

No. 684,748.

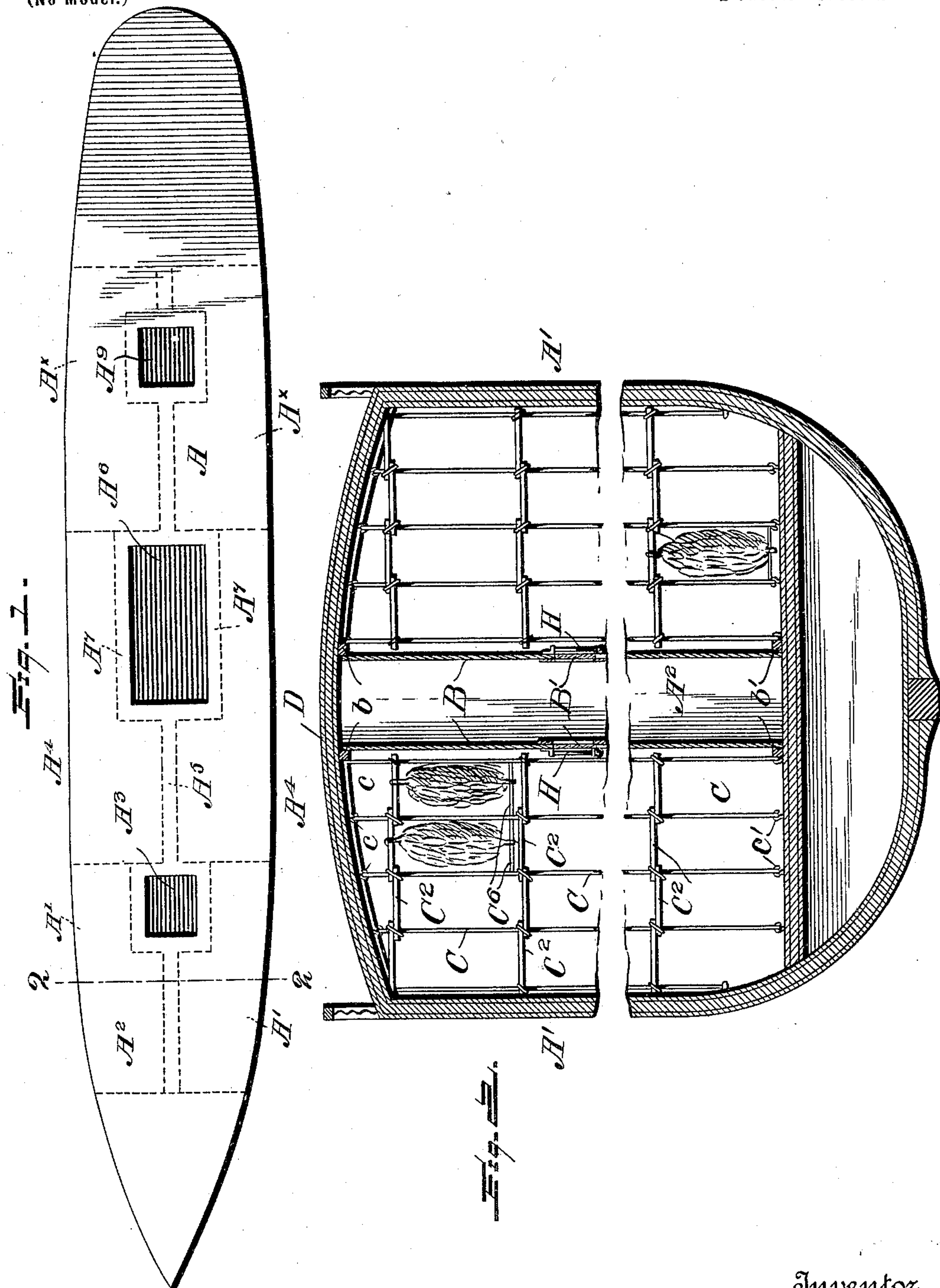
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A. K. FINLAY.
TRANSPORTING APPARATUS.

(Application filed July 16, 1900.)

(No Model.)

2 Sheets—Sheet 1.



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UNITED STATES PATENT OFFICE.

ALEXANDER K. FINLAY, OF NEW ORLEANS, LOUISIANA.

TRANSPORTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 684,748, dated October 15, 1901.

Application filed July 16, 1900. Serial No. 23,826. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER K. FINLAY, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Transporting Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in storage systems for transporting perishable articles, particularly tropical fruit; and it has for its object to provide means for transporting perishable tropical fruits in the hold of a vessel in such manner as to avoid, as far as practicable, injury thereto by bruising, as well as to provide means whereby ventilation is effected.

My invention, which consists in the novel features hereinafter described and claimed, will be understood by reference to the accompanying drawings, wherein the same parts are indicated by the same letters of reference throughout the several views.

Figure 1 is a view showing in diagram the preferred arrangement or division of the cargo-space of a vessel for carrying out my invention. Fig. 2 is a vertical cross-sectional view of the hold of a vessel, showing the arrangement of compartments for containing the fruit or other articles being transported and also illustrating the manner and means for carrying the articles. Fig. 3 is a view, enlarged, showing means for suspending bunches of bananas according to my system of transportation. Fig. 4 is a detail view, enlarged, showing the manner of looping and knotting the ropes over the cross-bars.

Referring to Fig. 1, which illustrates the plan of the preferred arrangement of the compartments in the hold of the vessel, A' A' indicate cargo-compartments at the forward end of the vessel separated by a gangway A², communicating at its rear with the forward hatchway A³. A⁴ A⁴ represent other compartments, which are separated by gangway A⁵, also communicating with the forward hatchway, and these compartments A⁴ extend on opposite sides of the engine-room A⁶, about which are

passage-ways A⁷, leading to the after hatchway A⁹, upon opposite sides of which are cargo-compartments A^x A^x. The arrangement thus shown is merely by way of illustration, and any other suitable or convenient arrangement will suffice, the principal idea of the scheme being, however, the separation of the hold of the vessel into compartments, between which are provided passage-ways. This arrangement I accomplish by means of temporary bulkheads running longitudinally and transversely of the hollow of the vessel. These temporary bulkheads are preferably of light wood or sheet-iron or light canvas and extend from the ceiling beneath the deck to the floor of the cargo-space.

Referring particularly to Fig. 2, which illustrates the arrangement of the temporary bulkheads, B B represent vertical bulkheads or partitions, which are secured at their upper and lower edges, respectively, to cleats b b', secured to the ceiling and the floor of the cargo-space. The bulkheads or partitions B (seen in Fig. 2) run longitudinally of the vessel; but it will be understood that these are merely illustrations of such as would be used to carry out the scheme of division of the cargo-space into the desired arrangement of compartments. The passage-way between the bulkheads or partitions B B corresponds with the passage-way designated by A³ in Fig. 1, and it will be understood that the dotted lines in Fig. 1 indicate lines of such bulkheads or partitions as are shown at B in Fig. 2.

It should be understood that the compartments shown in Fig. 2 may be subdivided into a number of smaller compartments by vertical and horizontal bulkheads, or it may be that the cargo-space of the vessel is provided with permanent floors in the said space. The arrangement shown is merely for the sake of illustrating to the best advantage the scheme for the arrangement of the temporary bulkheads, the size of the sheet not permitting of the representation of the hollow of the vessel on a larger scale. Thus the cross-section of a three-thousand-ton ship would show two compartments seven feet or so in height, and as her beam would measure about forty feet inside each compartment would measure across ship about eighteen feet.

The average bunch of bananas measures about twelve or thirteen inches in diameter by eighteen to twenty-four inches in length.

As the trade in bananas is much greater than that in pineapples or many other tropical fruits, the compartments fitted for transporting bananas would be greatly in excess of the compartments for any one other fruit.

The arrangement for transporting bananas is as follows: Ropes C are stretched vertically from hooks *c* or similar devices secured in cleats C', fixed to the ceiling D and secured at their lower ends to hooks *c'*, fastened to cleats C^x on the floor of the cargo-space. The ropes C are so spaced as to receive between each adjacent pair a bunch of bananas without the latter touching the ropes. At intervals approximating or slightly greater than the length of a bunch of bananas a succession of cross-bars C² are secured after the manner of a trapeze to the said ropes. Bunches of bananas are suspended by light cords or twine fastened to the stem of each bunch between the said ropes, as follows: The uppermost bunch in each vertical tier is suspended by such cord or twine fastened to its stem, the said cord or twine being secured to the uppermost cross-bar C², as shown in the drawings, or it may be secured immediately to a hook fastened in one of the upper cleats C'. The bunch would be secured at its lower end by means of a light cord C⁶, attached to the lower end of the stem of the bunch and secured at its ends to the ropes C, after the manner of a guy-rope, to prevent the swinging of the bunch as the vessel rolls in a sea. The next bunch in the tier would be suspended in a similar manner from a cross-bar adjusted immediately beneath the upper bunch, and it would be secured at its lower end by a guy rope or cord C⁶ in the same way. In this manner each bunch of bananas will have a practically separate support and it will be held out of contact with the adjacent bunches. Furthermore, it will be so suspended by reason of the ropes C being drawn taut and secured at their lower ends as to prevent any undue swaying thereof due to the rolling of the vessel. The manner of securing the cross-bars C² to the ropes C, as well as the details in the manner of securing the bunches of bananas, is best shown in Fig. 3. In this view a simple means for securing these cross-bars consists in forming knots C⁴ in the ropes C and inclosing the ends of the cross-bars C² within the said knots, the said cross-bars being provided with notches C⁵ near their ends, in

which the knotted portions of the ropes C engage. The knots used may be of any convenient character—such as a simple half-hitch, a slip-knot, or timber-hitch—the weight on the bars serving to tighten the knots and the notches C⁵ in the said bars serving to prevent their slipping from the loops in the ropes. This manner of securing the cross-bars will serve to accommodate the general scheme to irregular-sized bunches of bananas, so as to economize as much space as practicable.

In order to expedite the hanging and removal of each bunch of bananas, double or S hooks may be used, suspending each bunch, the hooks engaging over the cross-bars.

For the purpose of indicating the temperature within the various compartments I preferably provide thermometers H, located upon the inner sides of the bulkheads and arranged to be visible for the purposes of inspection from the passage-ways through transparencies B', fitted in the bulkheads, as seen in Fig. 2.

I do not wish to limit myself to the exact arrangement of compartments and the exact details herein shown and described in connection with my system, as many modifications thereof might be made which could be used without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a storage system for transportation of perishable fruits, the combination of a series of vertically-suspended cords, cross-bars engaging said cords at vertical intervals, for supporting the articles separately and in vertical series; and means for securing the pendent ends of said cords, substantially as described.

2. In a storage system for transportation of perishable fruits, the combination of a series of vertically-suspended cords, cross-bars engaging said cords at vertical intervals, for supporting the articles separately and in vertical series, guy-ropes attached to said pendent cords for securing the articles against swaying, and means for securing the pendent ends of said cords, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ALEXANDER K. FINLAY.

Witnesses:

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