Feb. 17, 1931. J. STEIN 1,792,940

CONTRIVANCE FOR STOWING CARGO ON SHIPS

Filed June 16, 1927

Fig. 1.

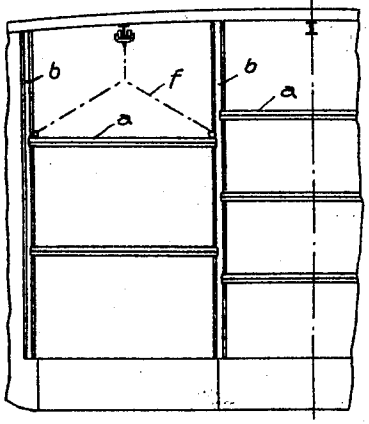


Fig. 2.

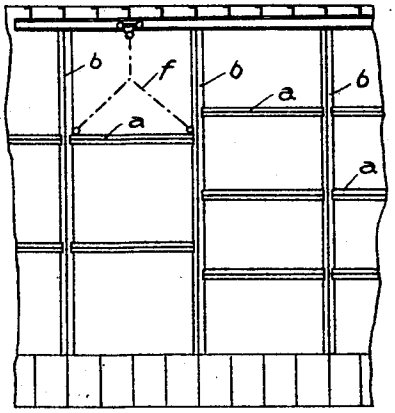


Fig. 3.

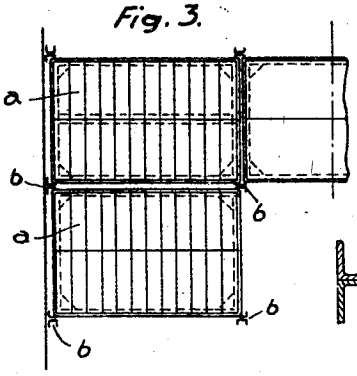


Fig. 4.

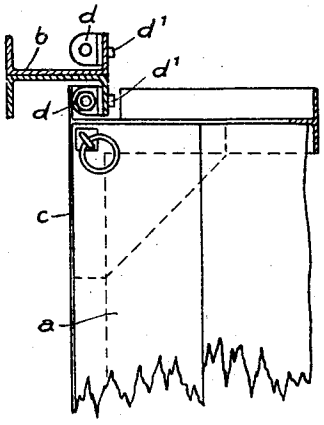
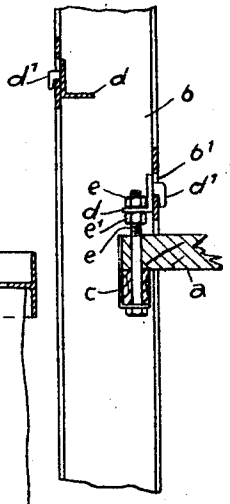


Fig. 5.



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UNITED STATES PATENT OFFICE

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CONTRIVANCE FOR STOWING CARGO ON SHIPS

Application filed June 16, 1927, Serial No. 199,389, and in Germany May 17, 1926.

The invention concerns a contrivance for stowing cargo on ships, particularly such goods as can only be stowed in one layer, e. g. fruit, cattle or similar cargoes. In order to be able to utilize the full cargo space for such goods, the height of the hold must be similar to the height of the goods. By building intermediate decks one could so fit up a ship that it corresponds to this requirement. Such a ship would however not be usable or only usable with bad utilization of space for goods of other dimensions in height. A device for the adjustment of the intermediate decks in height would be very expensive and would take up too much cargo space.

According to the invention the problem is solved in that the intermediate decks consist of a number of individual parts each such portion being adjustable in height independently of the other portions. The adjustment of the individual deck portions is not difficult and such a contrivance can be installed without great cost and without appreciable loss of cargo space.

In the drawing a constructional form of the invention is shown by way of example.

Figure 1 shows a transverse cross section through a part of the hold of a ship fitted up according to the invention, and Fig. 2 shows a longitudinal section. Fig. 3 shows some of the intermediate deck portions in plan view. Figs. 4 and 5 show in plan view and vertical cross section the manner of securing the deck portions to the deck supports or framing.

The intermediate decks are divided corresponding to the spacing of the deck supports. Each deck portion a (Fig. 3) is itself secured to the supports b or to the ship's framing and adjustable in height, so that the individual intermediate decks can be suitably adjusted in height for certain goods corresponding to their height. Moreover one can so adjust the individual portions of the intermediate decks to positions of different height that goods of different height can be stored with the best utilization of the space on an intermediate deck. Such a disposition of the intermediate deck is shown in Fig. 1. Goods of smaller size can thereby be stored in the middle of the ship and goods of large size in the outer parts of the cargo hold. The deck portions can also be adjusted at various heights in the longitudinal direction, as is evident from Fig. 2.

If ships fitted up according to the invention are to carry goods for which intermediate decks are not necessary, the individual portions of the intermediate decks are released from the supports and advantageously stored one above the other on the double bottom of the ship, whereby they simultaneously form ballast.

A particularly advantageous arrangement for securing the intermediate deck portions is shown in Figs. 4 and 5. In this the deck supports b are for example constructed of double-T bearers and the planks and beams of the intermediate deck portions rest on angle irons c, which are detachably secured to the deck supports or framing. For this purpose elongated holes b_1 are cut in the flanges of the deck supports at suitable distances apart, in which holes the angle pieces d engage with their claws d_1 (Fig. 5); on these angle pieces the deck portions hang by means of screws e.

If the intermediate decks are to be adjusted for goods of certain dimensions in height, the individual deck portions are brought to the corresponding height by means of strops f and running hooks, and then the claws d_1 are put in the holes b_1 of the deck supports. The height of the several deck portions can thereupon be still further altered to a slight extent by turning the nuts and lock nuts e_1 of the screws e to the left or right. This renders possible a fine adjustment of the deck portions as regards height.

In this way, by simple means, the intermediate decks can be so adjusted for any size of the cargo goods that the hold can be utilized to the full.

With the constructional form of the invention shown by way of example in the drawing several intermediate decks are provided. With this the upper intermediate deck portions are provided with apertures for passing through the hoisting slings. The invention may however also be used when there is only one intermediate deck.

I claim:

1. A ship having a fixed deck, a 'tween deck beneath said fixed deck said 'tween deck being composed of a plurality of individual plane deck portions, a plurality of upright supports each of said plane 'tween deck portions being movable in height independently of the other 'tween deck portions and without connection with said supports, and releasable means for securing said 'tween deck portions to said supports in positions of different height.

2. A ship having a fixed deck, a 'tween deck beneath said fixed deck, said 'tween deck being composed of a plurality of individual plane deck portions, a plurality of upright supports, each of said plane 'tween deck portions being movable in height independently of the other 'tween deck portions and without connection with said supports, and releasable and adjustable means for securing said plane 'tween deck portions to said supports in positions of different height.

3. A ship having a plurality of individual deck portions, each such portion being adjustable in height independently of the other deck portions, means for adjusting said individual deck portions, means for fixing the same when adjusted, and means for varying said adjustment after fixing the deck portions.

JOHANNES STEIN.