

(No Model.)

J. C. MITCHELL.

SWIVEL OR FIFTH WHEEL FOR RAILWAY VEHICLES.

No. 553,537.

Patented Jan. 28, 1896.

Fig. 1.

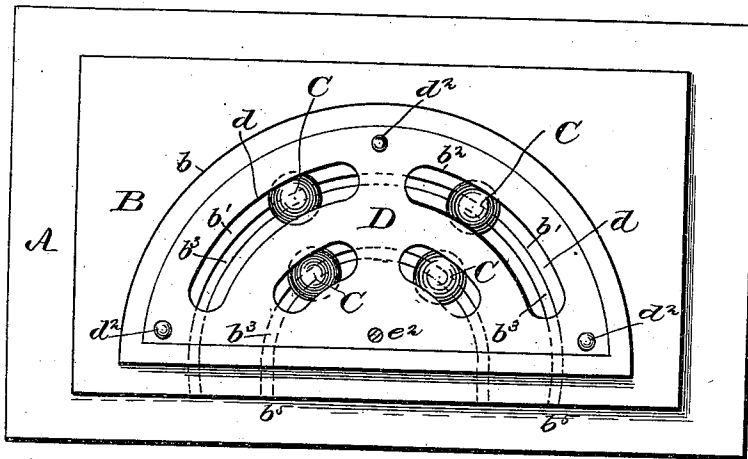


Fig. 2.

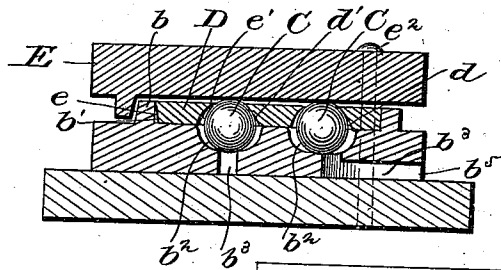


Fig. 3.

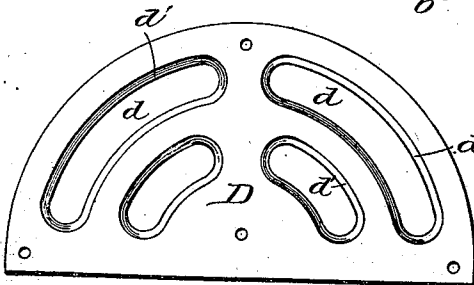


Fig. 4.

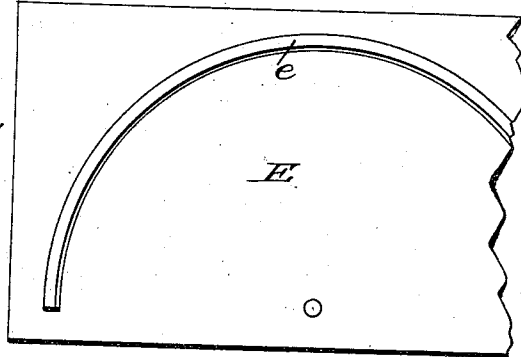
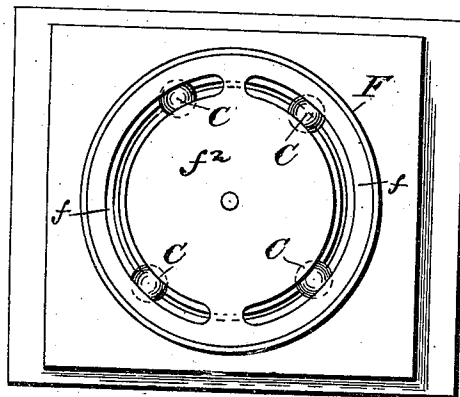


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

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SWIVEL OR FIFTH-WHEEL FOR RAILWAY-VEHICLES.

SPECIFICATION forming part of Letters Patent No. 553,537, dated January 28, 1896.

Application filed June 7, 1895. Serial No. 552,017. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. MITCHELL, a citizen of the United States, residing at Lancaster, in the county of Coos and State of New Hampshire, have invented certain new and useful Improvements in Swivels or Fifth-Wheels; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in swivels or fifth-wheels for railway-cars, locomotives, power-trucks, and other vehicles, and it has for its object the production of a device of this character which will be exceedingly simple in construction and at the same time possess many advantages in point of strength and durability.

In carrying out my invention I secure a base-plate upon the top surface of the truck of the car or other vehicle and mount thereon a suitable bearing-plate, which is provided with grooves or recesses for the reception of roller or ball bearings which are free to move therein. These bearings are prevented from falling out by a retaining-plate provided with slots corresponding to the shape of the grooves or recesses of said bearing-plate, said slots being large enough to allow the bearings to project therethrough a short distance. The securing-plate is designed to fit within a flange of said bearing-plate and is secured in position in any suitable manner. Dust-chambers are also formed in said bearing-plate and the same communicate with the grooves or recesses thereof. A flange formed on the under side of a second bearing-plate, which is secured to the vehicle-body, is designed to fit around and be guided by the flange of said base-plate.

The invention comprises the details of construction and the combination and arrangement of parts, substantially as hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a top plan view, the upper bearing-plate being removed. Fig. 2 is a sectional view on the line $x x$, Fig. 1. Fig. 3 is a bottom plan view of the retaining-plate. Fig. 4 is a bottom plan view of the upper bearing-plate. Fig. 5 is a view of a slight modification.

Referring to the drawings, A designates a base-plate, which is secured in any suitable manner upon the top of the truck of any kind of a vehicle. On the base-plate A is secured the main bearing-plate B, which is preferably of rectangular form and provided with a flange b forming a semicircular chamber b' . In the bottom of said chamber are formed four, more or less, semicircular grooves or recesses b^2 , said grooves or recesses being curved on a plane parallel to the curved portion of flange b and are provided with rounded bottom portions which are designed to form seats for roller or ball bearings C. In the under side of bearing-plate B are two concentric grooves b^3 , which are designed to form dust-chambers and communicate with the grooves or recesses b^2 at b^4 . These dust-chambers are intended to act as conduits for dust and other foreign substances which may get into the grooves or recesses b^2 , and they communicate with the outer air at b^5 .

D is the retaining-plate, which is of semicircular form and designed to fit within the flange b . This plate is provided with slots d corresponding to recesses b^2 , overhanging flanges or beveled portions d' being formed adjacent said slots, the same being designed to project over and secure the bearings C in said recesses. Said bearings are designed to project a short distance through said slots. The plate D is secured in position by any suitable means, securing rods or bolts d^2 being the preferred method.

E is a second bearing-plate, which is provided with a flange e which is designed to fit around the curved portion of flange b and be guided thereby. The under surface e' of said bearing-plate rests or bears upon the projecting portions of bearings C, the pivot rod or bolt e^2 of the vehicle and the flange e serving to keep said bearing-plate in its proper position. The pivot rod or bolt e^2 is also passed

through the retaining-plate, the main bearing-plate and the base-plate.

In Fig. 5 I have shown a slight modification of my invention, which consists solely in making a circular flange F in lieu of the flange b. In this form there is only one series of recesses f and one dust-chamber f' , which are arranged in a plane concentric to the said flange. The retaining-plate f^2 and the remaining parts of the device heretofore described are altered to correspond to the foregoing, and further description thereof is not necessary, since said alterations are obvious.

The advantages of my invention are apparent, and it will be readily seen that when my improved swivel or fifth-wheel is used the shock or jar caused by the sudden turn of a car or other vehicle is reduced to a minimum and will be practically overcome. It will also be seen that the same is simple, cheap and durable.

I claim as my invention—

1. In a fifth-wheel for vehicles, a base-plate, a main bearing plate secured thereon having grooves or recesses therein, ball-bearings adapted to work in said grooves or recesses, dust chambers communicating with said grooves or recesses, and a second bearing plate designed to rest on said bearings, substantially as set forth.

2. In a fifth-wheel for vehicles, a base-plate, a main bearing plate secured thereon having grooves or recesses therein, ball bearings adapted to work in said grooves or recesses, a retaining plate for said bearings, dust chambers communicating with said grooves or recesses, and a second bearing plate designed to rest on said bearings, substantially as set forth.

3. In a fifth-wheel for vehicles, a base-plate, a main bearing plate secured thereon having grooves or recesses therein, a flange formed on the upper surface of said bearing plate, ball bearings adapted to work in said grooves or recesses, a retaining plate surrounded by said flange, dust chambers communicating with said grooves or recesses, and a second bearing plate designed to rest on said bearings, substantially as set forth.

4. In a fifth wheel for vehicles, a base-plate, a main bearing plate secured thereon having grooves or recesses therein, a flange formed on the upper surface of said bearing plate, ball bearings adapted to work in said grooves or recesses, a retaining plate surrounded by

said flange and provided with slots corresponding to said grooves or recesses, dust chambers communicating with said grooves or recesses, and a second bearing plate designed to rest on said bearings, substantially as set forth.

5. In a fifth-wheel for vehicles, a base-plate, a main bearing plate secured thereon having grooves or recesses therein, a flange formed on the upper surface of said bearing plate, ball bearings adapted to work in said grooves or recesses, a retaining plate surrounded by said flange and provided with slots corresponding to said grooves or recesses, said slots being provided with overhanging portions, dust chambers communicating with said grooves or recesses, and a second bearing plate designed to rest on said bearings, substantially as set forth.

6. In a fifth-wheel for vehicles, a base-plate, a main bearing plate secured thereon having grooves or recesses therein, a flange formed on the upper surface of said bearing plate, ball bearings adapted to work in said grooves or recesses, a retaining plate surrounded by said flange and provided with slots corresponding to said grooves or recesses, said slots being provided with overhanging portions, dust chambers communicating with said grooves or recesses, and a second bearing plate provided with a flange adapted to fit around the flange of said first mentioned bearing plate, substantially as set forth.

7. In a fifth-wheel for vehicles, a base-plate, a main bearing plate secured thereon provided with a semicircular flange on its upper surface and having grooves or recesses therein arranged concentric to the curved portion of said flange, ball bearings adapted to work in said grooves or recesses, a retaining plate surrounded by said flange and having slots therein corresponding to said grooves or recesses, dust chambers also arranged concentric to the curved portion of said flange and communicating with said grooves or recesses, and a second bearing plate provided with a flange adapted to fit around the curved portion of said first mentioned flange, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES C. MITCHELL.

Witnesses:

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