Feb. 2, 1960 G. PONTONI ET AL 2,923,265

CARGO SHIP HOLD CONSTRUCTION

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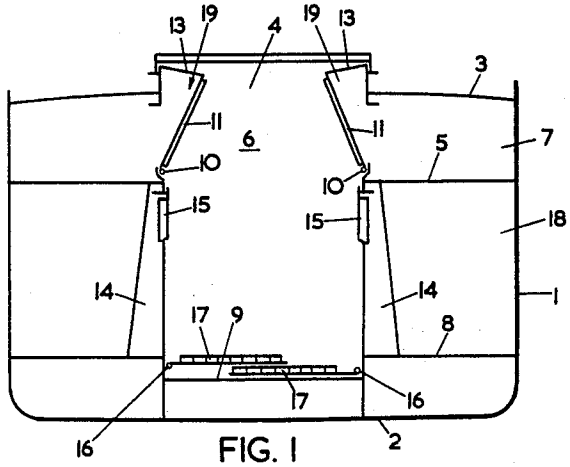


FIG. 1

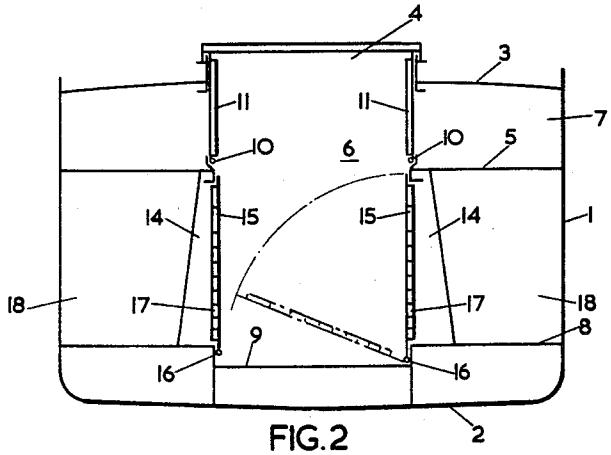


FIG.2

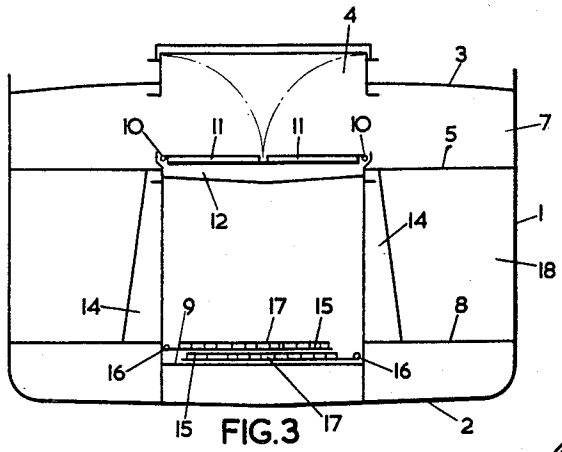


FIG.3

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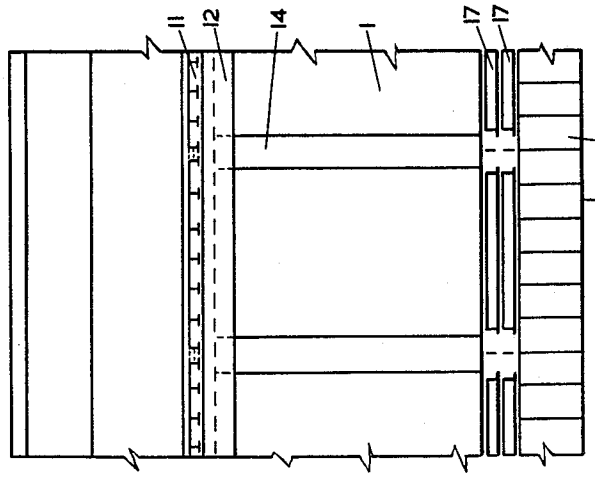


FIG. 6

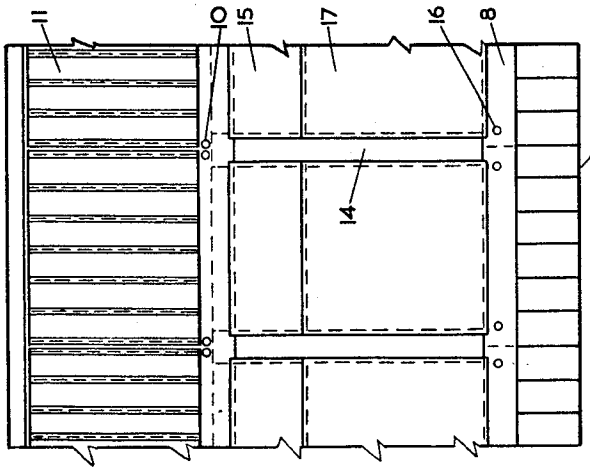


FIG. 5

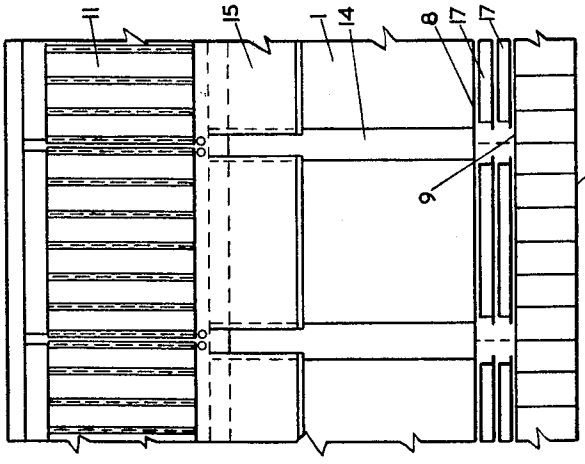


FIG. 4

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CARGO SHIP HOLD CONSTRUCTION

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Application January 28, 1957, Serial No. 636,713

2 Claims. (Cl. 114—73)

This invention relates to the construction and fitting in merchant ships of longitudinal sectional partitions for subdivision of holds and tweendecks into various compartments so as to allow variation of cargo space also independently in each hold in order to make the ship fit to carry either general or bulk cargoes of different specific gravities without affecting her sea-keeping qualities, that is, avoiding the risk of shifting, as for instance, in the case of grain cargoes, and keeping good stability conditions, as for instance, in the case of ore cargo, the latter being stowed for the full ship's height.

Hitherto, in designing a cargo ship, it was necessary to consider strictly a specific service for the ship and it was thus possible to use the ship to the best advantage only for the type of cargo for which she had been designed. This invention makes it possible to use the same ship for several types of cargo, thus increasing her commercial value as a result of the increased flexibility of use for widely different types of cargo.

In the accompanying drawings, Figure 1 shows a transverse vertical section of a ship with panels arranged in suitable position for stowage of bulk cargo such as grain, coal and the like, having about the same range of specific gravity; Fig. 2 is a similar section of the same ship with the panels raised and in a suitable position for ore cargo stowage; Fig. 3 is a similar section of the same ship with the panels arranged for transport of cargoes requiring the greatest cubic capacity; Fig. 4 is a partial longitudinal vertical section of the ship having the panels arranged as shown in Fig. 1; Fig. 5 is a partial longitudinal vertical section of the ship having the panels arranged as shown in Fig. 2; Fig. 6 is a partial longitudinal vertical section having the panels arranged as shown in Fig. 3.

In these drawings, the ship has a hull with side walls 1 and a bottom 2. Between the walls 1 and along the length of the ship there are provided an upper deck 3 with a hatch opening 4 and a lower deck 5 with a hatch opening 6. The upper deck 3 and the lower deck 5 between them define a tweendecks space 7. At the lower part of the hull is provided a floor or base 8 with a central well 9. A row of pivots 10 is arranged along each lateral edge of the lower deck hatch 6 and aligned longitudinally of the hull parallel to the bottom. These pivots support upper panels 11, 11 arranged in two spaced rows longitudinally of the hull. Each of these upper panels is of half the width of the lower deck hatch 6. In the lowered (horizontal) position of the panels 11, seen in Fig. 3, they meet centrally and serve to close the lower deck hatch. Removable cross beams 12 of well known kind are placed in the position shown in Fig. 3 to support the panels in the horizontal position. In the vertical position of the panels 11, seen in Fig. 2, they close the lateral portions of the tweendecks space 7. In Fig. 1, the panels are nearly vertical, and are held by stays 13 mounted on the coaming of the upper deck hatch 4.

Between the lower deck 5 and the base 8 are provided

a longitudinal row of spaced vertical stanchions 14, by means of which the lower deck is supported. On these stanchions, adjacent the underside of the lower deck 5 are mounted depending shift-preventing plates 15. These plates are removably mounted on the stanchions in any convenient known manner, e.g. by bolts.

On the base 8 at the lateral edges of the well 9 there are provided two spaced rows of pivots 16 aligned longitudinally of the hull and parallel to the bottom 2. These pivots 16 are spaced in the transverse direction of the hull by a distance equal to the width of the lower deck hatch 6. On these pivots 16 are mounted a plurality of lower panels 17 arranged in two spaced rows longitudinally of the hull. These panels 17 plus the plates 15 form assemblies which are of the same length as the height of the hold such that in the vertical position seen in Fig. 2 they abut against the hatch opening 6 of the lower deck and close the lateral portions of the hold 18. These panels 17 are movable on their pivots 16 to a superposed horizontal position parallel to the bottom 2, as seen in Figs. 1 and 3. In Fig. 1, only the panels 17 have been laid down horizontally in this manner, whilst in Fig. 3, the shift preventing plates 15 (removed from the stanchions 14) have been mounted instead on the ends of the adjacent panels and the joint structures moved down into horizontal position.

In the position of Fig. 1, the inclined position of the panels 11 leaves a space 19 at each side through which cargo can be moved to the tweendecks space 7. The panels 17 are positioned horizontally one upon the other and fill the well 9 so as to provide a level floor to the base 8.

In the position of Fig. 2, all the panels 11 and 17 are raised and the ship is then suitably arranged for ore cargo stowage, because the hold space available then conforms to the proper ratio between the ship's deadweight and the average specific gravity of the most common heavy ores.

In Fig. 3, the panels 11 and 17 are all arranged horizontally and the ship's storage space is then suitable for transportation of general cargoes requiring the greatest cubic capacity. In this arrangement, the upper panels 11 serve as hatch covers for the lower deck hatch 6. The lower panels 17 are laid in the well 9, and flooring elements (not shown) can be laid in the gaps to provide a complete and flush floor for the base.

We claim:

1. In a cargo ship having a hull including a bottom and side walls and a lower deck having a hatch and defining with the bottom and side walls a hold, and an upper deck having an aligned hatch and defining with the lower deck and side walls a tweendecks, a plurality of lower panels arranged in two spaced rows longitudinally of the hull and mounted on the bottom by pivots aligned longitudinally of the hull and parallel to the bottom, said pivots being spaced in the transverse direction of the hull by the width of the lower deck hatch, said panels being the same length as the height of the hold such that in vertical condition they abut against the hatch opening of the lower deck and close the lateral portions of the hold, said panels being movable on their pivots to a superposed horizontal position parallel to and adjacent the bottom, and a plurality of upper panels arranged in two spaced rows longitudinally of the hull and mounted on the lower deck at the hatch opening therein by other pivots aligned longitudinally on the hull and parallel to the bottom, said other pivots being spaced in the transverse direction of the hull by the width of the lower deck hatch, said upper panels being each of half the width of the lower deck hatch, said upper panels in vertical position closing the lateral portions of the tweendecks and in horizontal position closing the hatch of the lower deck.

2. In a cargo ship having a hull including a bottom and side walls and a lower deck having a hatch and defining with the bottom and side walls a hold, and an upper deck having an aligned hatch and defining with the lower deck and side walls a tweendecks, a plurality of lower panels arranged in two spaced rows longitudinally of the hull and mounted on the bottom by pivots aligned longitudinally of the hull and parallel to the bottom, said pivots being spaced in the transverse direction of the hull by the width of the lower deck hatch, a plurality of spaced vertical stanchions disposed between the lateral edges of the upper and lower deck hatches, a plurality of shift-preventing plates removably secured on said stanchions in longitudinal alignment, means for coupling said panels and plates, said plates and the lower panels being of such length that with the panels in vertical condition they join and close the lateral portions of the hold, said panels being movable on their pivots to a superposed horizontal position parallel to and adjacent to the bottom, and a plurality of upper panels arranged in two spaced rows longitudinally of the hull and mounted on the lower deck at the hatch opening therein by other pivots aligned longitudinally of the hull and parallel to the bottom, said other pivots being spaced in the transverse direction of the hull by the width of the lower deck hatch, said upper panels being each half of the width of the lower deck hatch, and said upper panels in vertical position closing the lateral portions of the tweendecks and in horizontal position closing the lower deck hatch.

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