

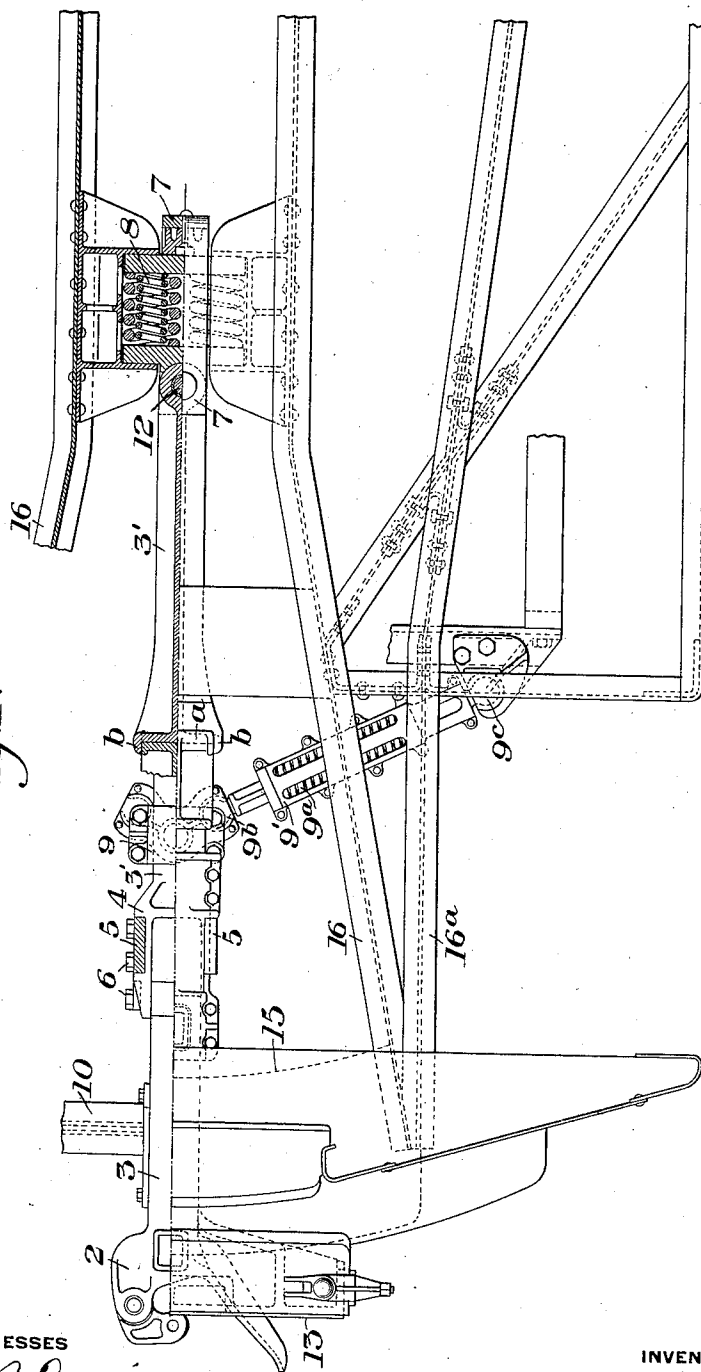
H. F. POPE.
DRAFT GEAR AND BUFFING MECHANISM.
APPLICATION FILED JUNE 2, 1908.

1,057,167.

Patented Mar. 25, 1913

3 SHEETS-SHEET 1.

Fig. 1.



WITNESSES

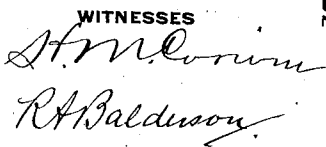
A. M. Loring
R. A. Balderson

INVENTOR

Henry F. Pope
By Arthur H. Pope & Associates
his attys

1,057,167.

3 SHEETS--SHEET 2.



INVENTOR

Henry F. Parker

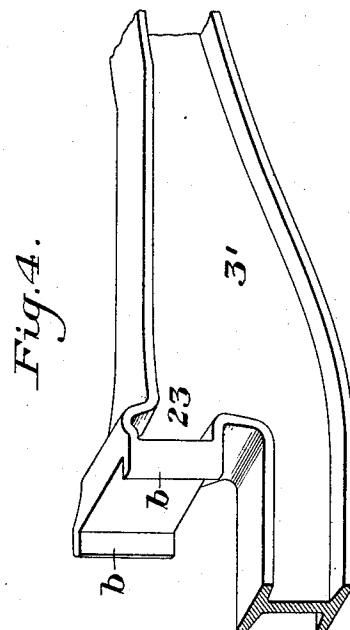
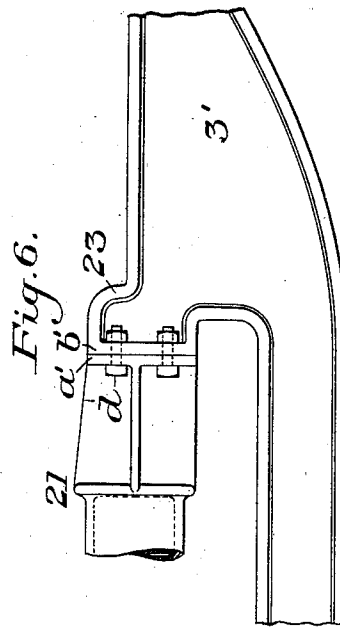
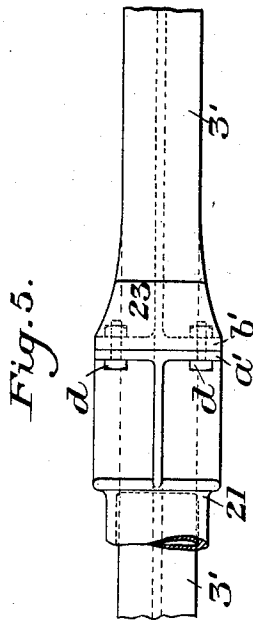
by Balkin & Dymus & Parnelles
his attys

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3 SHEETS—SHEET 3.



WITNESSES

H. M. Loring
R. A. Balderson

INVENTOR

Henry F. Pope
By R. A. Balderson & Loring
his attys

UNITED STATES PATENT OFFICE.

HENRY F. POPE, OF CLEVELAND, OHIO, ASSIGNOR TO THE NATIONAL MALLEABLE CASTINGS COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

DRAFT-GEAR AND BUFFING MECHANISM.

1,057,167.

Specification of Letters Patent.

Patented Mar. 25, 1913.

Application filed June 2, 1908. Serial No. 436,187.

To all whom it may concern:

Be it known that I, HENRY F. POPE, a citizen of the United States, and a resident of Cleveland, Cuyahoga county, Ohio, have
5 invented a new and useful Draft-Gear and Buffing Mechanism, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view partly in section
10 showing my radial draft gear; Fig. 2 is a vertical longitudinal section, partly in side elevation; Fig. 3 is an enlarged detail view partly in section, showing the manner of connecting the buffer and coupler shanks;
15 Fig. 4 is a sectional perspective view of the coupler shank extension; Fig. 5 is a detail plan view showing a modified construction; and Fig. 6 is a side elevation of the same.

The purpose of my invention is to provide a draft gear having a radially swinging coupler and a radially swinging buffer related so as to operate together and to afford efficient means by which both the coupler and buffer can adapt themselves
25 to the motion of the car truck as it passes around curves, and will operate properly under all such conditions of use. The device is especially adapted for passenger cars and it accomplishes the desired results with
30 great efficiency and simplicity of mechanism.

2 represents the car coupler, whose shank 3 has a long rearward extension 3' which is preferably in a separate piece from the main portion of the shank and is connected
35 therewith as shown in Figs. 1 and 3, the extension 3' having a socket 4 at its forward end into which the coupler shank 3 is fitted. This socket has opposite lateral recesses in which connecting plates 5 are fixed, preferably by bolts 6 which pass through the plates and through the socket and the contained coupler shank. The plates extend
40 upwardly and serve to give a connection between the coupler shank and the buffer mechanism, as explained below.

The extension 3' at its rear end is curved upwardly and is connected by a yoke or other suitable device 7 with a draft rigging 8 set between the sills of the cars, and
50 the coupler shank is also preferably provided with a sliding sleeve 9, from which guiding connections 9' are extended to the truck in a manner as heretofore known. These guiding connections are preferably
55 made in the form of telescopically fitted

parts containing springs 9^a, and they are pivotally connected at 9^b and 9^c to the socket 9 and to the truck-frame of the car, respectively. The construction of the draft
60 rigging is not of the essence of this invention. The coupler shank is supported by carry-irons 10 which extend between the sills of the car and may be supported by hangers 11. The coupler shank extension 3' has a
65 vertical pivot pin 12 which connects it to the yoke 7, so that when the car is passing around curves the coupler and its shank will swing radially on the axis of the pin 12 and will constantly be kept thereby approximately at the central portion of the railway
70 track.

13 is the face plate of the buffer, having a rearwardly-extending forked shank formed with two parallel arms 14, 14^a, as shown in Figs. 2 and 3. Between these arms of the
75 buffer extends a transverse carry-iron 15 which is curved as shown in Fig. 1, and is connected to the center sills 16 and intermediate sills 16^a of the car.

The rear end of the forked buffer shank
80 is held by a spring casing 19, preferably made in two longitudinally-divided parts, and the said shank has at the outer surfaces of its arms 14, 14^a sockets shown by dotted lines in Fig. 3, to which projections *c, c* on
85 the casing extend so that when the parts of the casing are held by the bolts they will be clamped firmly and rigidly upon the arms of the buffer shank, a filler piece 19' being interposed between the arms. The spring
90 casing extends rearwardly from the buffer shank, and fits telescopically over a rear spring casing 21 which extends within the spring casing 19 and contains interposed
95 buffing spring mechanism which is compressed by backward motion of the buffer shank and the spring casing 19. The spring mechanism comprises preferably two springs
100 22 and 22^a, the spring 22^a being an auxiliary spring of less capacity than the main spring 22, and being designed to exert a constant tension sufficient to force the buffer and its shank outwardly and to keep it in contact with the corresponding buffer of another car, even when the coupler shank is under
105 draft and is drawn out to its full extent. This spring also aids the main spring 22 in the work of buffing under compression.

The construction and arrangement of the buffer spring mechanism may be varied in
110

many ways, since my invention does not relate thereto, but relates to the manner in which the buffer with its spring mechanism is connected to the extension of the swinging coupler shank and is thus backed by the draft rigging 8. For this purpose, as shown in the drawings, the extension 3' of the coupler shank is provided with an upwardly projecting shoulder or portion 23, preferably formed integral with the extension 3' and constituting a shoulder against which the rear end of the buffer mechanism, preferably an extension of the spring casing 21, has an end bearing. The rear end or extension of the spring casing 21 and the face of the shoulder 23 are preferably flanged, as shown in detail in Figs. 3 and 4, being provided with interfitting flanges *a*, *b*, so that the buffer mechanism will not be displaced laterally from engagement with the extension of the coupler shank. Instead of this device I may use the device shown in detail in Figs. 5 and 6, in which the parts 21 and 23 are provided with abutting flanges *a'*, *b'*, which are bolted together with bolts *d*. The particular part of the buffer shank which bears on the shoulder 23, and the location of the spring mechanism in the buffer shank are not essential to my invention broadly considered. This arrangement, however, may be varied.

In the form of Figs. 5 and 6 the member 21 forms a structural part of the coupler shank extension, being rigidly secured thereto.

The engagement of the buffer with the coupler shank is effected by the plates or projections 5, which, extending upwardly from the coupler shank as above described, fit on opposite sides of the spring casing 19, as shown in Fig. 3 so as to permit independent longitudinal motion of the coupler shank and buffer. The coupler head and buffer also engage at 24. The transverse member of the buffer is thus kept at right angles to its shank and also to the shank of the coupler.

With the construction above described the coupler and its extension will swing radially on the axis of the pivot 12 as the car passes around curves, and the buffer mechanism will also swing therewith, being guided and moved by the connection 5 with the coupler shank. The stresses of buffing are transmitted through the coupler and the coupler extension 3' to the draft rigging, and through the buffer plate 13 and its arms and spring mechanism through the coupler extension 3' and thence to the draft rigging.

I claim:—

1. A laterally swinging draft member mounted for longitudinal movement in buffing and draft, a draft-rigging, a laterally-swinging buffer swinging with the draft member and having a centrally located

shank which has a relatively stationary rear bearing against the draft member, whereby stresses of buffing are transmitted through the draft-member to the draft-rigging.

2. A laterally swinging draft member mounted for longitudinal movement in buffing and draft, a draft-rigging, a laterally-swinging buffer swinging with the draft member and having a centrally located shank which has a relatively stationary rear bearing against the draft member, whereby stresses of buffing are transmitted through the draft-member to the draft-rigging, and spring mechanism interposed in the buffer between the buffing face and the rear bearing against the draft member.

3. A laterally swinging draft member mounted for longitudinal movement in buffing and draft, a draft-rigging, a laterally swinging buffer swinging with the draft member and having a centrally located shank which has a relatively stationary rear bearing against the draft member, whereby stresses of buffing are transmitted through the draft-member to the draft-rigging, and a longitudinally sliding connection between the draft-member and the buffer.

4. A laterally swinging draft member mounted for longitudinal movement in buffing and draft, a laterally swinging buffer swinging with the draft member and having a centrally located shank which has a relatively stationary rear bearing against the draft member, said draft-member being pivotally mounted, and a draft-rigging placed back of the pivot and held from lateral swinging motion.

5. A laterally swinging draft member mounted for longitudinal movement in buffing and draft, a draft-rigging, a laterally swinging buffer swinging with the draft member and having a centrally located shank which has a relatively stationary rear bearing against the draft member substantially in line with the draft rigging.

6. A laterally swinging draft-member mounted for longitudinal movement in buffing and draft, a laterally swinging buffer swinging with the draft-member and having a centrally located shank which has a relatively stationary rear bearing against the draft member, said draft member being pivotally mounted, and a draft-rigging placed back of the pivot, substantially in line with the buffer face.

7. A draft member mounted for longitudinal movement in buffing and draft, a buffer having a centrally located shank which has a rear buffing bearing against the draft member and adapted to transmit buffing stresses therethrough, and a draft rigging substantially in line with the buffer face.

8. In a railway car draft and buffing appliance, the combination of a draft gear, a coupler extension capable of swinging rela-

tively thereto, a buffer, a connection between said buffer and said extension and disposed longitudinally of the former, and means to compel substantially simultaneous lateral shifting of said extension and buffer.

9. In a railway car draft and buffing appliance, the combination of a draft gear, a coupler extension pivoted thereto, a buffer above the forward portion of said extension and having a central shank which has a relatively stationary bearing against said extension, and a support for the forward end of said buffer beneath the same and above the coupler.

10. The combination of a spring rigging, a spring buffer in longitudinal alinement therewith, and a draft member having its front portion below the buffer and its rear portion between and in longitudinal alinement with the buffer and the spring rigging and engaged with the latter for buffing and draft stresses, and the buffer having a buffer bearing against said rear portion of the draft member.

11. The combination of a spring rigging, a spring buffer in longitudinal alinement therewith, and a radially swinging draft member pivoted to the spring rigging with its forward portion disposed below the buffer and engaged therewith to swing the buffer laterally with the draft member, the rear portion of the draft member between the buffer and the rigging being in longitudinal alinement with said members, and

the buffer having a buffing bearing against said rear portion of the draft member.

12. A radially swinging pivoted coupler and coupler shank extension, a spring rigging to which the shank extension is pivoted, a buffer provided with a divided shank and mounted on a carry-iron between the arms of said shank, a filler block between the arms of the buffer shank, and a buffer spring interposed between the buffer shank and the coupler shank extension, that portion of the shank extension lying between the buffer spring and the spring rigging being in longitudinal alinement with said members.

13. In a railway car draft and buffing appliance, the combination of a draft rigging, a coupler extension pivoted thereto and having an upper rear portion and a lower portion, a buffer above said lower portion of the extension, a buffer-spring interposed between the front buffing face of the buffer and the rear portion of said extension, the buffing stresses received by the buffer being transmitted through the upper rear portion of said extension in a horizontal plane coincident with said buffer, and means to limit the outward shifting of said buffer.

In testimony whereof, I have hereunto set my hand.

HENRY F. POPE.

Witnesses:

HARRY E. ORR,

HARRY T. KRAKAU.