No. 682,406. Patented Sept. 10, 1901.

F. K. FASSETT.

ROLLER SIDE BEARING.

(Application filed Mar. 13, 1901.)

(No Model.)

Fig. 1.

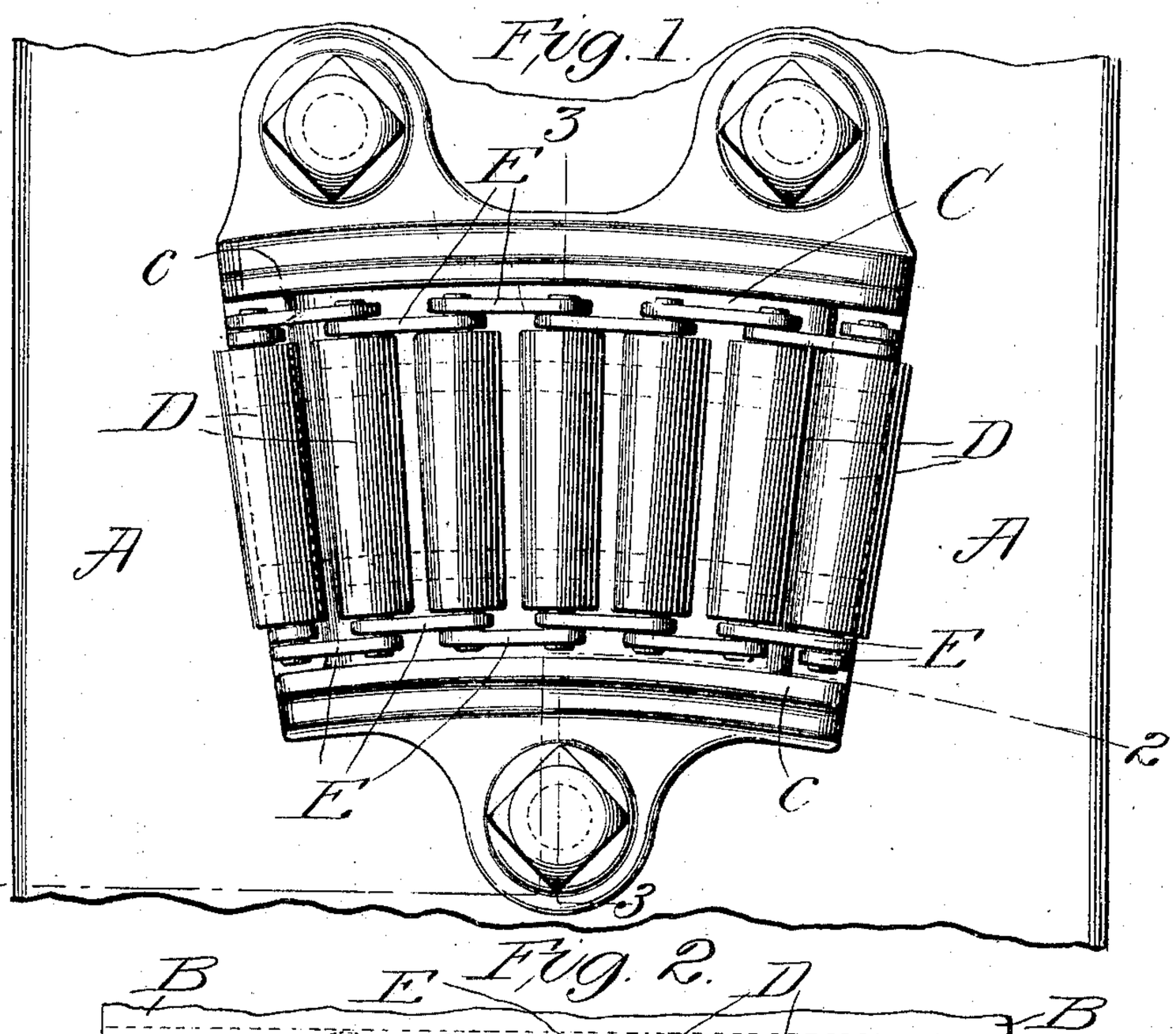


Fig. 2.

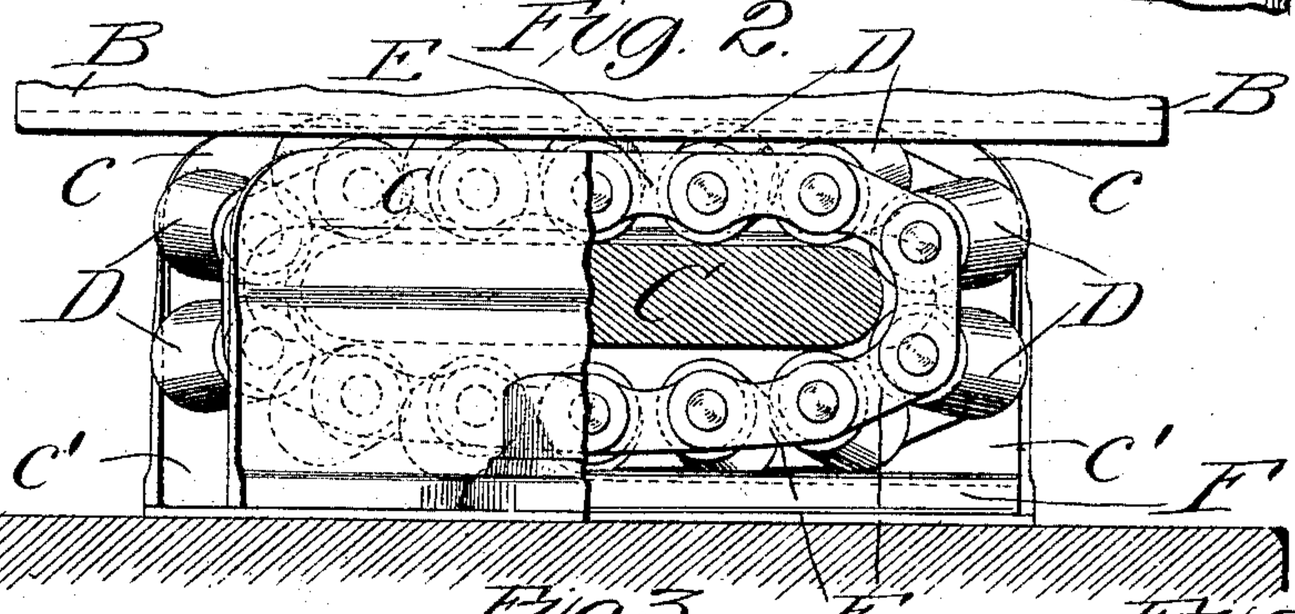


Fig. 3.

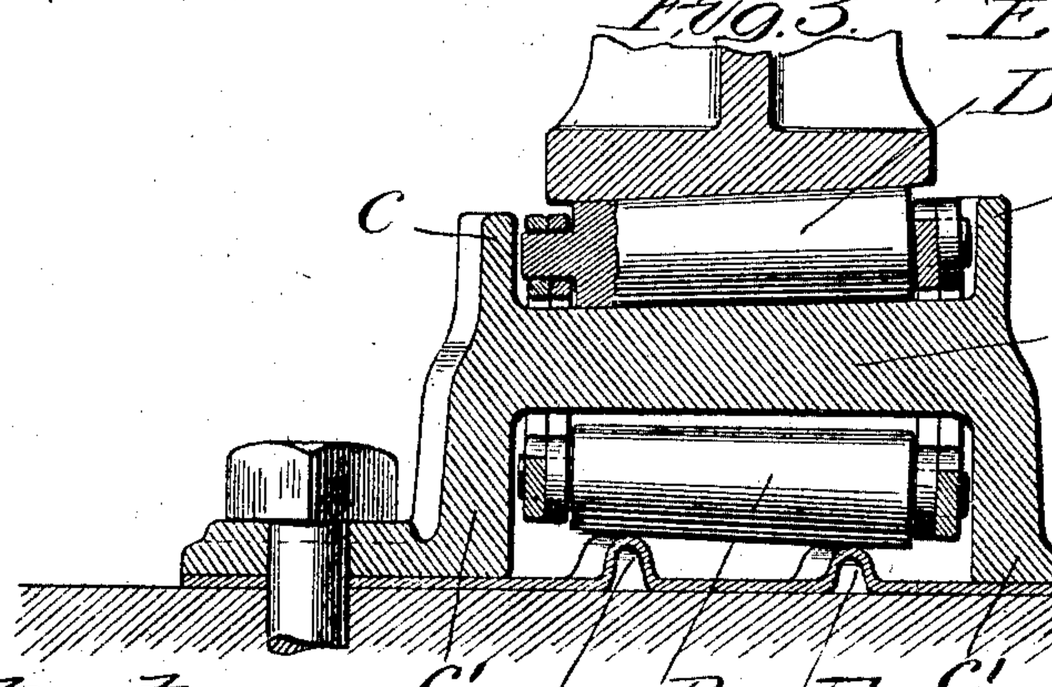
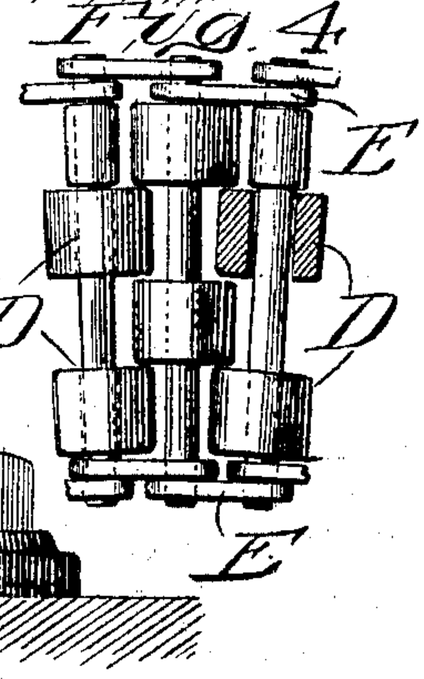


Fig. 4.



C' F D F C'

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UNITED STATES PATENT OFFICE.

FRANCIS K. FASSETT, OF ST. LOUIS, MISSOURI, ASSIGNOR TO LEO EHRLICH, OF SAME PLACE.

ROLLER SIDE BEARING.

SPECIFICATION forming part of Letters Patent No. 682,406, dated September 10, 1901.

Application filed March 13, 1901. Serial No. 50,910. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS K. FASSETT, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Roller Side Bearings, of which the following is a full, clear, and exact description, 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, forming part of this specification, in which—

Figure 1 is a top plan view of my improved roller side bearing. Fig. 2 is an end elevational view, partly in section, on line 2 2, Fig. 1. Fig. 3 is a sectional view on line 3 3, Fig. 1; and Fig. 4 is a detail plan view of a modified form of roller-chain.

This invention relates to a new and useful improvement in roller side bearings designed for use in railway rolling-stock.

The side bearing shown consists of a suitable guiding-support forming a track, over which connected rollers are designed to run, said track being separable or formed integral with the truck-bolster, the rollers on said track coöperating with the side bearing of the body-bolster, so as to form an antifrictional device capable of taking more or less of the weight of the car and its load and to such extent relieving the center bearing.

One object of my present invention is to employ antifriction-rollers in connection with an endless chain, whereby as the rollers are displaced they pass around their supports, new rollers being presented in operative position from time to time. This obviates the necessity of having a centering device for restoring the antifriction-rollers to a central or normal postion.

Another object is to simplify the construction of roller side bearings, to reduce the cost of manufacture of the same, and provide a strong and durable antifriction side bearing capable of well withstanding the shocks and strains to which devices of this character are subjected.

In the drawings, A indicates a truck-bolster, and B the side bearing of the body-bolster. This body-bolster (not shown) forms part of the underframing of the car and carries the usual center bearing, through which passes a king-pin. The truck-bolster A or "truck-transom," as it is sometimes called, may be of any of the well-known types—that is, it may be spring-supported in the truck, rigidly attached to the side frames of the truck or swung from stirrups. The specific details of construction of the above-mentioned parts are immaterial to my present invention, as my improved roller side bearing is capable of use in any of the well-known types of bolsters commonly employed.

C indicates what I will designate as the "supporting-track" of my improved side bearing. This supporting-track is preferably formed with an inclined upper face, the side edges thereof being preferably radial to the king-pin and rounded, as shown in Fig. 1.

c indicates flanges projecting upwardly from the inner and outer edges of the track, which flanges may be separable or integral with the track-support, they serving to form a way in which the antifriction-rollers run. I will state, however, that while these flanges are desirable their presence is not absolutely necessary if means are provided below the track for holding the rollers in their designed positions.

c' indicates depending flanges projecting from the inner and outer edges of the supporting-track, said flanges serving as legs to space the supporting-track above the face of the bolster and also means by which said supporting-track, if separable, may be secured to the bolster. These flanges or legs provide a housing for the idle antifriction-rollers. In the event that the supporting-track C is formed integral with the bolster, as could readily be done with respect to the well-known type of cast-steel bolster, it is obvious that the supporting-track C can be located at any height above the face of the bolster, appropriate openings being provided at each edge thereof for admitting the idle rollers to the interior of the bolster.

D indicates rollers which are preferably coned, so as to have substantially the same peripheral speed at both ends while rolling over the upper face of the supporting-track. These rollers are preferably solid, as shown in Fig. 3, their ends being reduced so as to

provide pintles for the endless chain. In fact, the rollers themselves might be said to form continuous pintles for the chain.

The chains which connect the ends of the rollers, where the rollers are coned, are necessarily of different lengths, the chain at the outer or enlarged ends of the rollers being the longer. These chains are composed of links E, whose inner edges are preferably recessed, so as to readily take the curved ends of the supporting-track. These links are perforated at their ends to receive the reduced ends of the rollers, and in order to hold the links in position the extremities of the roller-pintle may be upset, or other means can, if desired, be provided for holding the links in position.

I am aware that roller side bearings have been used in connection with railway rolling-stock and also that solid side bearings have been employed. Where solid side bearings are used, it is the usual practice to leave a slight clearance between the bearings of the body and truck bolsters; but where antifriction devices are employed, such as rollers, it is sometimes the practice to have the bearings on the body-bolster contact with the rollers, so as to relieve the center bearing of some of its strain. This results in distributing the weight of the car over three points on the truck-bolster. Where such contact exists, whether by original intention of the builder of the car or by circumstances, such as heavy loading of the car, it is necessary in other forms of roller side bearings with which I am familiar to restore the rollers to their normal or central position after the car has rounded a curve. The restoration of the truck to its normal alined position cannot be relied upon to restore the bearings due to the swaying of the car caused by inequalities of the track over which it passes. Consequently rollers heretofore used are sometimes laterally displaced and held in such displaced position for some length of time. When rollers are so held in one position, they are apt to become worn and flattened on one or more sides, which is a serious objection. When rollers heretofore used and which we are now considering are released from the weight of the car, such release usually occurring when the car is taking a curve, the next succeeding contact of the side bearing of the body-bolster—say when the car enters a straight track—will merely serve to laterally displace the roller in an opposite direction and hold it there. Furthermore, the centering devices for such types of rollers are usually in the form of springs, which, if subjected to pressure while at the limit of their compression, frequently become broken or disarranged, so that they lose their resiliency. My improved roller side bearing is not open to the above-noted objections, because any displacement of one roller merely causes the endless chain to move around the track-support to place a fresh roller in operative position. Moreover, it makes no difference whether the rollers are displaced to one side or the other. The continuity of the chain maintains a plurality of rollers on the track-support at all times. I prefer in this connection that at least three rollers be in operative position on the track-support at all times.

The inclination of the track-face and the coning of the rollers is desirable in my construction in that if clearance exists between the rollers and the bearing on the body-bolster a lunge of the car to one side or the other would cause the body-bolster bearing, moving in an arc of a circle described from the center plate, to forcibly contact with the rollers, such movement of the body-bolster bearing being in a line substantially perpendicular to the axis of the rollers. This obviates the necessity of taking care of any end thrust of the rollers. Furthermore, should such end thrust exist it will be received upon the flanges *c*. The side bearing on the body-bolster is preferably coned to contact the full length of the rollers, as shown in Fig. 3, so as to make uniform contact over the bearing.

In order to support the idle rollers under the track-support, I prefer to employ cleats or tracks F, which prevent the under side of the roller-chain from sagging and exerting pressure at the bends of the chain. Thus the rollers move more freely over the upper face of the track-support.

In Fig. 4 I have shown a modified form of roller-chain, wherein the links of the chains of unequal lengths are made shorter, the rollers in this case being loosely mounted on the pintles and staggered with respect to each other, the rollers on alternate spindles overlapping, as shown. In this instance the rollers may be said to be sectional, the several sections of a roller having different diameters. Instead of loosely mounting these sectional portions of a roller on a spindle it is obvious that the solid rollers, such as shown in Figs. 1, 2, and 3, can be employed, said rollers being turned down to form reduced annuli for accommodating enlarged diameters of different rollers.

I am aware that minor changes in the arrangement, construction, and combination of the several parts of my device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a side bearing, the combination with a truck-bolster, of a track-support arranged thereon, an endless chain of rollers surrounding the track-support, and a bearing-surface on the body-bolster for engaging the rollers on top of the track-support; substantially as described.

2. In a side bearing, the combination with a truck-bolster, of a track-support arranged thereon, the side edges of said track-support

being radial to the king-pin, an endless chain of rollers surrounding the track-support, the links connecting the outer ends of the rollers being the longer so as to cause the rollers on top of the track-support to travel in a curved line described from the king-pin, and a bearing-surface on the body-bolster for engaging the rollers on top of the track-support; substantially as described.

3. In a side bearing, the combination with an inclined track-support whose side edges are radial to the king-pin, of a plurality of rollers, and links connecting said rollers and forming an endless chain; substantially as described.

4. In a side bearing, the combination with an inclined track-support provided with flanges at its inner and outer edges, said flanges being on an arc of a circle described from the king-pin, and an endless chain of coned rollers arranged upon said track-support and between said flanges; substantially as described.

5. In a side bearing, the combination with a track-support, of an endless chain of rollers surrounding the same, and devices for supporting the idle rollers underneath the track-support so as to prevent the roller-chain from sagging and exerting a pull at the bends of the chain, and to enable the rollers in operative position on top of the track-support to move freely; substantially as described.

6. In a side bearing, the combination with an inclined track-support, of a series of rollers coöperating therewith, and links forming chains of different lengths for carrying said rollers; substantially as described.

7. In a side bearing, the combination with a track-support, of a series of rollers having reduced ends, and links arranged on said reduced ends and forming an endless chain around said support; substantially as described.

8. In a side bearing, the combination with an inclined track-support, of coned rollers having reduced ends, and links of different lengths arranged upon said reduced ends whereby an endless chain is formed, the links connected to the enlarged ends of the rollers being the longer; substantially as described.

9. In a side bearing for railway-cars, the combination with the truck and body bolsters, of a track-support arranged on the truck-bolster, an endless movable chain of rollers cooperating with said track-support, so that two or more of said rollers will at all times occupy positions above said track-support, and a bearing on the body-bolster for coöperating with said rollers; substantially as described.

10. In a side bearing, the combination with an inclined track-support seat, of flanges *c* and *c'*, coned rollers D, and links E of unequal lengths, said links being recessed to clear the edges of the track-support; substantially as described.

11. In a side bearing, the combination with an inclined track-support, of sectional rollers staggered or nested with respect to each other, spindles for said rollers, and links arranged upon the ends of the spindles, said links and rollers forming an endless chain around said track-support; substantially as described.

12. In a side bearing, the combination with a track-support, of sectional rollers staggered with respect to each other, or nested, and links of unequal lengths in which the spindles of said rollers are mounted, said links and rollers forming an endless chain around said track-support; substantially as described.

13. In a side bearing, the combination with a track-support, of endless chains of different lengths, spindles carried by said chains, and rollers of different diameters mounted on said spindles, said rollers overlapping each other; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 11th day of March, 1901.

FRANCIS K. FASSETT.

Witnesses:
GEORGE BAKEWELL,
RALPH KALISH.