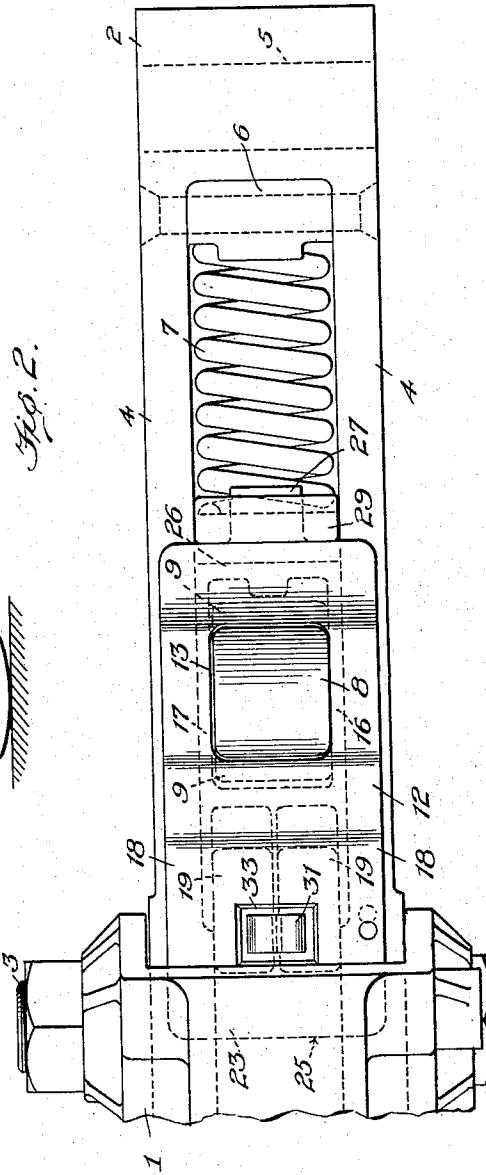
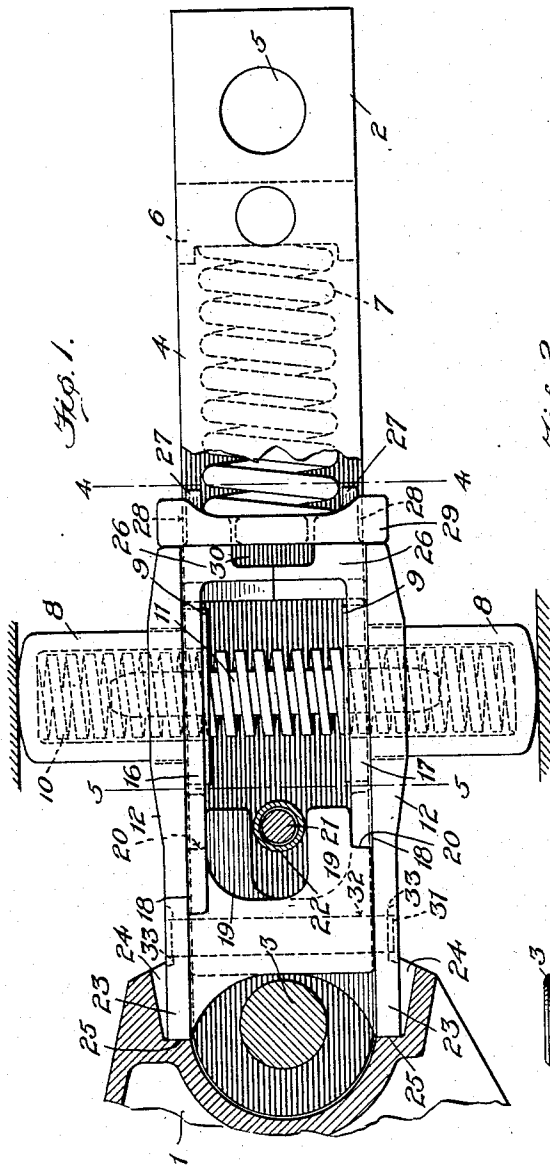


H. C. BUHOUP.
DRAFT APPLIANCE FOR RAILWAY VEHICLES.
APPLICATION FILED JUNE 25, 1915.

1,175,231.

Patented Mar. 14, 1916.
2 SHEETS—SHEET 1.



Inventor

Harry C. Buhoup

By

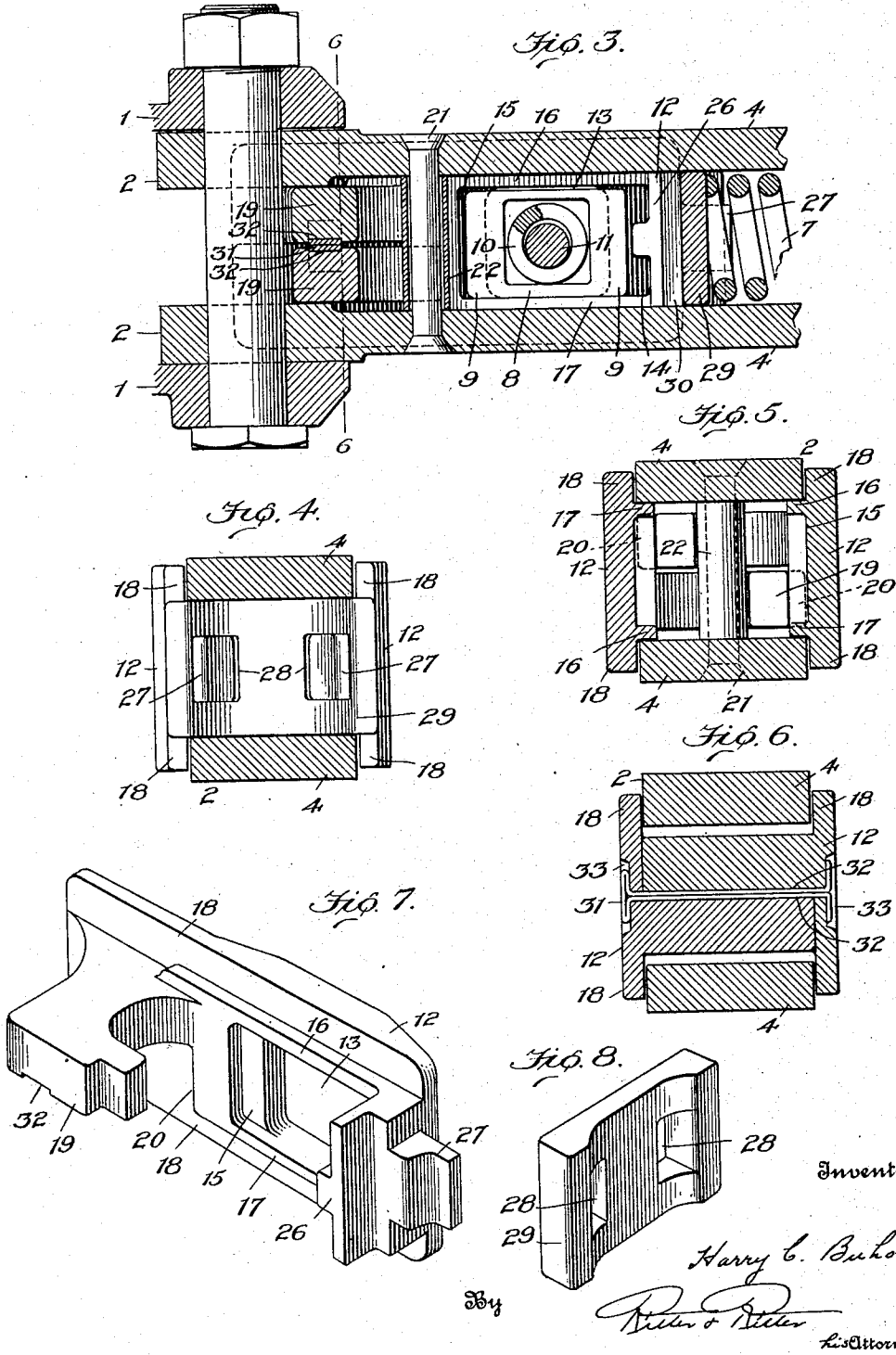
Ritter & Ritter

His Attorneys

H. C. BUHOUP.
DRAFT APPLIANCE FOR RAILWAY VEHICLES.
APPLICATION FILED JUNE 25, 1915.

1,175,231.

Patented Mar. 14, 1916.
2 SHEETS—SHEET 2.



Inventor

Harry C. Buhoup

Richard & Miller

Attorneys

UNITED STATES PATENT OFFICE.

HARRY C. BUHOUP, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE McCONWAY & TORLEY COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

DRAFT APPLIANCE FOR RAILWAY-VEHICLES.

1,175,231.

Specification of Letters Patent.

Patented Mar. 14, 1916.

Application filed June 25, 1915. Serial No. 36,233.

To all whom it may concern:

Be it known that I, HARRY C. BUHOUP, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Draft Appliances for Railway-Vehicles; and I do hereby 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.

My invention relates to the construction of draft appliances for railway vehicles and more particularly to the means for automatically restoring the coupler to its normal position in the longitudinal axis of the car after it has been displaced laterally from such position when the car moves upon curved track.

The primary object of my invention is to provide an efficient coupler centering device which may be easily and expeditiously assembled and repaired, and which is composed of parts of a nature conducive to economy of maintenance of the device. This object, generally stated, is accomplished by mounting upon the stem of the coupler a detachably connected frame which involves in its construction counterpart members having interlocking engagement, the spring mechanism for controlling the lateral movements of the coupler as a whole being carried by said frame. When the coupler head is pivotally mounted on the coupler stem, as is the case in the form of my invention illustrated in the drawings, the frame is preferably yieldingly mounted on the stem so as to serve as a means for centralizing the head with respect to said stem.

In the drawings illustrating the preferred form of my invention, the scope whereof is pointed out in the claims, Figure 1 is a plan view of mechanism embodying my invention, a portion of the stem of the coupler being broken away and a portion of the head of the coupler being shown in section. Fig. 2 is a side elevation of the device illustrated in Fig. 1. Fig. 3 is a vertical, longitudinal section of the principal portion of the mechanism shown in Figs. 1 and 2. Fig. 4 is a section on the line 4-4, Fig. 1, the spring for yieldingly supporting the slidable frame being omitted. Fig. 5 is a section on the line 5-5, Fig. 1, looking toward the coupler head. Fig. 6 is a section on the line 6-6,

Fig. 3, also looking toward the coupler head. Fig. 7 is a perspective view of one of the counterpart members of the slidable frame; and Fig. 8 is a perspective view of the spring-seat member by which the inner ends of the counterpart members of the frame are detachably connected.

In the drawings, 1 indicates the coupler head and 2 the stem of the coupler. These parts are pivotally connected by means of a pivot pin 3 which passes through corresponding apertures in the head and stem. The coupler stem 2 is preferably of a well-known type, being fashioned with an upper plate or branch 4 and a similar lower plate or branch 4, and being provided at its rear end with an opening 5 which is adapted to receive the usual tail-pin (not shown) whereby the coupler may be pivotally connected to the railway vehicle through yielding draft rigging devices. The stem 2 is also preferably provided near its rear end with a laterally flanged filler or spacing member 6 which is riveted between the plates 4 of the stem and serves as a seat for retaining in position the longitudinally disposed spring 7 by which the coupler head is returned to normal position.

Slidably mounted between the bars or plates 4 of the stem is a frame which carries spring-cups or followers 8 that, respectively, project outwardly beyond the sides of the coupler stem 2 in opposite directions sufficiently far to enable them to normally engage stationary abutments carried by the car, for example, the carry-iron or the draft-sills. These spring-cups, which are provided at their inner ends with suitable means, such as the flanges 9, for engaging the slidable frame to limit the extent of separation of the said spring-cups, are normally held in a position of maximum separation by means of a transversely extending spring 10. A pin or bar 11 may be loosely inserted within the spring 10 for the well-known purpose of preventing the latter from being injured by being compressed solid.

The mode of operation of the spring-cups or followers 8 and the interposed spring 10 in centering the coupler is this: When the coupler stem 2 is displaced laterally in either direction from its normal position in the center of the railway vehicle one of the spring-cups 8 moves laterally with it, being carried along by reason of the engagement

of its flanges 9 with the slidable frame that is mounted upon the stem. The other spring-cup, being in contact with a stationary part of the car, is prevented from retreating and the spring-cups thus approach each other and, consequently, compress the spring 10 between them. When the force causing the lateral displacement of the coupler ceases to act, the expansion of the spring 10 restores the parts to normal position, thus returning the coupler to the center of the vehicle.

The frame upon which the spring-cups 8 are mounted involves in its construction detachably connected, counterpart members 12 which interlockingly engage each other so as to enable them to slide back and forth together on the coupler stem 2. If the spring-cups 8 are employed, as it is preferred to do when the coupler stem and head are to be centered as a whole, each of the counterpart members 12 is provided intermediate of its ends with an opening 13 of suitable form to permit the corresponding spring-cup to project and reciprocate there-through. The inner faces or shoulders 14 and 15 (see Figs. 3, 5 and 7) of each member 12 adjacent to the sides of the apertures 13 therein form stops which are adapted to engage the flanges 9 at the respective bases of the spring-cups, to thereby limit the outward movement of said spring-cups. Above and below the opening 13 each frame member 12 is preferably fashioned with inwardly projecting, longitudinally extending flanges, 16 and 17, respectively, which not only afford extended bearing and guiding surfaces for the upper and lower faces of the spring-cups 8, but also, as will be readily appreciated from an inspection of Fig. 5 of the drawings, serve to retain the members 12 in proper vertical relation with the plates 4 of the coupler stem 2 while permitting them to freely slide or reciprocate longitudinally between said plates. To prevent lateral displacement of the slidable frame with respect to the stem of the coupler on which it is mounted, the side walls of each of the counterpart members 12 are preferably extended vertically a sufficient distance to engagingly overlap the outer edges of the plates 4 of the coupler stem, as indicated at 18 and best seen in Figs. 4, 5 and 6.

Each of the counterpart frame members 12 is provided on its inner side toward the end which engages the coupler head with a laterally extending projection 19 and with a transversely extending shoulder 20, said projection and said shoulder being so disposed that one is above and the other below the longitudinal axis of the member 12, or, in other words, on opposite sides of said axis. When the counterpart members 12 are brought into assembled relation they are thus interlocked against relative movement

in a longitudinal direction as the projection 19 on one of the members engages the corresponding transversely extending shoulder 20 on the other member 12. As shown in the drawings, it is preferred to make the projecting members 19 of hook-like form so that they may overlap the rivet 21 and spacing sleeve 22 by which the outer ends of the plates 4 of the coupler stem are connected in spaced relation. Such manner of fashioning the projections 19 eliminates the possibility of injury to the said rivet and sleeve which, if the parts fitted together with unusual looseness, might be caused by the impact of said projections against the sleeve 22 upon a rearward movement of the counterpart members 12. Moreover, by having the projections 20 overlap the rivet 21 and the spacing sleeve 22 in all operative positions of the parts, the said sleeve and rivet serve as a means for maintaining the counterpart members 12 at their forward ends in assembled relation with the stem of the coupler. The overlapping of the rivet 21 and sleeve 22 by the projections 19 of the counterpart members, though desirable, is in no wise essential, as the forward ends 23 (see Fig. 1) of the members 12 extend into a tapering, forwardly contracting pocket 24 in the coupler head 1 and abut at their outer ends against corresponding vertically extending shoulders 25 on the coupler head. By this means the coupler head 1, when the parts are in assembled position, serves to prevent the outer ends of the frame members 12 from separating.

The rear end of each counterpart member 12 is preferably provided with an inwardly extending projection or lug 26 which it is desirable to make of sufficient length to engage the end of the similar lug 26 on the other counterpart frame member, the members 12 being thus sustained in proper spaced relation at their rear ends. Projecting rearwardly from the rear end of each member 12 is a lug 27, the end of said lug being, as shown, preferably located near the outer face of the member 12 so that it, together with the corresponding lug on the counterpart member, may assist in retaining the forward end of the spring 7 in assembled position. The lugs 27 on the members 12, respectively extend through appropriately formed apertures 28 in a spring seat 29 upon which the forward end of the spring 7 bears. The two counterpart members 12 of the frame are thus detachably connected at their rear ends by the spring-seat, each of these three members engaging the two others.

To insure that the spring-seat 29 shall bear upon both counterpart members without requiring any machining or careful fitting of the parts, it is preferred to form the lugs 26 so that their rear faces adjacent to

their inner ends shall not come in contact with the spring seat 29 but shall be spaced away therefrom, as indicated at the space 30 in Fig. 1. The spring seat 29, thus bearing upon the counterpart members 12 near their outer sides only, may therefore tilt until it is firmly seated upon both, whereas if the bearing face for the spring-seat on each member 12 extended to the center of the frame the entire strain due to the compression of the spring 7 would be received by one only of the counterpart members, should one of them extend rearwardly beyond the other, since the spring-seat 29 could not then tilt so as to transmit the strain to both of the counterpart members. Moreover, the space 30, thus provided between the spring-seat 29 and the members 12 which it links together, affords an opportunity for the introduction of a bar or other instrument with which to disengage the member 29 from the members 12 in the event, as a result of service, it should ever become difficult to remove.

If desired the counterpart members 12 of the slidable frame may be connected at their forward ends by detachable means, such as a split key 31 which may be conveniently made of flat metal. When such means are employed it is preferred to form an appropriately shaped groove or way 32 in the under side of each of the interlocking projections 19 of the frame members 12, the transversely disposed key 31 or connecting means extending through said ways. As most clearly shown in Fig. 6, the outer faces of each of the members 12 may be provided with depressions or countersunk seats 33 for the reception and protection of the head or bent ends of the key 31.

It will be readily understood that when the head 1 of the coupler rotates on the stem 2 in either direction from its normal or centralized position one or the other of the shoulders 25 on the coupler head, depending upon the direction in which the head turns, acts upon the contacting end of one of the counterpart members 12 and thus causes the entire frame of which such member 12 is a part to slide rearwardly upon the coupler stem 2. The spring 7 is thereby compressed. Upon the expansion of this spring the frame is restored to its normal position, thus rotating the coupler head 1 to a centralized position with respect to said stem.

While the frame members 12 have been referred to herein as counterpart members, and while it is advantageous to make them alike, yet, as will appear from the following claims, frame members which are counterparts are not essential to certain novel structural features and combinations of elements embodied in my invention.

I claim:

1. The combination with a car coupler having a head and stem, of a frame mounted

upon said stem, and yielding means carried by said frame for centralizing said coupler, said frame involving interlocked counterpart members.

2. The combination with a car coupler having a head and stem, of a frame mounted upon said stem, and yielding means carried by said frame for centralizing said coupler, said frame involving a plurality of members provided with interlocking means for preventing relative movement of said frame members in the direction of length of said coupler stem and also involving detachable means for preventing the lateral separation of said frame members.

3. The combination with a car coupler having a head and stem, of a frame mounted upon said stem, and yielding means carried by said frame for centralizing said coupler, said frame involving a plurality of separable frame members and means for detachably connecting said separable frame members, and said frame members and said connecting means being adapted to be disconnected by a relative movement in the direction of length of the coupler.

4. The combination with a car coupler having a stem and a head pivotally mounted on said stem, of a frame slidably mounted upon said stem and engaging said coupler head, and yielding means interposed between said frame and said stem, said frame involving interlocked separable counterpart members.

5. The combination with a car coupler having a stem and a head pivotally mounted on said stem, of a frame slidably mounted upon said stem, and a spring interposed between said frame and stem, said frame involving separable members and means for connecting said separable members, said means constituting a seat for said spring.

6. The combination with a car coupler having a head and stem, of a frame mounted upon said stem, and yielding means carried by said frame for centralizing said coupler, said frame involving separable frame members each of which is provided with a transversely extending projection, said projections when assembled being adapted to extend across the longitudinal axis of said stem and at least one of said projections being adapted to engage the opposed frame member to thereby space said frame members apart.

7. The combination with a coupler stem having upper and lower members which are connected toward their forward ends by vertically extending means, of a coupler head pivotally mounted on said stem, a frame engaging said head and slidably mounted on said stem, and yielding means interposed between said frame and stem, said frame involving separable counterpart members having projecting portions which overlap the

said vertically extending means for connecting the upper and lower members of said stem.

8. The combination with a car coupler
 5 having a stem and a head pivotally mounted on said stem, of a frame slidably mounted on said stem and engaging said coupler head, and spring means interposed between said frame and stem, said frame involving separable frame members and a member through
 10 which said separable members project and by which they are connected, said last named member constituting a seat for said spring means.
9. The combination with a car coupler
 15 having a stem and a head pivotally mounted on said stem, of a frame slidably mounted on said stem, a spring interposed between said frame and said stem and extending longitudinally with respect to said stem, laterally projecting spring-cups mounted on
 20 said frame so as to reciprocate transversely with respect thereto, and a spring operatively interposed between said spring cups, said frame involving in its construction
 25 three detachably connected members each of which engages the others, and also involving detachable means for connecting two of said frame members toward their forward ends.
10. The combination with a coupler having
 30 a stem and a head pivotally mounted

on said stem, of a frame slidably mounted on said stem, and a spring interposed between said frame and said stem, said frame involving in its construction three interlocked detachably connected members each
 35 of which engages the others.

11. The combination with a car coupler having a head and stem, of a frame mounted on said stem, and yielding means carried by
 40 said frame for centralizing said coupler, said frame involving a plurality of separable members and transversely extending means for connecting said frame members, each of said frame members being provided with a
 45 transversely extending projection having on its under surface a groove to receive said connecting means, and said projections being disposed in overlapping relation when the parts are in assembled position.

12. The combination with a car coupler having a head and stem, of a frame reciprocatingly mounted on said stem, and yielding means carried by said frame for centralizing said coupler, said frame involving
 55 separable members having overlapping projections, and said stem being provided with means for engaging the said projections to thereby prevent lateral separation of said frame members.

In testimony whereof I affix my signature.
 HARRY C. BUHOUP.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
 Washington, D. C."