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CARGO TIEDOWN FITTING

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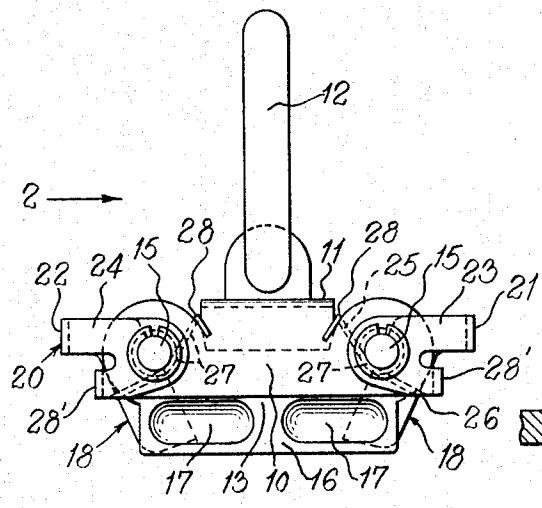


Fig. 1.

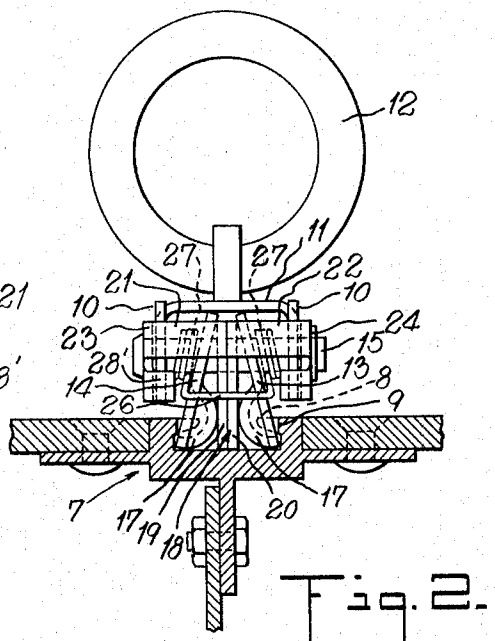
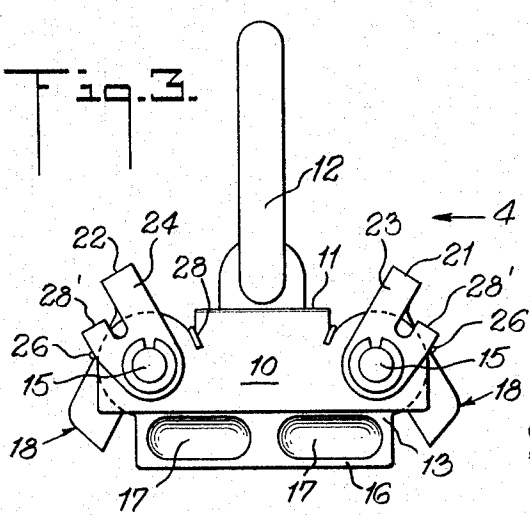


Fig. 2.

Fig. 3.



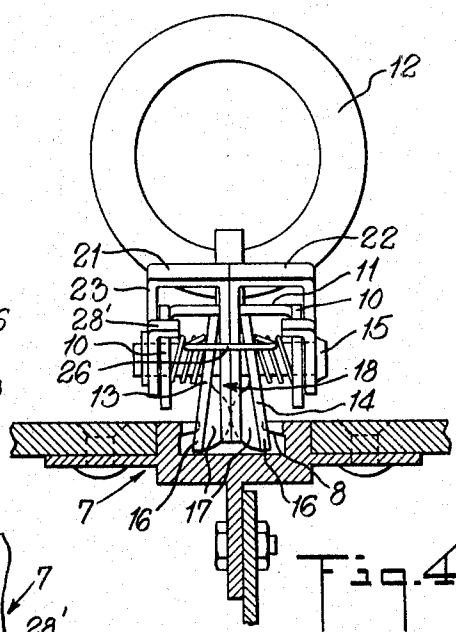


Fig. 4.

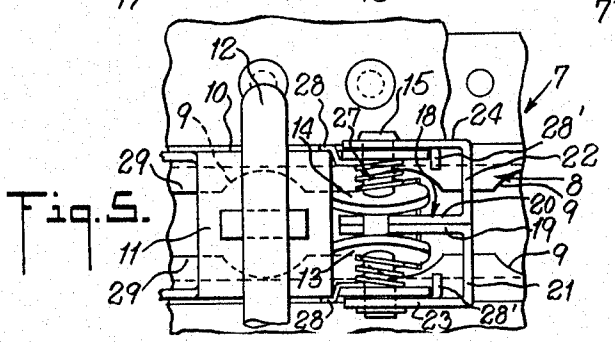


Fig. 5.

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CARGO TIEDOWN FITTING

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The invention herein disclosed relates to fittings used with channeled cargo tiedown tracks.

Objects of the invention have been to provide terminal fittings for rope, cord, cable, chain, webbing and other forms of tiedown connections, which would be of simple, sturdy construction, readily engageable with and releasable from the track and which would lock in place on engagement in the track and which while of small size and light weight would hold securely under usual or exceptional loading.

Particularly it has been a purpose of the invention to provide a practical and desirable form of fitting which could be made up wholly or for the most part of simply formed sheet metal parts.

Further special objects and the novel features through which the purposes of the invention have been attained are set forth and will appear in the course of the following specification.

The drawing accompanying and forming part of the specification illustrates a present practical embodiment of the invention but the structure may be modified and changed as regards the immediate illustration, all within the true intent and scope of the invention as hereinafter defined and claimed.

FIG. 1 in the drawing is a side elevation of one of the end fittings in normal, expanded condition but free of the track.

FIG. 2 is an end view of the same, but showing it engaged and interlocked with the track; the latter shown in section.

FIG. 3 is a side elevation similar to FIG. 1, but showing the spring tensioned finger grips pinched toward each other for releasing the device from the track.

FIG. 4 is an end view similar to FIG. 2 with parts in the releasing position.

FIG. 5 is a broken plan view showing interlocking engagement of the fitting with the track.

The cargo track **7** is shown as of the more or less usual construction having opposed flanges **8** defining an entranceway and these flanges having oppositely disposed notches **9** therein providing access to the space beneath or behind the flanges and providing spaced projections **29**.

The end fitting is shown as embodying a frame of inverted channel formation having spaced sides **10** connected at the top by a base portion **11** to which the ring or other terminal fitting **12** is secured, with anchor plates **13, 14** supported in back-to-back relation within the frame and adapted to be spread into engagement with the track flanges by interposed wedging means.

The track engaging plates are slideably mounted on traverse bolts or studs **15**, extending between the sides **10** of the frame and these plates are equipped at their lower edges with outwardly projecting flanges **16** to engage behind the opposed projecting flanges **8** of the track.

In practice, these anchoring plates **13, 14** have been made of sheet metal and the securing flanges **16** provided by embossing the plates inwardly as indicated at **17**.

FIG. 4 shows how with the plates collapsed in closely engaged back-to-back relation they may be passed through the entrance slot in the track and FIG. 2 shows how when expanded or spread apart, the securing flanges **16** at the lower edges of the plates will engage behind the track flanges.

The expanding and contracting movements of the plates

are effected or controlled by wedges or spreaders 18 pivoted on the cross studs **15** to swing from an outer position, FIG. 3, clear of the anchor plates to an inner or lower position, FIGS. 1 and 2, fully engaged with the embossed portions **17** and holding the plates spread apart fully interlocked with the track.

The wedges **18** are shown in the end views, FIGS. 2 and 4, as made up of separate pieces **19, 20**, pivotally engaged on studs **15** at the center of the frame and connected by laterally extending portions **21, 22** with angularly related handle or finger grip portions **23, 24**, pivotally engaged on the outer ends of the studs **15**.

A U-spring **25** has its intermediate bight portion **26** engaged over the two elements **19, 20** of each wedge **18** and its opposite ends coiled at **27** about the stud **15**, with these ends caught over the frame at **28**, FIG. 1, to exert downward movement of the wedges necessary to force and hold the anchor plates apart, as in FIGS. 1 and 2.

The exposed portions **21, 22** of the wedging or spreading members constitute finger grips or holds by which the wedges can be rocked from the holding position shown in FIG. 1 to the released position shown in FIG. 3.

The finger holds **21, 22**, may be located close enough together to be gripped between thumb and forefinger and the wedges thus be released by a simple pinching movement.

The coiled ends **27** of the springs may be disposed so as to exert a contracting action on the anchor plates, tending to force these plates together in close back-to-back relation, as indicated in FIG. 4.

To prevent excess movement or overthrow of the wedges **18**, the finger grip portions **23** by which the wedges are rocked may be equipped with stop lugs **28'** positioned to engage the ends of the frame when the wedges are fully engaged between the anchor plates, as in FIGS. 1 and 2.

The fitting is made up mostly of simply fashioned sheet metal parts so as to be light and strong; taking up small space and manufactured and assembled at low cost.

The fitting may be engaged with or disengaged from the track by simply pinching the finger grips toward each other to release the wedges from the anchor plates.

The embossments in the lower portions of the plates are located so as to engage and interlock with adjoining projections in the inverted T-slot track, thus to automatically anchor the fitting in the track and lock it against longitudinal movement in the track.

In the construction illustrated, the embossments at opposite ends of the plates are of sufficient extent and are located so as to receive and interlock over two adjoining projections **29** at each side of the track, as in FIG. 4, so as to securely hold the fitting against endwise movement on the track.

The inclines of the inner faces of the embossments facilitate entrance and release of the wedging elements.

What is claimed is:

1. A cargo tiedown fitting for tracks having inverted T-slots defined by opposed spaced flanges having notches forming entrances to space behind those remaining portions of the flanges between the notches, and comprising

an inverted channel frame having a back and dependent sides, terminal means for a tiedown connection on the back of the same and bolts extending between and connecting the sides of the same,

anchor plates slideably supported on said bolts in back-to-back relation.

said plates having outwardly facing holding flanges at the lower edges of the same engageable behind said remaining portions of the track flanges, when the plates are spread apart,

said plates being movable toward each other to withdraw the flanges thereon sufficiently for entry between said opposed flanges of the tracks, and

spreader means between said anchor plates movable to spread the anchor plates to engage the flanges thereon behind said portions of the opposed flanges or permit retraction of said holding flanges from behind the opposed flanges,

said anchor plates having parts entering the notches in the opposing flanges to hold the fitting against longitudinal movement on the tracks when the anchor plates are spread into holding engagement with the opposed supporting flanges.

2. The invention according to claim **1** with spring means including springs engaged over said bolts and disposed between the sides of the frame and the outer sides of the anchor plates for forcing said anchor plates toward each other and against said spreader means between the same.

3. The invention according to claim **1** with relatively inclined wedging faces on cooperatively engaging portions of the spreader means and anchor plates.

4. The invention according to claim **1** with handle means on said spreader means for retracting said spreader means from said spreading position.

5. The invention according to claim **1** with spring means for urging said plates into back-to-back relation and for projecting said spreader means into spreading position between the plates.

6. The invention according to claim **1** in which said holding flanges at the lower edges of the anchor plates are provided by embossments formed in said plates and of a size and spaced to engage over adjoining projections left between the notches in the track flanges.

7. The invention according to claim **1** with a spreader at each end of the frame positioned between the ends of the plates nearest that end of the frame.

8. The invention according to claim **1** with said spreader means including a wedge pivoted on one of said bolts between said plates.

9. The invention according to claim **8** with spring means urging said wedge into position between said plates and handle means connected with said wedge for retracting said wedge in opposition to said spring means.

10. The invention according to claim **1** with a spreader at each end of said frame and including a wedge pivoted on the bolt at that end of the frame in position to enter between the anchor plates, spring means urging said wedge between the plates and handle means for rocking said wedge in the opposite direction, said handle means being positioned at the opposite ends of the frame for gripping engagement between the fingers of a hand.

11. The invention according to claim **1** with said spreader means made up of wedge pieces pivoted in back-to-back engagement on one of said bolts and each having a handle forming portion projecting into exposed hand operable position and spring means urging said wedge pieces in the plate spreading direction.

12. Cargo tiedown fitting comprising

a frame having means for attachment of a tiedown connection,

cross studs at opposite ends of said frame,

anchor plates slideably mounted in back-to-back relation on said studs and having outwardly extending flanges at the lower ends of the same for engagement behind the flanges of cargo tiedown tracks,

spreading wedges pivoted on said studs for entry between said plates,

spring means for rocking said wedges into spreading engagement between said plates and

handle means for rocking said wedges in the opposite direction.

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