Feb. 3, 1948. J. G. DEEGAN 2,435,190

ROLLING HATCH BEAM TRACK

Filed Dec. 28, 1944

Fig. 1.

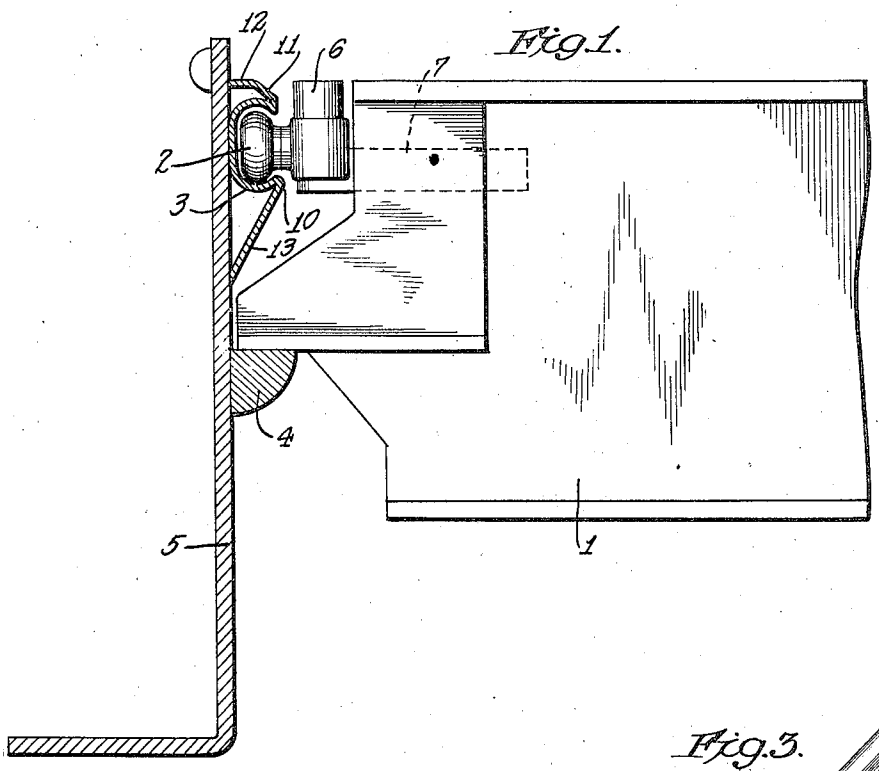


Fig. 2.

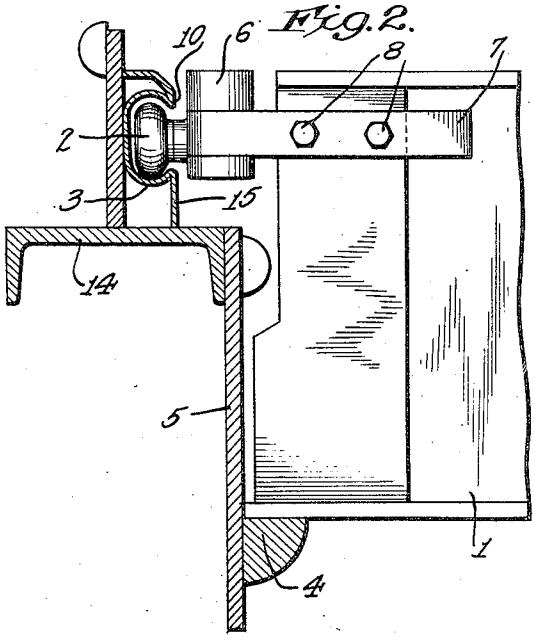
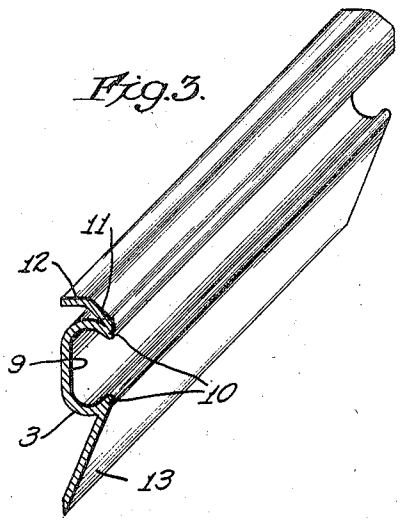


Fig. 3.



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Patented Feb. 3, 1948

2,435,190

UNITED STATES PATENT OFFICE

2,435,190

ROLLING HATCH BEAM TRACK

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Application December 28, 1944, Serial No. 570,196

7 Claims. (Cl. 114—201)

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This invention relates to a track to be associated with the hatch coamings of a ship to support rolling hatch beams.

Ordinarily the hatch beams of a cargo ship are hoisted from the hatch openings and stored on deck whenever cargo is being loaded or unloaded. This is an expensive, time-consuming operation and valuable deck space is sacrificed for the storage of these beams. Various suggestions have been made for mounting rollers on the ends of the hatch beams and rolling these beams to the ends of the hatchway during the cargo loading and unloading operations. But numerous difficulties have arisen in these suggestions, particularly with respect to the design of the track to be employed and the method of connecting it to the hatch coamings.

It is an object of this invention to provide a hatch beam track which may be pre-fabricated in a shop and thereafter secured to the hatch coaming with a minimum of trouble and expense and which will provide a track contour of improved design.

Another object is to provide a track having a cross section of such design as will prevent the beam rollers from leaving the track, or becoming jammed therein, and which, at the same time, will not offer projections extending into the hatch so as to interfere with, or be injured by, the raising or lowering of cargo through the hatch.

Still another object is to provide a track of considerable cross sectional strength, which, when secured to the hatch coaming, will serve to stiffen that member. The track may also cooperate with the hatch beams in supporting the hatch planking, or covers.

With these and other objects in view, the invention may be understood by reference to the following description, taken in conjunction with the drawing in which:

Fig. 1 is a view in cross section through a hatch coaming and a preferred form of track, showing in elevation a hatch beam and its associated rolling mechanism;

Fig. 2 is a substantially similar view showing a slightly different coaming arrangement; and

Fig. 3 is a perspective view of the preferred form of track.

Referring to the drawing, the numeral 1 indicates a hatch beam which is adapted to be rolled to one end, or the other, of a hatch to permit the loading, or unloading, of cargo through the hatch. Each hatch has a sufficient number of such beams to support the weight of the cargo to be carried in the hatch area, or to support the weight of seas which may break over the hatch

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in the uppermost, or shelter, deck of the ship. At the ends of these beams there are one or more rollers 2 by means of which the beams may be rolled in the track 3, the construction of which is hereafter described.

As shown in Figs. 1 and 2, the beams 1 are in the lowermost, or resting position, being supported by the cleats, or shoulders, 4, secured to the coaming 5. These cleats preferably (but not necessarily) extend the full length of the coaming so that the beams 1 may be supported in any desired location. When it is desired to roll the beams to one end, or the other, of the hatch, they must be lifted above the cleats 4 and be carried by the rollers 2 supported by the track 3. Likewise, after the beams have been positioned where desired, their weight is preferably taken off the rollers 2, and track 3, by lowering them onto the cleats 4 as shown in the drawing. The means for thus raising and lowering the beams is indicated generally by the numeral 6 representing a lifting mechanism which supports the rollers 2 and which is carried by a bracket 7 bolted as shown at 8, or otherwise secured to the beam 1. Since this lifting mechanism and its supporting means form no part of the present invention, it need not be further described herein. A preferred arrangement is disclosed in copending application Serial No. 573,347, filed January 18, 1945.

Referring now to Fig. 3, a preferred form of track will be described. It comprises a central, roller supporting section 9 in which the rollers 2 are adapted to roll, although some sliding action may occur. This tread section is substantially C-shaped with the vertical portion thereof resting against the coaming 5 as shown in Fig. 1, and its edges 10 encompass the rollers 2 to such an extent as to prevent these rollers from jumping, or pulling out of, the track. Above the upper edge 10, the track has a portion 11 inclined upwardly and toward the coaming 5. The uppermost part 12 is substantially flat and extends to the coaming to which it may be welded. From the lower edge 10 of the C-section a downwardly inclined portion 13 also extends to the coaming and may be welded thereto.

It will be readily appreciated that a track of this construction may be pre-fabricated in a shop, either by rolling, or otherwise forming, a single sheet of material with the desired cross section, or it may be formed of several pieces welded, or fastened together by other means. The completed track may then be welded to the coaming along the edges of the portions 12 and 13. Since the formation of the track cross section may be done in a shop and only two welds are required

to be performed aboard ship, this construction results in substantial economies. These two welds and the contact of the C-section 9 with the coaming, serve to stiffen that member.

The track preferably has a removable section, so that if it be desired for any reason to lift a beam entirely out of the hatch, this section of the track may be removed and the beams rolled to this location, from which they may be hoisted out of the hatch.

The portions 11 and 13 being inclined, protect the track from injury, particularly the C-section 9, by deflecting cargo away from the tread portion should the track be struck during the loading or unloading operations. Also these portions deflect particles of bulk cargoes which might otherwise accumulate in the tread portion and bind, or prevent, proper rolling action, or sliding action. If, however, such accumulations do occur, the tread portion is readily accessible for cleaning without dismantling any part of the apparatus.

Referring to Figs. 1 and 2 it will be observed that when the hatch beams are in resting position, the top track portion 12 is substantially on the same level as the top of the lifting mechanism 6 and the top surface of the hatch beam 1. This arrangement enables the hatch planking, or covers, to lie substantially flat on the hatch beams and the track provides additional support for these covers adjacent the coaming 5.

Referring to Fig. 2 a slightly different form of hatch coaming is shown. In some ship constructions the hatch coaming has a horizontal extension secured to its upper edge, such as the channel member 14 shown in this figure. With such an arrangement it is generally desirable to form the track so that its lowermost portion 15 extends vertically from the lower edge 10 of the C-section to the channel 14, to which it may be welded.

Having thus described a preferred embodiment of my invention, it is to be understood that I do not wish to limit myself to the exact details of construction shown and described since various modifications may be made by those skilled in the art without departing from the spirit and scope of my invention.

I claim:

1. A hatch coaming track integrally formed from flat metal stock for supporting rolling hatch beams comprising a central concave tread portion, upper and lower portions extending from the upper and lower edges of said tread portion for supporting the same, the outer edges of said upper and lower portions being adapted to abut the hatch coaming and to be fastened thereto to support said track in fixed engagement with the coaming.

2. A hatch coaming track for supporting rolling hatch beams comprising a generally C-shaped central concave tread portion, upper and lower portions extending to the adjacent coaming and to the upper and lower edges of said C-shaped tread portion for supporting the same, said supporting sections being inclined away from the hatch opening and having edges adapted to be secured to the coaming.

3. A hatch coaming track integrally formed of sheet metal stock for supporting rolling hatch beams comprising a generally C-shaped central web having a concave tread portion conforming substantially to the outline of the track wheel and upper and lower supporting sections attached to the adjacent coaming, and to the upper and lower extremities of said central web, the vertical portions of said web abutting the coaming and said supporting sections being inclined away from the hatch opening, and said track being free of projections beyond the tread portion in the direction of the hatch opening.

4. A hatch coaming track integrally formed of sheet metal stock for supporting rolling hatch beams comprising a substantially C-shaped web portion having a tread surface in the lower curved portion of said web conforming substantially to the outline of the track wheel, upper and lower portions extending from the upper and lower edges of the web portion and having their outer edges connected to the adjacent coaming, said track being free of projections beyond the tread portion in the direction of the hatch opening and serving to reinforce the coaming for supporting the weight of the hatch beams.

5. A hatch coaming track for supporting rolling hatch beams comprising a generally C-shaped web portion having a concave tread surface conforming substantially to the outline of the track wheel, upper and lower members, extending from the upper and lower edges of the web portion and connected along their outer edges with the adjacent coaming, the part of the upper portion adjacent the coaming being substantially flat and lying in the plane of the top surface of the hatch beam when it is in resting position, said track being free of projections beyond the tread portion in the direction of the hatch opening.

6. A hatch coaming track for supporting rolling hatch beams comprising a web member having a vertical portion abutting against the coaming and having a concave tread surface conforming substantially to the outline of the track wheel, an upper flange extending from the edge of the web member, including a rearwardly inclined portion and a substantially horizontal area adapted to support hatch covers, the edge of said flange being connected with the coaming, and a lower flange extending from the other edge of the web member also connected with the coaming, said track being free of projections beyond the tread portion in the direction of the hatch opening.

7. A hatch coaming track integrally formed of sheet metal stock for supporting rolling hatch beams comprising a generally C-shaped web member including a concave tread surface, an upper portion extending from the upper outer edge of the web member to the adjacent coaming and a lower portion extending from the lower outer edge of the tread surface of the web member vertically downward to the adjacent coaming, said track being free of projections beyond the tread portion in the direction of the hatch opening.

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