

June 11, 1968

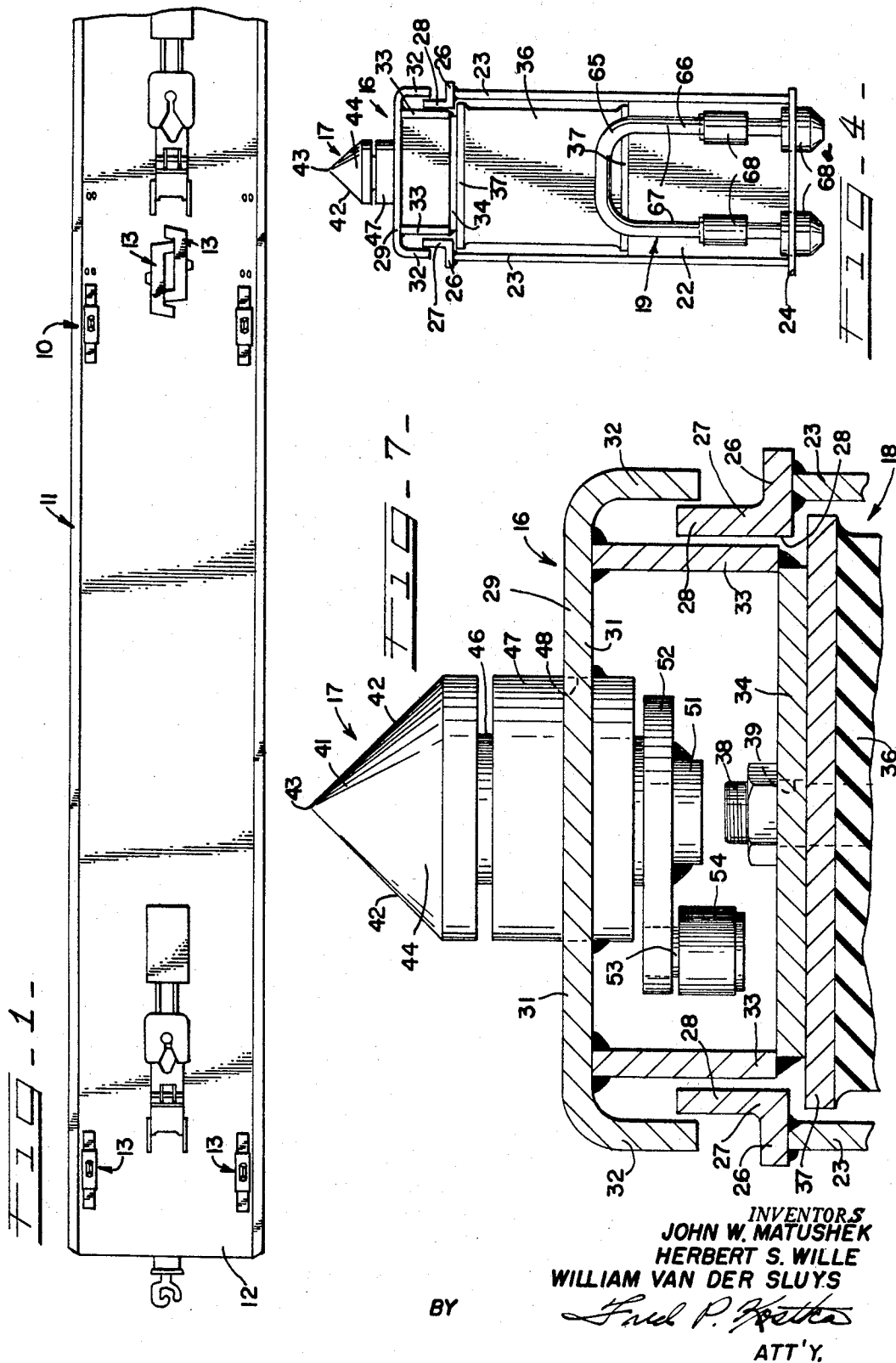
J. W. MATUSHEK ET AL

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CONTAINER MOUNTING ARRANGEMENT FOR FLAT CAR

Filed March 28, 1966

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FIG. 2

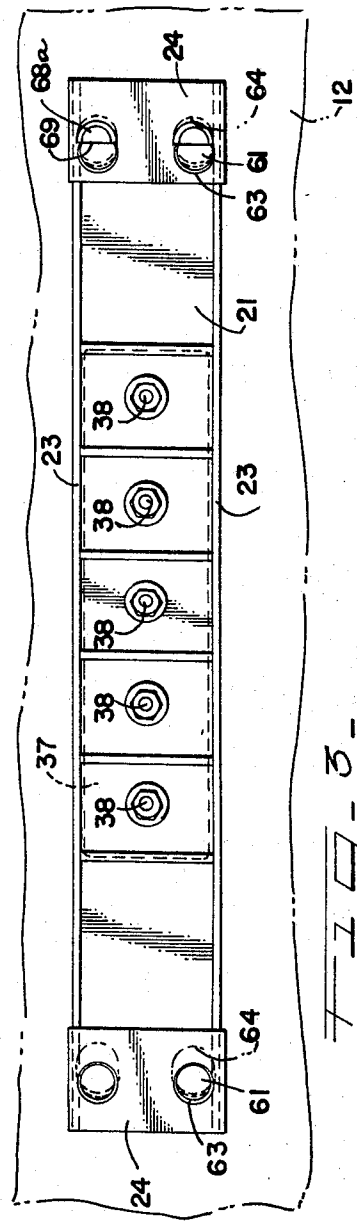
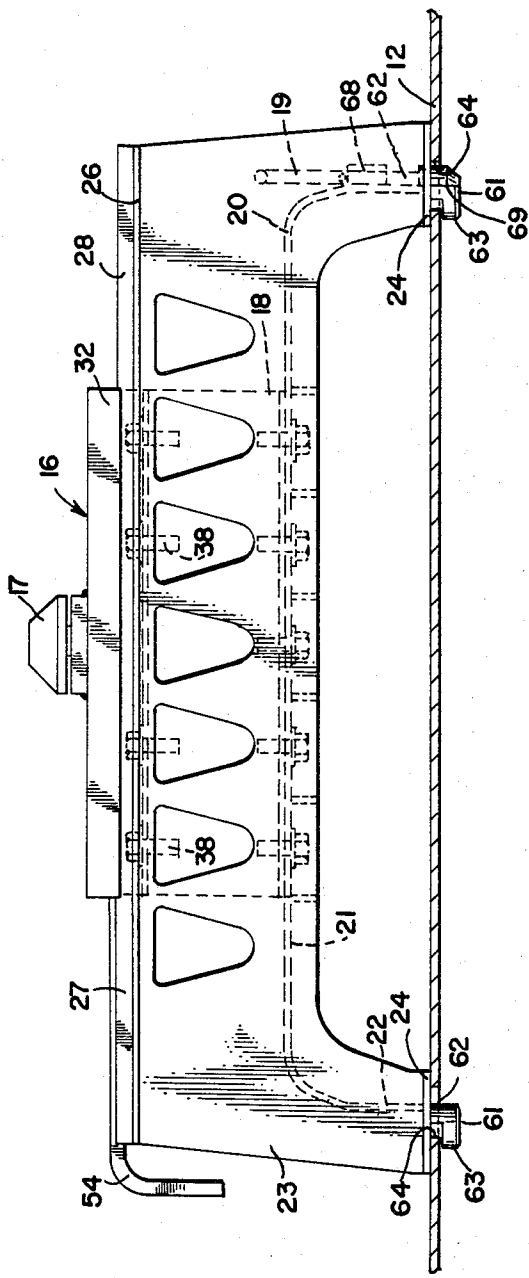


FIG. 3

INVENTORS
JOHN W. MATUSHEK
HERBERT S. WILLE
WILLIAM VAN DER SLUYS
BY *Fred P. Ketter*
ATT'Y.

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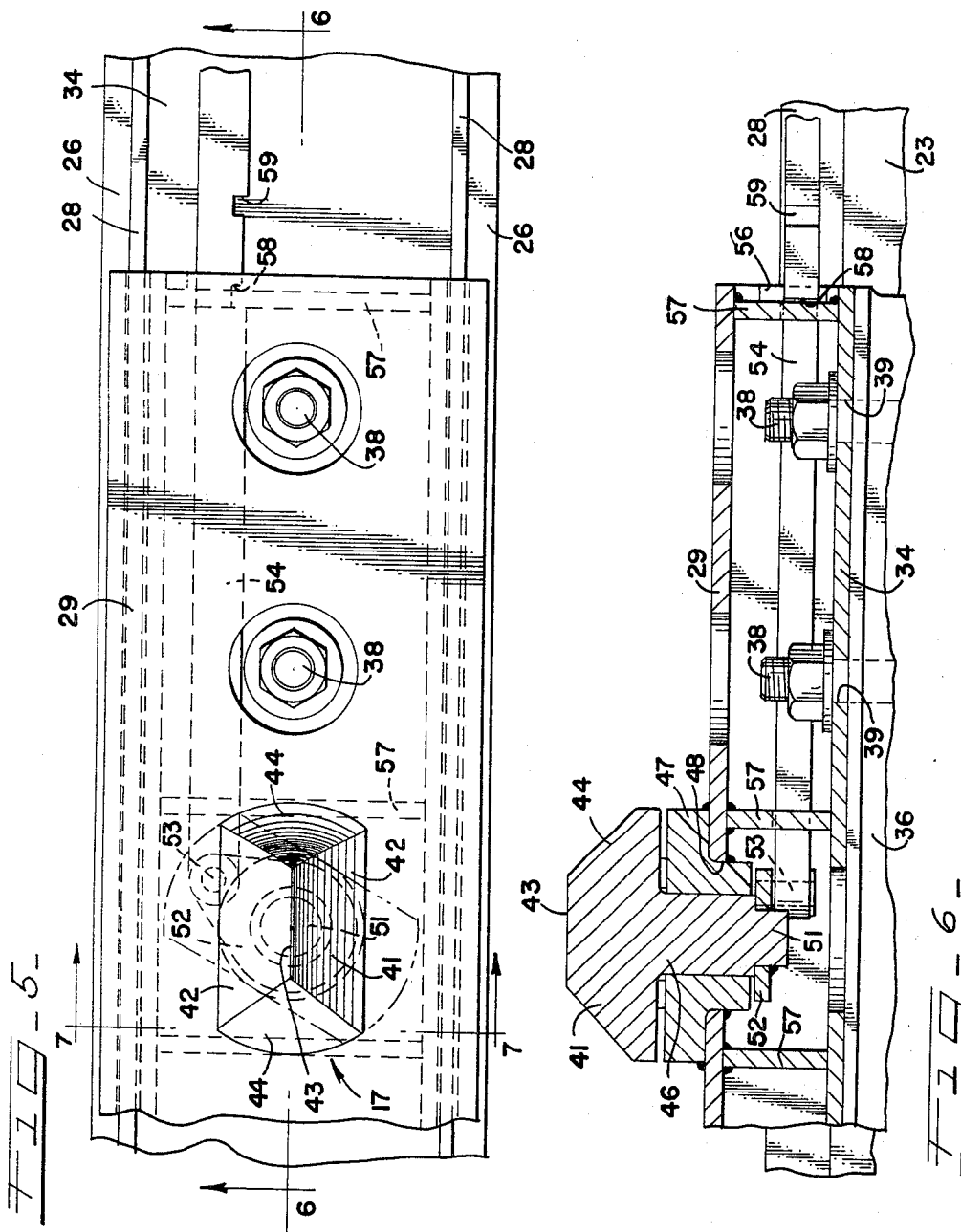
J. W. MATUSHEK ETAL

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INVENTORS
JOHN W. MATUSHEK
HERBERT S. WILLE
WILLIAM VAN DER SLUYS
BY *Fred P. Kostka*
ATT'Y.

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CONTAINER MOUNTING ARRANGEMENT FOR FLAT CAR

John W. Matushek, Harvey, and Herbert S. Wille and
William Van Der Sluys, Homewood, Ill., assignors to
Pullman Incorporated, Chicago, Ill., a corporation of
Delaware

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ABSTRACT OF THE DISCLOSURE

A mounting arrangement for supporting and securing a cubic container of the type having corner fittings on the floor of a railway car, said mounting arrangement comprising four container supporting and fastening assemblies, each assembly including a base having a longitudinally extending horizontal base, upstanding flanges extending from said base, a slide member overlying the free ends of said flanges, coacting guiding means on said flange and said slide member for guiding said slide member for lengthwise movement of said base, and elastomeric means having opposing faces fixed to said base and said slide member so that upon relative movement of said base and said slide member, said elastomeric means is elongated in shear, indexing and container locking means mounted on said slide member, and means detachably mounting said assemblies with each associated with a respective one of said corner fittings whereby said container is indexed and fastened to said car.

The present invention relates to a railway flat car and more particularly to a new and improved arrangement detachably secured to the flat car for providing a cushioned mounting and fastening arrangement for containers adapted to be transported on the flat cars.

It is a principal object of the present invention to provide a new and improved container mounting arrangement for mounting and fastening containers on railway cars and which is constructed and arranged so as to impart cushioned travel to the container mounted on the mounting arrangement.

It is a further object to provide a detachable mounting arrangement for mounting and fastening containers on a railway flat car including a plurality of container supporting and fastening assemblies which are constructed and arranged so as to provide cushioned travel with each of the assemblies being associated with a respective one of the corner fastenings of a container.

It is still another object to provide a container supporting and fastening assembly of the foregoing described type with a new and novel arrangement for detachably securing the assembly on the car floor so that the assemblies may be readily removed and stored when not in use.

Further objects and features will hereinafter appear. In the drawings:

FIG. 1 is a fragmentary plan view of a railway car showing the mounting arrangement of the present invention in the operative and stored positions thereof;

FIG. 2 is a side elevational view of one of the container supporting and fastening assemblies of the mounting arrangement shown in FIG. 1;

FIG. 3 is a bottom plan view of the arrangement as shown in FIG. 2;

FIG. 4 is an end elevational view of the container supporting and fastening assembly viewed from the left end of FIG. 2;

FIG. 5 is a fragmentary top plan view of the supporting and fastening assembly showing in particular the indexing head structure mounted on the slide member.

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FIG. 6 is a cross sectional view taken generally along the line 6—6 of FIG. 5 and showing in particular the indexing head structure and the operating mechanism thereof; and

FIG. 7 is a cross sectional view taken generally along the line 7—7 of FIG. 5.

Referring now to the drawings, the container mounting arrangement 10 of the present invention is shown arranged and mounted on a railway flat car 11 which may be of substantially conventional structure including a floor 12 supported by the usual underframe members. The container mounting arrangement 10 includes a plurality of container supporting and fastening assemblies 13 which are detachably mounted on the car so as to be positioned for engagement with the respective corner fittings on a container adapted to be transported on the railway car. The assemblies 13 may be in the operative container position as shown in FIG. 1 or may be stored centrally of the car when not in use.

The container supporting and fastening assemblies 13 comprise generally a base 14 upon which there is mounted a slide member 16 having an indexing mechanism 17, a resilient cushioning device 18, disposed between the sliding member 16 and base 14, for imparting cushioned travel and a latching mechanism 19 for detachably fastening the assemblies on the floor 12 of the railway car 11.

The base 14 includes a plate 20 having a horizontal web 21 from which there depend vertical ends 22. Extending along and fixed to the edges of the plate 20 are transversely spaced upstanding side webs 23. Fixed to the bottom edges of the transversely spaced plate 23 and the downwardly extending leg 22 is a connecting plate 24. Mounted on the upper ends of each of the transversely spaced plates 23 as by welding as shown in FIG. 7 is a horizontal leg 26 of an angle member 27. The angle member 27 includes an upstanding leg 28 which is spaced somewhat inwardly of the side plates 23.

Guided by the angle member 27 as shown in FIG. 7 is the slide member 16 which includes a channel member 29 having a horizontal web 31 from which there depend downwardly extending legs 32. The legs 32 are parallel and located outwardly of the vertical legs 28 or the guide members 27. Fixed to the underside of the web 31 as by welding are a pair of transversely spaced vertical plates 33 which lie inwardly of the legs 28 of the angle members 27. It should be readily apparent that the channel flanges 32 and the plates 33 provide a guide way which confine the vertical angle legs 28 whereby the slide member 16 is guided for lengthwise movement of the base 14.

Fixed between the plate 21 of the base 14 and an attachment plate 34 extending between the downwardly depending plates 33 is the cushioning device 18 which is arranged to permit limited longitudinal travel between the sliding member 16 and the base 14. In the form shown the cushion device 18 comprises an elastomeric block 36 formed, for example, from rubber or the like. Adhered or bonded to the upper and lower faces of the rubber block 36 are metallic plates 37 into which there is threaded a plurality of lengthwise spaced bolts 38 which extend through complementary spaced openings 39 formed in the horizontal plate 34 and horizontal plate 21 of the slide member and base, respectively.

Mounted on the slide member 16 is an indexing and locking assembly 17 which serves to locate and lock the containers on the car by way of the corner fittings fixed on the containers. These corner fittings are of standardized construction and include a generally elongate opening into which the indexing and locking assembly 17 are adapted to be inserted. The indexing and locking assemblies 17 each comprise a head 41 formed with sloping side faces 42 converging at an apex 43. The end faces 44 are formed of a generally conical contour. Depending

from the underside of the head 41 is a shaft 46 which is journaled in a bearing block 47 which is inserted and fixed within an opening 48 formed in the horizontal web 31 of the channel 29. The shaft 46 at its lower end is formed with a reduced portion 51 which projects downwardly below the bearing block 47 and has fixed thereto as by welding one end of a lever 52. The other end of the lever 52 is pivotally connected as by a pivot stud 53 to an actuating lever 54 which extends longitudinally of the slide member 16. The free end of the actuating lever 54 extends through an elongate opening 56 formed in a transversely extending reinforcing plate 57 which is fixed between the web 31, plate 34 and plates 33—33. Similar reinforcing plates 57 are located adjacent the journal block 47, as shown in particular in FIG. 6 and are formed with an opening for accommodating the actuating lever 54.

The indexing heads 41 in the indexing position located so that the inclined faces 42 extend longitudinally of the cushion assemblies 13 as shown in full lines on FIG. 5. In the container locking position, the actuating lever 54 is operated to turn the indexing head 60° into a position in which the inclined faces are located transversely to the longitudinal axis of the cushion arrangement 13. For holding the indexing head 41 in the locked or guiding position there is provided in the actuating lever 54 a pair of longitudinally spaced notches 58—59. When the notch 58 is engaged within the reinforcing plate 57, the indexing head is held in the indexing position and engagement of the notch 59 with the plate 57 retains the indexing head in the locked position. In the locked position of the indexing head 41 the underside of the head 41 overlies a flange bounding the opening in the corner fitting of the container, thereby to retain the same locked on the mounting assembly 13.

The container mounting assemblies 13 are each located on the car to accommodate the corner fittings of the container thereon. To this end it should be mentioned that the containers employed on a railway transport are of given standardized nominal dimensions so that the position of the corner fittings on the containers is correspondingly standardized.

The container mounting assemblies 13 are detachably connected or mounted on the car floor to accommodate the nominal standardized dimensions of the corner fittings. To this end, there is fixed to the underside of each of the base plates 24 of the base member 14, a pair of legs 61 having a vertical shank 62 and a horizontally disposed toe-like projection 63. The legs 61 are accommodated within elongate openings 64 formed in the floor 12 of the railway car 10. To fasten the assemblies 13 on the floor 12 the legs are inserted through the respective elongate openings 63 and thereafter moved longitudinally so that the toe-like projections underlie the floor 12.

To secure the assembly 13 against displacement out of the openings 64 there is provided a latching member 65 comprising a U-shaped bail 66 having vertically disposed legs 67—67 which are slidably supported in bearing straps 68 fixed to the outer face of downwardly depending leg 22 of the base 14. At the lower ends the bails 67—67 are each formed with a semi-cylindrical filler member 68a having a flat side 69 which is abutable or slidable against the rear face of the shank 61. The filler members 68a are sized so as to substantially fill the remaining space in the slots 64 and thereby to preclude displacement of the toe-like projections from underlying relationship with the floor 12.

When each of the mounting assemblies 13 are positioned as shown in FIG. 1, and the indexing heads 41 are positioned in their indexing position with the tapering sides 42 extending longitudinally of the car, a container to be transported on the car is placed thereon by means of a crane lift or the like so that the indexing heads are seated within the openings in the corner fittings. Thereafter each of the indexing heads 17 of the mounting assemblies 13 is turned transversely, as heretofore ex-

plained, so that the heads 41 overlie the flanges of the corner fitting openings. In this manner the container is mounted and fastened on the car 11.

Under conditions in which the container is loaded, the rubber block 36, disposed between the slide member 16 and the base 14, is compressed so that the vertical flanges 32 rest on the upper surface of the respective horizontal legs 26 of the guide angles 27 fixed to the base 14. Upon application of buff or draft forces on the coupler ends of the car, the container mounted on the mounting assemblies moves lengthwise relative to the car. During such movement the slide member 16 guided by the guiding angle 27 moves lengthwise to the base 14 so that the rubber block 36 fixed between the slide 16 and base 14 is elongated in shear. The rubber block during this elongation is operative to absorb a portion of the energy of the impact and thereby cushion the container and the lading carried therein.

What is claimed is:

1. A mounting arrangement for supporting and securing a cubic container of the type having corner fittings on the floor of a railway car, said mounting arrangement comprising container supporting and fastening assemblies, each assembly including a support base having a longitudinally extending horizontal base part, upstanding flanges extending from said base part, a slide member overlying the free ends of said flanges, coacting vertically extending guiding means on said flange and said slide member for limiting lateral movement of said slide member and guiding said slide member for lengthwise movement of said base, and vertically extending elastomeric means having upper and lower opposing faces fixed to said base part and said slide member so that upon relative movement of said base part and said slide member, said elastomeric means is elongated in shear, indexing and container locking means mounted on said slide member above the elastomeric means, and means carried by each locking means above the elastomeric means and below the locking means and detachably mounting each of said assemblies with a respective one of said corner fittings whereby said container is indexed and fastened to said car and means releasably securing the assembly with the car floor.

2. The invention as defined in claim 1 wherein said coacting means is defined by said upstanding flanges including longitudinal guide means fixed thereon and said slide member including transversely spaced and downwardly depending means embracing said longitudinal guide means so that said slide member is movable lengthwise of said base.

3. A mounting arrangement for supporting and securing a cubic container of the type having corner fittings on the floor of a railway car, said mounting arrangement comprising four container supporting and fastening assemblies, each assembly including a base having a longitudinally extending horizontal base part, upstanding flanges extending from said base part, a slide member overlying the free ends of said flanges, coacting guiding means on said flange and said slide member for guiding said slide member for lengthwise movement of said base, and elastomeric means having opposing faces fixed to said base part and said slide member so that upon relative movement of said base part and said slide member, said elastomeric means is elongated in shear, indexing and container locking means mounted on said slide plate, and means detachably mounting said assemblies with each associated with a respective one of said corner fittings whereby said container is indexed and fastened to said car, said base part being provided with a plurality of leg means disposed on opposite ends of said base part, said leg means each including a vertical portion fixed at one end to the underside of said base part and a horizontal portion extending from the other end thereof and spaced from said base part so as to underlie the edge of an elongate opening into which said horizontal portion is adapted

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to be inserted, and latch means including a bail-like member having latching portions movable between a retracted position and a position overlying said leg means on end of said base part whereby said latching portions are operative to fill said elongate opening into which said base leg means are inserted and retain said horizontal portions in underlying relationship with the edge portions of said openings.

4. The invention as defined in claim 2 wherein said coacting is defined by said upstanding flanges including an angle member fixed to the free edges thereof, said angle member including a vertical leg disposed between respective pairs of said downwardly depending members.

5. The invention according to claim 1 and means releasably securing each of the assemblies with the car floor.

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6. The invention according to claim 1 and said base being provided with aperture means and leg means extendible in said apertures and in the railroad car and latch means in the apertures to lock the leg means to the base and to the car.

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DRAYTON E. HOFFMAN, *Primary Examiner*.