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D. F. COULSON

3,331,333

MOUNTING BOLSTER FOR CONTAINERS

Filed Oct. 4, 1965

FIG. 1

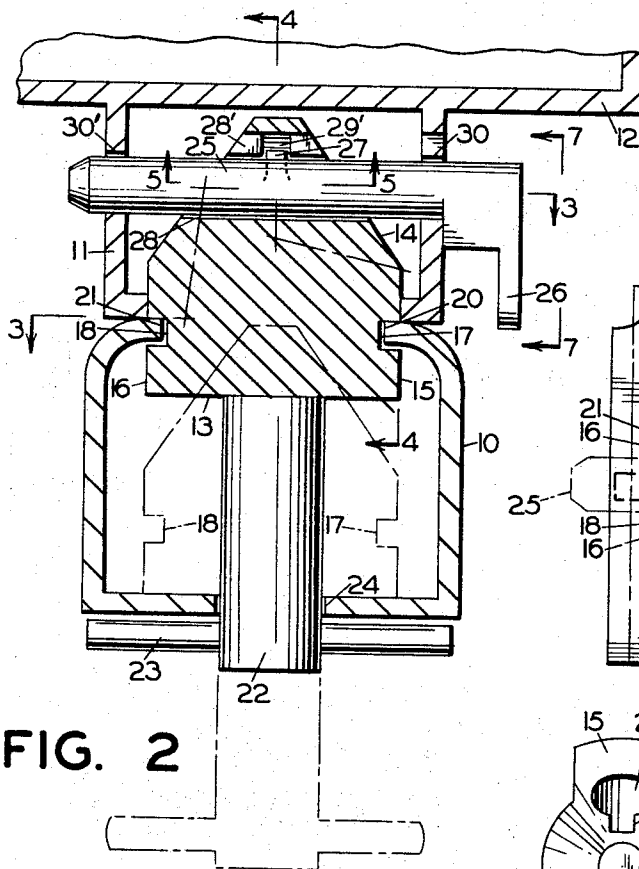
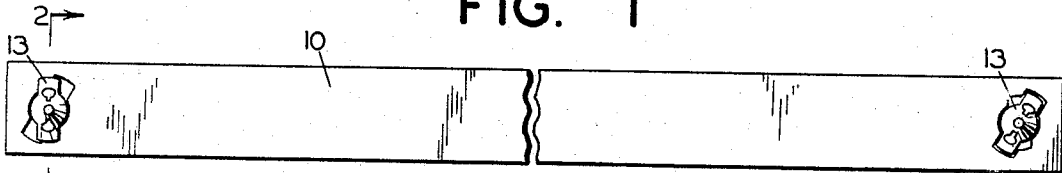


FIG. 2

FIG. 3

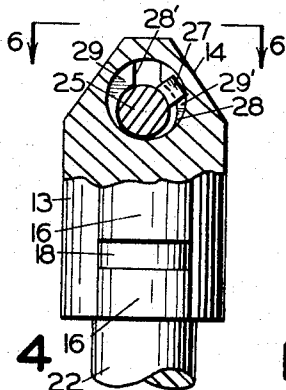
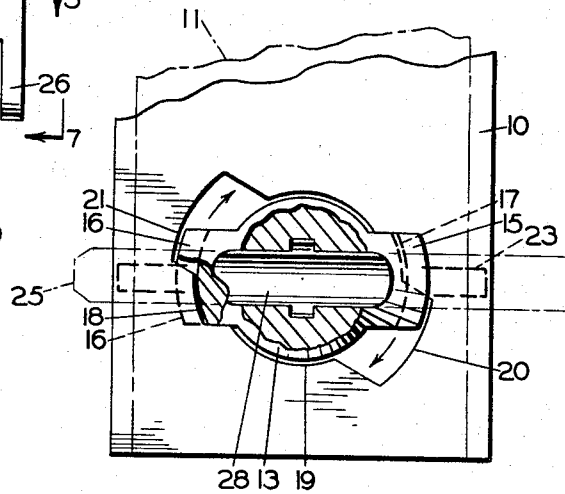


FIG. 4

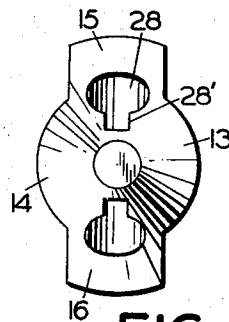


FIG. 5

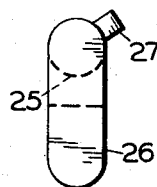


FIG. 6

FIG. 7

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1

3,331,333

MOUNTING BOLSTER FOR CONTAINERS

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2 Claims. (Cl. 105—366)

This invention, like that described in my companion patent application executed concurrently and entitled, "Adaptable Mounting Bolster for Containers and the Like," relates to bolsters for removably mounting large rectangular bins or containers on railway freight cars or other vehicles, and this present application is a continuation-in-part of the aforementioned application, to which reference is to be made.

One type of large freight containers extensively used for transportation by railway freight cars has a pair of bottom cross beams near the ends of the container respectively with each cross beam having a socket adjacent each end adapted to receive a holding member extending upwardly from the top of the underlying and supporting bolster. The object of this present invention is to provide a mounting bolster equipped with modified and improved means at each end for accommodating and securing a container cross beam having such end sockets.

A related object of this invention is to provide a bolster with an improved beam-engaging element near each end, capable of being quickly and easily raised into operative and beam-securing position and returned to inoperative and out-of-the-way position within the bolster when not in use, and provided with improved locking means for use in operative position.

A further object is to provide an improved beam-engaging element for each end of a bolster, the manipulation of which can be performed conveniently from the underside of the bolster, without any portion of such element being required to extend out from either side of the bolster.

Referring to the attached drawings:

FIGURE 1 is a top plan view of a bolster equipped at each end with the improved beam-engaging element of the present invention, the element at the left end being shown in raised operative position and the element at the opposite end being shown in lowered inoperative position, the other parts of the bolster, including the means for mounting and securing the bolster on a railway freight car being omitted from the drawing since these form no part of the present invention;

FIGURE 2 is a sectional elevation through the bolster and raised beam-engaging element, taken on the line 2—2 of FIGURE 1, drawn to a larger scale, and also showing a bottom cross beam of a container in sectional elevation and locked to the beam-engaging element; the position of the beam-engaging element when in lowered inoperative position being indicated in this figure by broken lines;

FIGURE 3 is a section on the line indicated at 3—3 in FIGURE 2, drawn to the same scale as FIGURE 2, the bottom cross beam of the container and the locking pin for locking the bottom cross beam to the beam-engaging element being indicated by broken line, and the manipulating handle for the beam-engaging element being shown in heavy dotted lines;

FIGURE 4 is a fragmentary section and sectional elevation taken on the line indicated at 4—4 in FIGURE 2 and drawn to the same scale as FIGURE 2;

FIGURE 5 is a fragmentary section on line 5—5 of FIGURE 2;

FIGURE 6 is a top plan view of the beam-engaging element by itself with the bolster omitted; and

2

FIGURE 7 is an end elevation of the locking pin for locking the cross beam of the container to the beam-engaging element when the latter is in raised operative position, this end view of the locking pin being taken on the line 7—7 of FIGURE 2.

In FIGURES 1, 2 and 3 the bolster is indicated by the reference character 10, and, as shown in FIGURE 2, is of the customary substantially rectangular cross sectional shape with a top flat surface on which the bottom cross beam of the container rests when the container is in position. In FIGURE 2 the bottom cross beam of the container is indicated by the reference 11 and is shown integral with the bottom of the container 12.

The engaging element in each end of the bolster for securing the bottom cross beam of the container in place comprises a solid member or block indicated as a whole by the reference character 13. When not being used this block 13 is in the lowered inoperative position indicated by the broken line in FIGURE 2, and, except for the integral stem 22 and manipulating handle 23, the block is located entirely within the bolster when in inoperative position. This securing block, instead of being in the shape of a simple cylinder as heretofore customary has a special configuration. The lower portion is cylindrical except for the fact that it is formed with two diametrically opposite extensions 15 and 16 (see FIGURE 6) constituting identical segments of a cylinder of larger diameter. These extensions 15 and 16 have peripheral slots 17 and 18 respectively (see FIGURES 2 and 3) located in the same plane perpendicular to the common axis. Each of the slots 17 and 18 is formed with an inner arcuate wall having a diameter greater than the diameter of the remainder of the central main cylindrical base part but less than the diameter of the peripheral walls of the extensions 15 and 16. The width of these slots 17 and 18 is slightly greater than the thickness of the top wall of the bolster 10, as shown in FIGURE 2.

The top wall of the bolster near each end, and thus above the pair of engaging elements or blocks 13 respectively (and thus below the sockets provided in the bottom cross beam of the container), is provided with a main opening or cut-away portion corresponding to the shape of the lower portion of each block. Thus, referring to FIGURE 3, the opening in the top wall of the bolster 10 has a circular portion 19 with a diameter slightly greater than the diameter of the main central cylindrical part of the lower portion of the block 13, and a pair of cut-out extensions 20 and 21 corresponding in size approximately to the extensions 15 and 16 respectively on the block 13. It will be noted from FIGURES 1 and 3 that in each of these openings in the top of the bolster for the blocks 13 the longitudinal center line through the extensions 20 and 21 of the opening, instead of being arranged at a right angle to the longitudinal center line of the top of the bolster, is oblique thereto. The reason for this will presently be apparent.

This opening in the top of the bolster 10 for each block 13 also has an additional section cut-out from one side of each of the portions 19 and 20, but at opposite sides respectively, so as to form a short flange terminating in an arcuate edge having a diameter approximately the same as that of the inner walls of the slots 17 and 18. Thus, when each block 13 is raised through the corresponding cut-out portion or main opening in the top of the bolster until the slots 17 and 18 are in the same plane as the top wall of the bolster and then is given a partial rotation (in a direction opposite the direction indicated by the arrows in FIGURE 3), the slots 17 and 18 will be engaged by the respective arcuate flanges adjoining the main opening in the top of the bolster and the block will then be supported by these flanges in the top wall of the bolster.

As previously mentioned, the main opening in the top wall of the bolster for each of the blocks 13 is so arranged that the longitudinal center line through the portions 20 and 21 of the main part of the opening, corresponding to the extensions 15 and 16 of the block, will be oblique to the longitudinal center line of the top of the bolster. However, the additional cut-out portions at the opposite sides respectively of the extensions 20 and 21, forming the supporting flanges for the block, are so arranged that when the raised block is given a partial rotation, to cause the block to be supported by these flanges on the top wall of the bolster, the longitudinal center line through the extensions 15 and 16 of the block will then be perpendicular to the longitudinal center line of the top of the bolster. Thus, as will now be noted from FIGURES 1 and 3, when the block 13 is raised through the main opening or cut-out portion in the top wall of the bolster until its slots 17 and 18 are in the same plane as the top wall and then is given a partial rotation (counterclockwise as shown in these figures), the block will be held supported in raised position on the arcuate flanges in the top wall of the bolster, and, when thus mounted, the longitudinal center line through the extensions 15 and 16 of the block will be perpendicular to the longitudinal center line along the top of the bolster.

The downwardly extending integral stem 22 (FIGURE 2) for each block 13 extends down through an opening 24 in the bottom wall of the bolster and carries a manipulating handle 23. Thus, when the block 13 is to be placed in raised operative position it is pushed upwardly manually by means of the handle 23 and made to extend up through the major part of the opening in the top of the bolster and then given a partial rotation to secure it in place on the adjacent flanges in the top wall of the bolster, such action being reversed when the raised block is to be returned to lowered inoperative position.

The wall of the top portion 14 of the block 13 is formed with the diameter decreasing upwardly, and thus this top portion preferably is substantially frusto-conical in shape. The top portion 14 is provided with a horizontal transversely-extending channel 28 to accommodate a locking pin 25. As shown in FIGURES 2, 3 and 6, the center line of the channel 28 is parallel to the longitudinal center line through the extensions 15 and 16 of the lower portion of the block 13. Thus, when the block 13 is secured in its operative raised position, the channel 28 will be perpendicular to the planes of the side walls of the bolster and perpendicular to the planes of the side walls of the bottom cross beam of the container when the bottom cross beam is in place on the bolster. The side walls of the container are provided with a pair of holes 30, 30' respectively which will be in registration with the channel 28 when the block 13 is in secured raised operative position and the bottom cross beam of the container is in place on the bolster.

The locking pin 25 (FIGURES 2, 4 and 7) comprises a cylindrical main shaft and an end handle portion 26. A locking finger 27 extends radially a short distance from the center portion of the main shaft, and, as apparent from FIGURE 7, is not parallel to the handle 26 but preferably extends obliquely from the vertical when the handle 26 extends downwardly, vertically. The top of the channel 28 is provided with a longitudinally-extending top slot 28' to provide clearance for the locking finger 27 when the locking pin 25 is to be set in place, the openings 30, 30' in the side wall of the bottom cross beam 11 of the container also being extended at the top to accommodate the finger 27 similarly.

The channel 28 through the top of the block 13 and top slot 28' have a pair of arcuate recesses 29, 29' (FIGURES 2, 4 and 5) in the center of the block extending oppositely and extending in a plane perpendicular to the longitudinal axis of the channel 28. Thus, the locking pin 25 is inserted in place by holding the handle 26 inclined from the vertical so as to enable the locking finger 27

to move along the top slot 28' of the channel 28 until the finger 27 reaches the location of the arcuate recesses 29, 29' in the center of the block 13. Then the bringing of the handle 26 to vertical downwardly extending position will cause the finger 27 to engage one of the recesses 29 or 29' and thus secure the locking pin in place until manually withdrawn in the opposite manner.

As apparent, the manual raising and placing of each of the blocks 13 into operative position and the subsequent locking of each raised block to the bottom cross beam of the container are accomplished very quickly and easily. Also the locking of the cross beam to the raised blocks simultaneously locks the blocks in raised position on the bolster and completes the desired locking of the bottom cross beam container to the bolster.

I claim:

1. In a mounting assembly for a container of the character described, wherein the container has a bottom cross beam adapted to rest on and be secured to a bolster and the bottom face of the cross beam has a socket near each end for engagement by securing means on a bolster, an improved mounting bolster including a box-like body substantially rectangular in cross section having a length approximately equal to the length of the container bottom cross beam, a securing block mounted in said bolster near each end, said block having an elongated base portion, the opposite ends of said base portion having a pair of identical slots respectively located in a plane perpendicular to the vertical axis of said block, said slots having a width slightly greater than the thickness of the top wall of said bolster and having inner walls constituting arcs of a circle, said block having an upper portion decreasing in a size upwardly, the height of said block not exceeding the height of said bolster, a central stem extending downwardly from said base portion of said block down through an aperture in the bottom wall of said bolster, a manipulating handle at the bottom of said stem, the top wall of said bolster having a main cut-out opening above said block corresponding in size and shape to said base portion of said block, said bolster top wall having said main cut-out opening extended adjacent the opposite sides of the main cut-out opening to form a pair of arcuate flanges for engaging said slots in the ends of said base portion, whereby when said block is manually raised to extend up through said main cut-out opening until said slots are in the same plane as the top wall of said bolster and then is given a partial rotation to cause said slots to engage said flanges respectively said block will be held in raised position by said flanges until said block is given a partial reverse rotation, and means for securing said block to the bottom cross beam of the container when the bottom cross beam is in position on said bolster with said block engaging a socket in the cross beam.

2. An improved bolster for mounting a bottom cross beam of a container, said bolster having a box-like body substantially rectangular in cross section with a length approximately equal to the length of the container bottom cross beam, a securing block mounted in said bolster near each end, said block having a base comprising a central partial cylindrical portion with diametrically opposite identical extensions consisting of sections of a cylinder of larger diameter, the walls of said extensions having a pair of identical slots respectively located in a plane perpendicular to the common axis of said central portion and said extensions, said slots having a width slightly greater than the thickness of the top wall of said bolster and having inner walls constituting arcs of a circle of greater diameter than said central portion of said base, the upper portion of said block being substantially frusto-conical, the height of said block not exceeding the height of said bolster, an axial stem extending downwardly from said base of said block down through an aperture in the bottom wall of said bolster, a manipulating cross bar handle at the bottom of said stem, the top wall of said bolster having a main cut-out opening above said block

5

corresponding in size and shape to said base of said block, said main cut-out opening so positioned that when said block is moved upwardly through said main opening a longitudinal center line through said extensions in said block base will be oblique to the longitudinal center line of said bolster top wall, said bolster top wall having said main cut-out opening extended adjacent the opposite sides respectively of the portions of said main opening corresponding to said extensions in said base and forming a pair of arcuate flanges for engaging said slots in the ends of said base, whereby when said block is manually raised to extend up through said main cut-out opening until said slots are in the same plane with said top wall of said bolster and is then given a partial rotation to cause said slots to engage said flanges respectively, said block will be held in raised position by said flanges until said block is given a partial reverse rotation, said flanges being

6

of sufficient length to cause the longitudinal center line through the base extensions on said block to be perpendicular to the longitudinal center line of said top wall of said bolster when said block is held to the full extent by said flanges, and means for securing said block to the bottom cross beam of the container when the cross beam is in position on said bolster with said block engaging the socket in the cross beam.

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