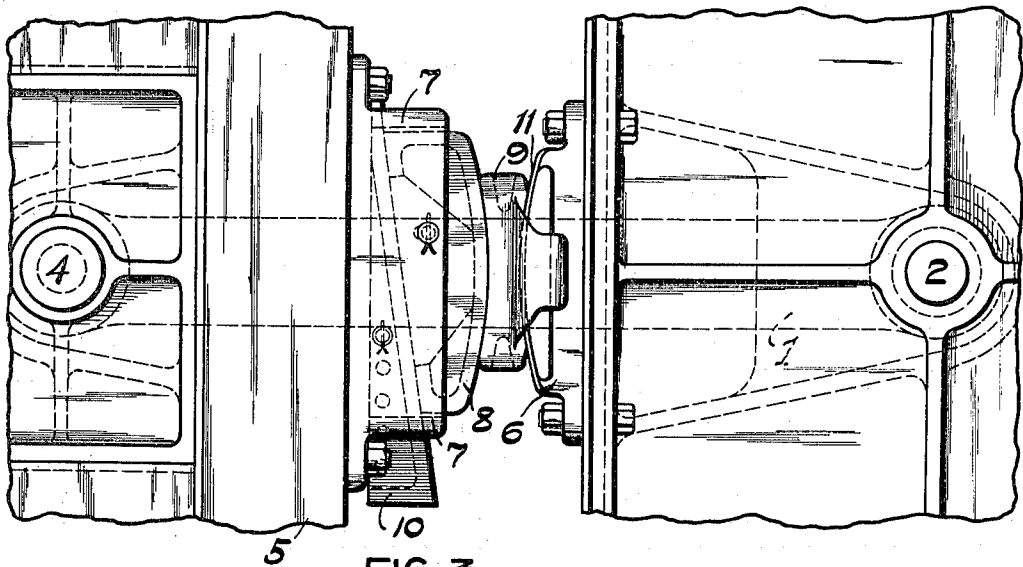


H. F. BALL.
CHAFING DEVICE FOR DRAFT GEAR.
APPLICATION FILED MAY 12, 1914.

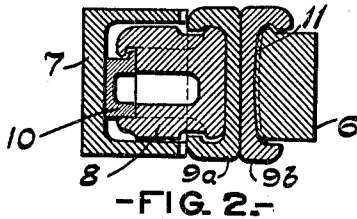
1,121,060.

Patented Dec. 15, 1914.

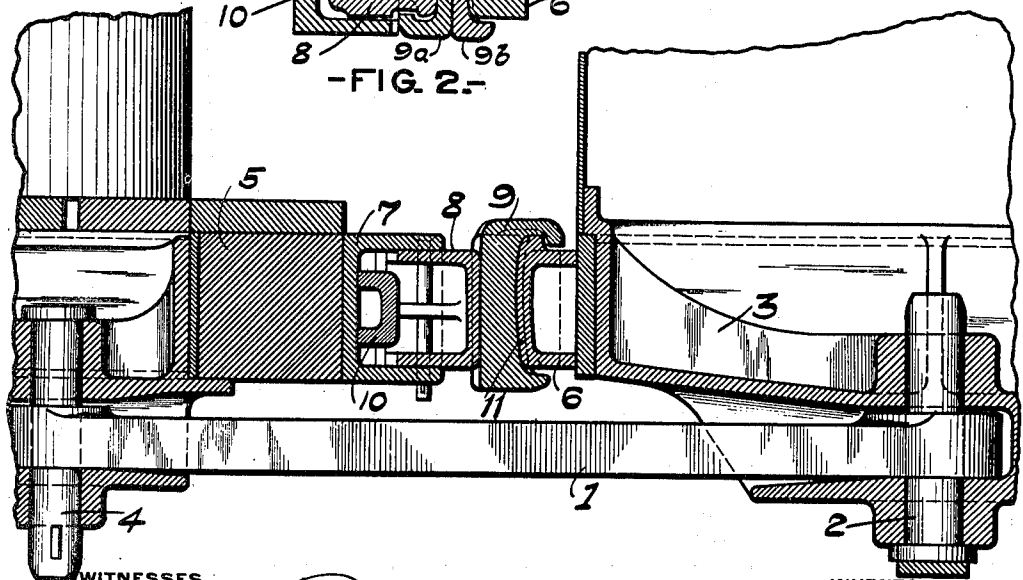
-FIG. 1-



-FIG. 3-



-FIG. 2-



WITNESSES

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CHAFING DEVICE FOR DRAFT-GEAR.

1,121,060.

Specification of Letters Patent. Patented Dec. 15, 1914.

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To all whom it may concern:

Be it known that I, HERMAN F. BALL, a citizen of the United States, and a resident of the borough of Manhattan, in the city, county, and State of New York, have invented a certain new and useful Improvement in Chafing Devices for Draft-Gear, of which improvement the following is a specification.

This invention relates to railway draft appliances and more particularly to chafing block devices adapted to be employed between the adjacent ends of a locomotive and tender, or other vehicles of a train, for transmitting the buffing stresses from one vehicle to the other. These chafing devices as heretofore used have comprised two chafing plates, one being attached to each of the two vehicles, and having horizontally curved outer surfaces, and an intermediate chafing block having correspondingly curved surfaces upon its opposite sides engaging the curved surfaces of the chafing plates, the central block being adapted to move laterally or radially between said plates and maintain the surfaces substantially perpendicular to the line of thrust when the vehicles turn at an angle to each other in passing around curved portions of the track.

In the operation of trains over either straight or curved portions of track it is well known that the vehicle bodies are subject to a lateral rocking movement, this being particularly true of the locomotive tender which carries the water tank, and when two adjoining vehicles rock in opposite directions at the same time the relative movement is, of course, much greater. There is also a certain amount of relative vertical movement, and a vertical rocking movement between the ends of the vehicles due to the vertical curvature and irregularities of the track.

The object of my present invention is to provide an improved device of this character in which the chafing parts may be maintained in close contact with each other, and at the same time provide for this relative rocking movement between the vehicles, and it comprises an improved chafing device of the character above referred to and in which one of the chafing plates and the adjacent side of the intermediate chafing block have cooperating surfaces curved both horizontally and vertically, preferably spherical, whereby they may rock freely one upon the

other in any position of the chafing block, and at the same time the radial movement of the chafing block upon the chafing plates is not interfered with.

In the accompanying drawing: Figure 1 is a plan of the adjacent ends of two vehicles, showing one form of my improvement applied thereto; Fig. 2, a vertical longitudinal section of the same; and, Fig. 3, a corresponding section showing a modified form of chafing block.

As shown in the drawing, the device as heretofore used, is illustrated as applied to the draft gear of a locomotive and tender, comprising a draw bar, 1, coupled to the locomotive by a pin, 2, passing through the sill plate, 3, and coupled to the tender by a pin, 4, mounted in a casting secured to the end sill, 5. The draft or pulling stresses are transmitted through the bar, 1, but for transmitting the buffing or pushing stresses, chafing devices are provided between the end sills of the respective vehicles. These devices comprise a chafing plate or casting, 6, bolted, or otherwise secured, to the end sill of one of the vehicles, as the locomotive, and having an outer convex surface formed on a curve with the pin, 2, as a center, and a chafing plate, 8, mounted on the other vehicle, or tender, and having a similar convex surface formed on a curve with the pin, 4, as a center. Between the adjoining convex surfaces of the respective chafing plates is mounted the chafing block, 9, having double concave surfaces engaging with the respective convex surfaces of the chafing blocks, and cooperating therewith in such a manner as to move radially or transversely thereon when one vehicle turns at an angle with respect to the other, as when passing around curves. In this way the chafing block surfaces remain in contact with the corresponding surfaces of the chafing plates throughout substantially the full length of said block, which occupies a position in line with the vertical plane of the draw bar at all times and transmits all of the pushing stresses from one vehicle to the other through said engaging surfaces.

According to my present improvement, one of the chafing plates, such as 6, is provided with a surface, 11, which is curved both horizontally and vertically, and the adjoining face of the central chafing block, 9, is correspondingly curved whereby these parts may rock freely upon each other, and

the block may, at the same time, move laterally or radially between the chafing plates when passing over curved portions of the track. The radius of the vertical curvature of this bearing surface is preferably equal to that of the horizontal curvature, thus producing a spherical surface by means of which the parts bear uniformly upon each other at all points, and also provide for a relative vertical or longitudinal rocking movement in any and all radial positions of the chafing device. It will be apparent that either of the chafing plates may be provided with the spherical bearing surface, although it is preferred that only one of such chafing plates should be so constructed, in order that the central chafing block may thus follow the rocking movements of one of the vehicles, while the chafing plate having the spherical surface is fastened to the other vehicle.

For the purpose of adjusting the chafing device in order to compensate for the wear of the parts, one of the chafing plates, such as 8, may be mounted in the open ended housing, 7, bolted to the end sill, 5, of the tender, and the wedge, 10, may be inserted between the back of said plate and the base of the housing for adjusting said chafing plate longitudinally.

It will be apparent that my improvement may be employed in connection with the integral form of chafing block, as indicated in Figs. 1 and 2, and that it is also applicable to the divided form of laterally movable chafing blocks heretofore used, as shown in my prior application Ser. No. 771,148, filed June 2, 1913, and in which the chafing block is formed in two parts, such as 9^a and 9^b, in Fig. 3. In this modification the two parts of the chafing block have the capacity of relative vertical movement, and one of

said parts, such as 9^b, is formed with a spherical bearing surface coöperating with the spherical bearing surface, 11, of the adjoining chafing plate, 6, thereby providing for the relative vertical and rocking movements, and also for the radial movement between the ends of the vehicles.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a draft gear for railroad vehicles, the combination of two chafing plates each adapted for connection to the end of a vehicle and having a curved outer surface, the surface of one of said chafing plates being curved both horizontally and vertically, and a laterally movable interposed chafing block having corresponding surfaces coöperating with the surfaces of said chafing plates.

2. In a draft gear for railroad vehicles, the combination of a draw bar pivotally connected at its ends to the respective vehicles, two chafing plates, each mounted on one of the adjoining ends of the respective vehicles, the surface of one of said chafing plates being curved both horizontally and vertically, and a laterally movable interposed chafing block having a corresponding horizontally and vertically curved surface.

3. In a draft gear for railroad vehicles, the combination of two chafing plates each adapted for connection to the end of a vehicle and having a curved outer surface, the surface of one of said chafing plates being spherical, and a laterally movable interposed chafing block having corresponding surfaces coöperating with those of said chafing plates.

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Witnesses:

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