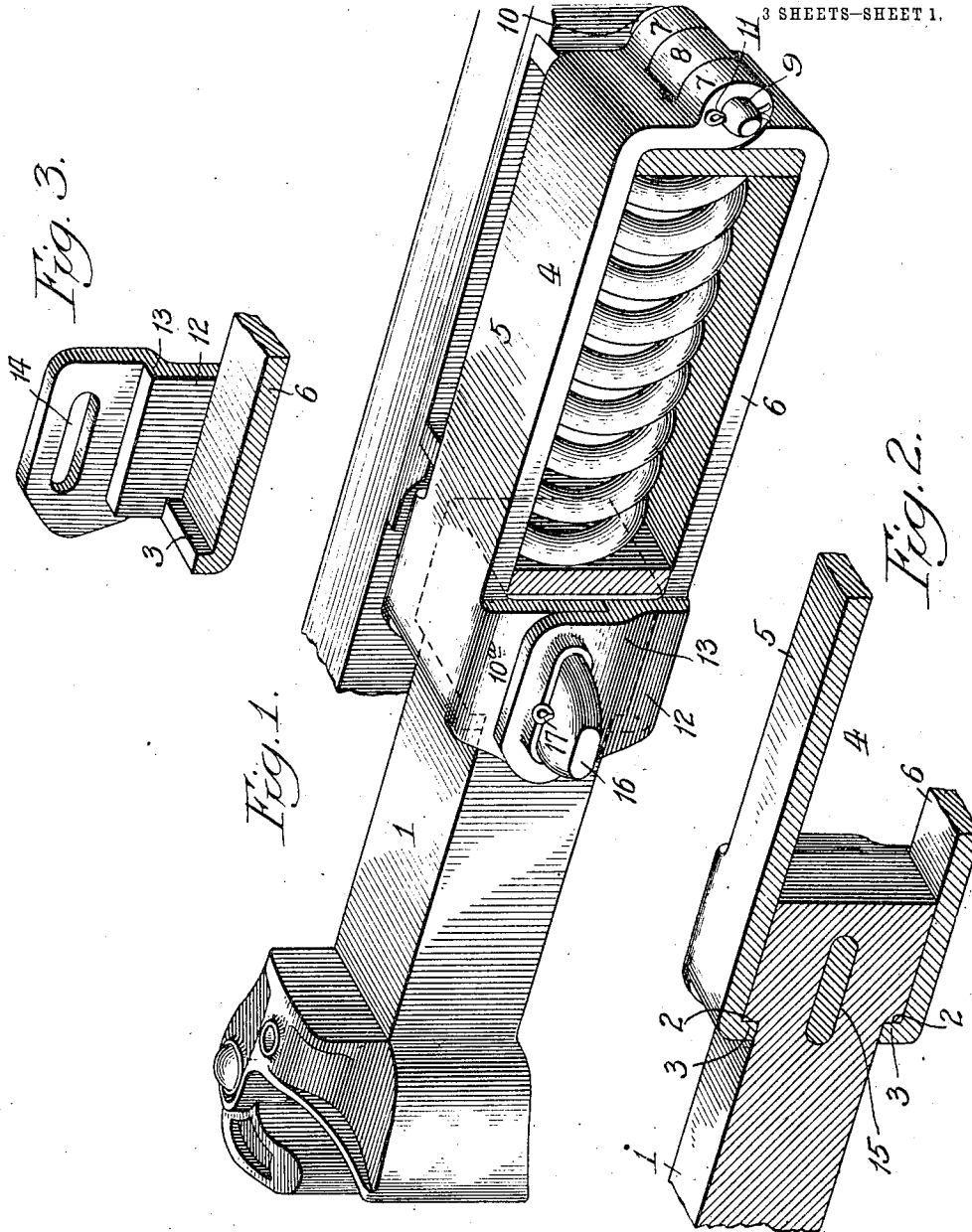


G. C. MURRAY.
DRAW BAR AND YOKE.
APPLICATION FILED MAR. 22, 1911.

1,000,932.

Patented Aug. 15, 1911.

3 SHEETS—SHEET 1.



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3 SHEETS—SHEET 2.

Fig. 8.

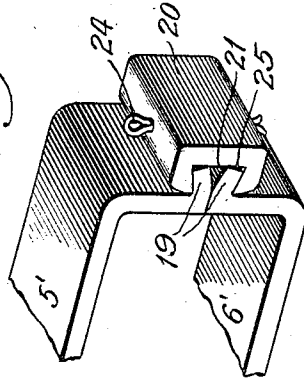


Fig. 9.

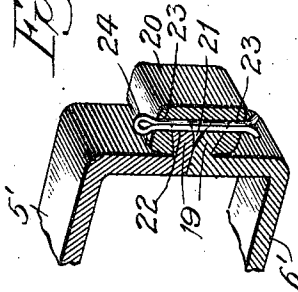


Fig. 4.

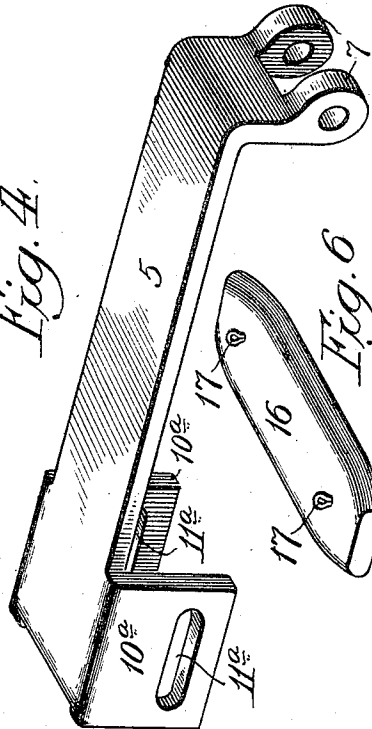


Fig. 6.

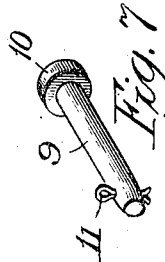


Fig. 7.

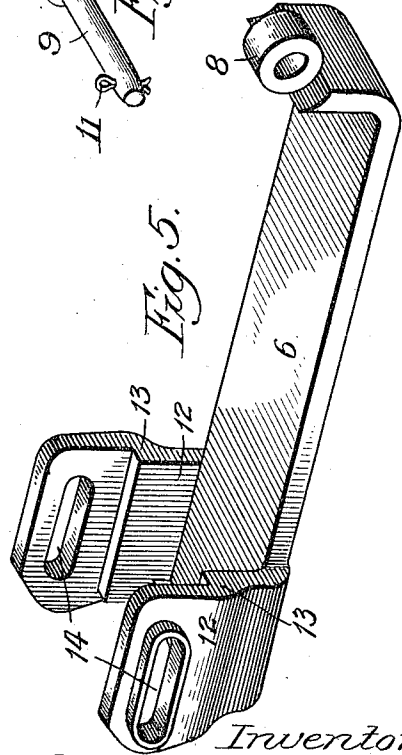


Fig. 5.

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3 SHEETS—SHEET 3.

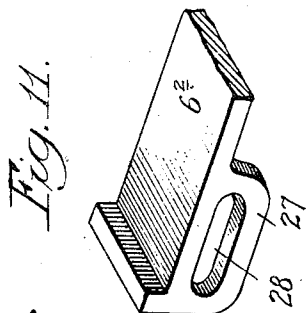
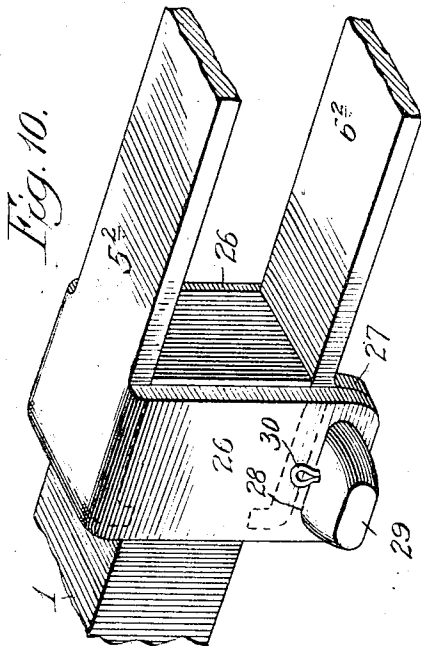
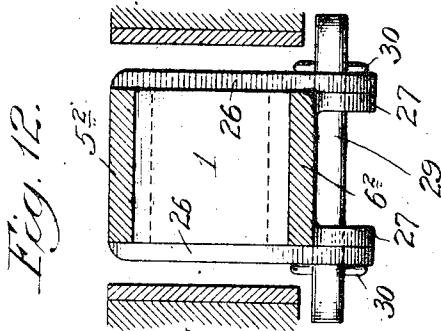
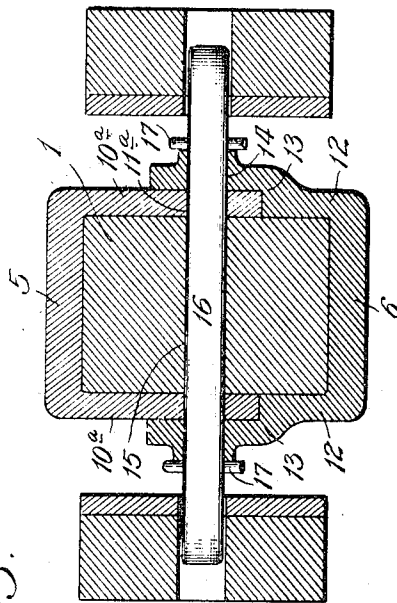


Fig. 13.



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UNITED STATES PATENT OFFICE.

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DRAW-BAR AND YOKE.

1,000,932.

Specification of Letters Patent. Patented Aug. 15, 1911.

Application filed March 22, 1911. Serial No. 616,188.

To all whom it may concern:

Be it known that I, GEORGE C. MURRAY, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Draw-Bars and Yokes, of which the following is a specification.

The object of my invention is to provide an improved draw-bar and yoke of such construction as to permit removal of a damaged draw-bar and replacement thereof without removing the draft gear from the car, and also to permit a draft gear to be removed from a car and replaced without the necessity of also removing the draw-bar and yoke.

Owing to rough usage, it frequently becomes necessary to replace or repair draw-bars on account of injury to the coupler head thereon, or by reason of being otherwise damaged. Draft gearings as ordinarily constructed consist of a number of parts, including springs, and it is frequently necessary on account of breakage that they be removed for repairs or for replacement by a new gearing. As ordinarily constructed, draft gears are embraced by a yoke riveted at one end to the coupler draw-bar and the draw-bar, yoke and draft gear must all be removed from the car in order to replace or repair any one of said parts. These parts are necessarily of quite massive construction in order to withstand the stresses to which they are subjected. The removal of a draft gear, together with the draw-bar and yoke, therefore, involves a large amount of labor and is ordinarily accomplished by the use of jacks.

The purpose of my invention is to obviate the larger amount of this labor by so constructing the draw-bar and yoke that the draw-bar or draft gear may be separately removed from the car and replaced without the necessity of removing the entire mechanism. The means whereby I accomplish this object will more clearly appear from the following description and drawings, in which—

Figure 1 is a perspective view of a draw-bar and yoke constructed according to my invention. Fig. 2 is a central longitudinal section in perspective through the draw-bar and yoke at the point where they are connected. Fig. 3 is a fragmentary perspective view of the lower part of the yoke at the

end thereof which engages the draw-bar. Fig. 4 is a perspective view of the upper member of the yoke. Fig. 5 is a perspective view of the lower member of the yoke. Fig. 6 is a perspective view of a key and cotter pins used for securing the yoke to the draw-bar. Fig. 7 is a perspective view of a hinge pin and cotter used for connecting together the inner ends of the parts of the yoke. Fig. 8 is a fragmentary perspective view of the inner end of the yoke having another form of hinge connection between the upper and lower members. Fig. 9 is a longitudinal sectional view in perspective of the structure shown in Fig. 8. Fig. 10 is a fragmentary perspective view showing another form of connection between the upper and lower members of the yoke at the point where they engage the draw-bar. Fig. 11 is a fragmentary perspective view of the end of the lower yoke member illustrated in Fig. 10. Fig. 12 is a transverse sectional view through the draw-bar and yoke illustrated in Fig. 10, the section being taken just inside of the end of the draw-bar. Fig. 13 is a transverse section through the yoke and inner ends of the draw-bar of the form shown in Fig. 1.

In their general outlines, my improved yoke and draw-bar are of the form now in common use, only such changes of form being made as are necessary to embody the features set forth in the foregoing statement of invention. It will be obvious, however, that the general principle of the invention may, if desired, be applied in many different forms of mechanical structure.

Referring to the construction illustrated in Figs. 1 to 7 inclusive, the draw-bar is provided with the usual shoulders to be engaged by the shoulders 3 at the outer end of the yoke 4. The yoke comprises separable upper and lower members 5 and 6 suitably hinged or otherwise detachably connected together at their inner ends. As illustrated in Fig. 1, the inner ends of the yoke members 5 and 6 are provided with eyelets 7 and 8 into which a hinge pin 9 is inserted. The hinge pin 9 is preferably provided with a head 10 at one end and with a perforation at the other end for the reception of a cotter pin 11, for the purpose of holding the parts against accidental displacement. The outer end of both the upper and lower yoke members are turned inward to form shoulders 2, designed to engage the

shoulders 2 upon the draw-bar in accordance with the usual custom. At its outer end the upper yoke member 5 is provided with downwardly projecting side flanges 10^a provided near their lower ends with keyways 11^a. The side flanges 10^a are designed to embrace the sides of the head of the draw-bar. The lower yoke member 6 is provided with upwardly projecting side flanges 12 which are offset outwardly at 13 and at their upper ends provided with keyways 14. The lower parts of the side flanges 12 are designed to lie against the sides of the draw-bar 1 while the upper outwardly offset parts lie outside of the depending side flanges 10^a of the upper yoke member, as clearly illustrated in Fig. 1. In this form of construction the inner end of the draw-bar 1 is provided with a keyway 15, and a key 16 provided with apertures at its ends for the reception of cotter pins 17 is inserted through the keyways in the upper and lower yoke members and in the draw-bar when the parts are assembled, as shown in Fig. 1.

In Fig. 1 I have diagrammatically illustrated a draft gear. In case it is desired to replace the draw-bar 1, for any reason, the key 16 is removed and the upper and lower members 5 and 6 of the yoke separated sufficiently to disengage their shoulders 3 from the shoulders 2 upon the draw-bar, whereupon the draw-bar can easily be removed. The draw-bar can then be replaced by simply inserting its inner end between the outer end of the yoke, bringing the outer ends of the yoke together and fastening them in place by the key 16, as illustrated in Fig. 1. In order to perform this operation it is not necessary to remove the draft gear or to lower it to the ground. If there is sufficient space beneath the car the upper member 5 of the yoke can be raised upon its hinge joint and the draw-bar lifted sufficiently to disengage its lower shoulder 2 from the shoulder 3 upon the lower yoke member 6 and then withdrawn. In case there is not sufficient room between the upper yoke member 5 and the part of the car immediately above, the draft gear may be temporarily supported by any means at hand, such as a timber or a jack, and the lower member 6 of the yoke lowered upon its hinge joint sufficiently to permit disengagement of the draw-bar. It will be obvious that this operation can be performed in a variety of ways, according to the particular construction of the car. If desired, the draft gear may be supported upon the lower yoke member 6 when the latter is lowered to permit withdrawal of the draw-bar. In any event, however, the labor of lowering the draft gear to the ground and lifting it again is not necessary to permit removal of a draw-bar.

If it is found necessary to remove and replace a draft gear, the key 16 will be re-

moved, as above described, and the lower yoke member 6 permitted to turn downwardly upon its hinge joint without removing or disturbing the draw-bar. This will permit the draft gear to be removed and replaced by another and will avoid the labor and delay incident to the removal of the draw-bar and yoke.

While I have referred to a hinged joint between the members 5 and 6, it will be obvious that the invention may be carried out in a variety of ways, as by bodily removing the lower member 6 of the yoke instead of turning it upon its hinge joint. In the construction shown in Fig. 1 this could be accomplished by removing the hinge pin 9 and key 16. It will be understood that the key 16 passes through the draft sills, and the parts may, if desired, be so proportioned that the key will assist in transmitting pulling and buffing stresses from the draw-bar to the body of the car.

In Figs. 8 and 9 I have shown another form of connection between the inner ends of the upper and lower members of the yoke. In this instance the upper member 5' and the lower member 6' are provided with out-turned lips 19, the outer surfaces of which converge toward the ends of the yoke members. The upper and lower members are secured together by means of a block 20 provided with an undercut groove 21. The block 20 may be slipped endwise over the lips 19, thus forming a dovetailed connection between the block and the two yoke members. The lips 19, as shown, are notched at 22, and openings 23 in the block 20 register with said notches when the parts are in assembled position, thus permitting a cotter pin 24 to be passed through the openings 23 and through the notches 22 in the lips 19. By this means the parts are securely held in assembled position. When the key 16 is removed, the connection formed by the block 20 may, if desired, be utilized as a hinge joint, permitting the lower yoke member 6' to be dropped at its outer end, the outer end of the lip 19 upon the lower yoke member being cut away; as shown at 25; to permit such a movement thereof. The outer edge of the lip 19 upon the upper yoke member is similarly cut away in order to permit of the upper member being similarly moved. This form of construction also permits the lower yoke member 6' to be bodily removed when necessary by simply removing the key 16 and the block 20.

In Figs. 10, 11 and 12 I have illustrated a construction similar to that above described except the side flanges 26 upon the upper yoke member 5² project downwardly beneath the lower yoke member 6². The lower yoke member 6² is also provided with downwardly projecting flanges 27 at either side, and keyways 28 are provided in the lower

parts of the flanges 26 and 27 just beneath the lower surface of the lower yoke member 6². When assembled, as shown in Fig. 10, the parts are secured together by means of a key 29 which passes through the keyways 28 in the flanges 26 and 27 just beneath the lower surface of the lower yoke member 6², the key 29 being held in place by means of cotter pins 30. In this construction the key does not pass through the draw-bar.

While I have described in some detail several modes of applying my invention, it will be understood that the application of the broad principle is not dependent upon the particular modes of construction herein illustrated and described.

What I claim is:

1. In a device of the class described, a draw-bar provided with shoulders, a yoke comprising two independently movable members each having a shoulder adapted to coact with one of the shoulders on the draw-bar, said independently movable members being provided with horizontal apertures adapted to register when the shoulders on said members engage the shoulders on said draw-bar, and a key adapted to extend horizontally through said apertures to hold said members in fixed relation.

2. In a device of the class described, a draw-bar provided with oppositely disposed outwardly projecting shoulders, a yoke comprising two members, each of said members having an inwardly projecting shoulder at one end, means for securing said members rigidly together at their shouldered ends, and a hinge connecting the other ends of said members.

3. In a device of the class described, a draw-bar provided with oppositely disposed outwardly projecting shoulders, a yoke comprising two members, each of said mem-

bers having an inwardly projecting shoulder and side flanges at one end, said side flanges and draw-bar being provided with openings adapted to register when the yoke shoulders engage the draw-bar shoulders, a key adapted to engage said openings, and means for securing the opposite ends of said members together.

4. In a device of the class described, draft sills, a draw-bar provided with oppositely disposed outwardly projecting shoulders, a yoke comprising two members, each of said members engaging the top and bottom of the draw-bar and having an inwardly projecting shoulder and vertical side flanges at one end, said draft sills, side flanges and draw-bar being provided with openings adapted to register when the yoke shoulders engage the draw-bar shoulders, a key adapted to engage said openings, and means for securing the opposite ends of said members together.

5. In a device of the class described, a draw-bar provided with oppositely disposed outwardly projecting shoulders, a yoke comprising two members, each of said members having an inwardly projecting shoulder at one end, means for securing said members rigidly together at their shouldered ends, and a hinge connecting said members.

6. In a device of the class described, a draw-bar a yoke comprising two members connected by a hinge joint, side flanges on said yoke members adjacent said draw-bar, and a key passing through apertures in said side flanges and draw-bar.

In testimony whereof, I have subscribed my name.

GEORGE C. MURRAY.

Witnesses:

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HENRY A. PARKS.