W. & J. INGLIS.

Marine Grain-Vessel.

No. 162,074. Patented April 13, 1875.

FIG. 1.

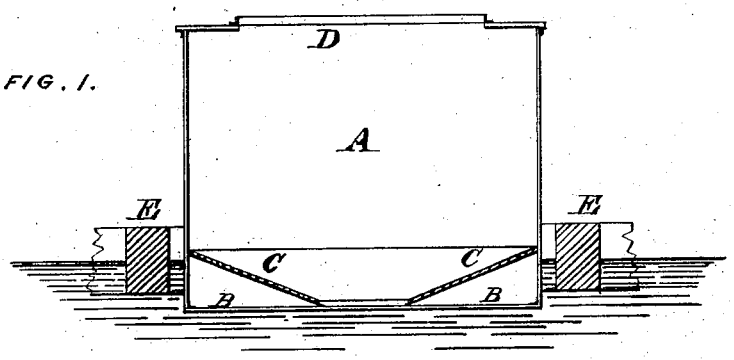


FIG. 2.

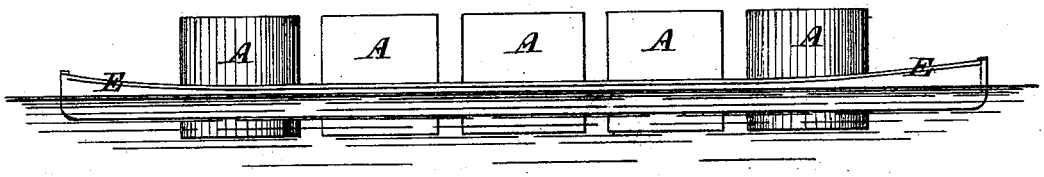
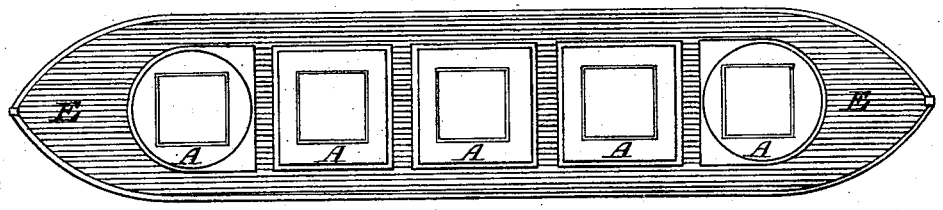


FIG. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM INGLIS, OF BOLTON, ENGLAND, AND JAMES INGLIS, OF MONTREAL, CANADA.

IMPROVEMENT IN MARINE GRAIN-VESSELS.

Specification forming part of Letters Patent No. **162,074**, dated April 13, 1875; application filed January 9, 1875.

To all whom it may concern:

Be it known that we, WILLIAM INGLIS, of the town of Bolton, in the county of Lancaster, England, mechanical engineer, and JAMES INGLIS, of the city of Montreal, Province of Quebec, Canada, merchant, have invented certain new and useful Improvements on Floating Vessels for Storing Grain; and we do hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to boats or vessels for storing, lightering, or carrying grain, and has for its object, by certain improvements in form, construction, and arrangement, to render such boat or vessel less costly, and less liable to strains due to the load carried, than boats or vessels of the ordinary construction.

In the improved vessels or boats, one or more floating tanks or bins are used, inclosed or surrounded by a separate boat or raft. The tanks or bins may be cylindrical, rectangular, or other desired regular form; but where a number of them are used together in one raft, &c., we prefer to make the end tanks or bins cylindrical, semi-cylindrical, or triangular, while the inner ones will be rectangular. This is for the purpose of gaining as good general water-line as possible to the combined set of tanks or bins; otherwise they may be made any desired shape, and are preferably made of iron plates.

The floating tanks are constructed with inner bottoms made of any suitable material, and separate from the outer ones, but provided with a suitable arrangement of supports. The inner bottom is made to slope on all sides toward the center, so that when the tank is being emptied, the grain may tend to flow toward the center and bottom without shoveling, from which point it can be elevated in the usual way.

In the drawings hereunto annexed, similar letters of reference indicate like parts, and Figure 1 is a sectional elevation embodying our invention. Fig. 2 is a side elevation of combined tanks, &c. Fig. 3 is a plan of Fig. 2.

Letters A are tanks or bins; B, the lower or outer bottom; C, the inner bottom, inclined toward the center. The top of the floating bin is shown partially covered or decked over, having an opening, D, which may be fitted with a movable covering, or otherwise protected. E is the separate boat or raft, a portion only being shown in Fig. 1. Figs. 2 and 3 show an elevation and plan of a vessel composed of five of the floating bins A, inclosed by the separate boat or raft E. The two outer tanks are shown as cylindrical; but they may be made with their outer half semi-cylindrical, and their inner rectangular, or they may be constructed of triangular form, situated to have an angle outward, and one side parallel to the side of the adjacent inner bin. When loaded, the tanks A sink independently of each other, and separate from the raft or boat E, so that whatever may be the load carried by the tanks or bins A, the draft of the separate protecting boat or raft E is not changed.

When the tanks or bins are loaded with wheat or heavy grain, the pressure of the grain on the inside will, to a great extent, balance that of the water on the outside of the vessels, so that tanks made of comparatively thin plates will suit for carrying heavy loads.

Having described the invention, and how the same is carried into effect, we beg to state that we do not restrict ourselves to the precise details described; but

What we claim is as follows:

In combination with the boat or raft E, the disconnected and independently-floating tanks or bins A, held separated, so that the immersed portion of each will be surrounded by water on all sides, substantially as and for the purpose specified.

WILLIAM INGLIS.
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