Jan. 28, 1969 F. L. DAVIS 3,423,800

CARGO TIEDOWN WITH LOCK FOR ADJUSTED, WEB TENSIONED RELATION

Filed July 6, 1967 Sheet 1 of 2

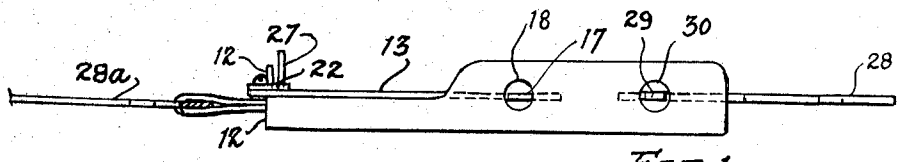


FIG. 1

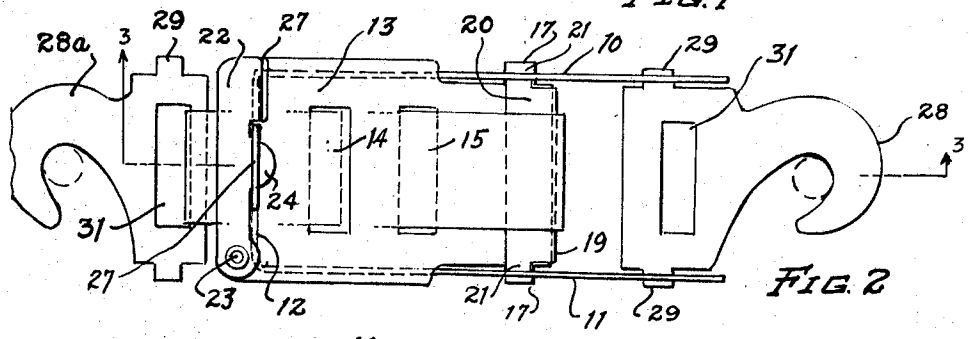


FIG. 2

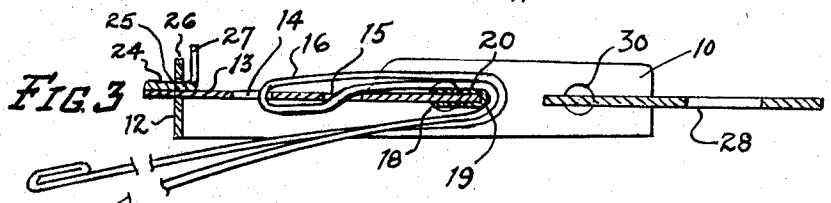


FIG. 3

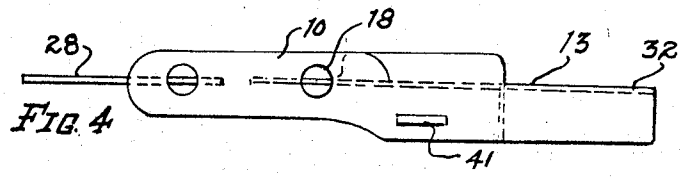


FIG. 4

FIG. 5

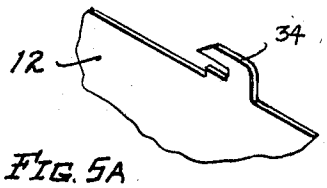


FIG. 5A

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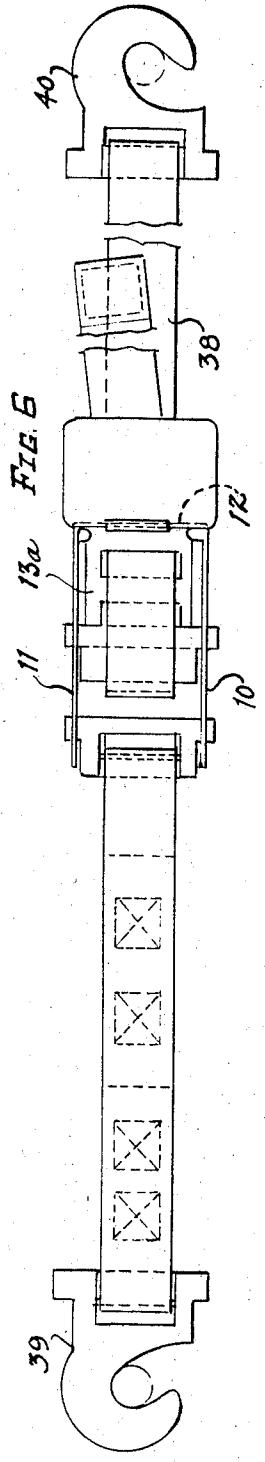


FIG. 6

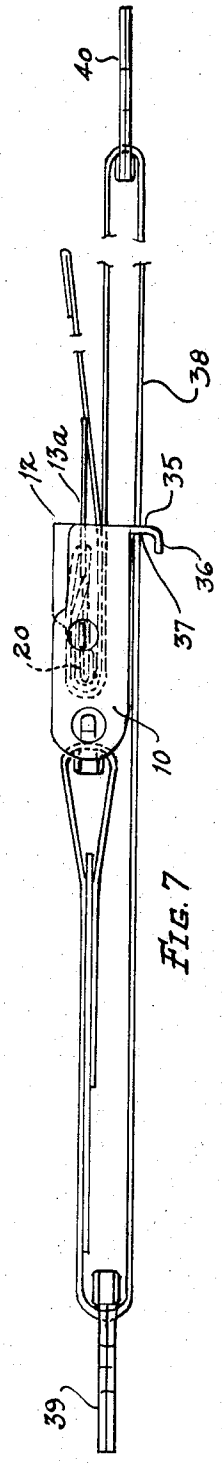


FIG. 7

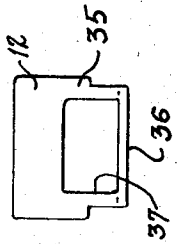


FIG 8

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CARGO TIEDOWN WITH LOCK FOR ADJUSTED, WEB TENSIONED RELATION

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U.S. Cl. 24—68 10 Claims
Int. Cl. A44b 21/00

ABSTRACT OF THE DISCLOSURE

Cargo tiedown web is adjustably connected with a pivoted takeup lever, which can be locked in the web tensioning position by a manually releasable catch, and duplicate terminal hooks pivotally engageable in buckle frame or connected with web.

FIG. 1 is an edge view of one of the cargo tiedowns embodying the invention, in the closed, web adjusted and tensioning position.

FIG. 2 is a plan view of the same.

FIG. 3 is a broken sectional view on substantially the plane of line 3—3 of FIG. 2.

FIG. 4 is an edge view of another form of the invention and FIG. 5 is a plan view of the same.

FIG. 5*a* is a broken perspective view of a hook formation.

FIG. 6 is a plan view of a further, modified form of the invention and FIG. 7 is an edge view of the same.

FIG. 8 is an end view of the frame.

In the first illustrated form of the invention, FIGS. 1, 2 and 3, the web tensioning buckle structure consists of a U-shaped frame made up of parallel side portions **10** and **11**, connected in spaced relation by an end portion **12** and a web tensioning lever consisting of a plate **13**, hawing cross slots **14**, **15** through which a loop **16** of the web is reeved and which plate has journal extensions or lugs, **17**, pivotally engaged in holes **18** punched in the side walls of the frame.

These pivot lugs are set back from the end **19** of the plate, giving the plate necessary leverage for tensioning the web extended about this end of the plate.

Additional leverage may be introduced by mounting a wraparound about this end of the plate, as shown at **20**, which provides a rounded bearing edge for the web and which with the lug extensions **21** lining up with the pivot extensions **17**, provides additional pivoting support for the web plate.

To secure the web plate in the closed web tensioning position, at latch member is mounted on the web plate, designed to interlock with a keeper on the frame.

This securing member is shown in FIGS. 1, 2 and 3 as a latch lever **22**, pivoted on the end of the web plate at **23**, having a tooth **24** to enter an opening **25** in the projection **26** on the end wall **12** of the frame.

This latch lever is shown provided with an upstruck thumb grip **27** for easy engagement or release of the latch.

In this first form of the invention, the frame is shown as having a hook **28** at the open end of the same, provided with lug extensions **29**, engaged in pivot openings **30** in the sides of the frame.

This hook is shown as having a cross slot **31**, so that it may be used for a web end hook, such as that designated **28***a*.

If desired, this duplicate use hook may have two or more cross slots, depending on whether, when used for a web end hook, the web is to be simply looped through a slot and stitched or otherwise fastened, or it is to be adjustably passed through a plurality of such slots.

Constructed as described, such hooks may be struck out of sheet metal for direct mounting in the frame or for attachment to webs used with the frames.

The second form of the invention, illustrated in FIGS. 4 and 5, resembles the first illustrated form in having a U-shape frame made up of parallel side walls **10** and **11**, connected by an end wall **12** and a web plate **13**, pivoted in the side walls by integral lug extensions **17**, but the web plate has an extended handle portion **32** at the free end, providing desirable leverage for tensioning the web and this extended handle portion has a slot **33** for passage of the upstanding hook **34** on the end wall.

This hook forms a latch for securing the web plate in the tensioning position and the plate is pivoted in the frame with slight free motion sufficient to permit the plate to snap down into and to free itself from engagement with the hook, on slight side pressure on the extended handle portion of the plate.

In the FIGS. 6 and 7 form of the invention, the closed end **12** of the frame is made with a downward extension **35**, rounded off at the bottom at **36**, to provide a smooth surface for bearing on cargo and this extension is shown as having a guide passage **37** therethrough, for the web **38**, which is shown as having a double run looped through end hooks **39** and **40**, with one end caught to the buckle frame and the opposite end adjustably engaged in the cross slots in the web plate **13***a*.

The invention provides a light, but strong, small size tensioning buckle which can be made up of sheet metal parts at relatively low cost.

The U-shape frame is stiffened and reinforced by the web plates and end hooks engaged in the sides of the frames.

If additional cross bracing is required, the sides may be connected by a cross brace bar, such as shown at **41**, FIGS. 4 and 5.

If greater strength or bearing surface is required for the hooks, they may be doubled one on top of another as indicated at **39** and **40** in FIG. 7.

While the terminal hooks have been shown connected with the buckle frame either by pivoting them to the frame or connecting them with a web, it is contemplated that the terminal hook on the frame may be rigidly connected with the frame or may in fact be formed as an integral part of the frame.

The U-shape frame first illustrated, has the advantage that it may be made up inexpensively out of strip stock bent into the U formation.

This frame, however, may be made up in channel formation or be made up of separate side pieces fastened together in spaced relation by welded or riveted or otherwise secured cross braces.

What is claimed is:

1. A web tensioning cargo tiedown with a manually releasable lock, comprising

a U-shaped frame of spaced parallel side walls connected at one end by an end wall,

a tiedown hook connected with the opposite free ends of said side walls,

said side wall connecting end wall having a projecting lug on one edge recessed for the reception of a locking member,

a web plate having journal extensions at one end pivotally engaged in said side walls in position for the free end of said plate to swing over the closed end of the frame,

said plate having web receiving cross slots for adjustably receiving a web to be tensioned in the swinging of said plate over said closed end of the frame,

said plate having a passage in line with and adapted

to receive said lug in the swinging movement of the plate over said lug, and

a manually releasable locking member on the free end of said plate to register with and engage in the recess in said projecting lug when said plate is in the web tensioning position over the closed end of the frame.

2. The invention according to claim 1 with a sheet metal wrap around on the pivoted end of the web plate projecting beyond the center of pivotal support for added leverage on a web looped over the same.

3. The invention according to claim 2 in which said wrap around is engaged over the end of the plate and has projecting lugs at opposite ends forming said journal extensions of the plate.

4. The invention according to claim 1 in which said manually releasable locking member is a latch pivoted on the free end of said plate in position to swing into and out of position in said recess.

5. The invention according to claim 1 with a web looped through said cross slots in said plate and extended about the pivoted end of the plate and

a hook element on the end of said web.

6. The invention according to claim 1 in which said journal extensions are integral projections at opposite sides of said plate set inward from the end of the plate to give leverage to a loop of web engaged about the end of the plate.

7. A web tensioning cargo tiedown with a manually releasable lock, comprising

a frame having spaced parallel side walls connected by an end wall,

said connecting end wall having a projecting lug on one edge recessed for the reception of a locking member,

a web plate having journal extensions at one end pivotally engaged in said side walls in position for the free end of said plate to swing over said end wall of the frame,

said plate having web receiving cross slots for adjustably receiving a web to be tensioned in the swinging of said plate over said end wall of the frame,

said plate having a passage in line with and adapted

to receive said lug in the swinging movement of the plate over said lug, and

a manually releasable locking member on the free end of said plate to register with and engage in the recess in said projecting lug when said plate is in the web tensioning position over said end wall of the frame, said end wall extended downward and turned under with a rounded bearing edge for smooth surface engagement with cargo and said downward extension having a web guiding passage therethrough.

8. A buckle construction comprising a frame having spaced parallel sides, and

duplicate hooks having extended bearing lugs for pivotal engagement in said sides of the frame and cross slotted for passage of a web therethrough and whereby said hooks are adapted either to be directly pivoted in said frame or to be connected with a length of webbing to be secured to said frame.

9. The invention according to claim 8 with a web adjustably connected with said frame and having a loop extended through the cross slot in one of said hooks.

10. Cargo tiedown gear comprising a buckle frame,

a terminal hook pivotally mounted in one end of said frame,

a web secured in the opposite end of said frame and,

a terminal hook attached to said web,

said hooks each having outstanding pivot lugs for pivotal engagement in the frame and a cross slot for engagement with a web therewith, and

whereby said hooks may be of duplicate construction and thereby either one be pivotally mounted in the frame or connected with the web.

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