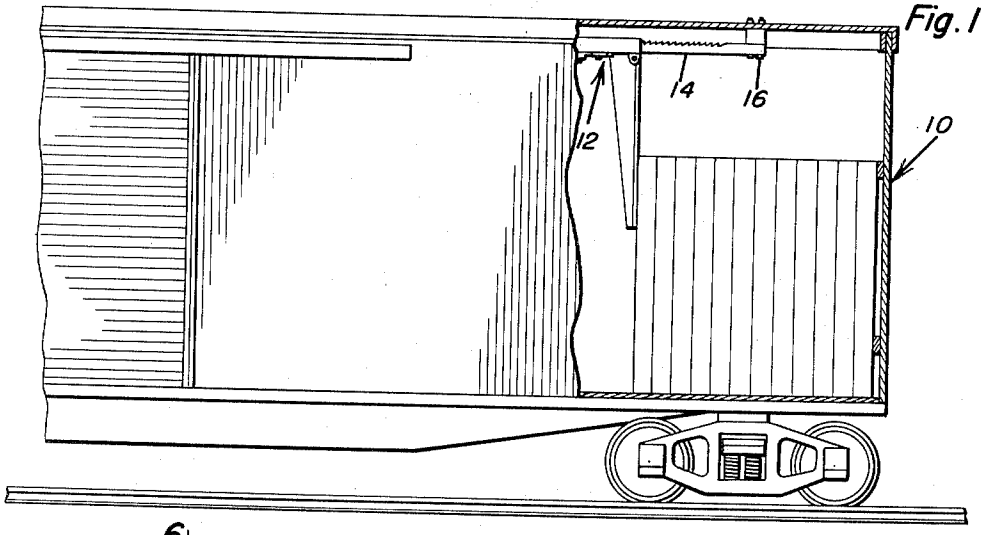
Sept. 25, 1956 H. L. STIEGEL 2,764,105

LOAD STOP FOR RAILROAD CARS

Filed Nov. 18, 1953

2 Sheets-Sheet 1

Fig. 1



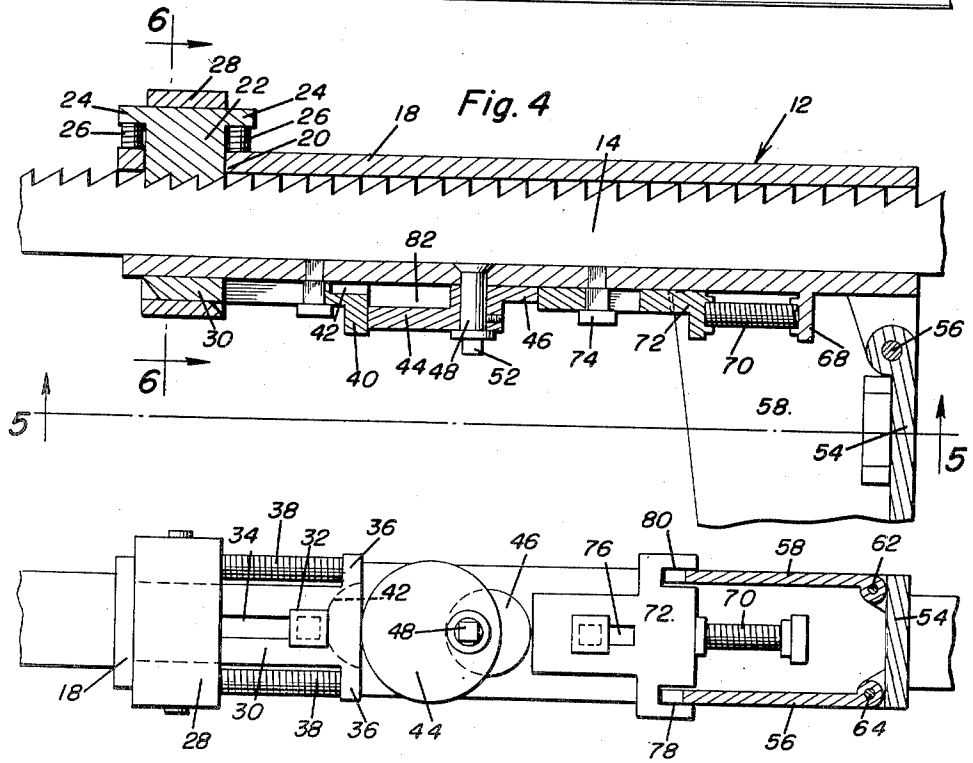


Fig. 4

Fig. 5

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Fig.2

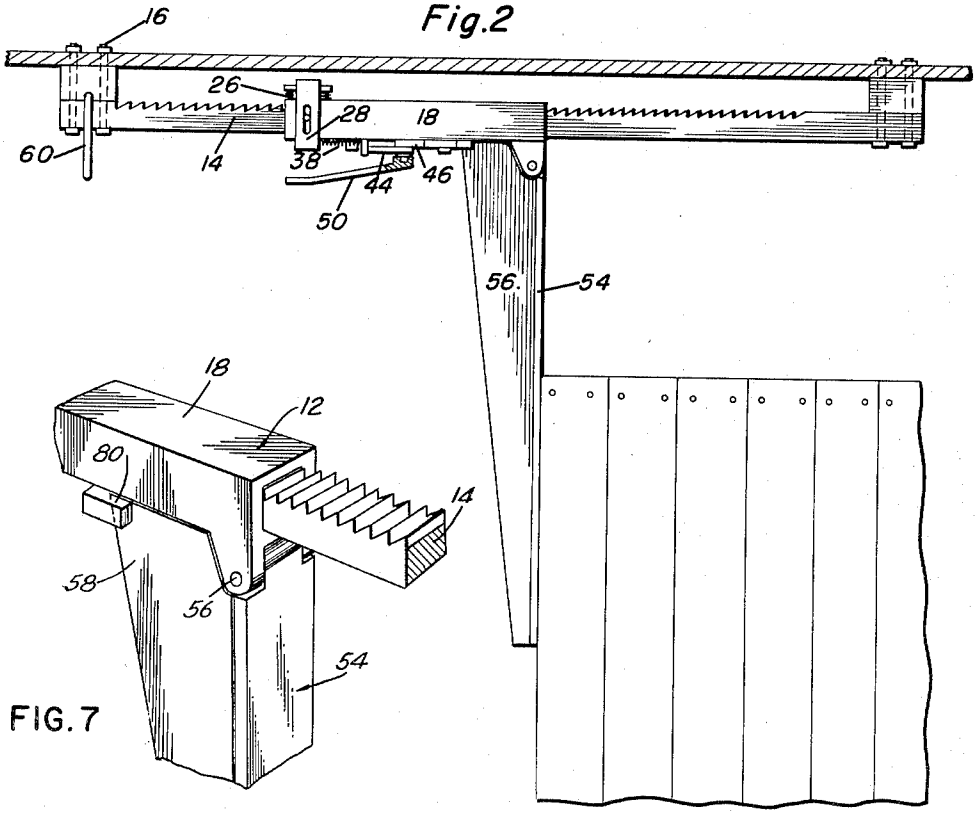
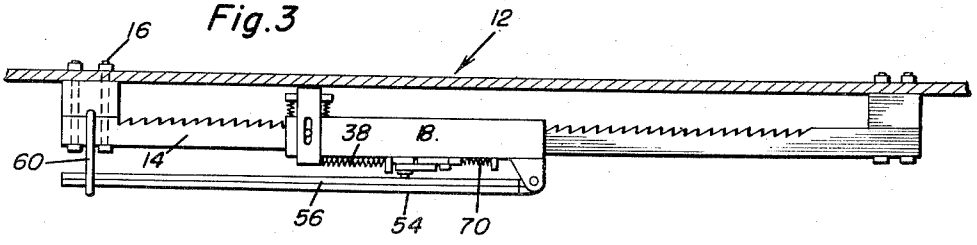


FIG.7

Fig.3



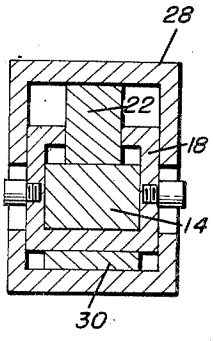


Fig.6

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United States Patent Office 2,764,105 Patented Sept. 25, 1956

2,764,105

LOAD STOP FOR RAILROAD CARS

Harry L. Stiegel, Jacksonville, Fla.

Application November 18, 1953, Serial No. 392,894

6 Claims. (Cl. 105—369)

This invention relates to an attachment for a railroad car and more particularly to apparatus adapted to prevent the shifting of loads caused by the various accelerations and decelerations to which a railroad car is normally subjected.

When cargoes shift in a railroad car due to the comparatively large accelerative and decelerative forces normally occuring in railroad operation, damage to the load is likely to occur. During the yearly operation of a railroad, this damage represents an enormous sum and it is a primary object of this invention to provide means which may be installed on various existing types and models of railroad cars for preventing the shifting of the loads in the cars while also being capable of being folded away so as to permit ready access to all parts of the railroad car during the loading and unloading operations.

The construction of this invention features bulkhead plates which are hingedly secured to the top, bottom or either to the side wall or the end wall of railroad cars in a manner so as to be readily extensible into engagement with the load. Means are provided for locking the bulkhead plates and for bracing the bulkhead plates so as to prevent the load in the railroad car from shifting.

Still further objects and features of this invention reside in the provision of a novel means for preventing the shifting of loads in railroad cars that is strong and durable, simple in construction and manufacture, easy to operate, yet which is comparatively inexpensive to produce, thereby permitting wide distribution.

These, together with the various ancillary objects and features of the invention which will become apparent as the following description proceeds, are attained by this load stop for railroad cars, a preferred embodiment of which has been illustrated in the accompanying drawings, by way of example only, wherein:

Figure 1 is a side elevational view with parts broken away of a railroad car illustrating the manner in which this load stop can be secured;

Figure 2 is an enlarged side elevational view of the load stop illustrating the bulkhead plate in an operative position;

Figure 3 is a view similar to that of Figure 2, but illustrating the device with the wing plates and the bulkhead plate held in an inoperative position for permitting the loading and unloading of the railroad car with great facility;

Figure 4 is an enlarged sectional detail view illustrating in particular the construction of the carriage and the means used for holding the carriage in relative position to the support bar and the means utilized for holding the bulkhead plate in a locked and operative position;

Figure 5 is a sectional view as taken along the plane of line 5—5 in Figure 4;

Figure 6 is a sectional detail view as taken along the plane of line 6—6 in Figure 4; and

Figure 7 is a partial perspective view of the bulkhead plate and associated members.

With continuing reference to the accompanying drawings wherein like reference numerals designate similar parts throughout the various views, reference numeral 10 generally designates a conventional type of railroad car on which the load stop comprising the present invention and generally indicated by reference numeral 12 is adapted to be attached. The load stop 12 includes a toothed support bar 14 which is bolted as at 16 or otherwise attached to the roof, floor or any of the side walls or end walls of the railroad car 10 in a manner dictated by the type of railroad car and the configuration of the structural elements thereof.

Slidably mounted on the bar 14 is a carriage 18 having an aperture 20 therethrough through which a toothed member 22 can extend. The teeth on the member 22 are adapted to engage with the teeth on the bar 14 for locking the carriage 18 against movement after the carriage 18 has been adjustably positioned. The toothed member 22 has end portions, as at 24, and coil springs 26 form resilient means which resiliently engage and extend between the shoulders 24 and the carriage 18. Of course, the springs 26 may be positioned over stub rods or lugs to prevent disengagement of the springs 26.

Positioned in overlying and embracing relationship about the toothed member 22 and the casing 18 is a casing 28. When the casing 28 is in a lower position due to the action of a filler member 30, the casing 28 will hold the toothed member 22 in engagement with the bar 14 against the compressive forces exerted by the springs 26.

The filler member 30 is slidably keyed to the carriage 18 by means of a holding key or fastener 32 secured in the casing 18 which extends through a slot 34 in the filler member 30. The wedge 30 is provided with outer end projections 36 and coil springs, as at 38, continuously urge the filler member 30 outwardly from the casing 28. The filler member 30 has a downwardly projecting tongue 40, as well as an arcuate recess 42 therein.

The tongue 40 is adapted to abut against the larger disk 44 of a pair of integrally formed eccentric disks 44 and 46 which form a cam member and which is secured on a shaft 48 journaled in the carriage 18. The disks 44 and 46 can be rotated by means of a handle which can be detachably secured to the square-headed extension 52 of the shaft 48 when it is desired to rotate the disks. The smaller disk 46 is adapted to be selectively seated within the recess 42 in the filler member 30.

A bulkhead plate 54 is hingedly secured, as at 55, to the carriage 18 and may be folded to a position, as is shown in Figure 3, wherein the bulkhead plate and the associated wing plates 56 and 58 can be supported by a ring type support member 60 carried by the bar 14. The wing plates 56 and 58 are pivotally secured, as at 62 and 64, to the bulkhead plate 54 which is adapted to restrain the load against shifting. The wing plates 56 and 58 are adapted to be rotated to a position where they are arranged in spaced parallel relationship to each other and perpendicular to the bulkhead plate 54, as is shown in Figure 5, and are adapted to be held in this position to lockingly hold the bulkhead plate 54 against pivotal movement and to reinforce the bulkhead plate 54.

There is mounted on the carriage 18 a stop 68 which is engaged by a spring 70, the other end of which engages a slide 72 keyed by means of a fastener or key 74 which extends through a slot 76 in the slide 72 to mount the slide 72 on the carriage 18. Hence, the carriage 72 is adapted for slidable movement relative to the carriage 18. The slide 72 is provided with grooves 78 and 80 therein for reception of the wing plates 56 and 58, respectively. The spring 70 normally urges the slide 72

into engagement with the cam member formed by the disks **44** and **46**.

In operation, with the device in the position as is shown in Figure 5, it is merely necessary to rotate the shaft **48** to position the disk **46** into the recess **42** and to permit the spring **70** to urge the slide **72** into the space, as indicated at **82**, formed by the offset of the disk **44** from the disk **46** so that the wing plates **56** and **58** may be disengaged from the grooves **78** and **80** and folded outwardly so as to be capable of being pivoted with the bulkhead plate **54** to the position as is shown in Figure 3. Then, when it is desired to lower the bulkhead plate **54** so that it may be used as a stop for the cargo, it is merely necessary to disengage the bulkhead plate **54** from the ring **60** and then rotate the cam member formed by the disks **44** and **46** so that the larger disk **44** abuts against the filler member **30** with the tongue portion **40** thus locking the filler member **30** with the carriage **18** in its adjusted position so that the toothed member **22** engages the bar **14** and so that the small disk **46** forces the slide **72** to engage the wing plates **56** and **58** to lockingly hold them in position, the wing plates **56** and **58** having been hingedly rotated to a position normal to the bulkhead plate **54**.

Since from the foregoing, the construction and advantages of this load stop for railroad cars is readily apparent, further description is believed to be unnecessary.

However, since numerous modifications will readily occur to those skilled in the art after a consideration of the foregoing specification and accompanying drawings, it is not intended to limit the invention to the precise embodiment shown and described, but all suitable modifications and equivalents may be readily resorted to which fall within the scope of the appended claims.

What is claimed as new is as follows:

1. An apparatus for eliminating shifting of loads in railroad cars comprising a toothed support bar adapted to be secured in the interior of a railroad car, a carriage slidably positioned on said bar, a bulkhead plate hingedly secured to said carriage, wing plates hingedly secured to said bulkhead plate engaging said carriage to prevent rotation of said bulkhead plate in one direction, means for adjustably locking said carriage relative to said bar, and means carried by said carriage for lockingly engaging and holding said wing plates in spaced parallel relationship to each other and normal to said bulkhead plate to lock said bulkhead plate normally to said support bar.

2. An apparatus for eliminating shifting of loads in railroad cars comprising a toothed support bar adapted to be secured in the interior of a railroad car, a carriage slidably positioned on said bar, a bulkhead plate hingedly secured to said carriage, wing plates hingedly secured to said bulkhead plate engaging said carriage to prevent rotation of said bulkhead plate in one direction, a toothed member adapted to engage and to interlock in toothed relationship with said toothed support bar, a casing positioned in overlying relationship relative to said toothed member and said bar, resilient means engaging and extending between said carriage and said toothed member resiliently urging said toothed member out of engagement with said bar, a filler member receivable between said casing and said carriage for holding said toothed member into engagement with bar, said toothed member being engaged by said carriage, and means carried by said carriage for lockingly engaging and holding said wing plates in spaced parallel relationship to each other and normal to said bulkhead plate to lock said bulkhead plate normal to said support bar.

3. An apparatus for eliminating shifting of loads in railroad cars comprising a toothed support bar adapted to be secured in the interior of a railroad car, a carriage slidably positioned on said bar, a bulkhead plate hingedly secured to said carriage, wing plates hingedly secured to said bulkhead plate engaging said carriage to prevent rotation of said bulkhead plate in one direction, means carried by said carriage engaging said bar for adjustably locking said carriage relative to said bar, a slide carried by said carriage having a pair of grooves therein for reception of center edge portions of said wing plates, said first recited means including cam means holding said slide in engagement with said wing plates, said cam means engaging said means for adjustably locking said carriage relative to said bar.

4. An apparatus for eliminating shifting of loads in railroad cars comprising a toothed support bar adapted to be secured in the interior of a railroad car, a carriage slidably positioned on said bar, a bulkhead plate hingedly secured to said carriage, wing plates hingedly secured to said bulkhead plate engaging said carriage to prevent rotation of said bulkhead plate in one direction, an opening through said carriage, a toothed member engaging said toothed support bar in interlocking relationship, a caging positioned in overlying relationship relative to said toothed member and said bar, said carriage engaging said toothed member, resilient means engaging and extending between said carriage and said toothed member resiliently urging said toothed member out of engagement with said bar, a filler member receivable between said casing and said carriage for holding said toothed member into engagement with said bar, a slide carried by said carriage having a pair of grooves therein for reception of center edge portions of said wing plates, cam means holding said slide in engagement with said wing plates, said cam means engaging said filler member.

5. An apparatus for eliminating shifting of loads in railroad cars comprising a toothed support bar adapted to be secured in the interior of a railroad car, a carriage slidably positioned on said bar, a bulkhead plate hingedly secured to said carriage, wing plates hingedly secured to said bulkhead plate engaging said carriage to prevent rotation of said bulkhead plate in one direction, an opening through said carriage, a toothed member adapted to engage and to interlock in toothed relationship with said toothed support bar, a casing positioned in overlying relationship relative to said toothed member and said bar, said carriage engaging said toothed member, resilient means engaging and extending between said carriage and said toothed member resiliently urging said toothed member out of engagement with said bar, and a filler member receivable between said casing and said carriage for holding said toothed member into engagement with said bar, a slide carried by said carriage having a pair of grooves therein for reception of center edge portions of said wing plates, cam means holding said slide in engagement with said wing plates, said cam means engaging said filler member, said cam means comprising a pair of eccentrically disposed disks appended to each other, said apparatus further including springs resiliently urging said slide and said filler member into engagement with said eccentrically disposed disks.

6. An apparatus for eliminating shifting of loads in railroad cars comprising a toothed support bar adapted to be secured in the interior of a railroad car, a carriage slidably positioned on said bar, a bulkhead plate hingedly secured to said carriage, wing plates hingedly secured to said bulkhead plate engaging said carriage to prevent rotation of said bulkhead plate in one direction, an opening through said carriage, a toothed member engaging said toothed support bar in interlocking relationship, a casing positioned in overlying relationship relative to said toothed member and said bar, said carriage engaging said toothed member, resilient means engaging and extending between said carriage and said toothed member resiliently urging said toothed member out of engagement with said bar, a filler member receivable between said casing and said carriage for holding said toothed member into engagement with said bar, a slide carried by said carriage having a pair of grooves therein

for reception of center edge portions of said wing plates, said means for adjustably locking said carriage relative to said bar including cam means, said cam means urging said slide into engagement with said wing plates, said filler member and said slide being longitudinally slidably keyed to said carriage.

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