

H. F. POPE.
RADIAL DRAFT GEAR.
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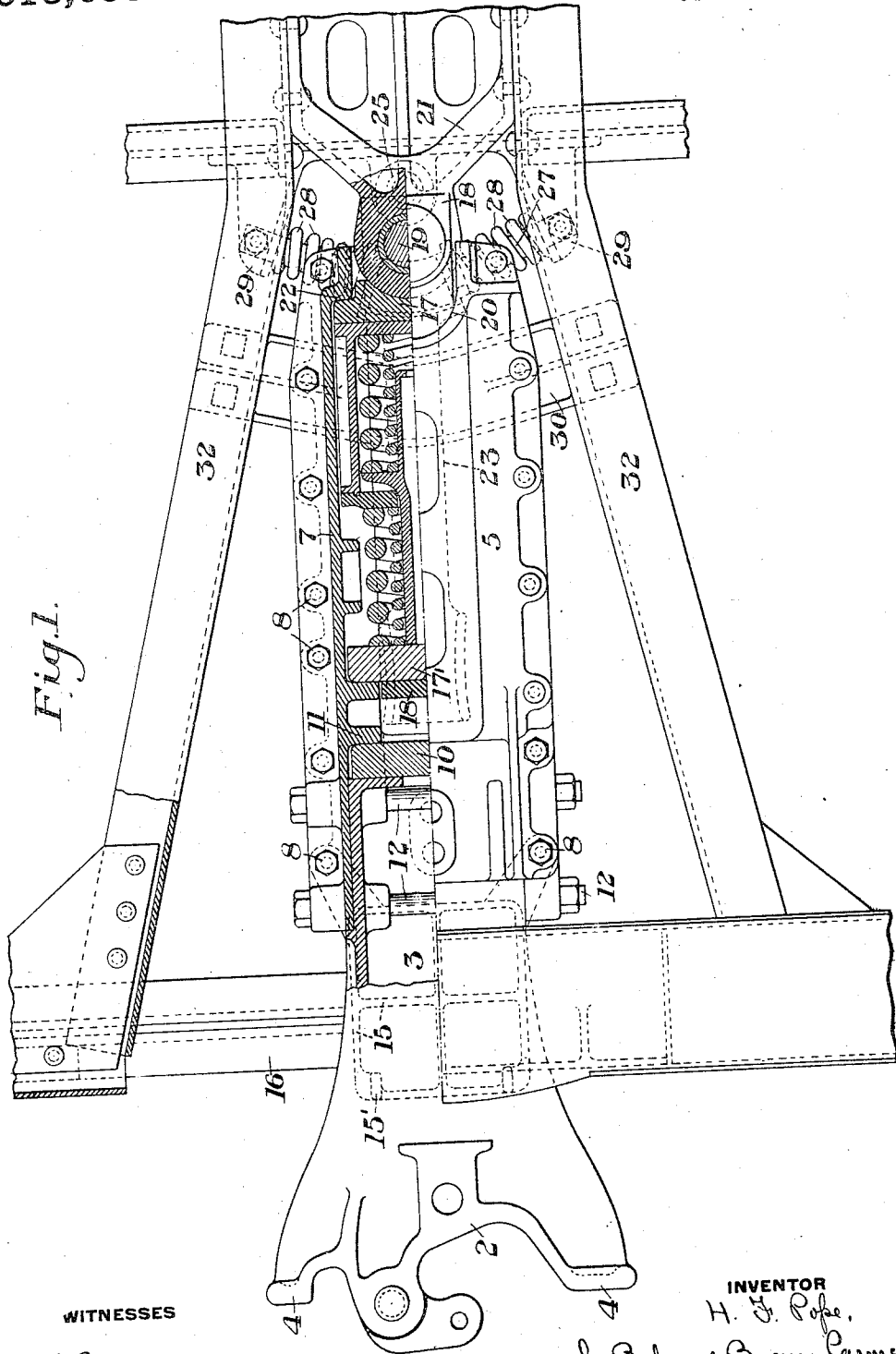


Fig. 1.

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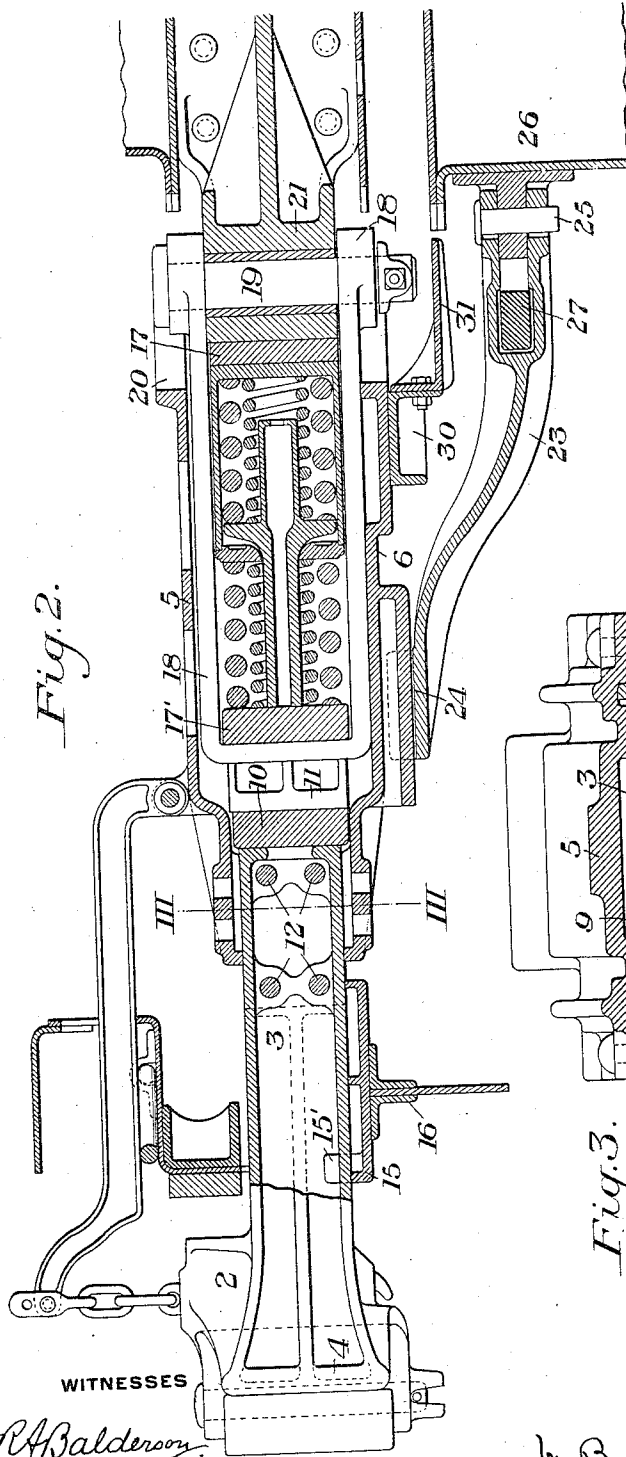
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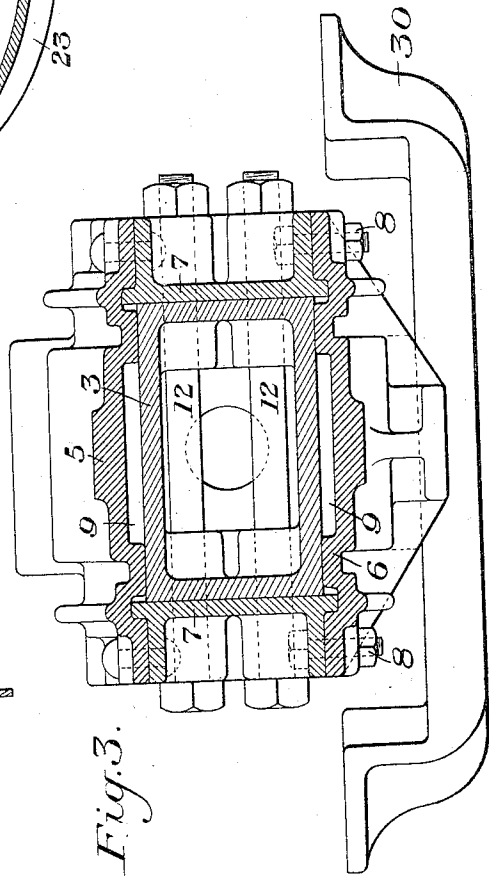
Fig. 2.



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Fig. 3.



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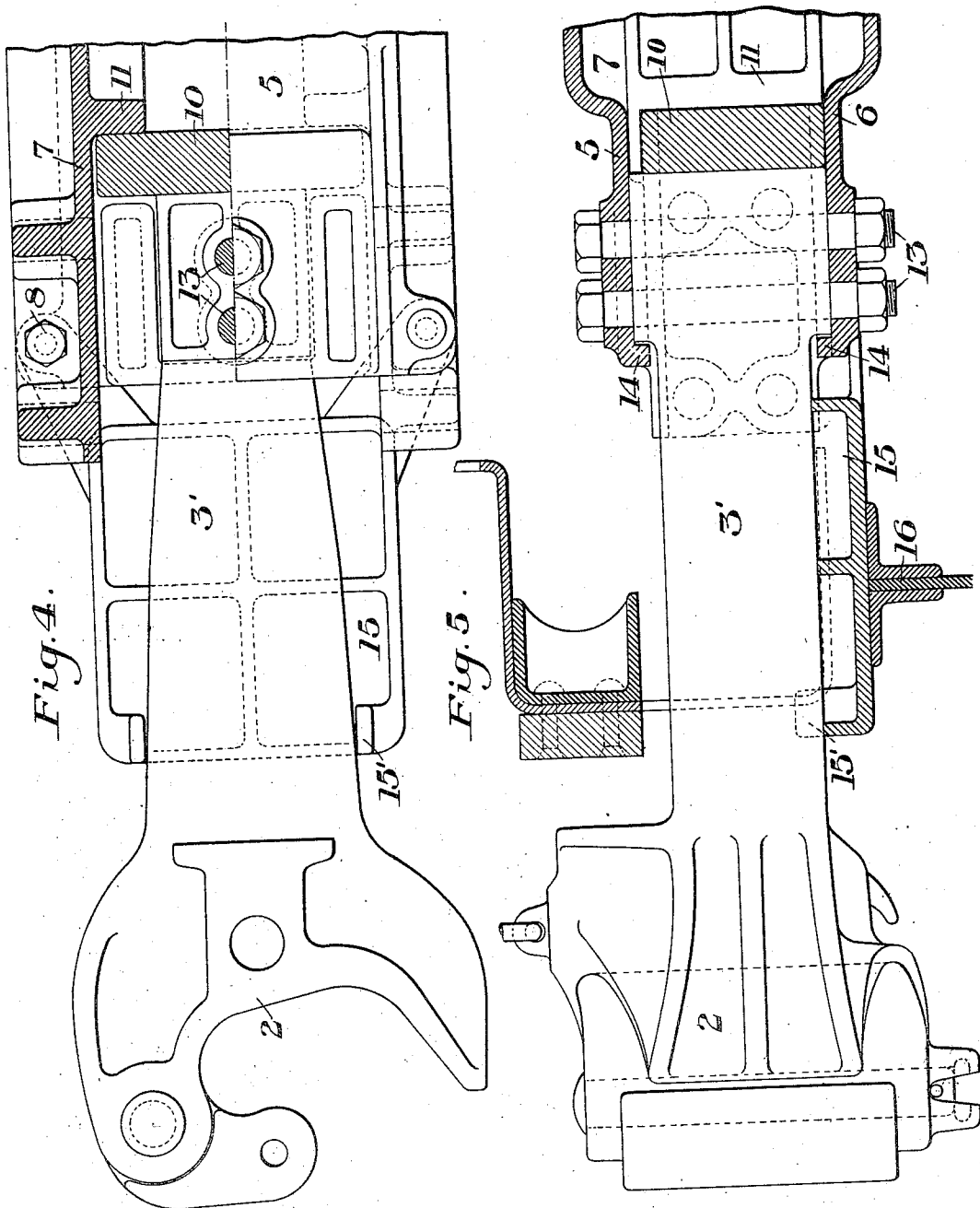


Fig. 4.

Fig. 5.

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UNITED STATES PATENT OFFICE.

HENRY F. POPE, OF CLEVELAND, OHIO.

RADIAL-DRAFT GEAR.

1,013,055.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENRY F. POPE, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Improvement in Radial-Draft Gears, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view partly in section; Fig. 2 is a vertical longitudinal section of the parts shown in Fig. 1; Fig. 3 is a cross section on the line III—III of Fig. 2; Fig. 4 is a sectional plan view showing the device as used with Master Car Builders' coupler; and Fig. 5 is a sectional elevation of the same.

One purpose of my invention is to provide a radial draft gear adapted to receive and hold car couplers having shanks of various sizes. As radial draft gears are now constructed, they are provided with couplers of special design having a broad shank adapted to fit within the frame of the draft gear and to back and brace the lateral stop-flange of the coupler head in such manner as to prevent their breaking, and one of the purposes of my invention is to provide a construction of the frame of the draft rigging of such character that it will receive not only the couplers of this construction, but ordinary couplers of the Master Car Builders' type having smaller shanks.

Another purpose of my invention is to preferably construct the gear in such manner that the center line of the coupler shank will be held thereby in line with the center line of the draft rigging, and also preferably in line with the center line of the pivotal support of the draft rigging and with the central plane of the sills, so that the draft gear will swing horizontally in the plane of the center line of the sills.

In the drawings, 2 represents the head of a coupler which is of special construction, having a broad shank 3, and lateral stops 4, 4, which project horizontally from the sides of the coupler so as to match with corresponding stops of an opposing coupler and to hold the couplers from buckling under buffing stresses. The shank of this coupler is mounted within a frame, shown in section in Fig. 3, having top and bottom members 5, 6, and side members 7, 7, which are preferably flanged and fitted together, as shown, and are held by suitable securing

bolts 8. The portion of this frame which incloses the coupler shank is shown in section in Figs. 1 and 3, and the portion thereof which incloses the draft rigging back of the coupler shank is shown in partial section in Fig. 1. The portion of the frame which incloses the coupler shank is made interiorly of the cross sectional dimensions of the said shank and has on the top and bottom members 5, 6, internal recesses 9, 9, of the width of the corresponding portion of the shank of an ordinary Master Car Builders' coupler; so that if the coupler shown in the drawings is removed from the frame, it can be replaced by such Master Car Builders' coupler, which in that case will fit between the top and bottom members, and will be held within the limiting walls of the recesses 9, 9, as shown in Fig. 5.

10 is a filling block or buffing block, which is seated within the frame at the rear end of the coupler shank and is backed by internal projecting flanges 11. This block is of suitable strength to receive the buffing stresses and to transmit them through the flanges 11 to the frame. When the coupler shown in Figs. 1 and 2 is placed in the frame, the rear end of the coupler shank abuts against the face of the block 10, and is preferably of about the same cross sectional dimensions, so as to have contact with the entire surface of the block. The coupler shank is then rigidly secured to the side members of the frame by lateral bolts or keys 12, which extend through the sides of the frame and through horizontal holes in the shank of the coupler. When the special coupler shown in Fig. 1 is removed from the frame and replaced with an ordinary Master Car Builders' coupler, as shown in Figs. 4 and 5, the shank 3' of this coupler fits within the frame and within the top and bottom recesses 9, 9, and abuts at its rear end against the filling block 10, and being of less cross sectional dimensions than the surface of said block it does not bear upon the entire surface thereof. To receive such Master Car Builders' coupler, the top and bottom members of the frame are provided with vertical holes spaced to match the vertical rivet holes in the usual liner block of a Master Car Builders' coupler, and when the coupler shank is put in position within the frame, it is held by vertical bolts 13 which pass through these holes in the frame and in the coupler shank.

The bolts of both forms of the coupler are relieved of buffing strains, for the reason that the coupler abuts against the buffing block 10, and transmits its stresses thereto, and there are also preferably lips 14, formed on the forward ends of the top and bottom members of the frame which engage the forward surfaces of the liner blocks of the Master Car Builders' coupler, in order to relieve the bolts from stress during pulling, and thus to serve the functions of the usual lips on the yoke of a coupler. As shown in Fig. 2, the frame is also preferably provided with a wearing shoe 15, which rests upon the coupler carry-iron 16, and is secured to the frame of the draft gear by means of the forward bolts 8, which tie the bottom members to the side members. This wearing-shoe has lugs 15' at its forward end which fit within holes on the under side of the coupler shank, so as to hold the shoe to the shank during the lateral movements of the coupler. The purpose of the shoe is to relieve the shank from wear during such lateral movement. When an ordinary Master Car Builders' coupler is inserted in the frame, it will also rest upon and will hold the wearing-shoe in the same manner, except that the lugs 15' fit at the sides of the coupler shank, as shown in Fig. 4, instead of fitting within vertical holes in the shank, as in the case of the special coupler above described.

It will thus be seen that in case of injury to the special coupler which is designed for the draft gear, it may be removed readily and an ordinary Master Car Builders' type substituted therefor without special preparation. In such case, the shank of the Master Car Builders' coupler will fit against the filling block 10, and will transmit the stresses of buffing to the frame of the draft gear, and thence to the draft rigging, thus relieving from strain the bolts which fasten the coupler shank to the frame.

The preferable arrangement of the draft rigging is shown in Figs. 1 and 2. The draft rigging is set within the frame and provided with suitable followers 17 and 17' and the yoke 18 of the draft rigging passes in front of the front follower 17' and extends back to the vertical pivot pin 19, on which the draft gear is pivoted, so as to swing horizontally. The frame is slotted, as at 20, or otherwise so constructed that during buffing it will move over the pivot 19, and in so doing will force the front follower 17' against the spring rigging and will compress the same, the rear follower during buffing being held by and abutting against the forward end of the bracket 21 on the car frame, through which the pivot pin passes. During pulling, the front follower 17' remains stationary, being held by the forward end of the yoke 18, and the rear follower 17 is

drawn forward by its engagement with stops 22 on the side members of the draft gear frame. The frame is guided from the truck by means of a guiding connection, a desirable form of which, shown in the drawing, consists of an arm 23, which is slidingly connected at its forward end at 24 with the bottom member of the draft gear frame and extends rearwardly to a vertical pivot pin 25 on the truck bolster 26. This arm 23 is held yieldingly by a rod 27 which passes through a slot in the arm 23, and carries springs 28, interposed between the arm 23 and brackets 29, which project from the truck bolster and carry the arm 23.

For the purpose of supporting the vertical pivot pin on which the draft swings radially, I preferably provide the rear carry-iron 30, of the draft gear, with a bracket 31 which projects under the vertical pivot pin 19, so that in case the pin should break, the bracket 31 will hold it from dropping, although other pin supporting means may be provided.

By constructing the car with the proper dimensions between the truck bolster 26 and the end sill of the car, the draft gear frame may be adapted to receive any kind of draft rigging which is now in use, and when the ordinary Master Car Builders' coupler is inserted in the frame it will not project beyond the end sill more than the ordinary and standard distance.

As shown in the drawings, the center sills 32 of the car frame are so placed that the longitudinal center line of the coupler shank is coincident with the longitudinal center line of the draft rigging and it is also coincident with the center line of the pivotal support 19 and with the central plane of the center sills, so that the draft gear will swing horizontally in the plane of the center line of the center sills. As the support forming the resistance has its center substantially in the center line of the center sills, the buffing stresses will be imparted to the draft gear equally in its upper and lower portions, thereby avoiding any tendency to deflect parts of the draft gear upwardly or downwardly. This also results from the center line of the coupler being in the horizontal center line of the pivotal bearing.

In the drawings, I show my device in what I deem to be its preferable form, but it will be understood by those skilled in the art, that it is capable of many modifications in form and construction to adapt it to modified uses, or to modified constructions of the coupler draft gear or spring rigging or trunk connection. I may also employ any suitable draft rigging in lieu of the one which I have specifically shown and described.

I therefore claim:

1. A draft gear having at its end a socket

arranged to receive the shank of a coupler, said socket being recessed to receive the narrower shank of another coupler.

2. A radial draft gear having a frame to receive a coupler, the frame having portions adapted to engage a projection on the coupler shank.

3. A draft gear having a frame movable longitudinally with the coupler and arranged to move with the followers of the draft rigging, a coupler, and a filling block back of the coupler and bearing against the frame of the draft gear, the gear being arranged to secure therein the narrower shank of another coupler, and the filling block being arranged to contact with the end of said narrower shank.

4. A draft gear having at its end a socket arranged to receive a coupler shank, said socket being recessed to receive the narrower shank of another coupler, and having a portion positively engaging the coupler.

5. A draft gear having at its end a socket to receive coupler shanks of different dimensions, and having bolt holes arranged to secure the differently dimensioned coupler shanks within the socket.

6. A draft gear having at its end a socket to receive a coupler shank which is wider than that of the ordinary Master Car Builders' type, said socket being arranged to receive therein the narrower shank of an ordinary coupler of the Master Car Builders' type.

7. A draft gear having at its end a socket arranged to receive the enlarged shank of a coupler larger than the shank of an ordinary coupler, and provided with lips arranged to engage the liner block of an ordinary coupler of the Master Car Builders' type.

8. A draft gear having a frame with a socket arranged to receive the enlarged shank of a special coupler, and a filling block in the rear portion of the socket and bearing against the frame, said filler block being shaped to form an abutment for the rear ends of coupler shanks of different dimensions in cross-section.

In testimony whereof, I have hereunto set my hand.

HENRY F. POPE.

Witnesses:

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HARRY T. KRAKAU.