

(No Model.)

J. E. MILLER.

PERIPHERAL RUNNER FOR CARS.

No. 265,271.

Patented Oct. 3, 1882.

Fig. 1.

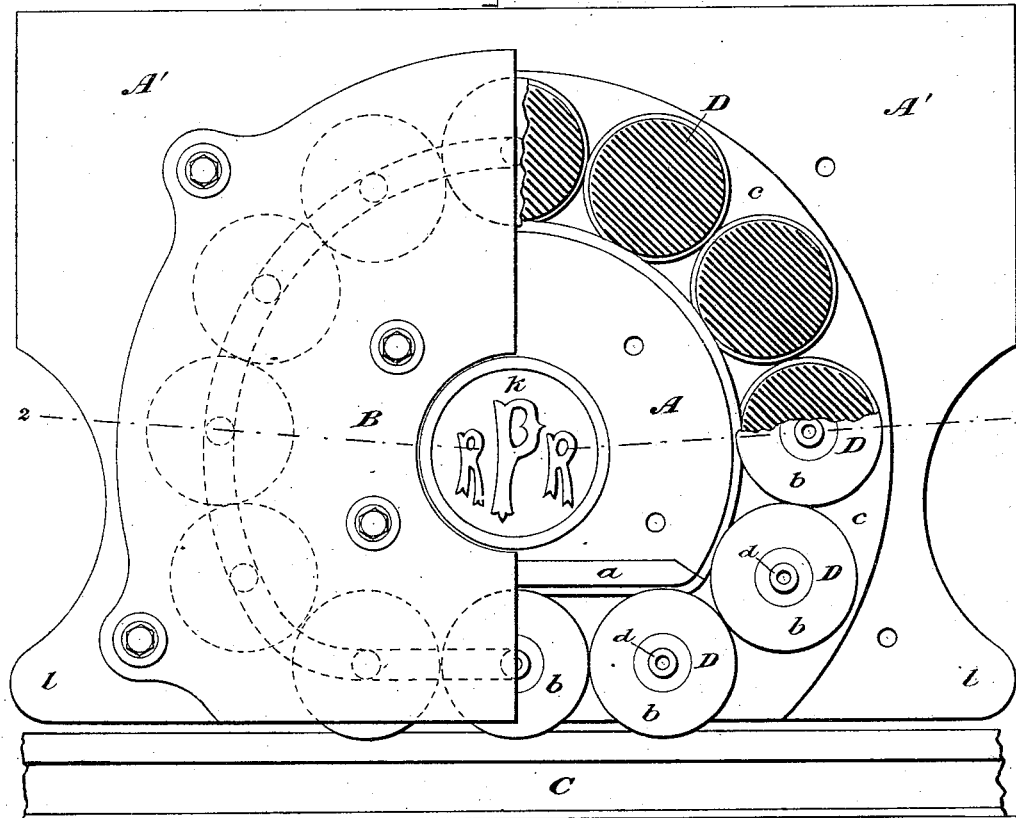


Fig. 2.

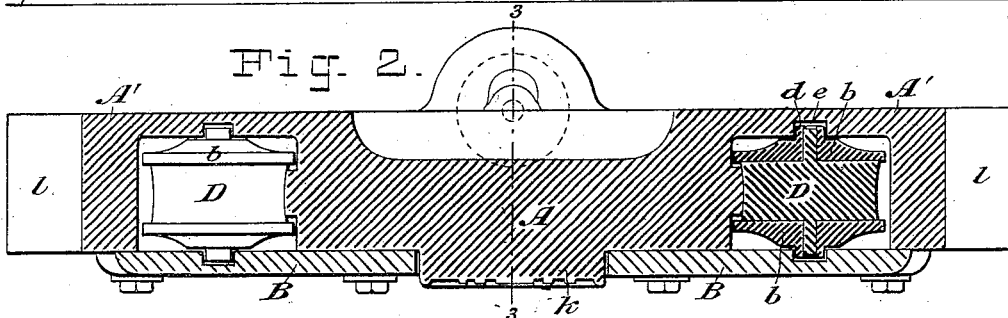


Fig. 4.

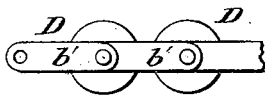


Fig. 3.

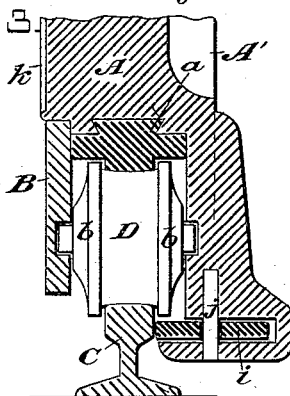
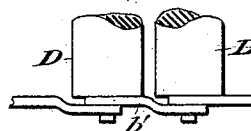


Fig. 5.



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UNITED STATES PATENT OFFICE.

JAMES E. MILLER, OF BROOKLYN, NEW YORK.

PERIPHERAL RUNNER FOR CARS.

SPECIFICATION forming part of Letters Patent No. 265,271, dated October 8, 1882.

Application filed January 30, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. MILLER, a citizen of the United States, residing in Brooklyn, Kings county, New York, have invented certain Improvements in Peripheral Runners, of which the following is a specification.

This invention relates to an anti-friction device or runner adapted to be interposed between a moving object and the surface over which it is moved.

I have shown my invention herein as applied to a railway-car, the runner taking the place of the ordinary wheel.

The novel features of the invention will be set forth in the claims.

In the drawings, Figure 1 is a side elevation with some parts broken away or removed the better to illustrate the interior parts. Fig. 2 is a cross-section of the same on the line 2 2 in Fig. 1. Fig. 3 is a vertical mid-section on the line 3 3 in Fig. 2. Fig. 4 is an elevation, and Fig. 5 a plan on a small scale, of a modified arrangement of the rollers.

The drawings show only the device which takes the place of the car-wheel, the truck-frame, springs, &c., being omitted, as forming no part of my present invention.

A is the bed-piece or rider, which is here shown of the form of three-fourths of a circle, with a flattened base or tread, *a*. In the present case the rider is shown as cast or formed in one piece with a housing piece or plate, A', and so constructed as to leave a groove or circular recess, *c*, around the bearer A.

B is a face-plate, one-half only of which is shown at the left in Fig. 1. This plate is arranged to be bolted or otherwise secured to the piece A', and it serves to form an inclosed channel of the recess *c*, as clearly shown in Fig. 2.

C represents an ordinary track-rail of a railway, and D D a series of rollers which occupy the channel *c*, and which are successively interposed between the tread *a* of the rider and the rail C as the car is drawn along. These rollers possess some peculiar features, which I will now describe: The roller is turned up slightly concave on its face, as shown, and I prefer to make it of steel. To prevent the rollers from touching I mount loosely on axial projections on their ends distance-wheels *b b*,

which are larger in diameter than the rollers. These wheels may touch together, of course, and they will produce no material retarding effect, whereas if the rollers were allowed to touch at their peripheries a serious retarding effect would be produced, as the adjacent peripheries of the rollers travel in opposite directions. The rollers are placed in the inclosed channel *c*, as clearly shown in Fig. 1, enough of them being employed to form a continuous series, by preference, to prevent rattling, and when so arranged they will move around the bearer A in the manner of an endless chain or belt as the car is drawn along. As the rollers project from the recess *c* below the treads *a*, and would be liable to fall out should the car lift from the track, I prefer to provide the wheels *b* with small projections or bosses *d*, to take over ledges on the face-plate B and the back wall of the channel *c* below the tread *a*. For convenience, and to better keep the rollers in place as they move around the rider, I arrange the bosses *d* on the distance-wheels to loosely engage grooves *e* in the face-plate B and the back wall of the channel *c*, as shown in Figs. 2 and 3 and as indicated by dotted lines in Fig. 1. It is designed that the rollers shall roll on the upper rounded face of the rider; but it is obvious that this upper part could be removed, and the rollers would then be guided around by the grooves *e*. I prefer that two or more rollers shall rest on the track at one time, so as to provide a steady bearing; but the number so employed will depend upon circumstances.

I prefer to make the tread *a* removable, so that it can be readily replaced when worn; but this is not necessary.

As a substitute for the usual wheel-flange which engages the inner face of the rail and keeps the wheels on the track, I extend a portion of the housing A' down to the proper depth and mount therein a wheel, *i*, which is arranged to bear against the rail at times and roll thereon whenever it touches. I prefer to house this wheel in the pendent part of the housing A' and to supply it with a vertical axis, *j*. This shaft or axis may be inserted from below after the wheel *i* is properly placed, and be fixed in position by a set-screw or other known means. One or more of these wheels

may be employed; or, in lieu of this wheel, flanges might be formed on the rollers D.

For convenience in fitting the plate B to the rider, I prefer to turn a boss, *k*, on the latter and arrange it to project through and fit an opening in the said plate. This, however, is not necessary; nor is it necessary to construct the rider and the housing-piece A' in one piece. They might be made separately and secured together.

Where cars are provided with runners of this kind the brake-shoes may be arranged to bear upon the track-rail.

With these runners I am enabled to bring the housing down close to the rail, and I provide it with rounded projections *l*, which are adapted to clear the track from obstructions. These projections might also be provided with rollers to catch and rest upon the track should the car be derailed.

I am aware that door-hangers have been constructed having a rider and a series of rollers arranged in a channel around the same. This device is not, however, intended to take the place of a car-wheel, and it has plain-faced rollers and no distance-wheels.

I am also aware that door-hangers have been provided with horizontally-arranged wheels adapted to take under a flange on the track and prevent the main wheel from jumping the track.

Locomotives or self-propelling cars have been provided with an endless series of rollers extending across from rail to rail and connected by toothed or cogged links, with which mesh a toothed driving-wheel on the body of the car. The car has endless elliptical tracks around it, on which roll wheels loosely mounted on the ends of the bearing-rollers. This is a driver, and is not intended to be drawn, as in the case of a car provided with my runners.

Therefore the rollers must be linked together. As the rollers extend across both tracks, it is obvious that in turning curves the roller must slip on one track.

My runner is intended for a car to be drawn over the track. The rollers are all independent from each other, and the runner on one track is independent from that on the other, so that no difficulty is experienced in turning curves.

Having thus described my invention, I claim—

1. A peripheral runner to replace the wheel of an ordinary car, comprising a rider, A, having a channel, *c*, around it, as shown, and a series of detached rollers, D, arranged in said channel *c*, and provided with distance-wheels loosely mounted on their axes, substantially as set forth.

2. A roller for a peripheral runner, having loosely-mounted distance-wheels on its axis, said distance-wheels having a greater diameter than the roller and being arranged to contact with the wheels on the next adjacent roller of the series, substantially as set forth.

3. In a peripheral runner to replace the wheel of a car, the housing A', provided with the rounded projections *l*, substantially as and for the purposes set forth.

4. A roller for a peripheral runner for a car, comprising a concave roller, D, and the distance-wheels *b b*, mounted loosely on its axis at the ends of the roller, substantially as and for the purposes set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JAMES E. MILLER.

Witnesses:

HENRY CONNETT,
ARTHUR C. FRASER.