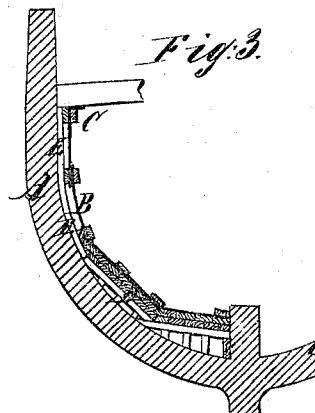
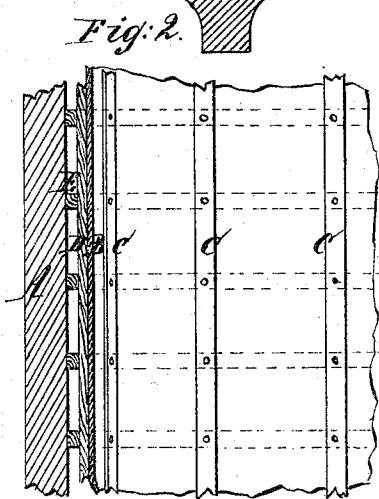
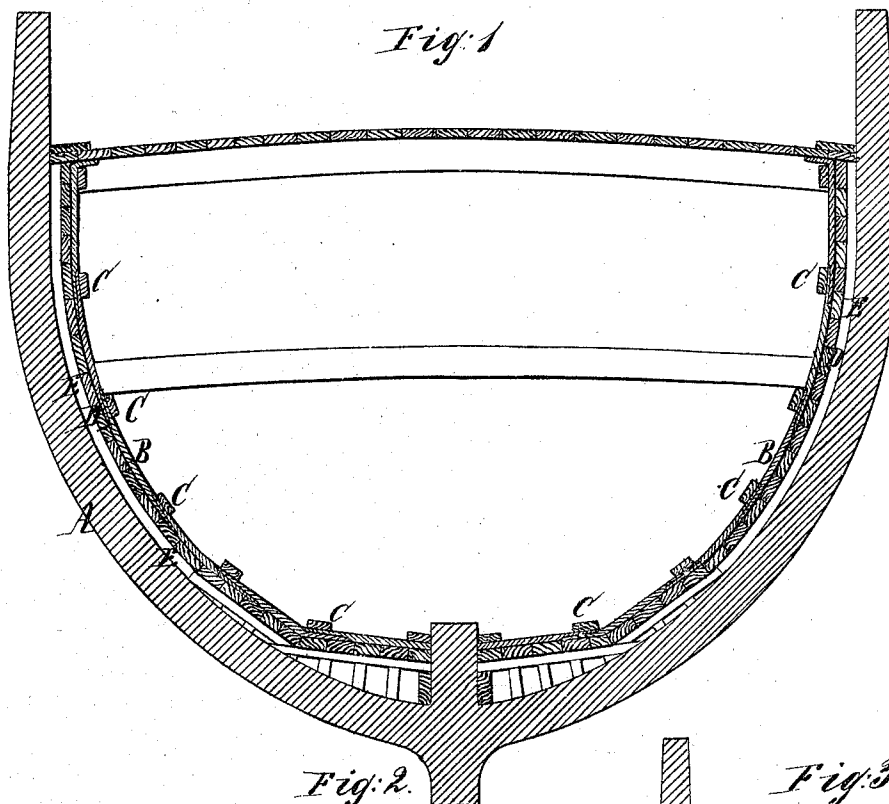


W. F. MORGAN.
Removable Ceilings for Vessels.

No. 142,262.

Patented August 26, 1873.



Witnesses:
Ernst Bilhuber.
Henry Lindner.

Inventor:
William F. Morgan
per
Van Santvoord & Hauff
attys

UNITED STATES PATENT OFFICE

WILLIAM F. MORGAN, OF NEW YORK, N. Y.

IMPROVEMENT IN REMOVABLE CEILINGS FOR VESSELS.

Specification forming part of Letters Patent No. **142,262**, dated August 26, 1873; application filed July 31, 1873.

To all whom it may concern:

Be it known that I, WILLIAM F. MORGAN, of the city, county, and State of New York, have invented a new and useful Improvement in Ceiling Vessels; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming a part of this specification, in which drawing—

Figure 1 represents a transverse section of my invention. Fig. 2 is a partial vertical section of the same. Fig. 3 is a transverse section of a modification of the same.

Similar letters indicate corresponding parts.

This invention consists in lining the interior of the sides and bulk-heads of a vessel with a layer of water-proof felt, made up of a series of strips, the ends of which overlap each other, said strips of felt being backed either by a continuous layer of boards, or simply by longitudinal furring-strips, and being retained in position by strips of wood or other material, in such a manner that, by said lining, the cargo of the vessel is effectually protected against moisture, and that a vessel is obtained which can be used with good advantage for carrying grain.

In the drawing, the letter A designates a vessel, which is provided with a lining, B, of water-proof felt. This lining is applied in strips, each of which is about three feet wide, and these strips are made to overlap each other, and they are secured by means of strips C, of wood or other suitable material, so as to be removed and packed away when not desired for transporting grain, and replaced with facility when desired for that purpose. The lining B is backed up by a continuous layer,

D, of ceiling-boards, which are nailed to the perpendicular furring-strips E; or my water-proof lining may be supported from the bilge upward at suitable intervals by longitudinal furring-strips F, as shown in Fig. 3, while that portion of the lining which extends from the bilge downward will be backed up under all circumstances by a continuous layer of boards.

When the vessel is provided with bulk-heads, the surface of these bulk-heads will also be protected by a lining of water-proof felt, as above described.

By these means a vessel will be supplied with a removable, water-proof, and non-injurious lining, which is of particular advantage for carrying grain, since, by my water-proof lining, the cargo of the vessel is effectually protected against moisture. Another great advantage of my lining is, that the same can be readily applied to any vessel, whenever it may be desired to fit up such vessel for carrying grain, and my lining can be readily taken off and stored away in a comparatively small space, if it is not required.

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

A removable water-proof lining for vessels, made up of a series of strips, as described, each strip overlapping the other, and secured in place upon a backing by strips C, as herein shown and described, for the purpose specified.

This specification signed by me this 30th day of July, 1873.

WM. F. MORGAN.

Witnesses:

W. HAUFF,
CHAS. WAHLERS.