R. S. HAMMOND.

CENTERING DEVICE.

APPLICATION FILED JUNE 11, 1917.

1,323,266.

Patented Dec. 2, 1919.

4 SHEETS—SHEET 1.

Fig. 1

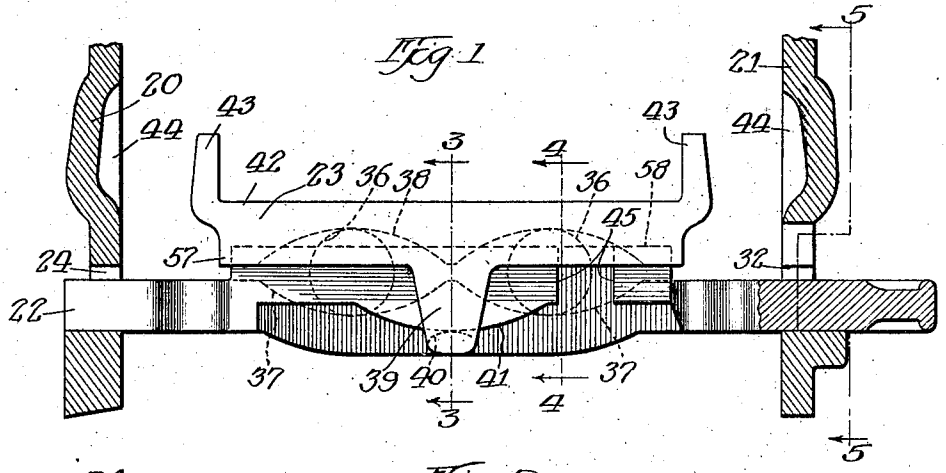


Fig. 2

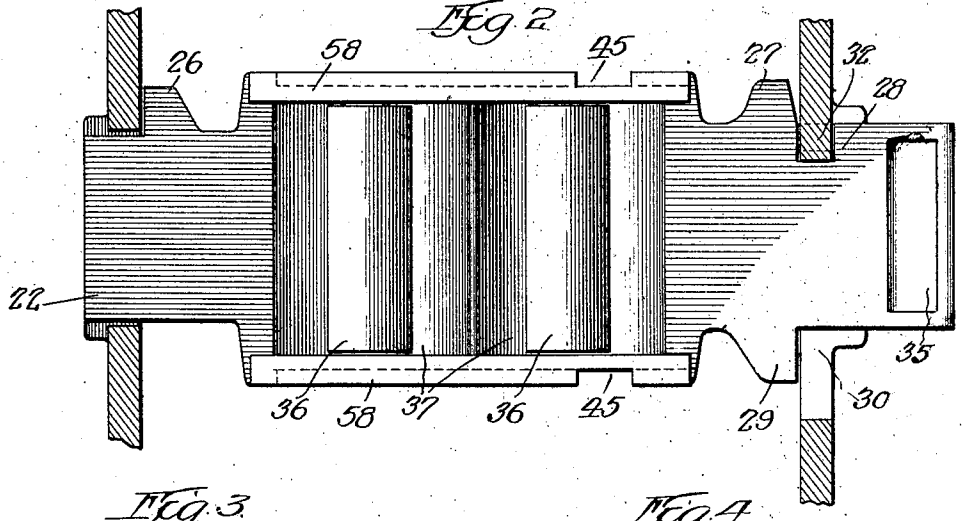


Fig. 3

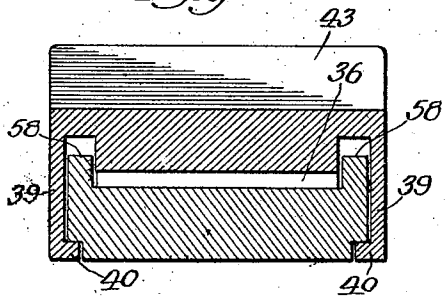
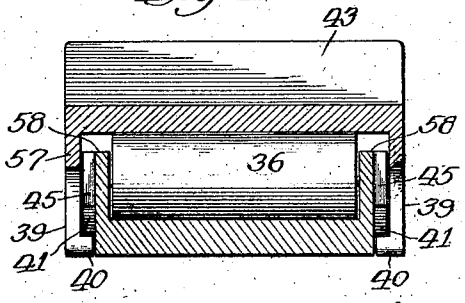


Fig. 4



Witnesses:

Jos. C. Dorrison Jr.

Milton S. Miller

Inventor.

Robert S. Hammond

By Parkinson & Hufley

Attys

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4 SHEETS—SHEET 2.

Fig. 5

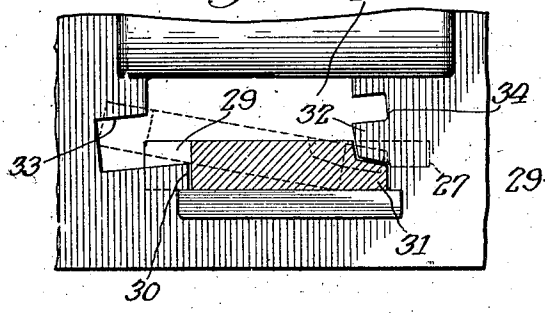


Fig. 6

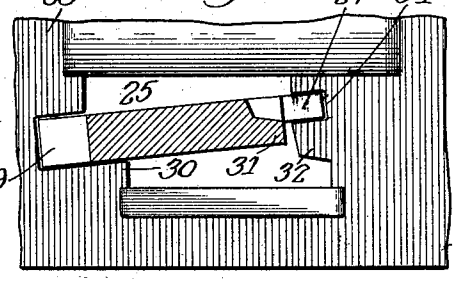


Fig. 7

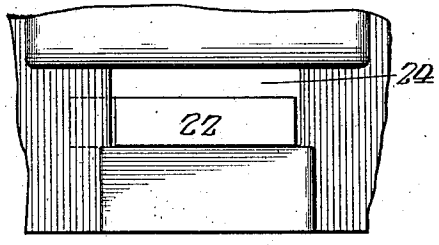


Fig. 11

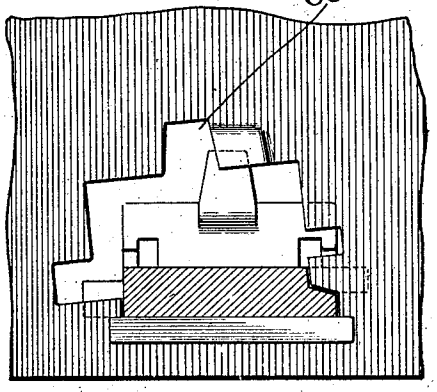
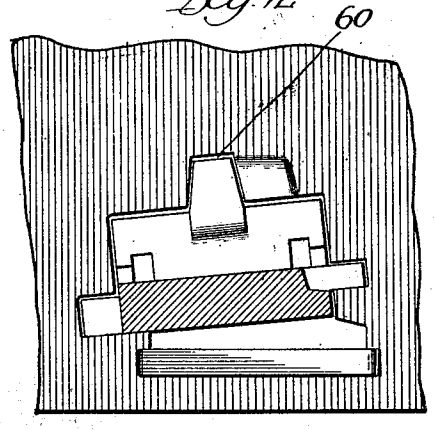


Fig. 12



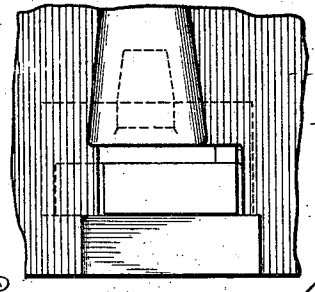


Fig. 13

Witnesses:

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4 SHEETS—SHEET 3.

Fig. 8.

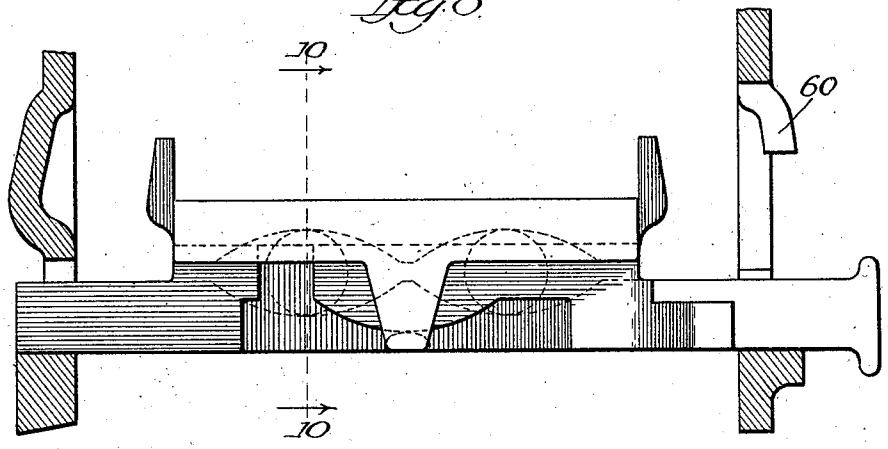


Fig. 9.

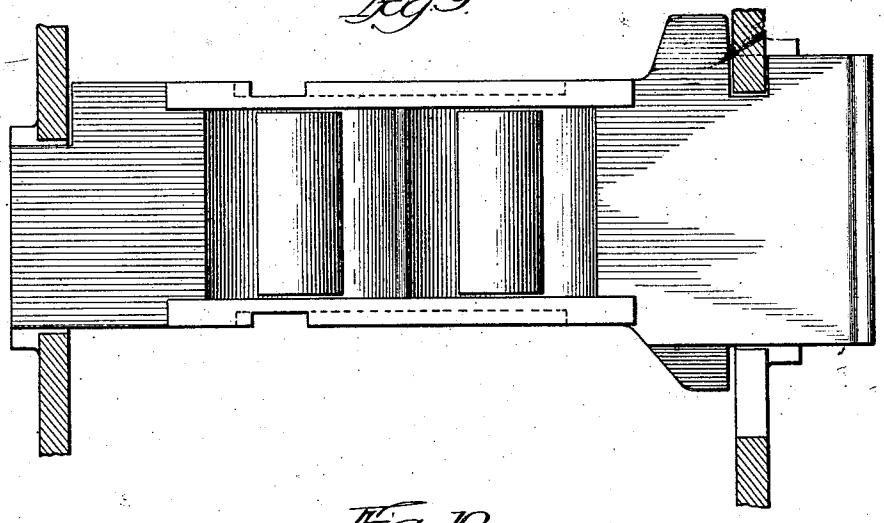
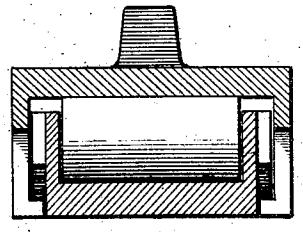


Fig. 10



Witnesses:

Milton S. Miller

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CENTERING DEVICE.

APPLICATION FILED JUNE 11, 1917.

1,323,266.

Patented Dec. 2, 1919.

4 SHEETS—SHEET 4.

Fig. 14

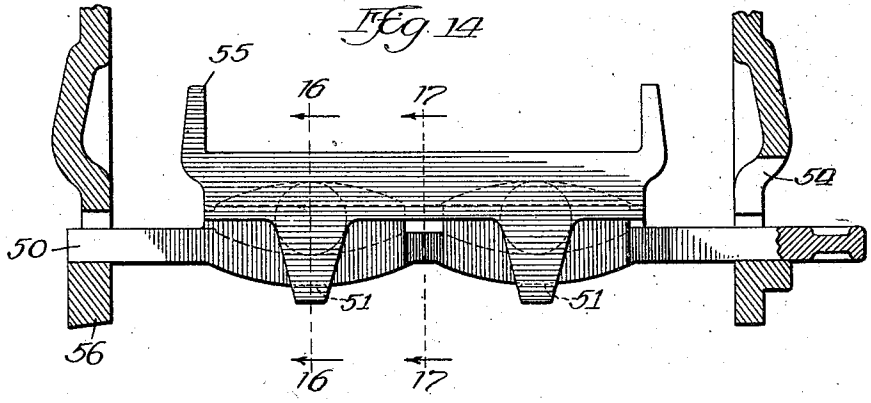


Fig. 15

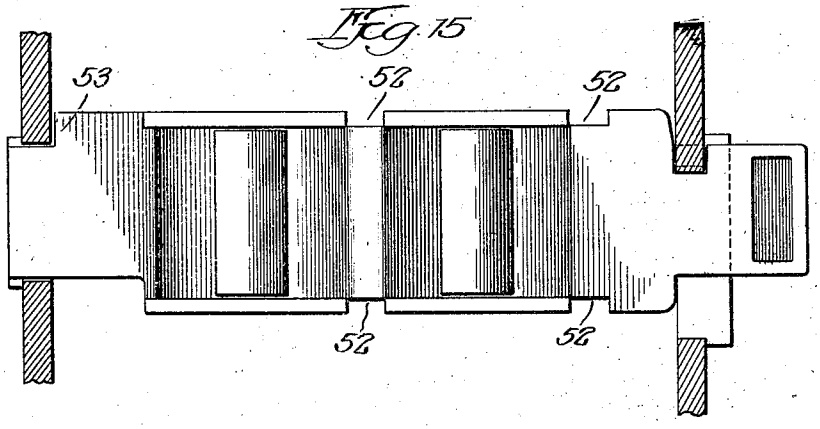


Fig. 16

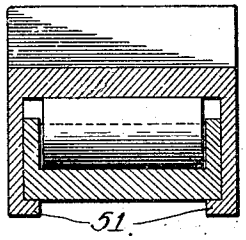
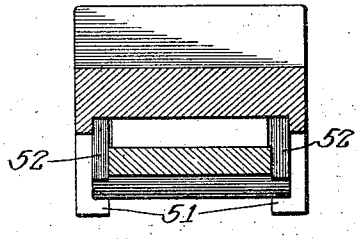


Fig. 17



Witnesses:

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Melvin G. Miller

Inventor

Robert S. Hammond

By Wilkinson & Huxley.

Attys.

UNITED STATES PATENT OFFICE.

ROBERT S. HAMMOND, OF CHICAGO, ILLINOIS, ASSIGNOR TO AMERICAN STEEL FOUNDRIES, OF CHICAGO, ILLINOIS, A CORPORATION OF NEW JERSEY

CENTERING DEVICE.

1,323,266. Specification of Letters Patent. Patented Dec. 2, 1919.

Application filed June 11, 1917. Serial No. 173,999.

To all whom it may concern:

Be it known that I, ROBERT S. HAMMOND, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Centering Devices, of which the following is a specification.

My present invention relates to improvements in carriers and centering devices for various purposes and more particularly for couplers employed in railroad rolling stock.

The principal objects of my present invention are to provide an improved form of centering device for couplers; to provide an improved centering device construction avoiding the employment of pins, cotters, nuts, bolts or the like; to provide an improved centering device which can be assembled or disassembled without the employment of tools; to provide an improved form of gravity centering device; to provide an improved form of combined carrier and centering device; to provide improved means of mounting the centering device on the carrier; to provide improved means for controlling the movement of the centering device relatively to the carrier; to provide improved means for assembling and disassembling the centering device, carrier and striking casting; the provision of a centering device, carrier and striking device consisting of the fewest possible parts; the provision of means for preventing tilting of the centering device, so as to maintain the same always in horizontal position; the provision of a centering device which cannot get loose or become separated without the entire device being removed from position, which can only be accomplished manually, and generally to improve, simplify and cheapen the construction of such centering devices, carriers and associated parts.

In attaining these and other objects and advantages to be hereinafter described, I have provided a construction various embodiments of which are illustrated in the accompanying drawings, in which—

Figure 1 is a front view, partly in section of a striking casting with my improved carrier and centering device applied thereto;

Fig. 2 is a plan view of the same with the centering device removed;

Fig. 3 is a vertical section on line 3—3 of Fig. 1;

Fig. 4 is a vertical section on the line 4—4 of Fig. 1;

Fig. 5 is a vertical section on the line 5—5 of Fig. 1;

Fig. 6 is similar to Fig. 5 except that the carrier has been moved into its disengaging position;

Fig. 7 is a side view similar to Fig. 5 showing the opposite end of the carrier;

Fig. 8 is a front view, partly in section of a further form of carrier and centering device in position relatively to its striking casting;

Fig. 9 is a plan view of the same with the centering device removed;

Fig. 10 is a section on the line 10—10 of Fig. 8;

Figs. 11 and 12 are side views of the construction shown in Fig. 8 viewed from the right hand side showing the carrier and centering device in two different positions;

Fig. 13 is a side view of the construction shown in Fig. 8 viewed from the left hand side;

Fig. 14 is a front view partly in section of a still further form of construction;

Fig. 15 is a plan view of the same with the centering device removed;

Fig. 16 is a vertical section on the line 16—16 of Fig. 14;

Fig. 17 is a vertical section on the line 17—17 of Fig. 14.

Considering first the form of construction shown in Figs. 1 to 7, 20 and 21 represent the side portions of the striking casting, 22 the carrier, 23 the centering device. The centering device is constructed so that if it is moved one side or other from the central position it is automatically lifted and thereby lifts the coupler with the result that the centering device with the coupler always tends through the action of gravity to retain its central position, while yet allowing the coupler to move laterally always in a horizontal plane when the car is rounding a curve.

The carrier consists of a single casting having its ends carried in apertures 24 and 25 of the striking casting. The carrier and these apertures in the striking casting are so constructed relatively to each other that when the carrier is in the position shown in Fig. 1 it cannot move longitudinally with respect to the striking casting, but when lifted it can be moved into or out of disen-

gagement with the striking casting. The means employed in the form of construction illustrated for detachably locking the carrier and striking casting together are shown clearly in Figs. 2, 5, 6 and 7.

It will be seen that the carrier comprises four projecting portions which engage the walls of the striking casting on one side or other of the apertures 24 and 25. These projecting portions are respectively 26, 27, 28 and 29. It will be observed on inspection of Figs. 2 and 7 that the projection 26 prevents movement of the carrier toward the left, and as will be described later, the carrier is disengaged from the striking casting by movement to the right.

The projecting portions 27 and 28 grip the part 32 of the striking casting therebetween. The part 29 engages the part 30 of the striking casting (Fig. 5). By lifting the left hand side of the carrier and sliding the latter to the left as shown in Fig. 5, the right hand portion 31 of the carrier may be moved clear of the projection 32 so that the part 31 may be lifted into the position shown in Fig. 6 in which position the projections 27 and 29 are brought into register with the lateral extensions 33 and 34 of the aperture 25. In this position the carrier may be withdrawn. The part 31 is beveled off along its upper edge and the part 32 is given a complementary form. One purpose of this construction is to check upward movement of the carrier by vibration and shocks. Another purpose is to provide the desired locking action without necessitating that the carrier be lifted more than the clearance between the coupler and the top of the striking casting. It will be observed that the aperture 24 is made of considerably greater height than the thickness of the carrier 22 so as to allow the carrier to be tilted in one direction as shown in Fig. 5 and then in the opposite direction as shown in Fig. 6 in order to bring the parts into disengaging position. The method of inserting the carrier into the striking casting is of course the exact reverse of the method of removing it. In order to facilitate insertion or removal of the carrier, recesses 35 are arranged in the ends of the carrier adapted to act as hand holds in gripping the end of the carrier.

The centering device consists of a carriage 23 adapted to slide to and fro along the carrier. It will be seen from Figs. 3 and 4 that the centering device does not rest directly on the carrier, but on balls or preferably rollers 36 carried by the carrier. These rollers 36 are arranged to run on downwardly curved tracks 37 on the carrier, the tracks being arranged symmetrically on either side of the center line of the striking casting. Similarly, but reversely curved, tracks 38 are arranged on the under side of the spring device. The tracks or rolling surfaces may be made of different material from the metal composing the carrier or centering device and may take the form of hard steel inserts cast integral with or riveted in the remainder of the carrier or centering device.

It will be evident from inspection of Fig. 1 that movement of the centering device laterally in either direction will produce a lifting action on the centering device. The path described by any part of the centering device is approximately an arc of a circle.

In order to prevent disengagement of the centering device from the carrier while in operative position and to prevent tilting of the centering device relatively to the carrier, the centering device is provided with downwardly extending arms 39 carrying inwardly projecting ends 40 which engage the under surface of the part 41 of the carrier. This part 41 has a substantially segmental lower surface and its curvature corresponds with that of the arc through which the centering device moves relatively to the carrier. Consequently whatever position the centering device may assume relatively to the carrier, the parts 40 are in contact, or substantially in contact, with the curved surfaces 41, and the centering device consequently cannot be disengaged from the carrier while in operative position.

The downwardly extending arms 39 form part of an overhanging edge or lip 57, the lower surface of which is lower than the upper surface of the raised edges 58 on the carrier on either side of the track 37 in order to exclude dirt from the rollers and the tracks on which they run.

The vertical overlapping portions 57 of the carriage and 58 of the carrier, serve as stops to so limit motion between the carriage and carrier as to protect the rollers. Furthermore the clearance between the arms 39 and the sides of the carrier is preferably less than the clearance between the ends of the rollers and the edges 58 of the carrier to take up any side thrust imparted to the centering device and relieve the rollers of such side motion.

The centering device is provided with an upper supporting surface 42 for the coupler with lateral wings 43 adapted to engage the sides of the coupler. Suitable recesses 44 are provided in the portions 20 and 21 of the striking casting for receiving the wings 43 at the extreme ends of the path of travel of the centering device. These wings are of greater height than the clearance between the top of the coupler and the striking casting when the coupler is in its central and therefore its lowest position.

In order to enable the centering device to be brought into engagement with the carrier, cutaway portions 45 are provided, through

which the projections 40 may be passed, as will be clear from Fig. 4.

With the particular construction illustrated the centering device cannot be brought into engagement with the carrier after the latter has been placed in position in the striking casting, as the centering device cannot be moved sufficiently far to the right to bring the projections 40 over the cutaway parts 45. The centering device may however be brought into engagement with the carrier before the left hand end of the latter has been inserted within the aperture 24 as in this position the carrier may be slid to the left, without obstruction by the projection 26, sufficiently to bring the projections 40 over the cutaway parts 45.

In the form of construction shown in Figs. 11, 12 and 13 one aperture 60 in the striking casting is made large enough to allow the carrier and centering device to be laterally removed through the striking casting as a single unit. Otherwise the construction is similar to that shown in Figs. 1 to 7.

In the form of construction shown in Figs. 14 to 17 a somewhat different form of carrier is employed. The lower surface of the carrier 50 is curved throughout its entire width to act as a guide for the projections 51 of the centering device. Instead of one pair of projections as in the form shown in Figs. 1 to 7 there are two pairs. Four cutaway parts 52 are provided in the edge of the carrier.

With this form of construction also the centering device cannot be placed in position on the carrier when the latter is in position in the striking casting. In this case the centering device may be brought into engagement with the carrier before any part of the carrier has been inserted in the striking casting.

To allow the centering device and carrier to be removed or inserted as a unit the aperture 54 is made larger than is otherwise necessary to allow the opposite end of the carrier to be dropped sufficiently to enable the wings 55 of the centering device to clear the lower edge 56 of the striking casting.

While I have shown and described my invention as used in connection with car couplers, yet it will be understood that it is adapted for other uses and I therefore do not desire to be restricted to the particular use herein specifically disclosed.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent is:

1. A centering device for couplers or the like comprising in combination a carrier member, a carriage supporting the coupler carried by said carrier member, said carriage having operative engagement with an upper and an under surface of said carrier member whereby vertical movement of said carriage relatively to said carrier member is restricted, and inclined surfaces on both said carriage and said carrier extending substantially from the center line of the car upwardly in both lateral directions whereby lateral movement of the coupler away from the center line of the car lifts the carriage and the coupler.

2. A device of the character described comprising in combination a supporting member, a carrier member, a carriage mounted on said carrier member for supporting the coupling, said supporting member having apertures adapted to receive the ends of said carrier member, and projecting portions on said carrier member adapted to engage opposite faces of said supporting member and thereby prevent accidental longitudinal movement of said carrier member relatively to said supporting member, one of said apertures being of greater height than the combined height of said carrier and carriage and having a lateral extension adapted to allow of the passage of said projecting portions and said carriage when the carrier member is lifted.

3. A device of the character described comprising in combination a supporting member, a carrier member, a carriage mounted on said carrier member for supporting the coupling, said supporting member and carrier member having interlocking portions, and means for positively preventing disengagement of said carriage from said carrier, while the latter is in interlocking position with said supporting member.

Signed at Chicago, Illinois, this 22nd day of May, 1917.

ROBERT S. HAMMOND.