller is employed simply to relieve the pintle from friction during the horizontal rotation of the roller-frame on said pintle.

What I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the two rollers R R, the frame A, formed with the socket *s* between the rollers and flared in a plane parallel with the axis of the rollers, the arch B on top of the frame A, the pintle P, stepped in the socket, and the roller D, journaled on the pintle and

bearing on the arch, substantially as described and shown.

2. The improved duplex roller-caster, consisting of the rollers R R, the frame A, formed between said rollers, with the socket *s* flaring in a plane parallel with the axis of the rollers, and formed also with the arch B, described from the pivotal point of the socket, and having the side adjacent to the socket beveled on a line intersecting the aforesaid pivotal point, the pintle P, stepped in said socket, and the roller D, journaled on the pintle and having its peripheral face in contact with the side of the arch, and beveled correspondingly, all constructed and combined substantially in the manner specified and shown.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 24th day of May, 1886.

DENISON RICHMOND. [L. s.]

Witnesses:

FREDERICK H. GIBBS,
C. BENDIXON.