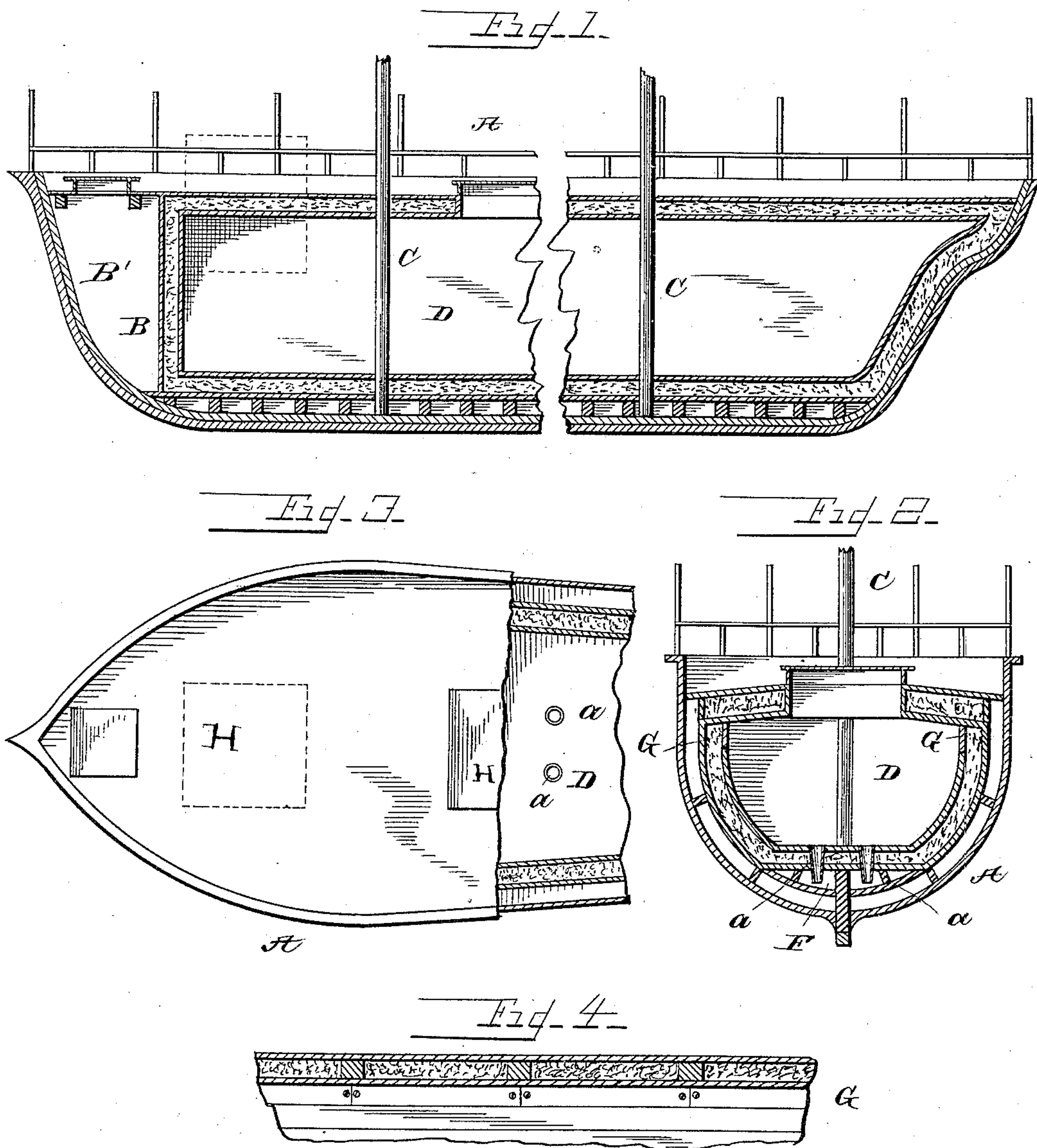


(No Model.)

R. RICH.
ICE TRANSPORTATION AND STORAGE VESSEL.

No. 411,201.

Patented Sept. 17, 1889.



Witnesses.

G. A. Tauberschmidt,
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UNITED STATES PATENT OFFICE.

RICHARD RICH, OF WASHINGTON, DISTRICT OF COLUMBIA.

ICE TRANSPORTATION AND STORAGE VESSEL.

SPECIFICATION forming part of Letters Patent No. 411,201, dated September 17, 1889.

Application filed December 4, 1888. Serial No. 292,615. (No model.)

To all whom it may concern:

Be it known that I, RICHARD RICH, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Ice Transportation and Storage Vessels; 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 vessels; and it consists in certain improvements in the same, which will be fully set forth hereinafter.

The object of my invention is to adapt a vessel of any description—such as a sloop, schooner, or barge—for use as a floating ice-house, in which ice may be transported or stored and which will avoid the necessity of transfer from the vessel to a separate ice-house, as the ice may be allowed to remain as long as desired in said vessel without danger of loss from melting.

The following specification and claims fully disclose the features of my invention, reference being had to the accompanying drawings, of which—

Figure 1 is a longitudinal vertical sectional view of a vessel provided with my improvements. Fig. 2 is a view in cross-section. Fig. 3 is a plan view with parts broken away. Fig. 4 is a detail view.

Similar letters of reference indicate identical parts.

A represents a vessel, which may be of any ordinary sloop, schooner, or barge construction, but which, instead of the usual interior arrangement found in these vessels, has nearly the whole interior space made into a large chamber D for the reception and storage of ice. This chamber inside the ordinary vessel construction is double-walled upon all of its sides, and the space between the walls is filled with any suitable non-conducting packing. The material which I prefer to use for this purpose is such as will not be injuriously affected by water, such as coke-screenings or similar substances. A space F intervenes between the inner skin of the vessel and the bottom of the chamber, and the floor of the said chamber is provided with drain-pipes *a*, so that any water resulting from melting ice or any leak-

age finds its way into this space F, from which it may be taken by means of pumps.

The drain-pipes *a* extend through the packing and floor to within a short distance of the bottom of the space F. There will be enough water in this space to seal the ends of the pipes and prevent the influx of air. The double walls at the top of the chamber and beneath the deck extend over the edges of the double side walls, so that none of the packing can escape from this portion of the interior lining. The packing in the double side walls may settle to some extent from the rolling and jarring of the vessel, and to enable these spaces to be refilled I provide a removable piece or strip G at the top of the inner packing-wall. By removing this strip the condition of the packing can be ascertained, and when necessary additional packing introduced.

A compartment B' is formed forward of the bulk-head B for the reception of the anchors, chains, &c. Another compartment or cabin of sufficient depth to accommodate the crew of the vessel may be located in rear of the compartment B'. This is shown in dotted lines in Figs. 1 and 3, and is preferably made large enough to hold in addition a donkey-engine for raising the anchors, working the pumps, and loading and unloading the vessel.

The packed lining will conform to the outer wall of the compartment D, and such compartment is preferably made to include all of the interior of the vessel not needed for the purposes already stated. It may, however, be divided into two or more parts by single or double partitions.

Standards X are provided at intervals around the deck, from which an awning may be suspended, if desired.

One or more hatches H are provided, as shown in Fig. 3, of any ordinary or preferred construction.

In my preferred form the vessel should be of barge construction, and is designed to be towed; but in order to avoid danger which might arise from the possible separation of the ice-boat and the vessel towing it, masts C may be placed in the vessel, or a propeller and steam-power may be provided, so that the vessel may be worked independently.

In loading vessels ordinarily employed to transport ice it is customary to place the blocks forming the first layer edgewise, and then to chisel the rough surface formed by the upper uneven edges of the ice until a smooth surface is secured to receive the large cakes flatwise thereon. This is necessary, owing to the oval form of the bottom of the boat. As a result of this there remains in the vessel from the time it is loaded a considerable amount of slush and water, which is not only detrimental to the ice, but which it takes some time to rid the vessel of after it is unloaded. All this is avoided by means of the level floor of my ice-chamber, provided, as it is, with the drain-pipes, which carry all waste water from the chamber into the space F, thus keeping the chamber itself entirely free from water.

What I claim, and desire to secure by Letters Patent, is—

1. The herein-described ice holding or transporting vessel, the main hold of which is pro-

vided with walls having non-conducting packing and a water-space beneath said hold or chamber, and drain-pipes leading from the main hold near to the bottom of the water-space, substantially as described.

2. The herein-described ice holding and transporting vessel, the main hold of which is provided with walls having a filling-space between them for the reception of non-conducting packing, the outer wall being imperforate and the inner wall of the filling-space for the sides of the vessel being provided at the top with removable strips extending the entire length of said inner wall, and rigid securing devices for said strips, substantially as described.

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

RICHARD RICH.

Witnesses:

GEORGE A. PREVOST,
L. B. WHITAKER.