(No Model.)

F. G. SUSEMIHL & A. TORREY.

ROLLER BEARING.

No. 605,147. Patented June 7, 1898.

Fig. 1.

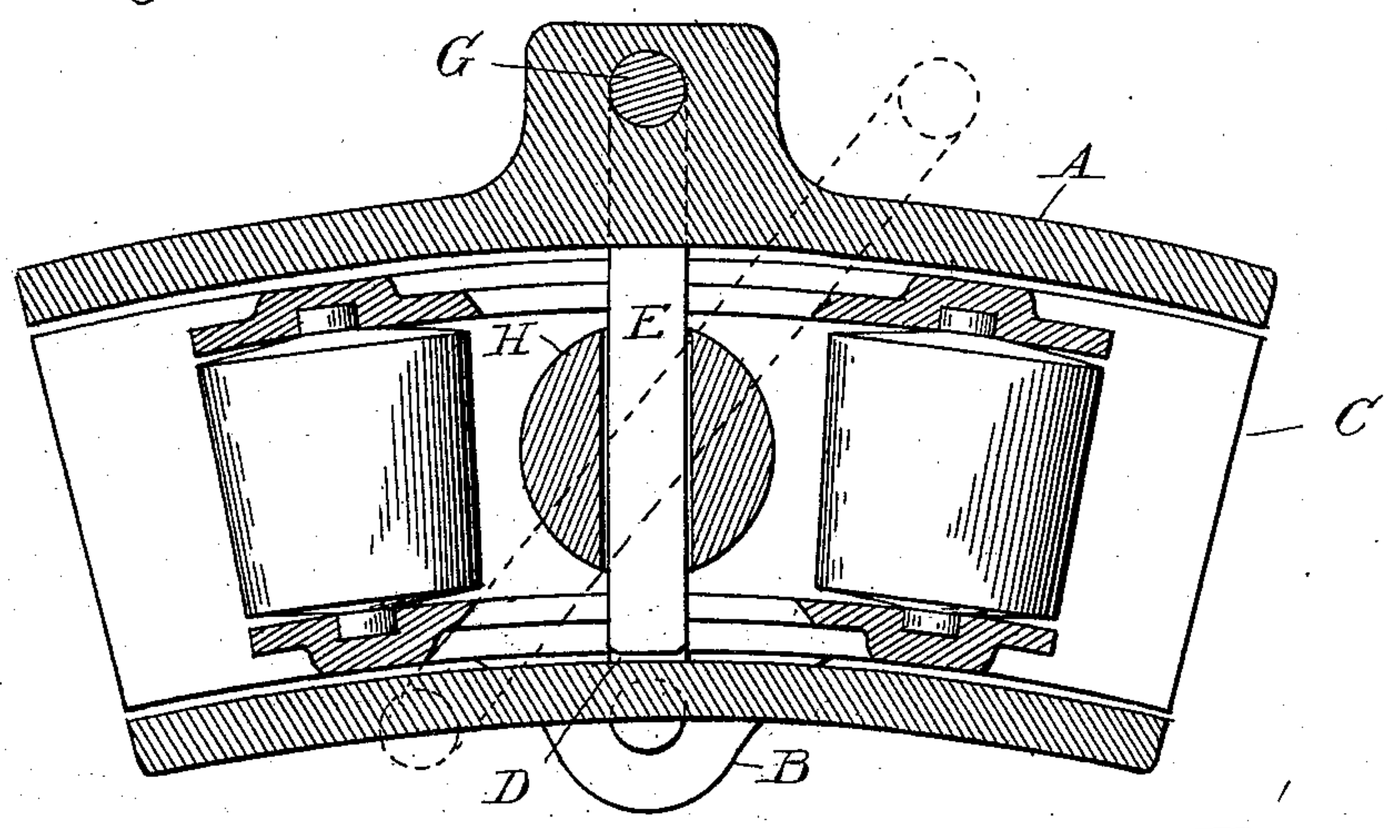


Fig. 2.

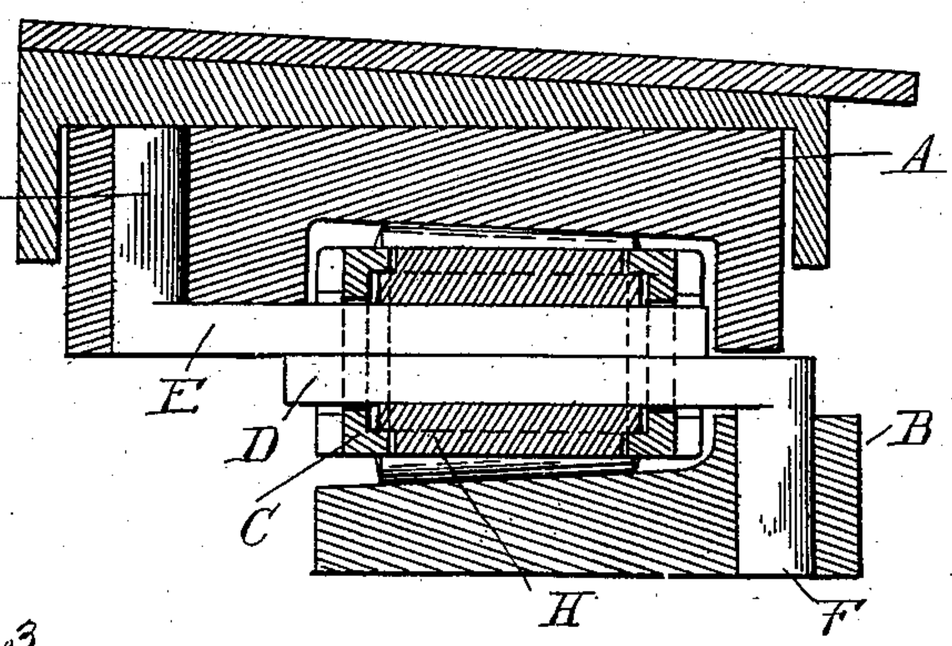


Fig. 4.

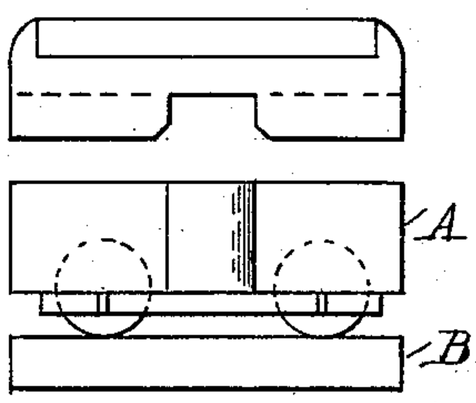


Fig. 3.

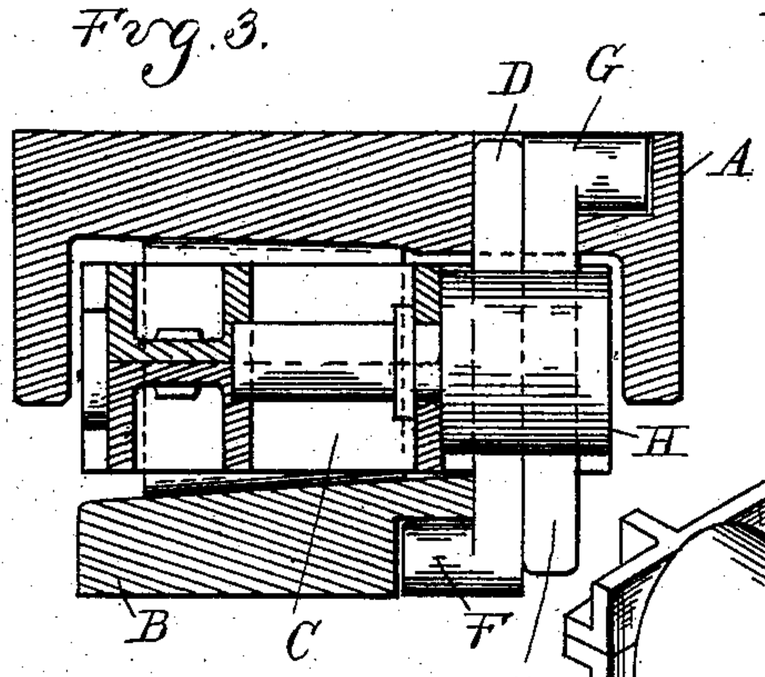
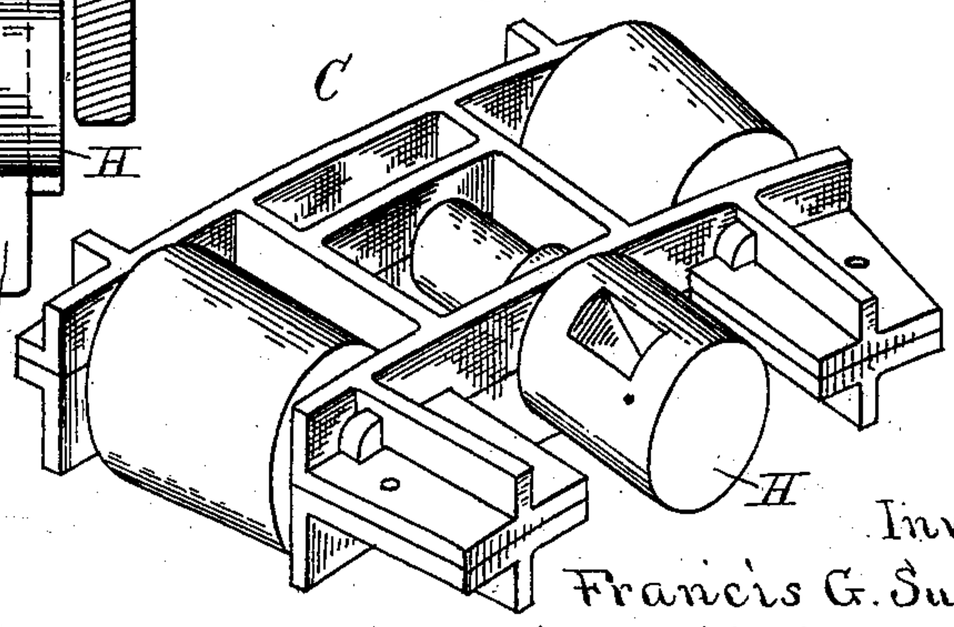


Fig. 5.



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UNITED STATES PATENT OFFICE.

FRANCIS G. SUSEMIHL AND AUGUSTUS TORREY, OF DETROIT, MICHIGAN.

ROLLER-BEARING.

SPECIFICATION forming part of Letters Patent No. 605,147, dated June 7, 1898.

Application filed February 26, 1898. Serial No. 671,729. (No model.)

To all whom it may concern:

Be it known that we, FRANCIS G. SUSEMIHL and AUGUSTUS TORREY, citizens of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Roller-Bearings, of which the following is a specification, reference being had therein to the accompanying drawings.

Our invention relates to that class of roller-bearings in which a roller-carriage is interposed between the bearing-plates and is controlled in its movement and held from accidental displacement by a coupling-bar which permits the rollers a limited movement in rolling contact with said plates and at the same time positively compels the proper relative travel of the carriage.

Our invention consists in the peculiar construction of the coupling-bar employed, and, further, in the peculiar construction, arrangement, and combination of parts, as more fully hereinafter described and claimed. This coupling-bar can be placed in a vertical, horizontal, or oblique position, one end of the same being always pivoted to the top plate, the other to bottom plate, and when made in two parts, as preferred for obvious reasons, passing through a swivel-head, which again is pivoted in suitable bearings in the carriage holding the rollers.

In the drawings, which show our roller-bearing as designed for a side bearing of a car, Figure 1 is a horizontal section through the bearing, showing the coupling-bar in a horizontal plane. Fig. 2 is a vertical cross-section thereof. Fig. 3 is a similar cross-section of a bearing in which the coupling-bar is arranged in a vertical plane. Fig. 4 is a side elevation thereof, showing the securing-plate for the upper plate detached therefrom. Fig. 5 is a detached perspective view of the roller-carriage employed in the latter and preferred construction.

A is the upper or car bearing-plate, and B is the lower or truck bolster-plate, of a car side bearing, and C is the roller-carriage arranged between said plates, the rollers being of conical form, so as to travel in the arc of a circle concentric with the pivot of the truck, or, in other words, each roller is a frustum of a cone whose apex lies in the center of the king-bolt connecting car and truck.

It is well understood that theoretically the roller would go back and forward with the movement of top and bottom bearing-plates without the use of a controlling-bar; but practically the rollers would soon lose their proper position, chiefly when the car-body should lift a trifle and be for an instant out of contact with the roller, but also through grit and dirt lodging under the rollers and through other causes—such as moisture, irregularities in the surface of bearings, or through the crowding inward or outward of the rollers. Therefore controlling-bars of some kind are absolutely necessary, and various coupling-bars have been used and devised for this purpose. They generally consist of one or more bars pivotally secured to one of the members of the bearings and slidingly engaging with slotted bearings in the other two members. An objection to this type of coupling-bar, whether the same lies horizontal or vertical, is that in most trucks the room is limited, and such a bar has to be of considerable length, so as to allow sufficient travel for rollers where cars pass over short curves. Our improved coupling-bar is designed to overcome this objection, and consists of a longitudinally-extensible or telescoping bar, which is pivotally secured at its opposite ends to the upper and lower bearing-plates, respectively, and has an intermediate pivotal connection with the carriage. In the construction shown in Figs. 1 and 2 of the drawings this bar is arranged in a horizontal plane and comprises the two sections D and E, respectively provided with upwardly and downwardly extending pivot-pins F and G, engaging with corresponding sockets or bearings in the plates A and B.

H is a head swiveled, preferably, centrally in the carriage-frame and provided with a transverse slot with which the oppositely-extending members D and E are adapted to slidingly engage. The pivots of such bar, which lies horizontally, must of course be so arranged as to allow the bars to keep always on as straight a line as possible, so as to hold the carriage always in the proper central position between the bearing-plates. To accom-

plish this, the pivot on the inner bar must be located somewhat closer to center of swiveled head than the pivot of outer bar, according to the length of arc over which the two different pivots travel.

In Figs. 3 and 4 we show a construction in which the coupling-bar is arranged in a vertical plane and in which the head H is swiveled in a horizontal plane. With this construction the pivotal points of the two members of the coupling-bar are located at equal distances from the center of the swivel-head, thereby keeping the two members of the bar always in a straight line and holding the carriage always in the center between the two bearing-plates. We show this telescoping bar placed on the inside of the carriage as preferable; but it may be placed, when conditions require, on the outside of the carriage, or one member may be placed on the inside and one on the outside, in that case there being two heads formed with a shank running through the whole width of carriage. This construction employing the vertical guide-bar is preferable to the first-mentioned construction for the reason that in this case the two members of bar are made of the same length and also because the bar can be placed on the outside of carriage instead of passing through the sides of carriage, and thus weakening the frame. Moreover, the rollers may be placed closer together where it may be required. The members of bar pass through a transverse slot in the swivel-head, which lies outside of carriage-wall, and the shank of the swiveled head runs through or into the carriage, where it is locked in position, so that the carriage is carried back and forward with it.

The carriage is preferably made of two like castings riveted or bolted together and embracing the journals of rollers as well as the shank of swivel-head.

The top bearing-plate is provided with front and rear wall extending downward to near the bottom bearing-plate. These walls form the guiding-surfaces for the carriage, which is provided with flanges on both sides, meeting the walls of top bearing-plate.

The bottom bearing-plate is bolted to transom of truck, while the top bearing-plate may be bolted to transom of car, in which case the top surface must be formed so as to fit the transom and be also bolted to it; but as the transoms of cars are of unequal width and different pitch, and as the distance between transom and bolster is not always alike, and also to avoid the annoyance of disarranging the parts of bearing when car-body is lifted off for repairs, we preferably form the top bearing-plate with a horizontal upper surface and provide for an extra plate, which is bolted to transom of car and engages with said top bearing-plate. This extra or securing plate is provided with downwardly-projecting flanges or lugs which so engage with said top bearing-plate that the latter is compelled to travel horizontally with said securing-plate, but is not disturbed by any vertical movement thereof, thus remaining in position while the car-body is lifted.

What we claim as our invention is—

1. In a roller-bearing comprising upper and lower bearing-plates and a roller-carriage between, a longitudinally-extensible or telescopic coupling-bar pivotally secured at its ends to said upper and lower plates respectively and having an intermediate pivotal connection with said roller-carriage.

2. In a roller-bearing comprising upper and lower bearing-plates and a roller-carriage between, the combination of a transversely-slotted head swiveled to said carriage and a coupling-bar formed in two sections pivotally secured respectively to said upper and lower plates and telescopically engaging with said slotted swiveled head.

3. The combination with the upper and lower bearing-plates, of the roller-carriage between said plates comprising the rolls, a transversely-slotted swiveled head and a carriage-frame formed in two like sections, each having formed therein half-bearings for said rolls and head and adapted when united to hold the same in position and a coupling-bar formed in two sections pivotally secured respectively to said upper and lower plates and telescopically engaging with said slotted head.

4. In a car side bearing the combination with the upper and lower bearing-plates, the latter being secured to the truck, the roller-carriage between, and the coupling-bar uniting the three, of a securing-plate attached to the transom or body portion of the car and vertically, separably engaging said upper bearing-plate.

In testimony whereof we affix our signatures in presence of two witnesses.

FRANCIS G. SUSEMIHL.
AUGUSTUS TORREY.

Witnesses:
OTTO F. BARTHEL,
LIONEL BATTERBY.