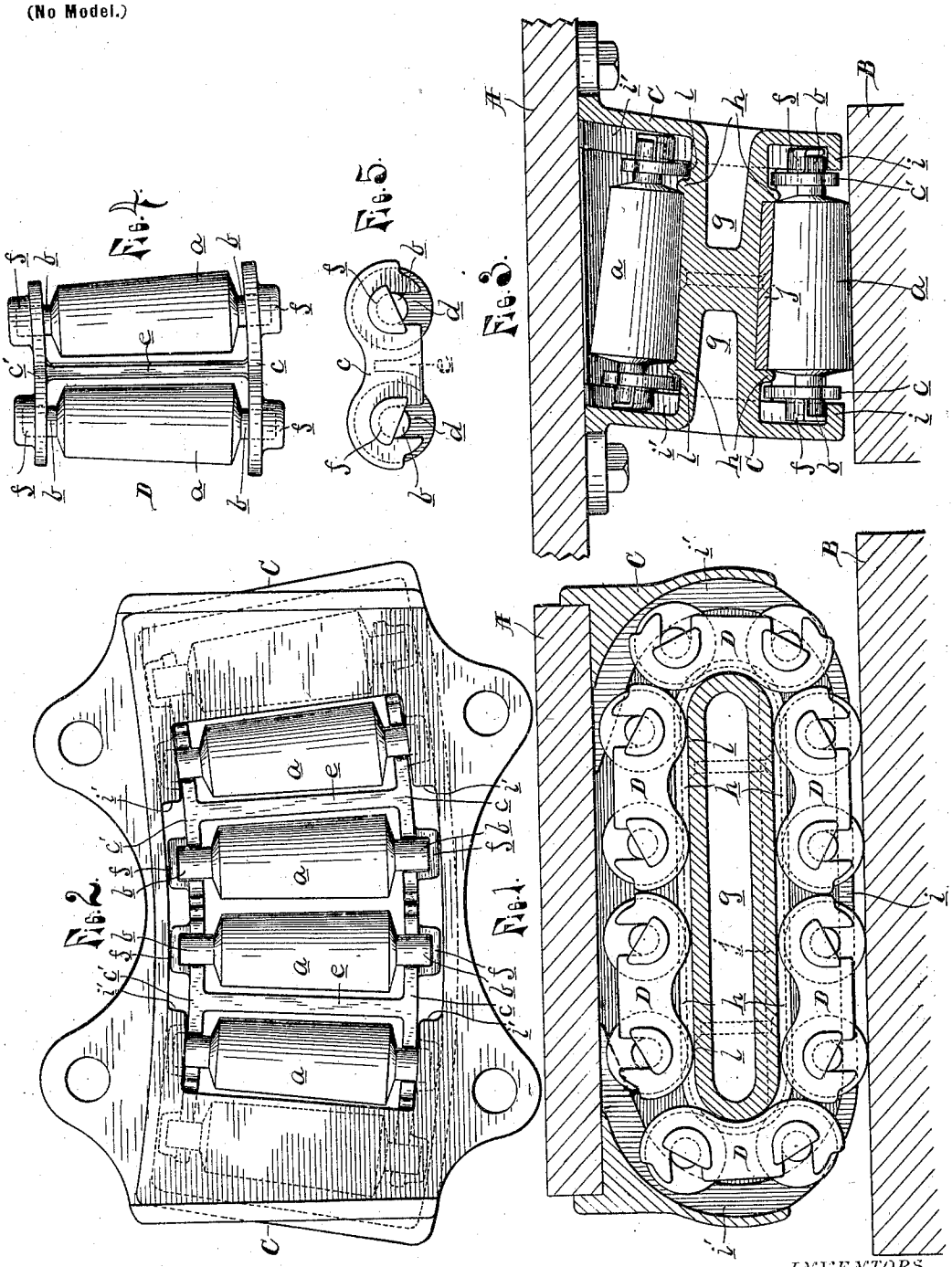
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F. G. SUSEMIHL & A. TORREY.

CAR SIDE BEARING.

(Application filed Mar. 3, 1902.)

(No Model.)



WITNESSES.

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CAR SIDE BEARING.

SPECIFICATION forming part of Letters Patent No. 701,416, dated June 3, 1902.

Application filed March 3, 1902. Serial No. 96,403. (No model.)

To all whom it may concern:

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

This invention relates to that class of side bearings in which antifriction-rollers are interposed between the truck and body bolsters on opposite sides of the center bearing.

The object of our invention is to make a roller-bearing of simple construction and not liable to get out of order; and to this end the invention consists of a casing carried by the body-bolster and inclosing a series of disconnected roller-trucks guided upon a track within the casing and coöperating with a bearing on the truck-bolster to form an antifriction side bearing, all as more fully hereinafter described, and shown in the accompanying drawings, in which—

Figure 1 is a side elevation of the bearing with the front wall of the casing broken away to show the interior of the casing. Fig. 2 is a top plan of the bearing; Fig. 3, a cross-section of the bearing. Fig. 4 is a detached plan of one of the roller-trucks, and Fig. 5 is an end elevation of Fig. 4.

A and B represent the outer ends of a body-bolster and a truck-bolster, respectively, between which our improved side bearing is interposed, the bolsters being, as usual, provided with a center bearing. (Not shown.)

C is the casing, secured in any suitable manner to the under side of the body-bolster, and D represents a series of roller-trucks inclosed in said casing free to travel. Each roller-truck consists of a pair of tapering rollers *a*, formed with journals *b*, and of a rigid frame composed of two side bars *c c'*, formed with bearings *d*, in which the rollers are removably journaled, and of a cross-bar *e*, connecting the side bars between the rollers. The side bars *c c'* are rounded off at the ends, and the journals *b* of the rollers project beyond the side bars of the truck-frame. The side bars are also provided with hoods *f*, which project over the top portions of the projecting ends of the rollers, but leave the lower portions exposed. These hoods strengthen the side bars at the bearings and at the same time form stops to prevent the endwise movement of the roller in the truck-frame. Each roller-truck is adapted to form an independent traveling unit, and the series of trucks together form an endless train free to travel within the casing around a central core *g* formed therein and adapted to support a plurality of the rollers in direct traveling contact with the opposite bolster. To this end the core is flattened upon its upper and lower sides and has rounded ends, and in making the upper face of the truck-bolster the bearing-face upon which the active rollers travel the bearing-faces of the rollers on the core (and respectively on the casing) will be so inclined that the rollers during their travel will be in radial alinement with the center bearing. The core is formed with two parallel guide-flanges *h*, extending around the core at a distance apart equal to the length of the bearing-face of the rollers and adapted to guide the roller and mediately the trucks in a path concentric with the center bearing. The casing is open on top and bottom and may be cast in one piece, with the exception of forming the bearing-face for the active rollers of a separate steel plate *j*. The sides of the casing at their lower edges are formed or provided with inwardly-projecting retaining-flanges *i*, which prevent the roller-trucks from falling out in case the bolster B should be withdrawn. These retaining-flanges, however, continue upward upon the sides of the casing in the path of the roller-trucks, and from being mere retaining-flanges they become bearing-flanges *i'*, upon which the projecting ends of the journals of the rollers are adapted to travel in rolling contact therewith in passing around the ends of the core *g*, the hoods being suitably cut away to permit this travel. The flanges *i'* are continued upward sufficiently to guide the rollers till they can travel upon the top portion of the core, and they are then stopped off, so as to form a clear and unobstructed entrance into the top of the casing, through which the trucks may be inserted into or removed from the casing when the casing is taken off. The flanges *i'* in connection with the flattened portions of the core thus form the track on

which the rollers travel whenever a relative movement between the bolsters takes place, and in whatever direction the movement takes place the trucks of the rollers which bear the load push the trucks which carry the idle rollers in the direction in which the movement takes place and in such manner that as soon as each roller is relieved of the load it commences to travel with its journals upon the flanges *i'*, owing to the tendency of the trucks to push each other outwardly in passing around the ends of the core. In doing so the rollers are caused to revolve in a reverse direction upon their axis till gravity causes the trucks to drop on top of the core. In passing over the top the rollers travel upon the core, while the trucks ride upon bearings *l*, formed between the guide-flanges *h* and the side of the casing. As the trucks collectively form an endless train in which the individual trucks can have little or no independent travel, it is not necessary that there should be any connection between the trucks. In fact, we find it more desirable that the trucks should be independent, as it insures greater freedom in travel by allowing the trucks to slightly separate. It also dispenses with unnecessary parts. However, suitable connections between the trucks may be used without interfering with the broader features of our invention. The contour and shape of the truck-frame is such that rubbing contact with the casing will be avoided, and the side bars are of such relative lengths that a line drawn through the extreme end will pass through the center bearing. Instead of one cross-bar centrally uniting the side bars the side bars may be united by cross-bars near the ends.

It is obvious that our improved bearing instead of being carried by the body-bolster may be carried upon the truck-bolster, and any modification with this end in view we deem to be within the scope of our invention.

The advantage of roller-bearings in which the rollers travel in a continuous path over those in which the rollers are stationary or travel in the arc of a circle only is well understood; but in all construction of the former kind of which we are aware it is possible for the rollers to skew—that is, they get out of radial alinement with the center bearing—and then they become inoperative as an anti-friction-bearing. In our construction this cannot occur, as the rollers are rigidly held in alinement by being journaled in rigid truck-frames, two or more. It will also be seen that our construction is simple and the rollers are adapted to travel with a minimum of friction.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In a car side bearing, the combination with the casing forming an endless roller-track, of an endless train of independent roller-trucks.

2. A car side bearing comprising in combination, a casing forming an endless roller-track, an endless train of independent roller-trucks, each roller-truck comprising a rigid frame with a roller mounted therein, substantially as described.

3. In a car side bearing, the combination with the casing forming an endless roller-track, of an endless train of independent roller-trucks, each roller-truck comprising a rigid frame, and a plurality of tapering rollers journaled therein.

4. In a car side bearing, the combination with the casing forming an endless roller-track which guides the rollers, of an endless train of independent roller-trucks, each composed of a rigid frame and a pair of tapering rollers journaled in said frame.

5. In a car side bearing, the combination with the truck and body bolsters, of a side bearing consisting of a series of tapering rollers, a casing secured to one of the bolsters and forming an endless track for said rollers adapted to support a part of the rollers in traveling contact with the other bolster, and rigid truck-frames in which said rollers are journaled, said frame and rollers forming an endless train of roller-trucks.

6. In a car side bearing, the combination with the truck and body bolsters, of a side bearing consisting of a series of tapering rollers, a casing secured to one of the bolsters and forming an endless track in which said rollers are free to travel a portion of said travel being in contact with the other bolster, and rigid frames in which said rollers are journaled, said frames and rollers forming an endless train in which each frame and the rollers carrying the frame form an independent traveling unit.

7. In a car side bearing, the combination with the truck and body bolsters, of a side bearing consisting of an endless train of roller-trucks each composed of a rigid truck-frame and tapering rollers journaled in said frame, and a casing secured to one of the bolsters and forming an endless roller-track adapted to support a portion of the rollers in traveling contact with the other bolster, each truck-frame and its rollers forming a unit, guided in its travel in the casing independently of any other unit.

8. In a car side bearing, the combination with the truck and body bolsters, of a side bearing consisting of an endless train of roller-trucks each composed of a rigid truck-frame and tapering rollers journaled in said frame and a casing secured to one of the bolsters and forming an endless track for said roller-trucks, said casing provided with a core adapted to support a portion of the rollers in traveling contact with the other bolster and with projecting guide-flanges extending around the core at a distance apart equal to the bearing-face of the rollers and adapted to guide the rollers in their travel around the core.

9. In a car side bearing, the combination with the bolster and the casing secured there-

to and forming an endless roller-track for guiding the rollers in their travel, of an endless train of independent roller-trucks, each composed of a rigid frame and two rollers removably journaled in said frame.

10. In a car side bearing, the combination with the bolster and the casing secured thereto and forming an endless roller-track for guiding the rollers, of an endless train of independent roller-trucks, each composed of a rigid frame formed of two side bars and a cross-bar centrally connecting the side bars together and two rollers journaled in said side bars on opposite sides of the cross-bar.

11. In a car side bearing, the combination with the body-bolster and the casing secured thereto and forming an endless roller-track for guiding the rollers, of an endless train of independent roller-trucks, each composed of two rollers and a rigid frame composed of two side bars formed with open bearings in which the rollers are removably journaled and of a cross-bar uniting the side bars intermediate between the rollers.

12. In a car side bearing, the combination with the casing carried by the body-bolster and formed with a core around which the rollers are adapted to travel, of an endless train of independent roller-trucks, each composed of two tapering rollers formed with journals at their ends, and of a rigid frame formed of two side bars and a cross-bar, the side bars formed with open bearings to receive the journals of the rollers and provided with hoods projecting over the ends of the journals.

13. In a car side bearing, the combination with the casing carried by the body-bolster and forming an endless roller-track, of an endless train of independent roller-trucks, each composed of two tapering rollers and of a rigid frame formed of two side bars provided with bearings in which the rollers are journaled, and of a cross-bar uniting the side bars between the rollers, the ends of the side bars being rounded off and projecting beyond the rollers.

14. The combination with the truck and body bolsters having a center bearing, of side bearings carried by the body-bolster each comprising a series of independent roller-trucks composed of a rigid frame and two taper rollers journaled in the frame, and a casing formed with a core around which the roller-trucks are adapted to travel in a path radial with the center bearing, said core provided with projecting parallel guide-flanges for the rollers extending around said core at a distance apart equal to the length of the bearing-face of the rollers.

15. The combination with the truck and body bolsters having a center bearing, of side bearings carried by the body-bolsters, each comprising a series of independent roller-trucks and a casing formed with a core around which the roller-trucks are adapted to travel in a path radial with the center bearing, said core formed on its under side with a flat bearing-face formed of a steel plate secured to the core and with projecting flanges extending around the whole core for guiding the rollers in their travel around the core.

16. The combination with the truck and body bolsters having a center bearing, of side bearings carried by one of the bolsters, each comprising a series of independent roller-trucks composed of a rigid frame formed with side bars and of two rollers provided with journals engaging into bearings in the side bars and projecting beyond said bearings, a casing formed with an elongated core around which the trucks are adapted to travel, said core flat upon its upper and lower sides and with rounded ends projecting guide-flanges upon said core adapted to guide the rollers in their path around the core and retaining-flanges for the rollers projecting inwardly from the sides of the casing, said retaining-flanges adapted to form bearings for the projecting ends of the journals of the rollers in their travel around the rounded portions of the core.

17. The combination with the truck and body bolsters having a center bearing, of side bearings carried by one of the bolsters each comprising a series of independent roller-trucks D and a casing C formed with an elongated core *g*, the upper and lower sides of which form bearings for the rollers in the travel of the trucks around the core, guide-flanges *h* extending around the core, and the retaining and bearing flanges *i i'* projecting inwardly from the sides of the casing and stopped off at the top of the casing, said casing being open on top for the insertion and removal of the roller-trucks.

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

FRANCIS G. SUSEMIHL.
AUGUSTUS TORREY.

Witnesses:
THOMAS G. LONGSTAFF,
OTTO F. BARTHEL.