March 11, 1969 E. J. CORDANI ETAL 3,431,868

COVER FOR DECK OPENINGS IN RAILWAY FLATCARS

Filed June 8, 1967 Sheet 1 of 3

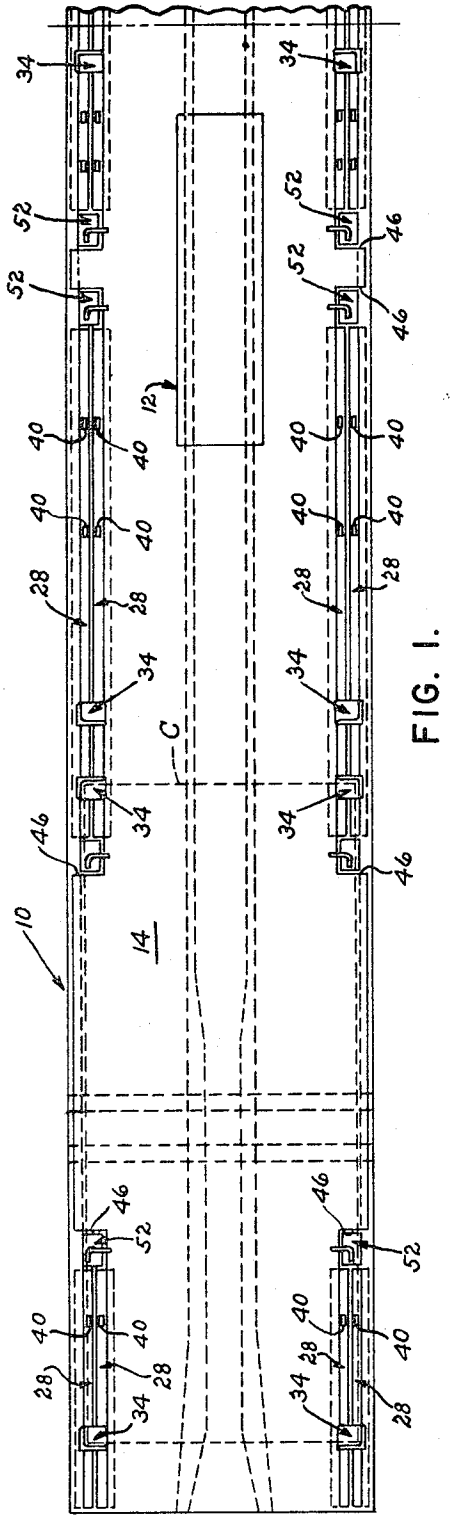


FIG. 1.

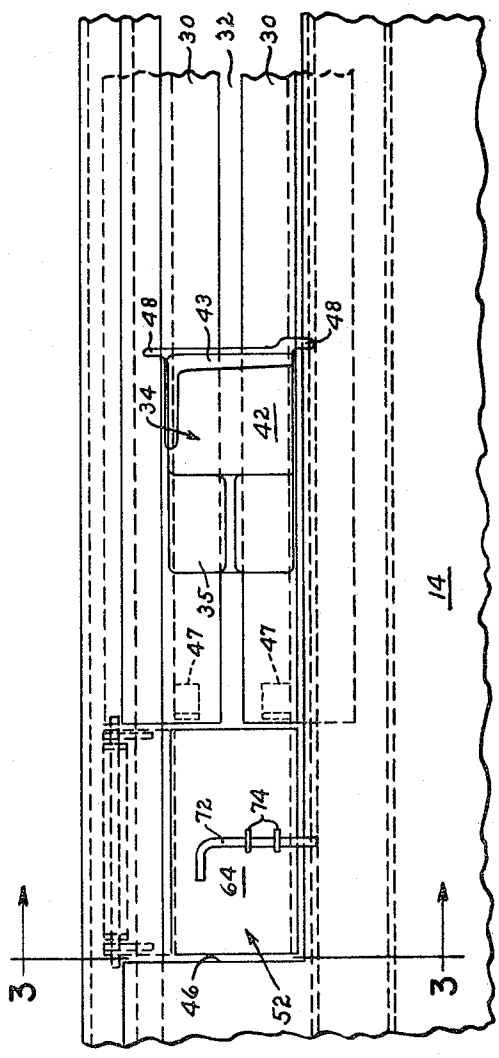


FIG. 2.

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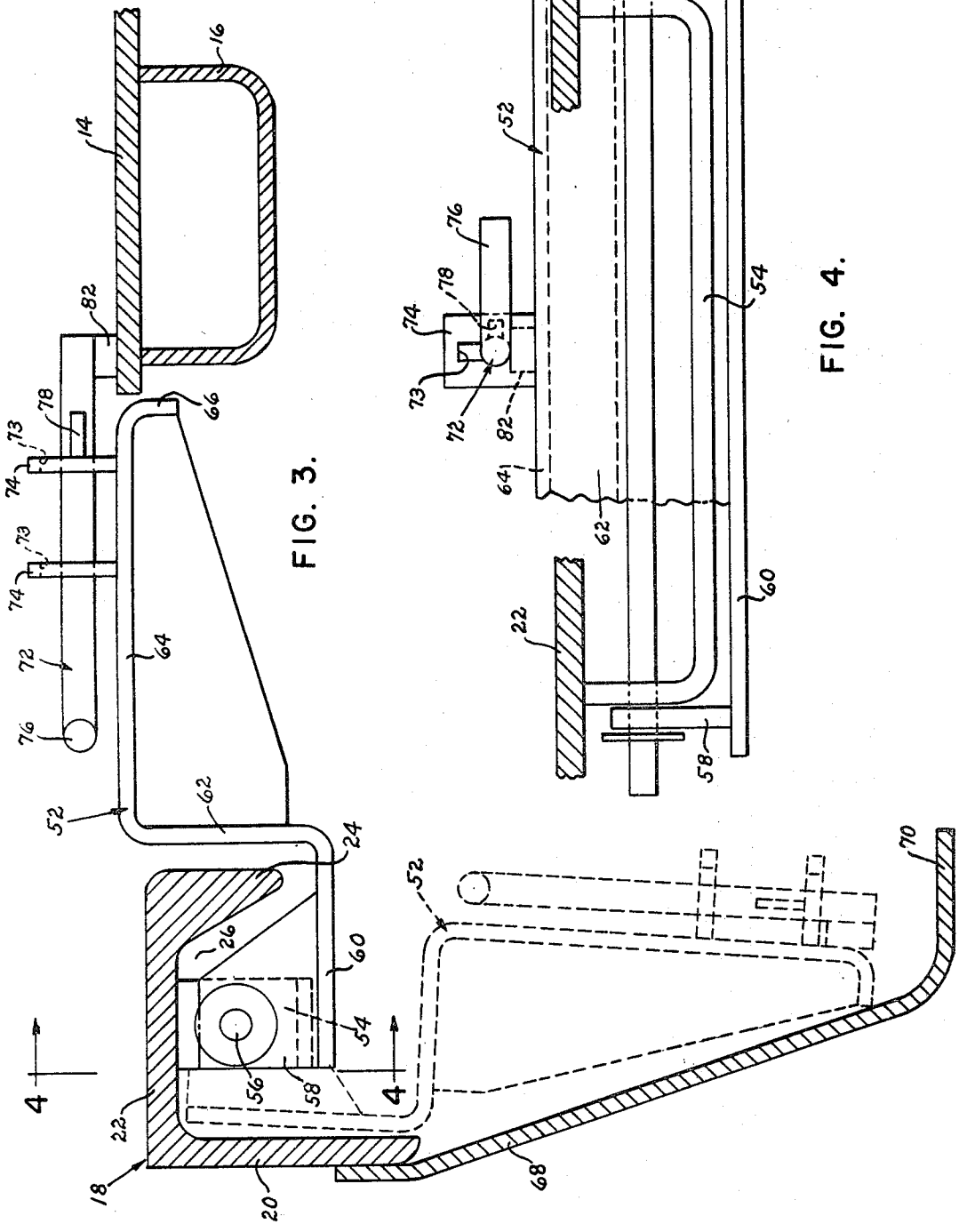


FIG. 3.

FIG. 4.

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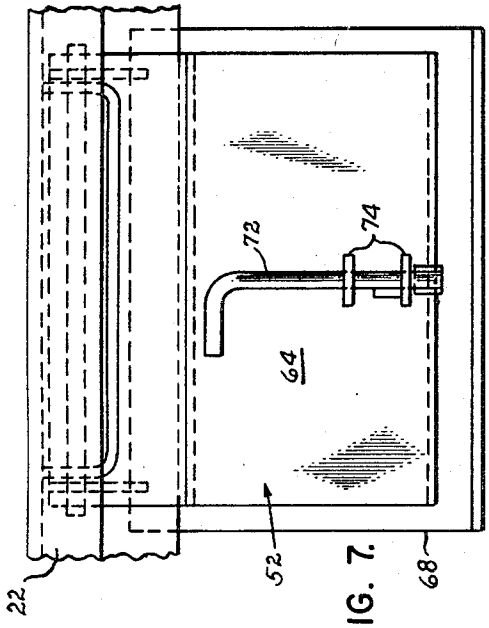


FIG. 7.

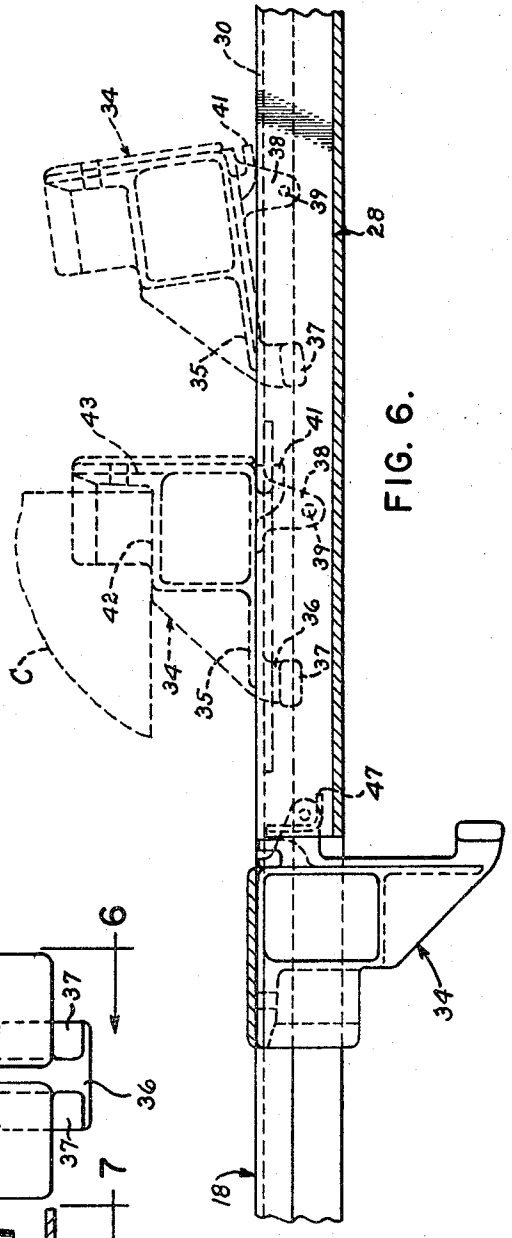


FIG. 6.

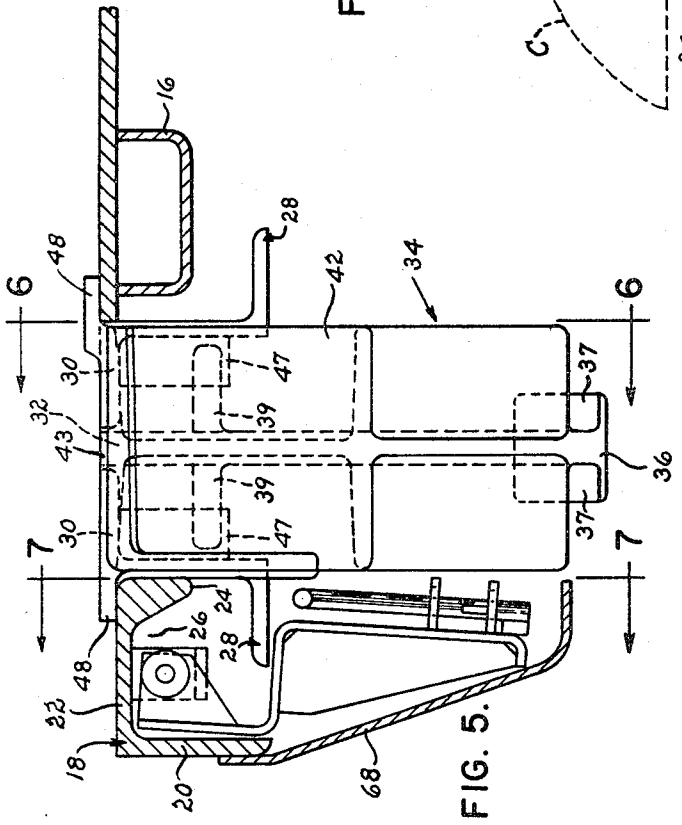


FIG. 5.

United States Patent Office 3,431,868 Patented Mar. 11, 1969

3,431,868

COVER FOR DECK OPENINGS IN RAILWAY FLATCARS

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U.S. Cl. 105—366 2 Claims
Int. Cl. B61d 3/06, 17/10; B65j 1/22

ABSTRACT OF THE DISCLOSURE

A railway flatcar having a generally flat deck for the transport of either containers or roadway vehicles with cutout portions or openings formed in the deck to receive container corner supports in a retracted position. A separate cover for each deck opening is mounted beneath the deck surface and is pivoted upwardly to a raised position to cover an associated deck opening when the container support is in an erect or container support position. The container supports cover the openings in retracted position and the associated covers are pivoted downwardly beneath the deck in retracted position.

Background and description of invention

Copending application Ser. No. 565,420 filed July 15, 1966, now Patent No. 3,391,654, and entitled "Railway Car," the entire disclosure of which is incorporated by this reference, discloses a railway flatcar having a flat deck adapted to transport, selectively either containers or roadway trailers. Corner supports for the containers are movable into openings in the deck in a retracted position and cover the openings in such position to form a generally continuous deck surface for the transport of trailers. When the corner supports are in an erect or raised position for the transport of containers, the deck openings are exposed and could result in a safety hazard to workmen and the like walking along the deck of the car.

The present invention provides a covering for the deck opening when the corner supports are in raised position thereby to remove any possible safety hazard resulting from an exposed deck opening. The cover is mounted beneath the deck for pivotal movement and is pivoted downwardly to a retracted position beneath the deck while being pivoted upwardly to close the deck opening.

The invention accordingly comprises the constructions hereinafter described, the scope of the invention being indicated in the following claims.

In the accompanying drawings in which one of various possible embodiments of the invention is illustrated,

FIGURE 1 is a top plan of around one-half the length of a railway flat car embodying the present invention;

FIGURE 2 is an enlarged fragment of FIGURE 1 illustrating the cover forming the present invention in covering relation to an associated deck opening;

FIGURE 3 is a section taken generally along line 3—3 of FIGURE 2 and illustrating the cover in covering relation to the deck opening;

FIGURE 4 is a section taken generally along line 4—4 of FIGURE 3;

FIGURE 5 is a section similar ot FIGURE 3 but showing the container support in retracted position and covering the deck opening;

FIGURE 6 is a section taken generally along line 6—6 of FIGURE 5 and illustrating the retracted position of the container support; and

FIGURE 7 is a section taken generally along line 7—7 of FIGURE 5 and illustrating the retracted position of the cover.

Corresponding reference characters indicate corresponding parts throughout the several views of the drawings.

Referring now to the drawings for a better understanding of this invention, a railway flatcar is generally indicated **10** and is adapted for the transport of either containers or roadway trailers. For the transport of roadway trailers, a suitable collapsible hitch generally indicated **12** may be mounted on deck **14** to secure the kingpin of an associated trailer. Hitch **12** is movable between a collapsed position on deck **14** for the transport of containers, and an erect position for the transport of roadway trailers. As an example of a suitable collapsible hitch **12**, reference is made to U.S. Patent 3,262,402 dated July 26, 1966, the entire disclosure of which is incorporated by this reference.

As shown in aforementioned patent application Ser. No. 565,420, now Patent No. 3,391,654 stringers **16** extend longitudinally of railway car **10** beneath deck **14**. A side sill **18** extends along each side of car **10** and includes an outer vertical flange **20**, an upper horizontal flange **22**, and an integral downwardly extending edge portion **24** which forms a pocket **26** beneath the associated side sill **18** as shown in FIGURES 3 and 5. Adjacent each side sill **18** is a pair of Z-shaped guide members **28** having opposed upper flanges **30** spaced from each other to form a slot or guideway **32** therebetween. The upper surfaces of flanges **30** are generally flush with the upper surface of deck **14** to form a continuous or flush deck surface.

Mounted within each slot **32** for sliding movement therealong to various spaced intervals along the length of associated slot **32** is a container support **34** adapted to support the lower corner of a container C thereon. Each support **34** includes a base **35** with a front guide lug **36** extending downwardly from base **36** through slot **32** and having laterally extending projections **37** thereon extending beneath the adjacent flanges **30** to prevent removal of support **34**. A rear guide lug **38** extends downwardly within slot **32** and has laterally extending pins **39** thereon beneath flanges **30**.

To position container support **34** at predetermined positions along the length of slot **32**, openings **40** are provided in flanges **30** of Z-shaped members **28**. Hook-shaped projections **41** are adapted to be received within openings **40** for positioning container support **34**. When projections **41** are vertically aligned with openings **40**, the projections drop within openings **40** and support **34** is manually moved to the right as viewed in FIGURE 6 to engage projections **41** beneath the flanges **30**. To release container support **34** for movement to another position, support **34** is moved in a direction to release lugs **41** from engagement with flanges **30** and is then lifted upwardly as shown in broken lines in FIGURE 6 so that projections **41** may clear flanges **30** and ride along the top of members **28** to another predetermined position. Support **34** has a container seat **42** to support container C and an end wall **43** adjacent seat **42**.

To adapt railway car **10** for carrying trailers or the like, container supports **34** may be moved to an inoperable retracted position to provide a deck surface free of projections or obstructions. For this purpose, deck **14** has cutout portions **46** adjacent the ends of guides **28** and end retaining tabs **47** are secured to the ends of guides **28**. As shown in FIGURES 5 and 6 in retracted position, support **34** may be pivoted downwardly with pins **39** on lugs **38** engaging end retaining tabs **47** to prevent support **34** from being withdrawn from slot **32**. End wall **43** has marginal edge portions **48** engaging the adjacent deck **14** and upper flange **22** respectively, as shown in FIGURE 5. Thus, end wall **43** of container support **34** covers cutout portion **46** and forms a continuous deck surface in the retracted position of support **34**. For further details, ref-

erence is made to copending application Ser. No. 565,420, now Patent No. 3,391,654.

Normally a pedestal or corner support **34** is provided for each cutout portion **46** whereby upon movement of the supports **34** to retracted position for the transport of trailers, all of the cutouts or openings **46** are covered. If flat car **10** is adapted for the transport of four containers, sixteen (16) corner supports **34** and sixteen (16) cutouts **46** would be provided. However, for the transport of containers, deck openings or cutouts **46** would be exposed and might present a safety hazard to workmen or the like on the railway car.

The present invention provides a separate cover generally indicated **52** for covering each cutout **46** when associated support **34** is in erect position. Each cover **52** is mounted for pivotal movement within the pocket **26** of the adjacent side sill **18** and includes a U-shaped bracket **54** secured to the underside of flange **22** of side sill **18**. A supporting rod **56** is carried by bracket **54** and extensions **58** of cover **52** are mounted for rotation on rod **56**. Cover **52** is generally Z-shaped to form stepped portions and includes a lower flange **60**, an integral web **62**, and an upper horizontal flange **64** having a downturned end portion **66** as shown in FIGURE 3. The arrangement of such a Z-shaped cover **52** permits cover **52** to be mounted beneath adjacent side sill **22** and to be pivoted upwardly to close opening **46** while receiving the adjacent downturned edge portion **24** of side sill **18**. To provide a partial housing for cover **52** in the retracted position thereof, an outer plate or member **68** is secured to vertical flange **20** of the adjacent side sill **18** and has a horizontal extending lower end portion **70** extending beneath cover **52** in the retracted position thereof. Outer plate **68** extends downwardly from side sill **18** and forms with side sill **18** a side sill structure.

To secure cover **52** in covering relation to opening **46**, a locking pin **72** is mounted for sliding movement within openings **73** of extensions **74** on the upper surface of flange **64** as shown in FIGURE 3. Pin **72** has an outturned end portion **76** for manually gripping. A detent **78** on pin **72** may be aligned with an elongate portion of opening **73** upon rotation of pin **72** thereby to permit unlocking of pin **76** and retraction of cover **52**. A spacer **82** on the extending end of pin **72** bears against the adjacent deck surface **14** in the closed position of cover **52**.

From the foregoing, it is to be understood that a separate cover **52** is provided for each deck opening **46** and is pivotally mounted beneath the adjacent generally angle-shaped side sill **18** to pivot downwardly to a retracted position while pivoting upwardly to close opening **46**. This arrangement does not obstruct the deck surface in any manner when in retracted position. When cover **52** is in closed position as shown in FIGURE 3, the flatcar **10** is adapted for carrying containers. Therefore, pins **72** do not interfere with any movement of tractors or the like along the deck surface since flatcar **10** is not being used to transport trailers. When trailers are transported, openings **46** will be covered by corner supports **34** which will easily permit tractors or the like to be driven thereover without any hindrance or interference.

In view of the above, it will be seen that the several

objects of the invention are achieved and other advantageous results obtained.

As various changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. A railway flatcar adapted to support a container thereon comprising, a generally flat deck, a side sill structure extending longitudinally along each side of the deck, each side still structure having an upper inwardly extending horizontal flange forming a continuation of the deck surface to provide a generally flush and even deck surface and a side member extending downwardly from the upper flange, at least a pair corner supports adjacent each side of the car adapted to fit beneath and support the lower corners of a container, means mounting each corner support for movement between an erect position above the deck and a retracted position in which the deck is not obstructed, a cutout portion of the deck to receive an associated corner support when the support is moved to retracted position and being exposed when the associated corner support is in erect position, said support forming a covering over the associated cutout portion of the deck in the retracted position thereof and a continuation of the deck surface whereby roadway vehicles may be moved over the support, a separate cover for the cutout portion when the support is in erect position, and means beneath the horizontal flange of the side sill structure pivotally mounting the cover for downward movement to a retracted position beneath the deck and upward movement within the cutout portion for forming a continuation of the deck surface and a covering for the cutout portion, said cover having a pair of stepped portions with the lower stepped portion being mounted to said side sill structure for pivotal movement and the upper stepped portion forming the covering surface for said cutout portion when the cover is in covering relation to the cutout portion, said cover when in retracted position being positioned closely adjacent the side member of said side sill structure beneath said upper flange whereby the side sill structure forms an area for storing the cover in retracted position.

2. A railway flatcar as set forth in claim **1** wherein means are provided on the upper stepped portion to releasably secure the cover in covering relation to said cutout portion.

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U.S. Cl. X.R.

105—368, 372, 418, 422