United States Patent

[11] 3,556,019

[72] Inventors **Phillip D. Schwiebert**
Glenco;
Edward S. Steck, Chicago, Ill.

[21] Appl. No. **778,517**
[22] Filed **Nov. 25, 1968**
[45] Patented **Jan. 19, 1971**

[73] Assignee **MacLean Lock Nut Company**
Mundelein, Ill.
a corporation of Delaware

[54] **RAILROAD CAR SUPPORT AND SECUREMENT STRUCTURE INCLUDING A COLLAPSIBLE SUPPORT PEDESTAL**
19 Claims, 12 Drawing Figs.

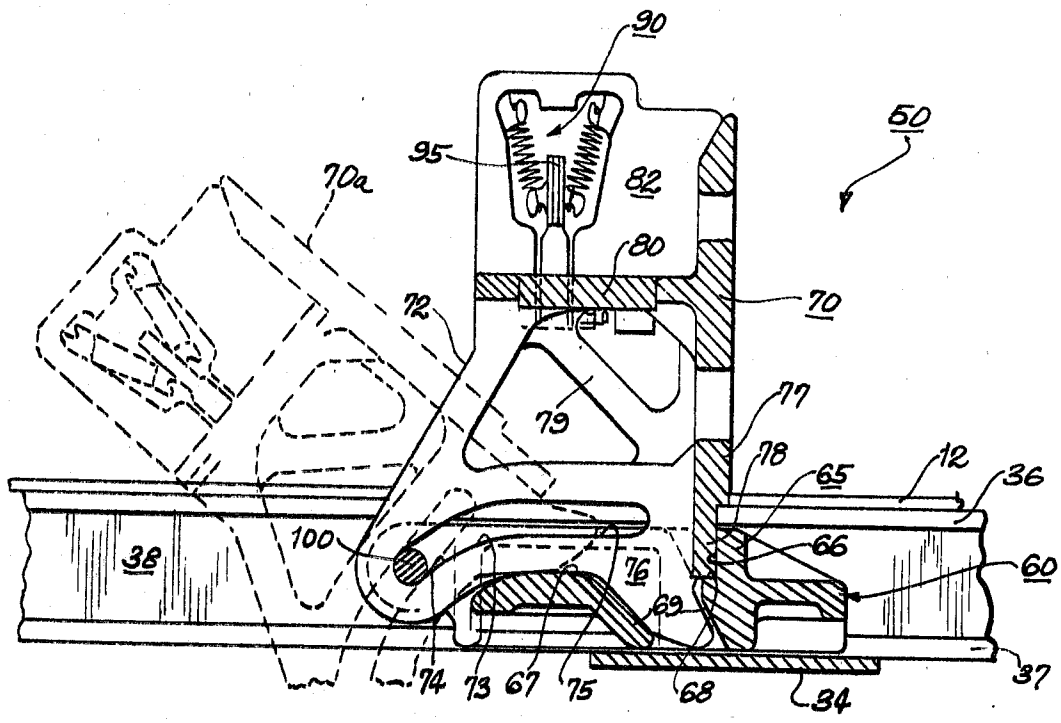
[52] **U.S. Cl.** **105/366,** 248/119, 248/361
[51] **Int. Cl.** **B60p 7/08,** B65j 1/22
[50] **Field of Search** 105/366, 369A, 368B; 248/119, 361; 296/35.1

[56] **References Cited**
UNITED STATES PATENTS

3,391,654	7/1968	Grob et al.	105/366
3,417,712	12/1968	Pulcrano et al.	105/368(B)
3,431,868	3/1969	Cordani et al.	105/366

Primary Examiner—Drayton E. Hoffman
Attorney—Davis, Lucas, Brewer & Brugman

ABSTRACT: Railroad car support and securement structure for carrying box containers upon collapsible pedestals each including a base received and retained within an anchor track and a standard joined to the base for swinging movement relative thereto between alternate dispositions erect over the track or retracted flat against flanges thereof, respectively. Interlock means are provided on the standard member for engagement with the track to secure the pedestal at a desired erect disposition.



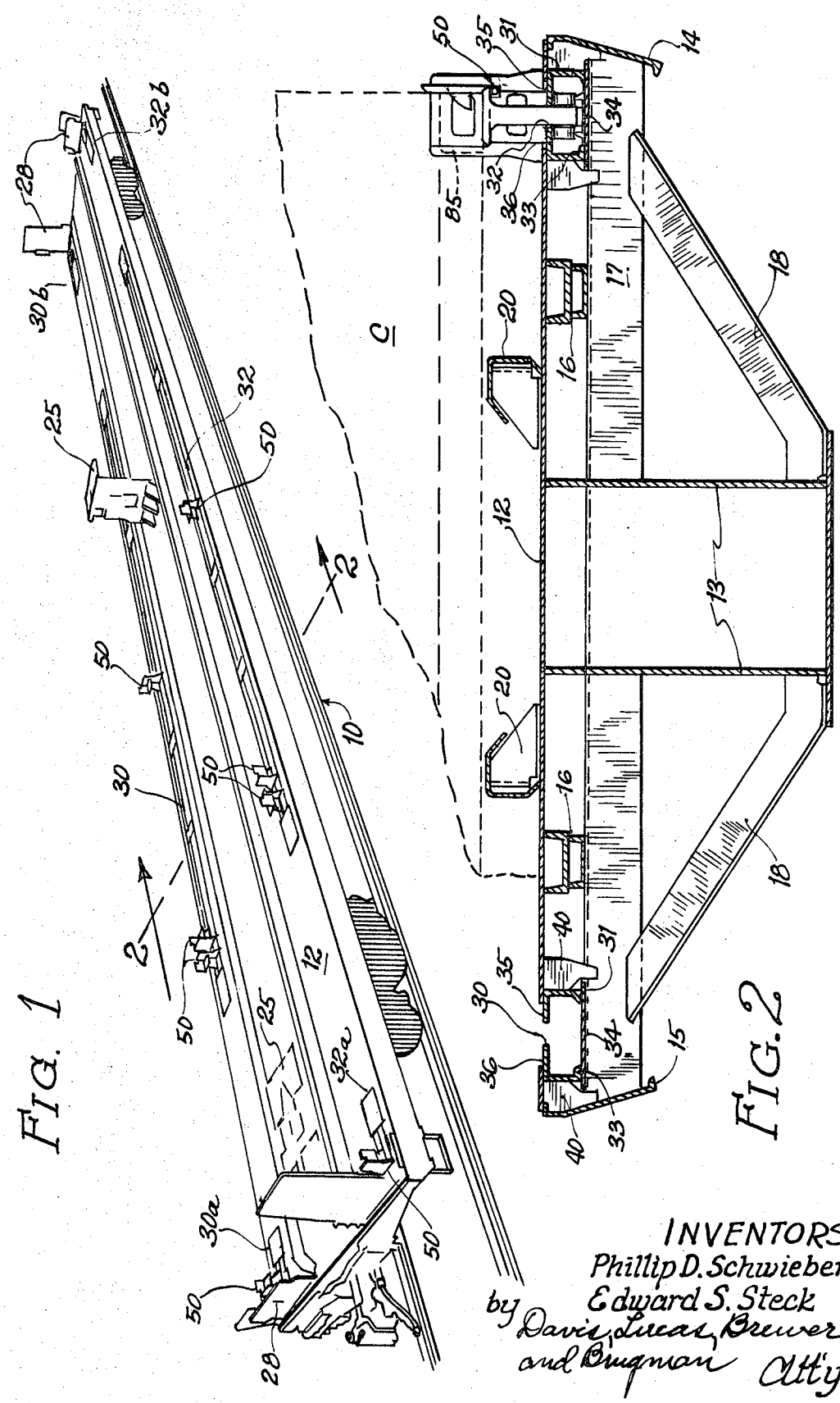


FIG. 1

FIG. 2

INVENTORS
Phillip D. Schwiebert
Edward S. Steck
by Davis, Lucas, Brewer and Brugman Attys

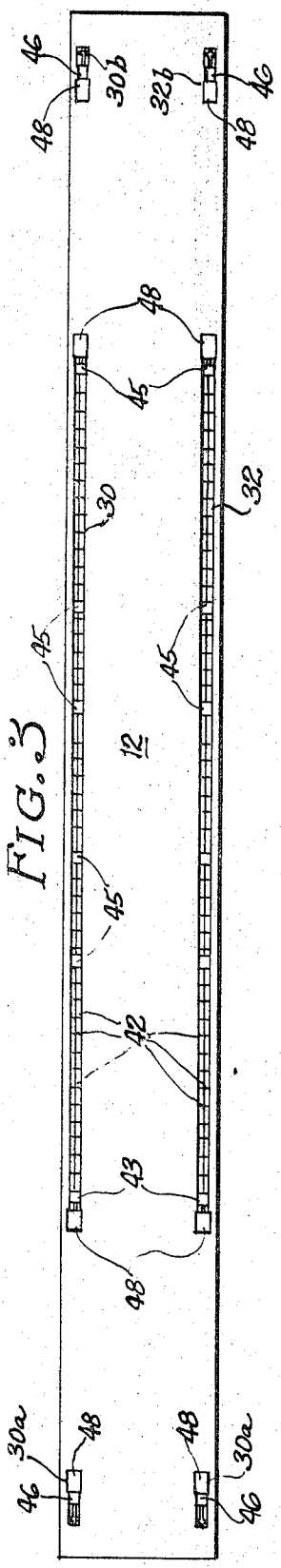


FIG. 3

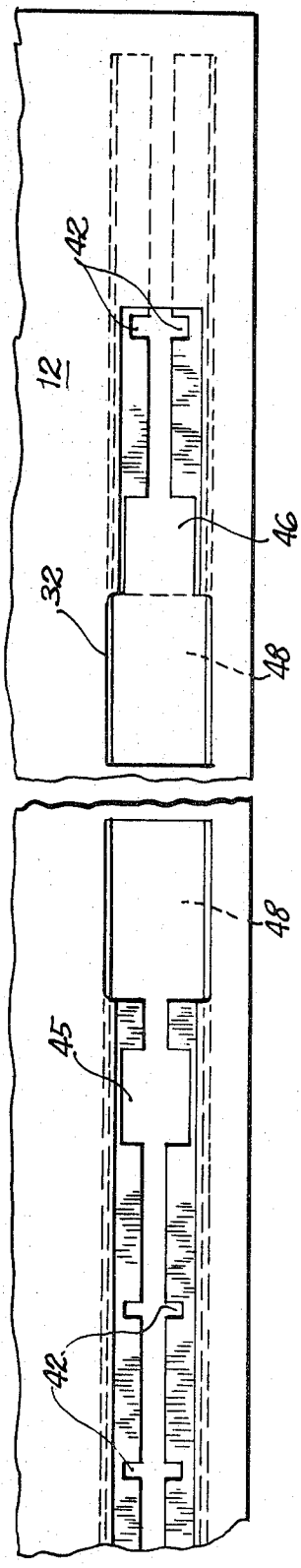


FIG. 4

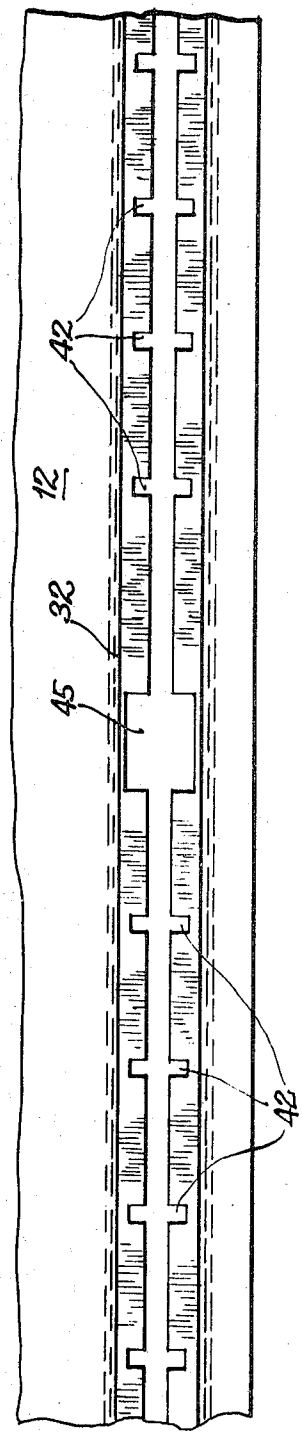
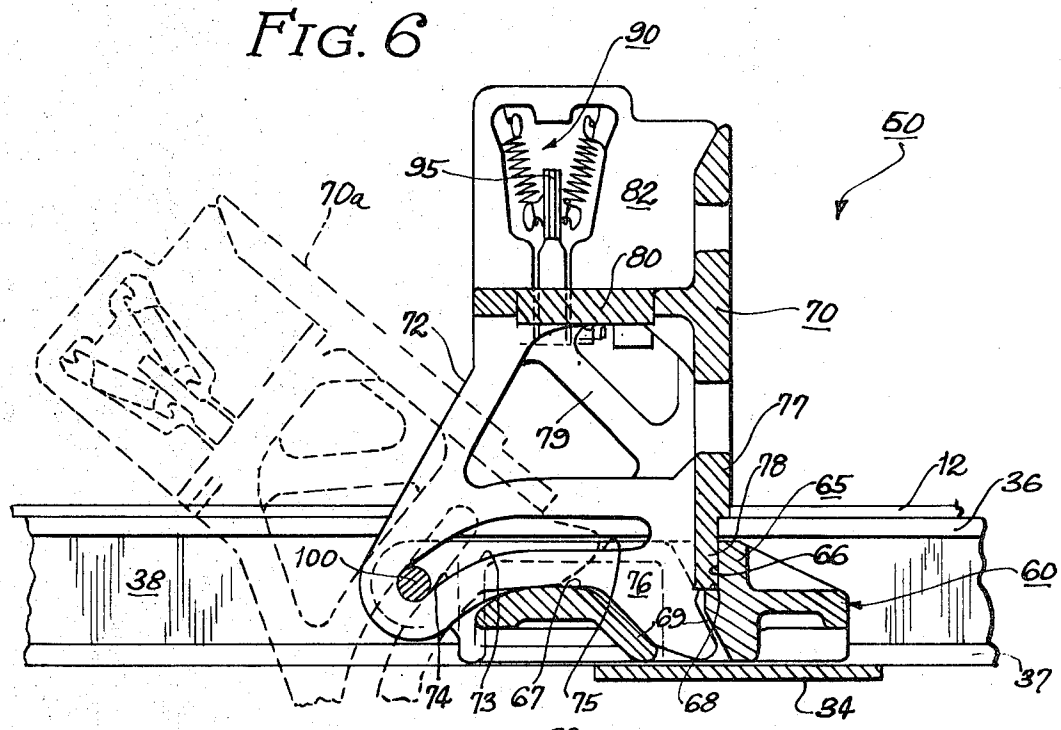


FIG. 5

FIG. 6



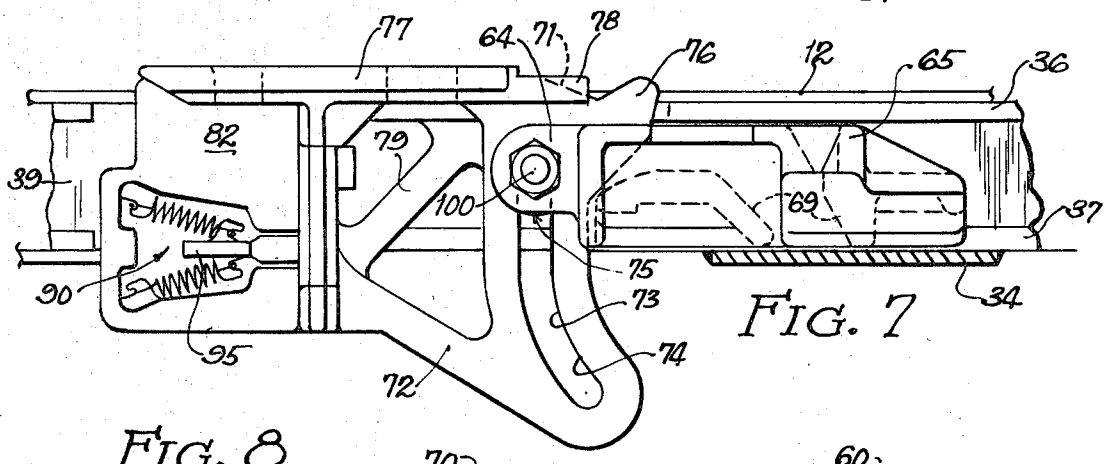
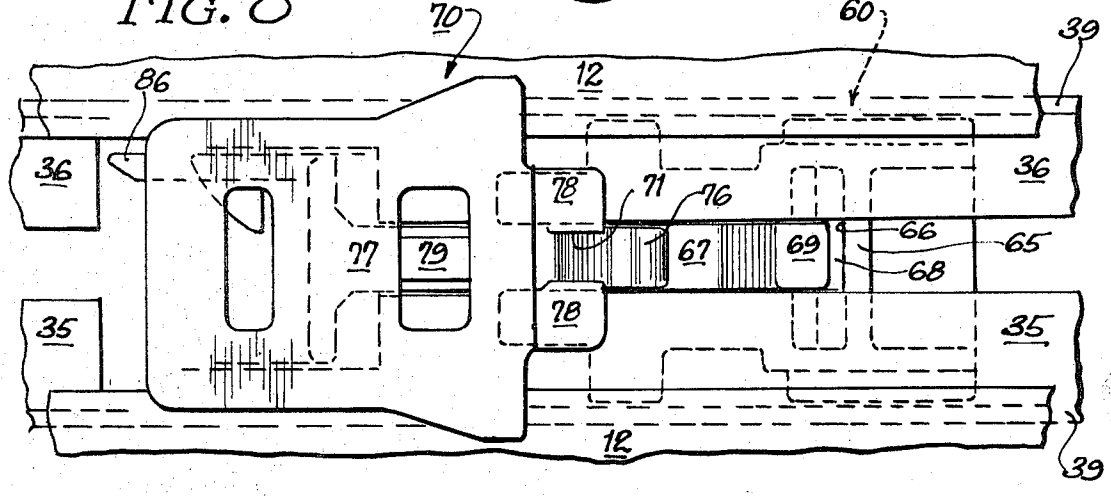


FIG. 7

FIG. 8



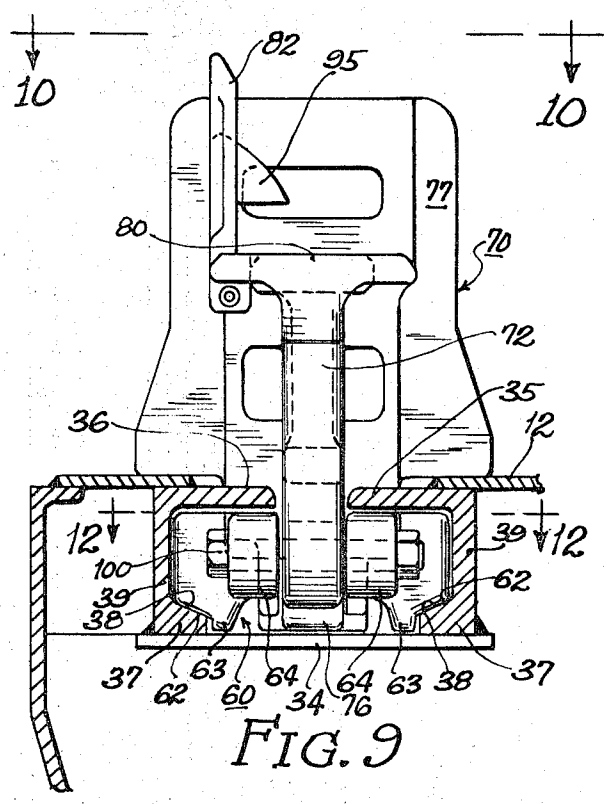


FIG. 9

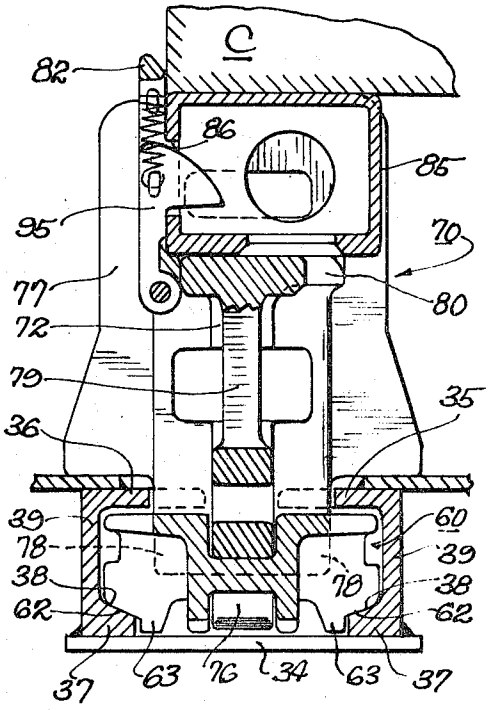


FIG. 11

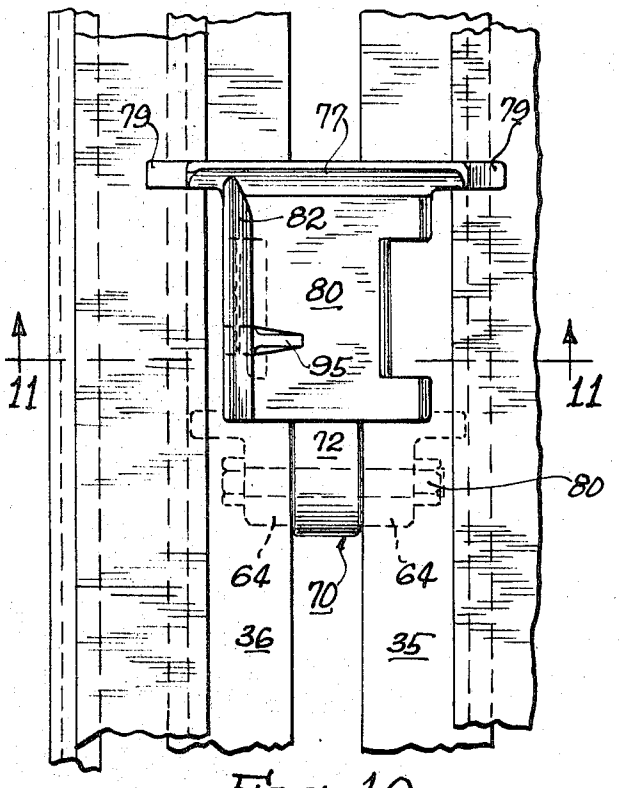


FIG. 10

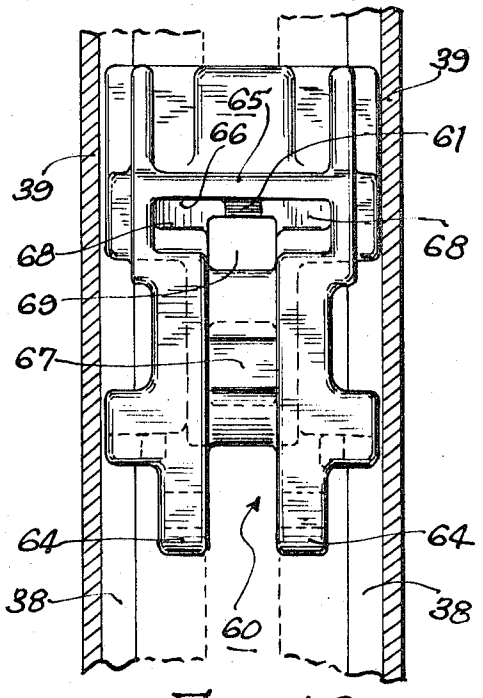


FIG 12

RAILROAD CAR SUPPORT AND SECUREMENT STRUCTURE INCLUDING A COLLAPSIBLE SUPPORT PEDESTAL

BACKGROUND OF THE INVENTION

This invention relates generally to a railroad car support and securement structure for carrying box containers above a car bed, and more particularly, to a collapsible support pedestal therefor.

It has recently become common to ship freight in box-type containers which are readily transferable between ships, flat cars and trucks. The containers are generally of a standard width, but vary in length from 20 feet to 40 feet, the lengths being such that combinations of two, three, or four of the containers can be mounted lengthwise on one railroad flat car. To facilitate loading and unloading of the containers either by crane or the like, or for other reasons, it is desirable that the containers be supported above the bed of the flat car on pedestals which are slideable to various positions along anchor tracks.

It is also highly desirable that the railroad flat car be versatile, and thus, subject for other uses. For example, to carry roadway trailers in piggy-back service or other freight on the flat car bed. For this reason the pedestals are collapsible into openings to lie flat on the car bed and in generally flush relationship thereto so as to cover the openings when not in use. Since openings and positioning notches in upper flanges of retaining structure have a tendency to weaken upper supporting portions of such structure, it is desirable to distribute the pedestal load to and along other portions of the anchor tracks. It is also advantageous to limit the size of the retraction openings for safety purposes. Furthermore, such pedestals should be durable yet made convenient to handle by limitation of the size and weight of the collapsible portion.

SUMMARY OF THE INVENTION

Therefore, in view of the foregoing factors and considerations, it is a general object of this invention to provide a new and improved railroad car support and securement structure for support and retention of various sizes of box-type containers on collapsible support pedestals.

To this end, the present invention utilizes a novel two-part pedestal having a base member and a standard member joined for swinging movement between alternate dispositions relative thereto; that is, erect over the base and anchor track or retracted to a relatively flush position thereon. In the erect disposition, the pedestal extends above the railroad car bed to define a corner seat for a box-type container. In the retracted disposition the standard is swung relative to the base to its storage position within an opening in the retention flanges of the anchor track. The base is retained within an anchor track beneath and between the retention flanges thereof. The tracks include lower flanges providing support surfaces beneath the retention flanges for support of the base. These support surfaces are continuous and sloped inwardly to seat correspondingly sloped shoulders of the base.

Thus, one of the object of this invention is to provide a novel two-part collapsible support pedestal having a base member and a standard member which is swingable relative thereto between alternate erected or retracted dispositions.

It is an object of this invention to provide a support pedestal for retention within an anchor track upon a continuous inner support surface thereof.

Another object is to equalize and distribute downward force from a support pedestal to an anchor channel.

Still another object is to provide a two-piece collapsible pedestal having a base which is retained within an anchor track and which is not susceptible to remove removal therefrom.

It is also an object of this invention to provide a two-piece pedestal which is durable yet convenient to handle.

An object of this invention is to promote safety in a container support structure by limitation of the size of openings necessary for reception of a collapsible support pedestal.

This invention further has within its purview the provision of a two-piece collapsible support pedestal which can be retracted into an opening provided in the retention flanges of an anchor track.

Further and other objects, and a more complete understanding of the invention may be had by referring to the following description and claims, taken in conjunction with the accompanying drawings.

DESCRIPTION OF THE DRAWINGS

For the purpose of illustrating the invention, there is shown in the drawings a form which is presently preferred, it being understood, however, that this invention is not necessarily limited to the precise arrangement and instrumentalities there shown, and wherein:

FIG. **1** is a perspective view of a railroad flat car having thereon the securement and support structure of the present invention;

FIG. **2** is an enlarged cross-sectional view taken substantially as indicated by a line **2–2** and accompanying arrows in FIG. **1**;

FIG. **3** is a top plan view of a railroad flat car which has the securement support structure of this invention applied thereto;

FIG. **4** is an enlarged fragmentary view of portions of the structure illustrated in FIG. **3**, and wherein anchor channel segments are shown in the bed of the flat car;

FIG. **5** is an enlarged view of the midregion of FIG. **3**;

FIG. **6** is a sectional side view of the improved two-part support pedestal of this invention in an erect position;

FIG. **7** is a side view of the support pedestal in a retracted position;

FIG. **8** is a top plan view of the pedestal shown in FIG. **7**;

FIG. **9** is an end view of the two-part pedestal;

FIG. **10** is a plan view looking downward in FIG. **9**;

FIG. **11** is a partial section taken along line **11–11** of FIG. **10**; and

FIG. **12** is a plan view of a portion of the structure depicted substantially from the position indicated by a line **12–12** of FIG. **9**.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring in detail to the drawings wherein corresponding reference numerals indicate like elements, there is shown in FIG. **1**, a railroad flat car **10** of generally normal construction and adapted to the application of the support and securement structure of the present invention. As indicated by the enlarged cross section of FIG. **2**, the flat car **10** has a bed **12** supported upon a center sill **13**, side sills **14**, **15**, longitudinal stringers **16**, crossmembers **17** and brace structure **18**. The flat car shown is also adaptable for use in piggy-back service; and thus has parallel wheel guide rail structures **20** extending longitudinally of the bed top surface and retractable trailer hitch structures **25** located at positions spaced longitudinally of the car bed, both well known in the art. Bridging plate members **28**, shown in erect dispositions, may be lowered to provide bridging between ends of adjacent flat cars, as desired, for use in loading and unloading trailer vehicles.

A pair of spaced anchor tracks **30**, **32**, are provided in the bed **12** extending along opposite sides of the flat car **10**, as shown in FIG. **2**. Neither anchor track **30**, **32**, need be continuous throughout the length of the flat car **10**, and thus includes short end segments **30***a*, *b* and **32***a*, *b*, as shown in FIGS. **1** and **3**. The intervening bed length between the anchor channels **30**, **32** and respective ends segments **30***a*, *b* and **32***a*, *b*, is chosen according to the shortest length of box container C (partially visible in FIGS. **2** and **11**) to be accommodated for support and securement on the car. As shown in the cross section of FIG. **2**, each anchor track of the disclosed structure is made up of opposed channel-type bulb angle sections **31**, **33** connected together by welding, or the like, onto a crossweb **34** to from an integral elongated box-type guideway with a slot between opposed upper retaining flanges **35**, **36**. Since the

crossweb 34 is not continuous, anchor tracks 30, 32 are open at the bottom allowing drainage of water and the like. As may be seen readily in the enlarged cross sections of FIGS. 9 and 11, the bulb portions 37 are lowermost and are welded directly to the web 34. The bulb portions have support surfaces 38, which slope inwardly and downwardly in opposed and spaced relationship to one another. In the form shown, the retaining flanges 35, 36 are in a plane spaced below that of the bed 12 by the thickness of the plate which forms the deck surface. The bulb angles thus provide supports for the deck. Appropriate openings through the bed 12 are provided over the tracks 30, 32. Thus, as noted in FIGS. 4 and 5, portions of the tracks 30, 32 are indicated by dotted lines as extending under the bed 12. Gussets 40 (visible in FIG. 2), welded to the outsides of sections 31, 33 and crossmembers 17, secure the tracks 30, 32 to the framework of flat car 10. With reference to FIGS. 3, 4 and 5, it is to be observed that the retention flanges 35, 36 include evenly spaced and opposed notches 42 therein. Retraction openings 45, 46 are also provided in the flanges 35, 36 by cutout portions at which portions of the flanges 35, 36 between upright side portions or webs 39 of the bulb angle channels are cut away. The length of retraction openings 45 is less than the spacing between notches 42, so that they can be included anywhere along tracks 30, 32. As herein shown the retraction openings 45 can be and are included at spaced intervals throughout the lengths of the anchor tracks 30, 32, as shown in FIG. 3. One of the intermediate retraction openings 45 is shown in FIG. 5. The end segments 30*a*, *b* and 32*a*, *b* also include retraction openings 46. As shown in FIGS. 3 and 4, openings are provided at both ends of the anchor tracks 30, 32 by the removal of segments of the flanges 35, 36. Openings are likewise provided at the inside ends of the end segments 30*a*, *b* and 32*a*, *b*. Cover plates 48 are welded in place on the bulb angles to completely close those openings after the installation of support and securement structure, as described hereinafter.

FIGS. 6 to 12 illustrate in detail a collapsible pedestal 50 of this invention. As shown, the pedestal 50 includes a base 60 and a standard 70, which are joined together for swinging movement of the standard 70, as may be visualized by the phantom representation of 70*a* in FIG. 6.

The base 60 is completely received within the anchor track, beneath the retention flanges 35, 36. As shown in FIGS. 9 and 11, the base 60 includes shoulders 62, sloped to correspond to the support surfaces 38 on the bulb angles of the anchor tracks. The base 60 also includes downwardly projecting lug portions 63, which fit between the bulb angle portions 37 of the anchor track and are spaced above the connecting web 34. At one end of the base 60 has thereon projecting bosses 64 which are in spaced and opposed relationship to one another, as may be visualized with reference to the plan view of FIG. 12. At the end region opposite the bosses 64, the base member also includes a support portion which is indicated generally at 65. The support portion 65 includes a vertical face 66 and a horizontal ledge 68. Also a tapered projection 61 projects from the midregion of the face 66, between opposite end portions of the ledge 68. As may be seen by reference to the cross section of FIG. 6, the base 60 includes a curved support surface 67 leading to a throat 69 which is defined a by an inclined downward open section through base 60.

The standard member 70 includes a brace element 72 which is narrow enough for reception between the retention flanges 35, 36 of the anchor channels and the bosses 64 on the base. As shown in FIGS. 6 and 7, brace element 72 includes an elongated slot 73 which has a short inclined initial segment 74 and an elongated horizontal segment 75 joined by a short smoothly curved segment therebetween. The under surface of the brace element is correspondingly shaped and fits the curved surface 67 of the base 60, as shown in FIG. 6. Brace 72 also includes a tongue 76 for reception in the throat 69 of base 60. The standard 70 also includes a lateral support wall 77 which has a lower end 78 which, in the erect position of the standard, seats on the ledge 68 of the support portion 65 of the base 60. The tongue 76 projects beneath the support wall 77 in the spaced relationship shown in FIGS. 6 and 7 for engagement in the throat 69 when the standard is erect and supported from the base. The lower end 78 of the standard has a recess 71 (FIG. 8) therein, into which the projection 61 of the base extends when the standard is moved to the erect position of FIG. 6. A pin 100 extends through bosses 64 on the base and the slot 73 in the standard and provides a connecting element by which the standard and base are joined for movement with and relative to one another. The pin 100 may be a standard bolt of suitable size provided with a retaining nut. For the purpose of weight reduction the brace element 72 has an open midregion; however, it includes a brace 79 extending diagonally thereacross for strength. The lateral wall 77 also has openings therein for weight reduction and to serve as hand holes for moving the standard. It is noted that portions of the lateral wall 77 flare outwardly to rest on the car bed 12 as at FIGS. 9 and 11. This provides additional lateral stiffness in the erect disposition. The lower ends 78 of the lateral wall immediately below the flared portions engage in the notches 42 of the anchor channel when the standard 70 is in an erect disposition to releasably secure the pedestal 50 in a desired position along the anchor channel. A cargo support seat 80 extends perpendicularly from the lateral support wall 77 and extends across the top of the brace element 72, as shown in FIGS. 9, 10 and 11. A vertical sidewall 82 extends in perpendicular relationship to both the support seat 80 and support wall 77 to form a corner pocket for reception of a corner block 85 secured to one corner of the base of a container C, as shown in FIG. 11.

In the erect disposition of the standard, as shown in FIG. 6, the tongue 76 is engaged within the throat 69 and the lower end 78 of lateral support wall 77 is seated on the ledge 68 of the base 60 and bears against the vertical face 66 thereof. The projection 61 of base 60 is received within recess 71 of standard 70. When thus disposed the standard 50 is securely locked in position along the anchor track by the engagement of ends 78 of the lateral wall 77 of the standard in the notches 42 of the anchor track.

A spring-loaded retaining latch 90 is carried by the standard sidewall 82 and includes a latch member 95 adapted for engagement in an opening 86 in the corner block 85 on the container C, to hold the container on the support seat 80.

When it is desired to collapse the pedestal 50, it is unlocked by tipping the standard to the left, as shown in phantom at 70*a* FIG. 6, removing the tongue 76 from the throat 69 and disengaging the lower end 78 from the ledge 68 of the base and from the notches 43 in the anchor track. During such movement of the standard relative to the base and anchor track, the pin 100 moves along the short initial inclined segment 74 of slot 73. Once the tongue 76 is free, the pin 100 continues along the curved segment of slot 73 and then along the elongated straight segment 74, allowing the standard 70 to assume the flat retracted disposition, as shown in FIGS. 7 and 8.

Once the pedestal 50 is disengaged from its locked erect disposition, with the standard 70 at an intermediate inclined disposition shown in phantom at 70*a* in FIG. 6, it is easy to slide the pedestal 50 with the base 60 within an anchor track to any other disposition desired, at notches 42, or to any of the retraction openings 45, 46. Once at a retraction opening 45, 46, the standard may be folded flat, as shown in FIGS. 7 and 8.

The base 60 is wider and longer than retraction openings 45, 46, and cannot be removed therethrough. The ends of anchor tracks 30, 32, and inside ends of end segments 3 30*a*, *b*, 32*a*, *b* are originally open to allow insertion of the base 60. Once the bases 60 of a desired number of pedestals 50 are inserted in the respective anchor tracks, the cover plates 48 are welded in place. This assures that the pedestals 50 cannot be removed from the flat car 10.

The present invention may be embodied in other specific forms without departing from the spirit of potential attributes thereof and, accordingly, reference should be made to the appended claims, rather than to the foregoing specification as indicating the scope of the invention.

We claim:

1. Railroad car support and securement structure for carrying containers above a car bed comprising: a pair of spaced anchor tracks secured to opposite sides of said bed and each of which tracks comprises channels having webs and flanges in spaced and opposed relationship to one another; and a plurality of pedestals mounted for movement along said pair of tracks to support corners of said containers, each of said pedestals including a base received between the channels of one track and retained therebetween for movement longitudinally thereof by said spaced and opposed flanges, and a standard connected to the base for swinging movement relative to the base and channels from and to a position in which the standard extends upwardly from said base to a height above said bed and defines a corner seat for a box container, said standard also being swingable relative to said base and channels to a retracted stowage position between the ends of the track and in which the standard extends along the track channels and is supported relative thereto with a major portion thereof between the channel webs of said channels.

2. Railroad car support and securement structure in accordance with claim 1, wherein upper opposed retention flanges of said tracks have notches therein at spaced positions, and said pedestals have interlock means thereon for engagement in said notches for said retention of said pedestals at desired positions dependent upon the lengths of said containers to be supported thereby, and the lower opposed flanges of said channels along which said base is movable are continuous.

3. Railroad car support and securement structure in accordance with claim 2, wherein said flanges of the track channels have cutout portions in opposed relationship for reception of said standards in said retracted stowage dispositions.

4. Railroad car support and securement structure in accordance with claim 3, wherein said cutout portions are between the webs of said channels.

5. Railroad car support and securement structure in accordance with claim 3, wherein said cutout portions are spaced inwardly of the ends of said tracks.

6. Railroad car support and securement structure in accordance with claim 3, wherein inner surfaces of the lower opposed pair of the flanges of said channels of each track provide support surfaces along which said base is movable, and said base having shoulders extending outwardly at opposite sides thereof and bearing on said support surfaces.

7. Railroad car support and securement structure in accordance with claim 6, wherein said channels of each track are bulb angle sections with the bulb portions lowermost and providing said support surfaces and which support surfaces slope inwardly and downwardly in opposed and spaced relationship to one another, said shoulders having slopes corresponding and complementary to said support surfaces for the equalization of downwardly directed force components on said channels of the track.

8. A collapsible support pedestal for securement at various positions along an anchor track which includes a pair of channels having webs and having upper and lower flanges extending toward one another in spaced and opposed relationship; a base member for retention within said track intermediate said webs and supported on said lower flanges below the upper flanges; a separate standard member for extension upwardly from said base between the upper flanges of said track for support from and by the base member, said standard member including a support seat; means joining said base member and standard member for relative swinging movement of the standard member longitudinally of the track relative to said base member between alternate dispositions of said standard member, either erect from the base member over said track or retracted to a generally flat relationship against the upper flanges and between the webs of the track, respectively; and interlock means on said standard member for engagement with said track to secure said pedestal at a particular one of said various positions along the track when the standard member is erect relative to the base member and track.

9. A pedestal in accordance with claim 8, wherein said base member has shoulders on opposite sides thereof which bear on inner portions of the lower flanges of said channels that extend beneath said base member.

10. A pedestal in accordance with claim 9, wherein the channels of said track comprise opposed bulb angle sections the upper surfaces of the lower flanges of which are opposed and inwardly slanted, said shoulders of said base being outwardly sloped to complementarily correspond with said slanted upper surfaces of the lower flanges against which they bear for equalization of downwardly directed load components on the channels of said track.

11. A collapsible support pedestal for securement at various positions along an anchor track which includes a pair of channels having webs and having upper and lower flanges extending toward one another in spaced and opposed relationship; a base member for retention within said track intermediate said webs and supported on said lower flanges below the upper flanges; a separate standard member for extension upwardly from said base between the upper flanges of said track for support from and by the base member, said standard member including a support seat, means joining said base member and standard member for relative swinging movement of the standard member longitudinally of the track relative to said base member between alternate dispositions of said standard member, either erect from the base member over said track or retracted to a generally flat relationship against the upper flanges and between the webs of the track, respectively; and interlock means on said standard member for engagement with said track to secure said pedestal at a particular one of said various positions along the track when the standard member is erect relative to the base member and track, said means joining said base member and standard member including projecting bosses on one end of the base member in spaced and opposed relationship to one another laterally of the base member, a brace element at the lateral midregion of the standard member below the support seat and movable between said bosses and said upper flanges of the track and having a slot therein, said bosses and brace element being connected together for relative movements by a pin extending between said bosses and through said slot.

12. A pedestal in accordance with claim 11 wherein said base member has a support portion spaced from the end thereof from which the bosses project, and said standard member includes a lateral support wall which has load supporting seating engagement with said support portion when said standard member is in said erect disposition.

13. A pedestal in accordance with claim 12, wherein said support portion includes a vertical face and a horizontal ledge for reception of lower end portions of said support wall.

14. A collapsible support pedestal for securement at various positions along an anchor track, said pedestal comprising: a base member for retention within said track; a separate standard member for extension upwardly from said base member between retaining flanges of said track, said standard member including a support seat; means joining said base member and standard member for relative swinging movement between alternate dispositions of said standard member, either erected over said track or retracted flat against said flanges thereof, respectively; and interlock means on said standard member for engagement with said track to secure said pedestal at a particular one of said various positions, said means joining said base member and standard member including projecting bosses on the base member in spaced and opposed relationship to one another, a brace element on the standard member movable between said bosses and having a slot therein, said bosses and brace element being joined by a pin extending between said bosses and through said slot, said bosses projecting from one end of said base member, said base member having a support portion spaced from the end thereof from which the bosses project, and said standard member also including a lateral support wall which has seating engagement with said support portion when said standard member is in said erect

disposition, said slot being curved to provide for movement of said pin therealong during movement of said support wall from said support portion and the dropping of said standard member downwardly into said retracted disposition with said lateral support wall adjacent said flanges, said brace element of the standard member including a tongue portion which projects beneath said lateral support wall in spaced relationship thereto, and said base having a throat for the reception of said tongue for locking said standard member in erect disposition relative to said base.

15. A pedestal in accordance with claim **14**, wherein said slot consists of a short, inclined initial segment and an elongated horizontal segment joined by a curved segment, said brace element being correspondingly shaped, said base having a curved surface for the support of said brace element, and said throat being defined by an inclined downward opening section through said base, said swinging movement of the standard relative to the base enabling said standard member to be unlocked from said erect disposition by sliding said tongue outwardly from said throat while said pin travels along said initial straight segment of said slot until said tongue is free, said pin continuing along said curved segment and downward along said elongated straight segment of the slot during movement of the standard to said retracted disposition.

16. A pedestal in accordance with claim **15**, wherein said lateral support wall has segments for engagement in notches in said retaining flanges of said track for holding the pedestal at predetermined positions along the track.

17. A pedestal in accordance with claim **16**, wherein said support seat extends perpendicularly from said support wall and across said brace element.

18. A pedestal in accordance with claim **17**, wherein said standard member includes a vertical wall perpendicular to said support seat and said support wall to form a corner pocket therewith, and said vertical wall having retention means thereon for the retention of a container corner on said support seat.

19. A pedestal in accordance with claim **18**, wherein said support wall is transversely notched for engagement against said retaining flanges, and said support portion of said base includes a vertical face and a horizontal ledge for reception of a lower corner of said support wall when in said erect disposition, said transversely notched portion together with said support portion encompassing said retaining flanges at three surfaces for effective securement at said desired disposition.

PO-1050
(5/69)

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,556,019 Dated January 19, 1971

Inventor(s) Philip D. Schwiebert and Edward Steck

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

On the title page, item 72, the address of Philip D. Schwiebert should be "Glencoe" instead of "Glenco".

On the title page, item 73, the name of the assignee sh be "MacLean-Fogg Lock Nut Co.".

Col. 1, line 58 (spec. pg.3, line 5), "object" should b -- objects --.

Col. 1, line 69 (spec. pg.3, line 16), delete "remove".

Col. 2, line 67 (spec. pg.5, line 24), "ends" should be -- end --.

Col. 2, line 74 (spec. pg.5, line 30), "from" should be -- form --.

Col. 3, line 50 (spec. pg.7, line 20), delete "of".

Col. 3, line 61 (spec. pg.7, line 30), after "defined" delete "a".

Col. 4, line 64 (spec. pg.10, line 17), after "segments' delete "3".

Claim 1, line 2 (col. 5, line 2, amendment of January 1970, pg. 3, line 8), before "containers" insert -- box

Signed and sealed this 11th day of May 1971.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

WILLIAM E. SCHUYLER, JR.
Commissioner of Patents