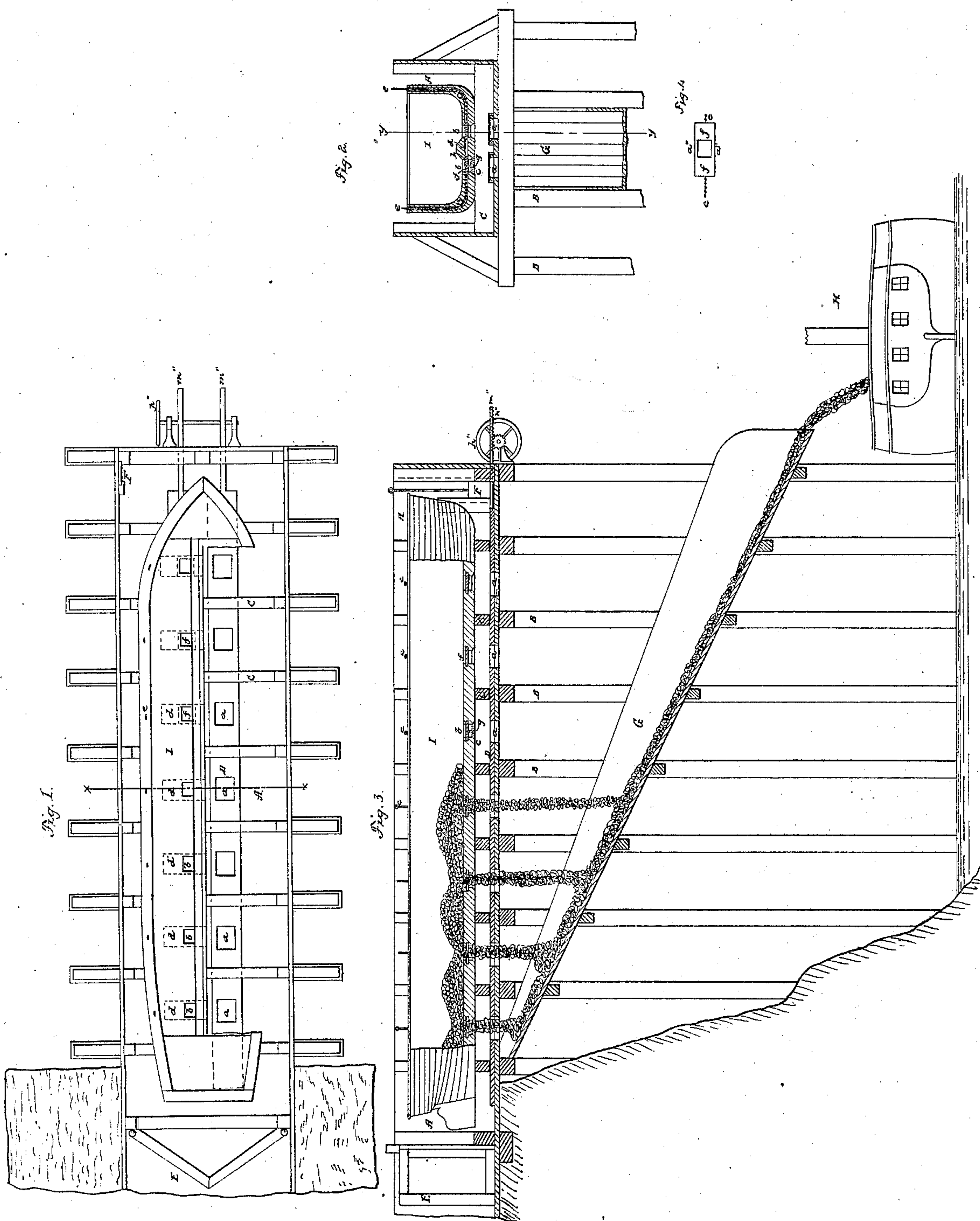


*W. Loughridge,  
Unloading Canal Boats.*

*N<sup>o</sup> 10,891.*

*Patented May 9, 1854.*





# UNITED STATES PATENT OFFICE.

WILLIAM LOUGHRIDGE, OF WEVERTON, MARYLAND.

## METHOD OF UNLOADING CANAL-BOATS AND OTHER VESSELS.

Specification of Letters Patent No. 10,891, dated May 9, 1854.

*To all whom it may concern:*

Be it known that I, WILLIAM LOUGHRIDGE, of Weverton, in the county of Washington and State of Maryland, have invented a new and useful Improvement in the Mode of Unloading Canal-Boats and other Vessels; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, forming part of this specification, in which—

Figure 1 is a plan of the chamber, with the boat in the position for unloading. Fig. 2 is a section upon the line  $x x$  of Fig. 1. Fig. 3 is a section upon the line  $y y$  of Fig. 2, showing the manner in which my invention is applied. Fig. 4 is a plan of the valves  $f$  for closing the inner portion of the openings in the bottom of the boat.

Similar letters in the several figures indicate the same part.

The object of my invention is to facilitate the unloading of canal boats and other vessels, by placing them in a dock or chamber, from which the water may be withdrawn; and then discharging the cargo through apertures made for that purpose in the bottom of the boat, on both sides of the keel or center: these apertures which may be either round or square being surrounded by a frame or casing of wood, iron, or other material closely and securely fastened to the ribs and bottom of the boat. The apertures to be covered by a sliding valve, which may be withdrawn at pleasure through a groove between the ribs of the boat, by a chain or rod attached to said slide, and passing under the floor of the boat to the side, and under a roller up the side to the deck, where it is to be operated by a lever, screw, or other device of sufficient power to withdraw the valve or cover, and open the aperture. The under side of the aperture to be closed by a slide or other valve forming an even surface with the bottom of the boat, and lined with leather, gutta percha, or other material adapted to prevent leakage and make it water tight: this valve to be secured by a screw, hasp or otherwise.

The boat thus constructed and provided is to be run into a lock or chamber of the nature of a dry dock, from which the water must be withdrawn, leaving the boat resting on timbers placed across the chamber or dock for that purpose. The chamber or

dock should rest upon posts or pillars and be open beneath, and the bottom of said chamber must be provided with apertures corresponding in number and position with those in the bottom of the boat, each covered with a sliding valve to be removed after the water is drawn off, when the cargo is discharged as will be hereafter described.

In the drawing A represents the chamber, supported by the posts B, and having the cross timbers C on which the boat is to rest; between these timbers C are the apertures  $a$  covered with the valves D.

E is the gate for the admission of water and F the one by which the water is let off.

To illustrate the operation of my improvement the chamber is represented as being above a river and having its openings  $a$  connected with a chute G leading to a vessel H. The boat I is constructed as usual except that in the bottom are the apertures  $b$  between the timbers of the boat, which are cased with iron or wood, and closed on the exterior by the doors  $c$  having beveled edges and fitting tightly into the openings; these doors being lined with leather, gutta percha or any other water tight material. The inner portion of the aperture is covered with the valve  $f$  each pair connected by the rods  $a''$  and attached to the chain  $e$  so as to be capable of sliding into the chamber  $d$  when the aperture is to be opened as shown in Figs. 2 & 4. When closed the valve  $f$  and door  $c$  are secured by the screw  $g$ , thus rendering the aperture impervious to water, and presenting on the inside no obstruction to the stowing of the cargo, while the exterior surface of the door  $c$  being flush with the bottom of the boat prevents it from injuring the sailing qualities of the vessel. In the middle of the boat is the beveled partition  $h$  giving the interior the form of two hoppers leading to the apertures.

The operation of my improvement is as follows: The valves  $c$  and  $f$  having been properly closed as above described, the boat is loaded with coal, grain or any thing capable of being unloaded by my method. On the arrival of the boat at the discharging point, the chamber A is thrown open and the boat floated in. The gates E are then closed and the water discharged; the boat on the discharge of the water will rest on the cross timbers C, as seen in Fig. 1; the apertures  $b$  being directly over those in the dock. After the water has been entirely discharged from



the chamber A the sliding valves D are withdrawn from the apertures *a*, and the doors *c* covering the apertures *b* in the boat removed by withdrawing the screws *g*. All being  
 5 ready for the discharge of the cargo, the sliding valves *f* are drawn back by the levers attached to the chains *e*, and rest in the recesses *d*, permitting the coal, grain or other  
 10 cargo to be precipitated through the apertures in the bottom of the boat and the corresponding apertures in the bottom of the dock or chamber, into descending or inclined planes or chutes, by which it will be conveyed to the vessel, railway car, ware house,  
 15 or other place of deposit to which it may be desired to transship the cargo of said boat.

To suit the locality various modifications of the above described arrangement may be made; among which I mention constructing  
 20 the chamber as described for receiving the boat, which on the discharge of the water settles down upon a truck, upon which it is drawn forward to the chutes, and the cargo discharged as before. This is applicable to the case where the point of deposit is necessarily a greater distance from the canal than would under the application of the described arrangement be convenient. Other modifications may be made, but as  
 25 they will readily suggest themselves in practice it will be needless to mention them.

The valves in the bottom of the chamber A are moved by the rods *m''* having on their under surfaces the racks *n''* meshing into a

cogged pinion operated by a wheel *p''* as 35 shown in Fig. 3, or by any analogous device that will give the requisite power.

I am aware that vessels have been made with valves or traps in their bottoms, for the discharge of their loads of earth, mud, 40 &c., as in the case of I. R. Putnam's patent of May 6th 1841 and the withdrawn case of Sophia Putnam, of June 28th 1847; I am also aware that vessels have been floated into dry docks, and the water drawn off through 45 valves, leaving the vessel dry and supported upon blocks or upon trucks. I therefore do not claim originality in contriving either of these devices; or in that of the chute. But

What I do claim as new, is the method or 50 process of unloading vessels described above, by means of the combined arrangement of the vessel with valves in the bottom, the dry dock with valves immediately below those in the vessel, and the chutes to carry 55 off the load into boats or other receptacles placed below, but not immediately under the elevated dry dock all as above described; thereby expediting the discharge of cargoes, and economizing labor, time, and money. 60

In testimony whereof, I have hereunto signed my name before two subscribing witnesses.

WM. LOUGHRIDGE.

Witnesses:

J. DIXON ROMAN,  
 WM P. ELLIOT.