Aug. 13, 1935. E. G. HALLQUIST 2,011,051

RAILWAY BUFFING STRUCTURE

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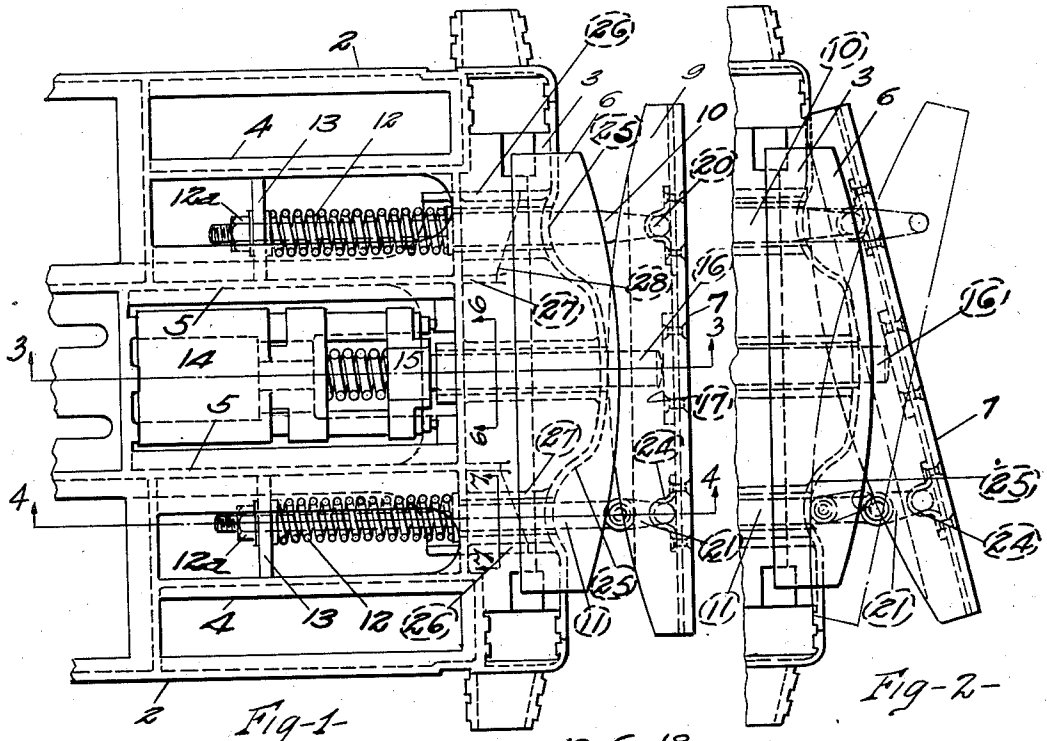


Fig-1-

Fig-2-

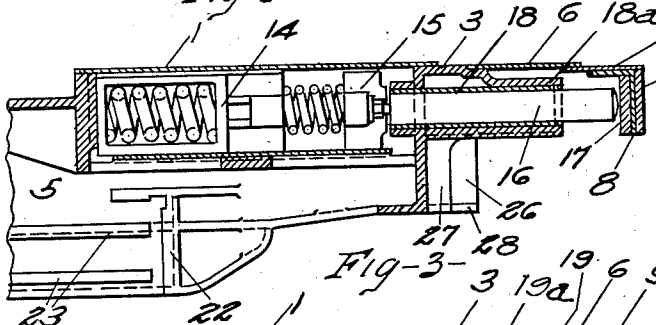


Fig-3-

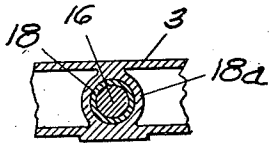


Fig-6-

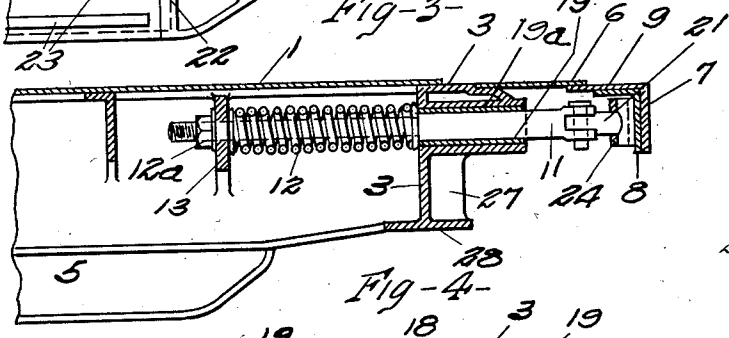


Fig-4-

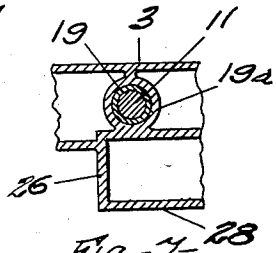


Fig-7-

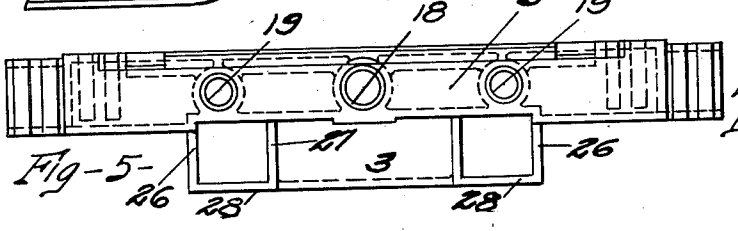


Fig-5-

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RAILWAY BUFFING STRUCTURE

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11 Claims. (Cl. 213—222)

This invention relates to buffing devices forming a part of the end construction of railway vehicles.

It is customary at present to provide railway passenger cars, in particular, at each end with a buffing device including a buffer beam forming a part of or spaced from the car end sill, and a buffer plate supported from the buffer beam by means of side buffer stems slidably mounted in the beam with their outer ends pivoted to the plate. A center buffer stem abuts the center of the buffer plate and suitable springs thrust all the stems outwardly. The center and side stems are usually of rectangular section to provide a flat bottom surface and pass through similarly shaped perforations, or pockets, in the buffer beam. These pockets are provided with suitable wearing blocks which directly support the buffer stems, and the side pockets are made somewhat wider than the side stems in order to accommodate movement of the side stems towards each other when the buffer plate is inclined from its normal transverse position as when the vehicle is on a curve.

This relative transverse movement between the side stems and the buffer beam causes considerable wearing of the stems, pockets, and wear plates, and in the past renewal of these members has been one of the most expensive items of maintenance on passenger equipment. Also the play of the stems in their bearings produces a continuous clanking noise which is highly objectionable to passengers near the end of the car.

The main object of the present invention is to provide a buffing device of the type referred to in which the buffer stems pass through closely fitting bearings in the buffer beam and transverse movement of the side buffer stems relative to the buffer beam is eliminated.

Another object is to simplify the construction of this type of buffing device by utilizing round stems and bearings therefor which are easier and consequently more economical to manufacture than rectangular bearings.

These objects and others hereafter appearing are attained by the structures illustrated in the accompanying drawing in which—

Figure 1 is a top view of a railway car platform illustrating the invention.

Figure 2 is a fragmentary top view of the same showing the buffer plate in different positions.

Figures 3 and 4 are longitudinal sections taken on the corresponding section lines of Figure 1.

Figure 5 is an end view of the platform with the buffing mechanism removed.

Figures 6 and 7 are detail transverse sections taken on lines 6—6 and 7—7, respectively, of Figure 1.

The novel buffing device in the figures is applied to a car end platform including a box-like end sill and buffer beam 3, side members 2, and intermediate and central longitudinal members 4 and 5, the latter forming draft sills having lugs 22 and ribs 23 for mounting the draft gear (not shown). Mounted on the upper surface of the buffer beam is a threshold plate 6 which projects outwardly from the beam. The spaces between various platform sills and transoms are closed by suitable flooring plates 1.

Adjacent the beam 3 is a buffer plate 7 having an angle 8 secured to the side thereof and a plate 9 at the top which extends beneath the threshold plate 6. The buffer plate is supported by means of side buffer stems 10 and 11 which extend through pockets 19a in the buffer beam, side buffer springs 12, and transverse members 13. The buffer beam is reinforced by vertical webs 26 and 27 and horizontal webs 28, which webs form a support for the coupler carrier, webs 27 being extensions of intermediate sills 5.

Mounted between the longitudinal members 5 is a friction buffing device 14 having a front follower 15 abutting the center buffer stem 16 which extends through pocket 18a in the buffer beam and abuts a bearing 17 on the buffer plate angle 8 but is not pivotally connected thereto.

Both the center and side stems are preferably of cylindrical section, as in Figures 6 and 7, and these pass through closely fitting cylindrical bearings 18 and 19 in the buffer beam. The bearings 18 and 19 are preferably of hardened steel to most effectually resist wear.

The side buffer stem 10 is pivoted at its outer end 20 directly to the buffer plate near one end thereof. Near the other end of the plate a link 21 is pivoted to a bracket 24 on the buffer plate and swingable horizontally relative thereto. The corresponding side buffer stem 11 is pivoted to the other end of link 21. During swiveling of the buffer beam, as in Figure 2, the link 21 may swing inwardly to compensate for the decreased distance between pivot connections 20 and 21 and avoid transverse movement of stems 10 and 11. The side buffer stems are susceptible to longitudinal movement only, so that it is unnecessary to provide clearance between stems and their pockets or bearings in the buffer beam. By closely fitting the side buffer stems within the bearings 18 and 19, wear upon these parts is minimized.

The outer surface of the buffer beam 3 is provided with recesses 25, one of which, during swiveling of the buffer plate, receives the pivoted connection between the link 21 and stem 14, the connection being larger than the stem. Positioning of the buffer plate on realignment of the adjacent vehicle is effected by means of springs 12. The nuts 12a limit the outward movement of the buffer plate.

The flexible connection between the buffer plate and one of the side buffer stems does not materially weaken the device, while at the same time it substantially improves the operation thereof due to the elimination of binding between side buffer stems and their bearings in the buffer beam. The cylindrical stem pockets are obviously readily drilled and machined and the provision of cylindrical bearings prevents wearing of any part of the platform casting. The cylindrical bearings, while subject to only slight wear, are readily replaceable and due to the close fit of the stems in their bearings the stems will wear evenly on all sides. Obviously, square stems such as are in general use may be substituted for the round stems illustrated and substantial advantages of the invention retained, but the round sections are preferable.

Various details of the framing to which the buffing device is applied may be modified without altering the advantageous results attained by the invention and exclusive use of all such modifications as come within the scope of the appended claims is contemplated.

What is claimed is:

1. A vehicle buffing device comprising a buffer plate having a plurality of supporting stems projecting therefrom, and a link pivotally connecting one of said stems to said plate.

2. A vehicle buffing device comprising a buffer plate, a side buffer stem pivoted directly thereto near one end, a link pivoted thereto near the other end and swingable horizontally only, and another side buffer stem pivoted to said link and supporting said plate through said link.

3. A vehicle buffing device comprising a buffer plate, a side buffer stem pivoted directly to said plate near one end, a link pivoted to said plate near the other end thereof, and another side buffer stem pivoted to said link.

4. In a car end construction, a buffer beam and a buffing device, said buffing device having a front plate, and center and side stems of round cross section, bushings in said buffer beam forming bearings for said stems, and a link pivoted to the outer end of one of said side stems and flexibly connected to the front plate of said device.

5. In combination, a car underframe end construction including a buffer beam, and a buffing device comprising a buffer plate adjacent said beam, side buffer stems pivotally connected with said plate and slidably mounted in said beam, elements yieldingly connecting said stems with said end construction, and a link flexibly connecting the end of one of said stems and said plate whereby said plate may swivel relative to said beam without causing transverse movement of said stems.

6. In a vehicle end construction, a buffer beam, and a buffing device including a buffer plate adjacent said beam, bearings extending through said beam, side and center buffer stems slidably mounted in said bearings and closely fitting within the same, one of said side stems being pivoted directly to said plate, and a link pivotally connecting the other side stem with said plate whereby said plate may swivel relative to said beam without causing transverse movement of said stems.

7. In a vehicle end construction, a buffer beam, and a buffing device comprising a buffer plate adjacent said beam, cylindrical bearings removably mounted in said beam, similarly shaped side and center buffer stems slidably mounted in said bearings and closely fitting within the same, one of said side stems being pivoted directly to said plate, and a link pivotally connecting the other side stem with said plate whereby said plate may swivel relative to said beam without causing transverse movement of said stems.

8. In a vehicle end construction, a buffer beam having bearings therein, and a buffing device including a buffer plate, buffer side stems slidably mounted in said bearings and closely fitting the same, one of said stems being pivoted directly to said plate near one end, and a link pivoted to said plate near the other end and connecting the other side stem thereto, the connection between said link and said latter-mentioned stem being larger in diameter than said stem, and the outer surface of said beam being recessed adjacent said link to receive said connection when the corresponding stem is retracted.

9. In combination in a railway vehicle, a buffer beam and a buffing device including a buffer plate adjacent said beam, buffer plate supporting structure projecting from said plate through said beam, and a pocket in said beam snugly receiving a portion of said structure and resisting transverse movement thereof, said structure being laterally flexible between said plate and said beam to permit swiveling of said plate.

10. A buffing device for a railway vehicle comprising a buffer plate, means abutting the same at the center thereof for resisting buffing forces applied to said plate, and buffer plate supporting devices pivoted to said plate at the sides of said means, one of said devices including a part for slidably cooperating with the vehicle buffer beam and laterally flexible structure adjacent said plate to permit swiveling of said plate.

11. In combination, a vehicle buffer beam having a pocket, a buffer plate adjacent said beam, and a buffer plate supporting device including an element longitudinally slidable in said pocket and snugly fitting the same so as to be held against transverse movement therein and laterally flexible structure to accommodate swiveling of said plate.

EINAR G. HALLQUIST.