

Oct. 6, 1936.

B. F. FITCH

2,056,178

DEMOUNTABLE BODY

Filed Sept. 19, 1933

2 Sheets—Sheet 1.

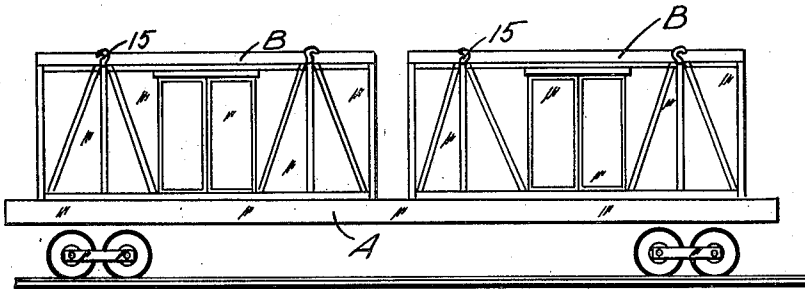


FIG. 1

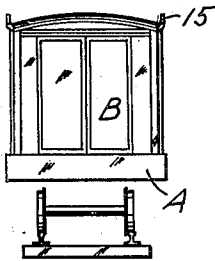


FIG. 2

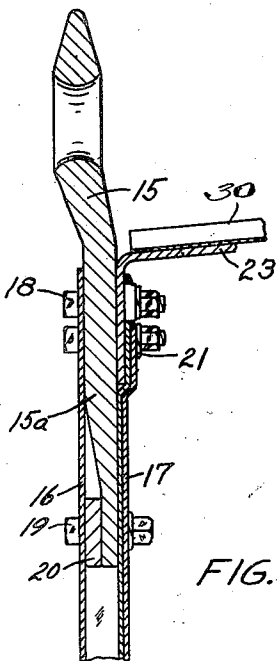


FIG. 4

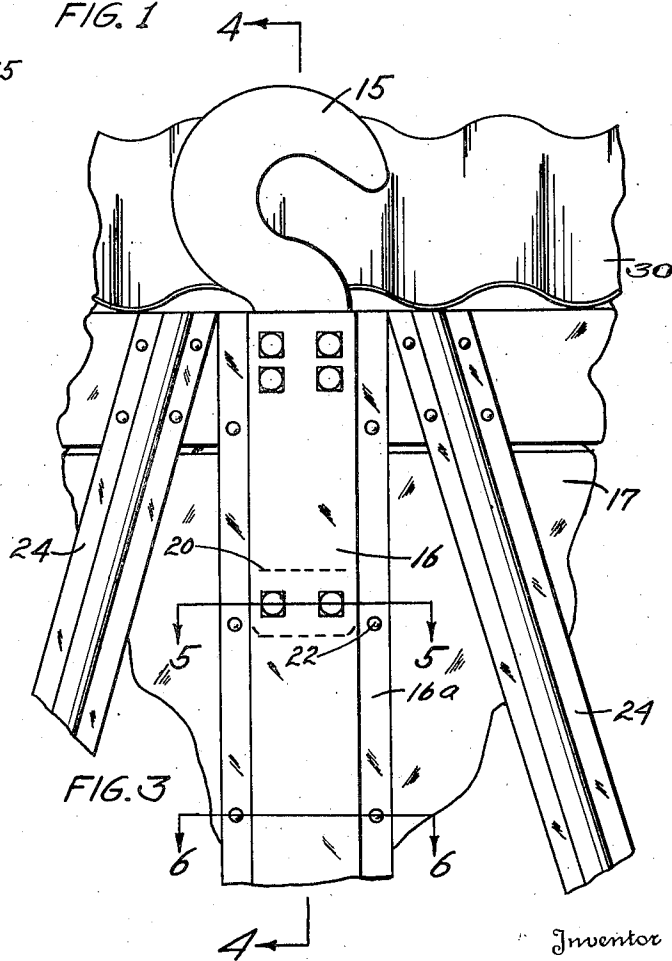


FIG. 3

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Fig. 5.

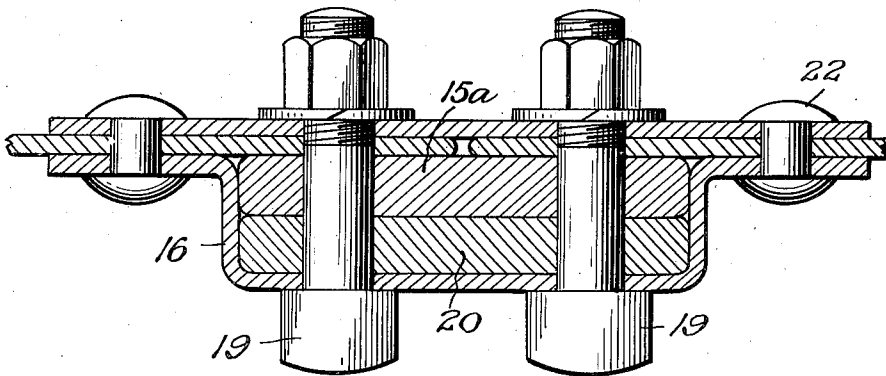
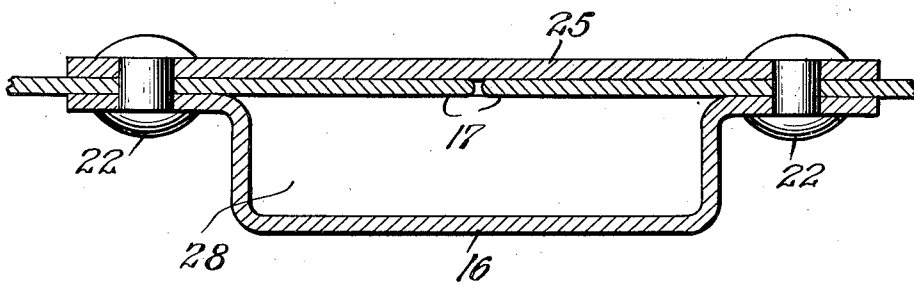


Fig. 6.



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UNITED STATES PATENT OFFICE

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DEMOUNTABLE BODY

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Application September 19, 1933, Serial No. 690,104

7 Claims. (Cl. 220—1.5)

A system of handling package freight by means of demountable bodies which may be carried on highway trucks or on vessels and lifted intact with their loads to a railway car for intermediate rail transportation, and thereafter transferred at the distant end to a truck or vessel for ultimate delivery, has many advantages, reducing the cost of shipping from consignor to consignee, reducing the time involved, and reducing the loss due to pilferage or breakage. In a system of this kind where the demountable body with its load is interchanged between different vehicles, a very important feature for such a demountable body is the combination of a maximum of strength with a minimum of weight. The lifting of the body with its load, together with the rough handling of it by unskilled labor requires strength and stiffness in the body, while, on the other hand, the lighter the body in weight, the less unpaying load is carried.

It is desirable that such bodies have provision for ventilation at the roof to enable the body to carry vegetables or other perishable freight, but on the other hand, the bodies should be so arranged as to prevent ingress of water, dirt or similar substance through the ventilation openings.

It is the general object of my invention to provide a demountable and readily transferable body which shall comprise the desired characteristics of strength, stiffness, lightness, tightness and ventilation.

It is, of course, necessary to provide means for removing the body from the railway car, truck or vessel transporting it, or from a loading platform, and a crane system having depending raising members adapted to engage body hooks, or suspending a cradle which has shackles to engage such hooks, is an effective means for handling the body. The hooks, to be readily engageable by the crane lift members or the cradle shackles, must project a considerable distance above the top edges or eaves of the body, and hence, expose themselves to blows which may distort their shape or occasionally break them off completely.

To prevent a damaged hook from interfering with the usability of the body, I make such hooks readily removable. Each hook is bolted to a side of the body in such manner that while it is rigidly attached it may be quickly detached and a substitute installed, in case of distortion or other injury to the hook. This is one of the features of my invention.

If the lifting members exert any lateral stress

on the body it is important that it be braced transversely, and these same braces may constitute roof beams for supporting a light roof. A feature of the present invention which materially improves the body and contributes to its lightness as well as strength is to make lateral bracing roof beams in the form of trough-shaped members, which are effectively reinforced adjacent their ends by stirrups which embrace them, and are firmly secured to the bent-over eave plates of the body and to the roof itself.

The roof proper is preferably made of corrugated metal with the length of the valleys and ridges of the corrugations extending transversely of the body. I avail myself of the cheapness and ventilation provision resulting from the corrugated roof without danger of ingress of water or dirt at the eaves by filling those corrugations between the roof metal and the inward flange of the eave plate with sufficiently packed fibrous material to prevent access from the outside, while leaving sufficient ventilation from the interior. I find mineral wool is very satisfactory for this purpose.

As will be understood from the above outline, my invention comprises a demountable body having the improved lift hooks at the eaves and the improved construction of the roof adjacent such eaves, all as hereinafter more fully described in connection with the drawings, which illustrate a preferred embodiment thereof.

In the drawings, Fig. 1 is a side elevation of a railway flat car on which two of my demountable bodies have been placed; Fig. 2 is an end view of such car and body; Fig. 3 is an elevation of a portion of the side of the body at the top, adjacent one of the hooks; Fig. 4 is a sectional view of such hook and its support, as indicated by the line 4—4 of Fig. 3; Figs. 5 and 6 are transverse sections as indicated by the lines 5—5 and 6—6 on Fig. 3, and are shown on a somewhat larger scale than is Fig. 3.

Referring to Fig. 1, A represents a railroad flat car, having demountable bodies B placed thereon. These bodies B have hooks 15, which furnish a means of engagement by a suitable crane to remove the body from the car.

The hooks are made removable from the body to allow substitution or repair in the event of injury. Thus, in Fig. 3 the hook 15 is shown with its shank 15a mounted in a vertical housing rigidly secured to the car side. This housing is shown as a sheet metal channel plate 16 which has side flanges 16a by which it is riveted to the side 17 of the body. The hooks 15 are bolted

to the body and housing by bolts 18, at one portion, and by bolts 19, at another portion of the shank. It will be noted that the shank 15a tapers substantially from the hook stem to the end, in order that a reinforcing plate 23 may be interposed between the hook member 15 and the outside of the channel 16. Lock washers 21 prevent the bolts from jarring loose, due to vibration of the body.

The two sets of bolts 18 and 19, not only firmly hold the hooks in place in channel 16, but also by reason of their engagement with the side of the body 17 carry part of the stress which is normally handled by rivets 22 in the side flanges 16a and the body wall. The bolts 18 also help to hold the roof and the sides together by virtue of their engagement with the side of the eave-plate or angle-shape 23, the inner flange of which angle acts as a support for the roof. Members 24 are diagonal bracing sections riveted or welded, or both, to the sides of the body and to the eave plate to help carry the stress occasioned by a load deposited on the floor of the body.

In the large-size body illustrated, it is expensive and troublesome to make the body side 17 from the door to the end of the body of a continuous piece of sheet-metal, while to overlap separate sheets and rivet them makes an undesirable offset in the side surface. To eliminate this offset I may employ sheets abutting in the same plane with a splice plate behind them. In such case I locate the junction directly behind the channel-shaped member 16, the latter accordingly serving not only as a receptacle for the hooks but as a cover and bracer for this junction, as clearly illustrated in Figs. 5 and 6. It will be seen that the same rivets 22 which hold the channel member to the side plates also hold the batten strip 25 on the inside of the body. This batten strip serves to further stiffen the construction at this point, giving a very rigid upright member for carrying the load stresses from the floor frame to the hook.

Although the hook shank 15a practically fills the channel 16, it is possible that water, resulting from a rain storm or melting snow, might seep into the top of the channel at the edges of the shank; but in that case the channel, together with the body side and batten strip, makes an effective downspout, conducting such water harmlessly to the bottom of the body, where it is discharged.

The body shown has a suitable roof structure 30, which is formed of corrugated sheet metal with the length of the ridges and valleys extending transversely and which rests on the inturned flanges 23 of the eave plates. Suitable transverse beams, not shown, may also be connected to these eave plates and support the roof. However, the roof structure constitutes no part of the present invention, but forms the subject matter of my divisional application No. 723,661, filed May 3, 1934.

It will be seen from the disclosure given that I have materially improved demountable bodies having lift hooks for their transference between the vehicles, enabling the ready repair or re-

placement of damaged hooks and providing a fastening of the hooks to the body, which is water-tight.

Having disclosed my invention, I claim:

1. In a demountable vehicle body, lifting hooks 5 removably fastened in channel pieces mounted on the sides of said body, said lifting hooks each comprising a curved hook portion and a tapered shank portion, the shank portion adjacent the hook being substantially as thick as said channel 10 pieces are deep, and the end of said shank portion being less thick than said channels are deep, together with a reinforcing plate interposed between the hook shank and its receptacle at the 15 thinnest portion of the hook shank.

2. In a demountable body, the combination with the side walls of the body of upright reinforcing members secured thereto, and extending from adjacent the bottom thereof, hooks having downwardly extending flattened shanks, and means 20 extending through such shanks for fixedly and removably attaching the hooks to both the side walls and the upper portion of said reinforcing members.

3. In a demountable body having a plurality of 25 removable lifting hooks, an enclosed box-like receptacle open at the top for each of said hooks comprising a side reinforcing member and the outer face of a side portion of the body and the vertical side of an angle piece adapted to support 30 the roof, said hook being removably connected to each of the receptacle forming portions of the body.

4. In a demountable vehicle body, receptacles 35 for removable lifting hooks comprising channel pieces extending vertically from top to bottom of the sides and adapted to reinforce said sides, and provide an elongated box-like receptacle open at the upper end, said hooks having shanks extending 40 within the channels and removably fastened thereto.

5. In a demountable vehicle body, channel 45 pieces along the body sides, lift hooks fastened in said channel pieces, said lift hooks each comprising a curved hook portion and a shank portion, said shank being substantially as thick as said channels are deep.

6. In a demountable vehicle body, lift hooks 50 removably fastened in channel pieces mounted on the sides of said body, said lift hooks each comprising a curved hook portion and a shank portion, said shank being substantially as thick as said channels are deep, and as wide as said 55 channels, whereby a relatively tight seal is provided by said hook where it enters said channel.

7. A body lift hook construction, comprising a 60 body side wall, a reinforcing member extending from the bottom to the top of said side wall, a hook carried partly by said reinforce whereby stresses are transmitted directly to said hook from 65 the bottom of the body, said hook being carried partly by said side wall, whereby the side wall stresses are also transmitted to said hook, said reinforce being shaped adjacent its top to coact with said side to provide a receptacle for the hook shank.

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