

Nov. 24, 1925.

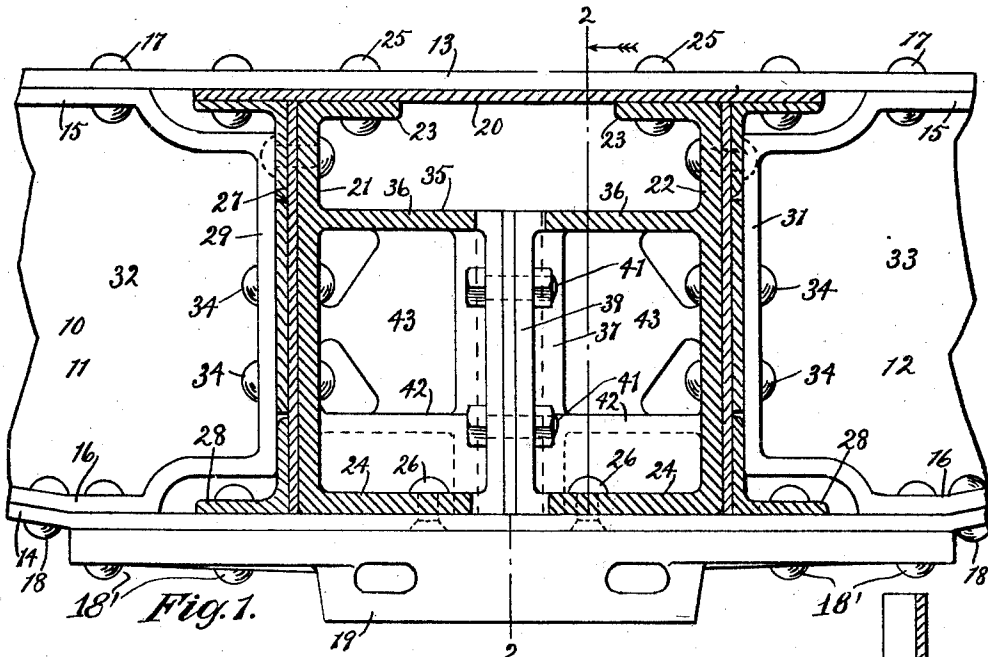
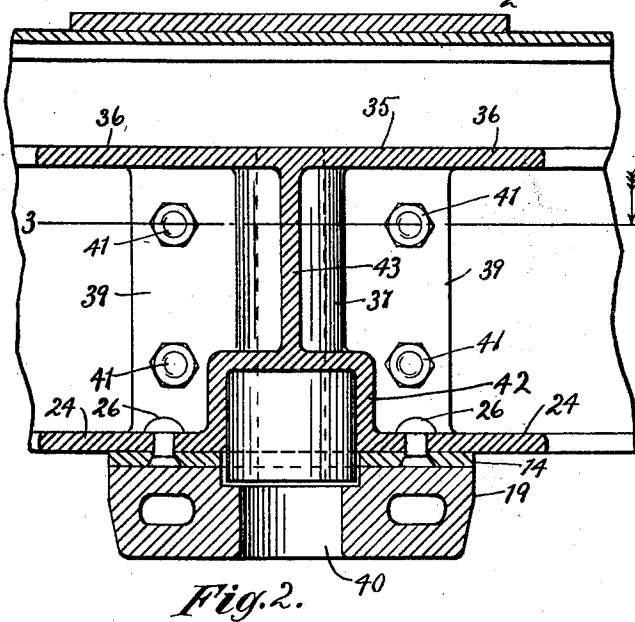
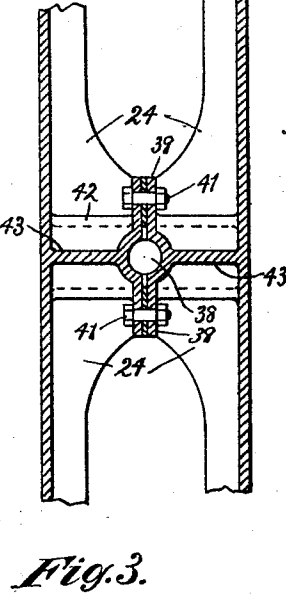
1,563,091

C. C. KINSMAN

CAR UNDERFRAME

Filed March 10, 1925

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

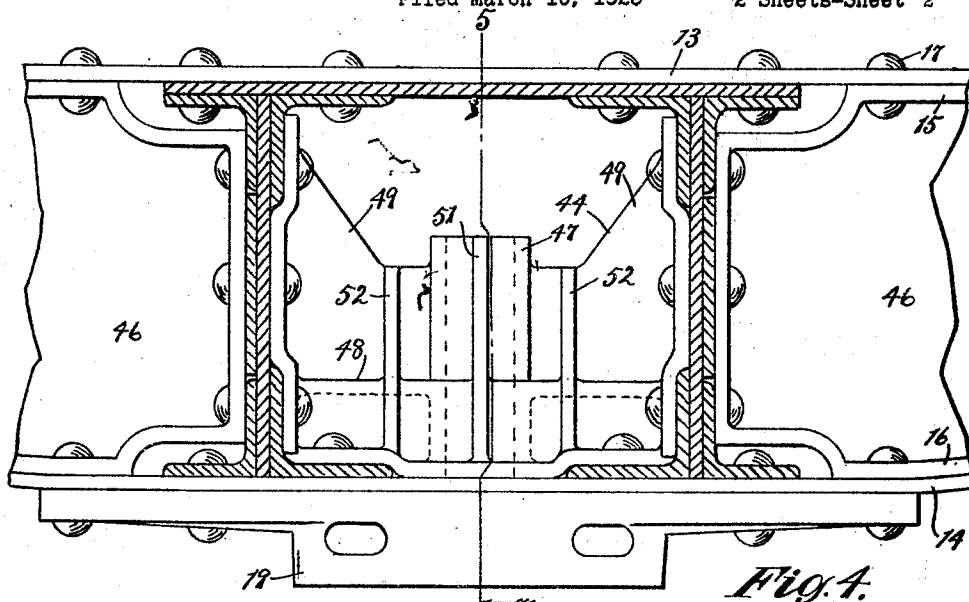


Fig. 4.

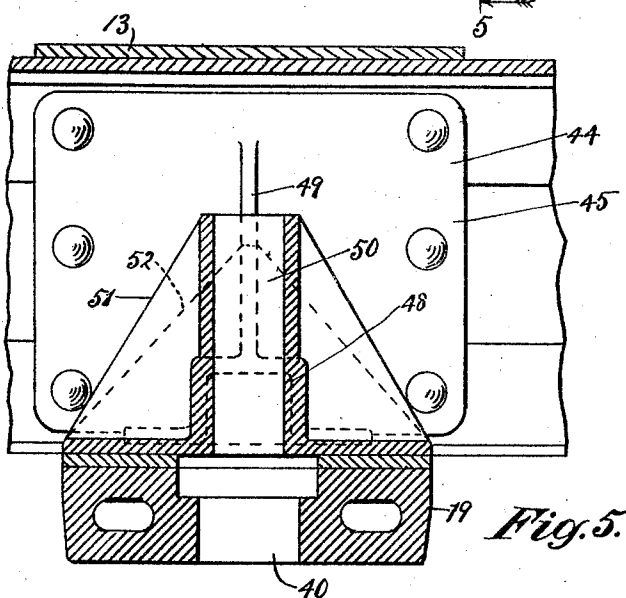


Fig. 5.

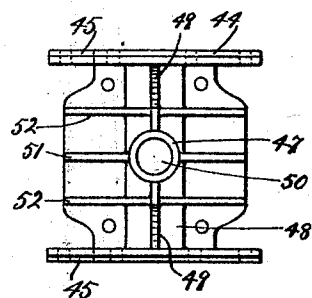


Fig. 6.

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UNITED STATES PATENT OFFICE.

CHARLES C. KINSMAN, OF CHICAGO, ILLINOIS, ASSIGNOR TO UNIVERSAL DRAFT GEAR ATTACHMENT CO., A CORPORATION OF ILLINOIS.

CAR UNDERFRAME.

Application filed March 10, 1925. Serial No. 14,378.

To all whom it may concern:

Be it known that I, CHARLES C. KINSMAN, a citizen of the United States, and resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Car Underframes, of which the following is a specification, and which is illustrated in the accompanying drawings, forming a part thereof.

This invention relates to car under-frame construction, and more particularly to the construction of the draft arm and associated parts adjacent to the bolster of railway cars.

One of the objects of the invention is the provision of new and improved means for reinforcing the center piece or casting of bolsters for railway cars.

Another object of the invention is the provision of new and improved combined draft arms and center casting in built-up bolster construction.

Other objects of the invention are the provision of a bolster and draft arm assembly that is cheap to manufacture, easily assembled, efficient in use, strong, durable, and that is not likely to become broken or get out of order.

Other and further objects and advantages of the invention will appear from the following description taken in connection with the accompanying drawings, in which

Fig. 1 is a side elevation of a portion of a bolster for car under-frame with the draft arms in position therein, and shown in vertical section;

Fig. 2 is a section on line 2—2 of Fig. 1;

Fig. 3 is a section on line 3—3 of Fig. 2;

Fig. 4 is a view similar to Fig. 1, showing a modified form of the invention;

Fig. 5 is a section on line 5—5 of Fig. 4; and

Fig. 6 is a plan view of the center casting.

On the drawings, reference being had to Figs. 1 to 3, inclusive, the numeral 10 designates the bolster of a railway car under-frame. The bolster 10 may be of any approved construction. In the form shown in Fig. 1, the bolster comprises the end sections 11 and 12 which are connected together by means of plates 13 and 14 rigidly secured to the flanges 15 and 16 at the upper and lower portions of said sections, as by means of the rivets 17 and 18, respectively. The bolster center plate 19 is rigidly connected to said

sections and the plate 14, as by means of the rivets 18'.

In the space formed between the inner ends of the end sections of the bolster, and between the plates 13 and 14, the draft arms 21 and 22 are adapted to be secured. These draft arms extend longitudinally of the central portion of the car, as is usual in such construction. The arms are provided with upper and lower flanges 23 and 24, the flange 23 being secured to the plate 13 as by means of the rivets 25. A tie member or reinforcing plate 20 may be inserted between the flanges 23 and the plate 13, for reinforcing said plate and for assisting in tying the arms 21 and 22 together.

Upper and lower angle members 27 and 28, rigidly secured to said bolster and draft arms may be employed to assist in securing said draft arms to said bolster. The draft arms may also be secured to the flanges 29 and 31 at each side of the web portions 32 and 33 thereof, as by means of the bolts or rivets 34, suitable spacing members being inserted between the inner ends of the bolster sections and the draft arms, as clearly shown in Fig. 1.

The center block or center casting 35 is formed in sections and is so constructed that it is not only automatically positioned when the draft arms are installed or assembled, but it is firm and rigid and will hold the arms in proper spaced relation during any and all kinds of service to which the device may be subjected.

In the form of the device shown in Figs. 1 to 3 which has been selected to illustrate one embodiment of the invention, each draft arm is provided with an inwardly extending intermediate flange 36. Since the draft arms are similar except being rights and lefts, only one need be described. The intermediate flange has its maximum width in the plane of the bolster. The lower flange 24 is increased in width adjacent to the bolster as shown in Fig. 3. The flanges 24 and 36 are connected together by a connector bar or member 37 which is provided with a vertical groove 38 and with flanges 39 extending laterally therefrom. The flanges 39 of one arm are adapted to be secured to those of the other arm by suitable fastening means, as the bolts 41, whereby the grooves 38 will form an aperture in alignment with

the opening 40 in the center plate 19, see Figs. 2 and 3.

The center castings of the usual construction are not properly reinforced, and in order to overcome this difficulty in an efficient and economical manner each section of the center block or casting is provided with a reinforcing channel or inverted U-shaped member 42 which is secured to the connector member 37 and extends between the same and the body or base portion of the draft arm. It is also rigidly secured to the flange 24 of the draft arm and is preferably integral therewith. When the draft arms are assembled the inverted U-shaped members 42 are in alinement and constitute a powerful reinforcing element for holding the draft arms in proper spaced relation. A web 43 between the flange 36, connector member 37, and channel member 42 may be employed for further strengthening the parts.

It is understood that each portion of the center block or casting 35 may be composed of separate elements suitably connected together, but in the preferred construction the parts are formed integral and integral with the corresponding draft arms, as shown in Fig. 3.

The form of the device shown in Figs. 4, 5 and 6 differs from that shown in Figs. 1 to 3 in that the center block or casting 44 is a unitary structure instead of being formed in sections. It is provided with attaching flanges 45 which are adapted to be rigidly attached to the end sections 46 of the bolster. The casting comprises a central or hub portion 47 having an opening 50 therethrough for the reception of the center pin or king bolt. A channel bar or reinforcing member 48 integral with the hub portion 47 extends across between the flanges 44 and 45. This member is an inverted U in cross section and is adapted to materially strengthen the webs 49 extending between the hub portion 47 and the flanges 45. The webs are preferably integral with the said hub and flanges and are also integral with the top portion of the reinforcing channel member 48 as clearly shown in Fig. 6. Transversely arranged strengthening ribs 51 and 52 may be and preferably are provided on the hub and on the web and channel member 48. These ribs reinforce the hub and are adapted to brace the same longitudinally of the draft arms.

It is thought from the foregoing taken in connection with the accompanying drawings that the construction and operation of my device will be apparent to those skilled in the art. Various changes in size, shape, proportion and details of construction may be made without departing from the spirit and scope of the appended claims.

I claim as my invention:—

1. In a car underframe construction, a

bolster, a pair of draft arms secured to said bolster, said arms being provided with complementary center castings integral therewith, and means for securing said complementary center castings together.

2. In a car underframe construction, a bolster, a pair of draft arms secured to said bolster and extending transversely thereof, and means including a channel member extending transversely to said arms and in the plane of said bolster for spacing said arms apart, said means being provided with an aperture for receiving a coupling pin.

3. In a car underframe construction, a bolster provided with an opening extending transversely through its central portion, a pair of draft arms extending through said opening, each arm being provided adjacent its lower portion with spacing means including an inwardly extending inverted U-shaped reinforcing member, and means for securing said spacing means together.

4. In a car underframe construction, a bolster, draft arms extending transversely thereof, and means for spacing said arms apart, said means including a channel member rigidly secured to said arms and positioned in the plane of the lower portion of said bolster.

5. In combination, a bolster, a pair of draft arms extending through said bolster, means on each arm for spacing said arms apart, said means comprising an inwardly extending flange, an inwardly extending channel member in spaced relation to said flange, a connecting member secured to the inner ends of said flange and said channel member, said connecting members being provided with grooves on their adjacent faces, and means for securing said connecting members together with the groove of one opposite the groove of the other to form a king pin opening.

6. In combination, a bolster, an apertured center plate, draft arms extending transversely to said bolster above said center plate, each arm being in the form of a channel with the lower channel increased in width in the plane of said bolster, an intermediate flange, a connecting member for connecting the inner ends of said intermediate and lower flanges, an inverted U-shaped reinforcing member for said connecting member, said connecting member being provided with a vertical groove, and means for clamping said connecting members together with said grooves opposite each other for forming an aperture in alinement with the aperture in said center plate.

7. In combination, a bolster, a pair of draft arms rigidly secured to said bolster, a center member rigidly secured to said arms, said center member being provided with a vertical opening for the reception of the king pin and a reinforcing member in-

verted U-shape in cross-section extending transversely to said arms and rigidly secured thereto.

5 8. In combination, a car bolster, a pair of draft arms rigidly secured to said bolster, each of said arms being provided with a center member formed integral therewith, and means for connecting said members together to form a center member.

10 9. In combination, a bolster, a pair of

draft arms extending transversely to said bolster, and a center member secured to said arms in the plane of said bolster, and provided with a central vertical opening for the reception of the king pin, the lower portion of said member terminating in a channel member extending between said arms for spacing the same apart. 15

In testimony whereof I affix my signature.

CHARLES C. KINSMAN.