

P. EMERSON.  
Portable Wing Dams.

No.152,092.

Patented June 16, 1874.

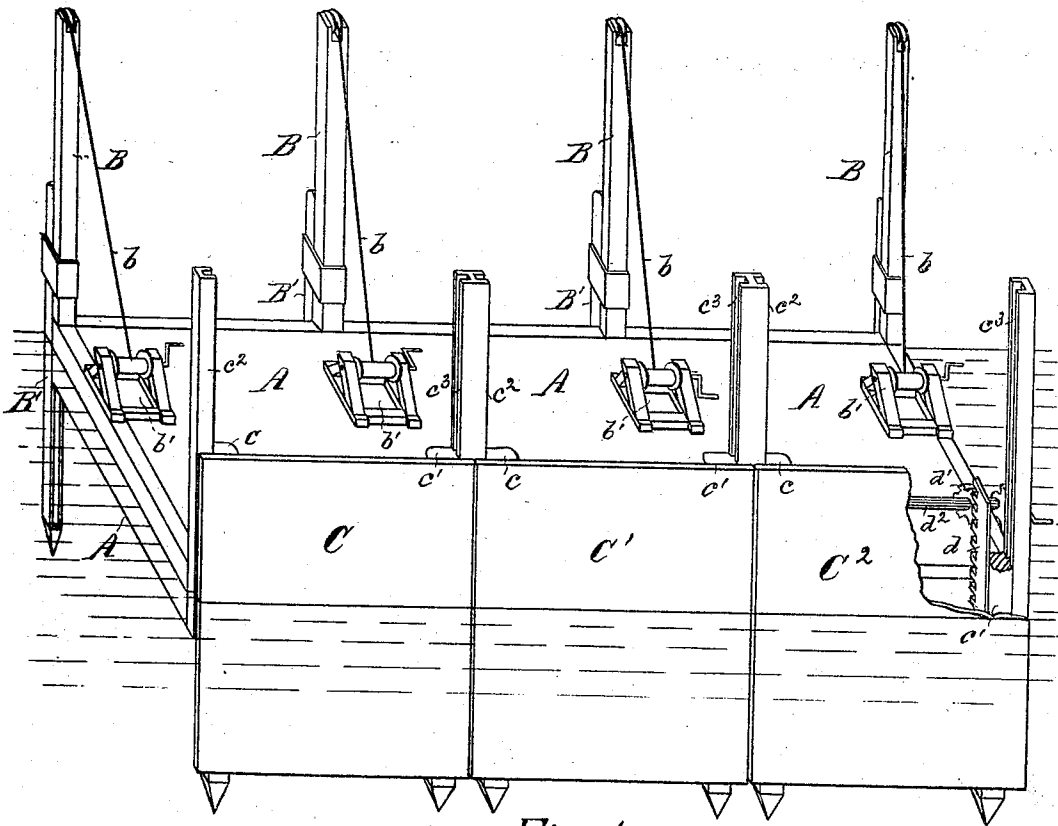


Fig. 1.

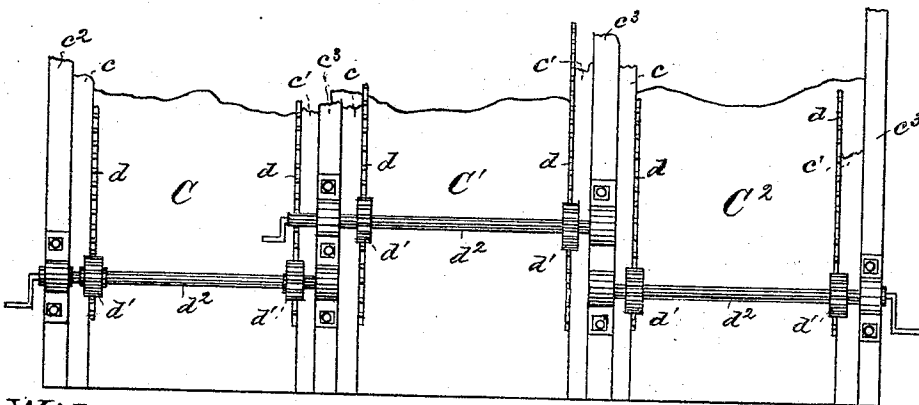


Fig. 2.

Witnesses:  
Chas. F. Meisner.  
O. L. Garrison

Inventor:  
Primus Emerson  
per. *Kutzel & Co*  
Attys.

# UNITED STATES PATENT OFFICE.

PRIMUS EMERSON, OF ST. LOUIS, MISSOURI, ASSIGNOR TO HIMSELF AND JAMES DOYLE.

## IMPROVEMENT IN PORTABLE WING-DAMS.

Specification forming part of Letters Patent No. **152,092**, dated June 16, 1874; application filed April 16, 1874.

*To all whom it may concern:*

Be it known that I, PRIMUS EMERSON, of St. Louis, in the county of St. Louis and State of Missouri, have invented an Improved Portable Wing-Dam, of which the following is a specification:

The object of this invention is the scouring and washing away of sand, sand-bars, and other impediments from wharves, levees, or landings of boats; to deepen the water at such places; also to free rivers, channels, and the like, from the formation of sand-bars and the like obstructions, and otherwise to obtain and maintain a sufficient depth of water for free navigation. My invention, therefore, is a portable wing-dam, consisting of a flat-boat or vessel provided with wings or dams, operating by gearing, so as to be raised or lowered, as required, said wings or dams being to divide the current of water, and concentrate the same, so that by its force and passage it scours, washes, and otherwise removes the accumulation of sand, or sand-bars, or like impediments.

In the drawing, Figure 1 is a perspective view, showing my invention as applied in use. Fig. 2 is a part rear elevation, showing the gearing connection that operates the dams.

A represents an ordinary flat-boat or vessel. The flat-boat A will be of light draft, so that it can be placed on very shallow water. B are a number of side posts or uprights, from which are suspended the posts B', which are to fasten the boat. Hence the posts B' are raised and lowered by suitable rope-and-tackle attachments b, which are operated by the respective windlass b' from the boat, as shown in Fig. 1. To secure or fasten the boat A, the posts B' are lowered so that their lower ends become fastened and secured in the sand or bottom of the water. When the posts B' are raised, the boat A can be towed to some other place.

In connection with the means above described to anchor and secure the boat A, the same can be provided with an ordinary anchor. A better angular position for placing the boat can thus be had with the use of the anchor.

On the opposite side of the boat A I provide the movable wings or dams C. The dams consist of boarded frames secured to side uprights  $c\ c'$ , more clearly shown in Fig. 2; further, I form the dams C of any number of independent sections, C C' C<sup>2</sup> being the sections shown in drawing. The dams C C' C<sup>2</sup> operate vertically; hence each section of dam I secure to operate between side frames or uprights  $c^2\ c^3$ , as shown in Figs. 1 and 2.

In order to guide and facilitate the operation of the dams C C' C<sup>2</sup>, I prefer to form their side frames  $c\ c'$  to have a tenon fitted to engage the grooves in each of the side frames  $c^2\ c^3$ , as indicated in Fig. 1, and shown in Fig. 2. The dams thus arranged slide in the side frames  $c^2\ c^3$ , and are held to remain in their true position; further, in order to raise or lower each dam, I provide each thereof with rack-bars d, secured to each side frame  $c\ c'$ . Gearing in said racks are pinions d' on the respective shafts d<sup>2</sup>, which turn in proper journal-bearings secured to the uprights  $c^2\ c^3$ . (See Fig. 2.)

As the dams C C' C<sup>2</sup> are sections for themselves, the racks, pinions, and shafts will be provided for the operation of each section, so that the same, or each dam, can be raised or lowered independently.

The boat A, thus provided with fastening-posts B' and dams C C' C<sup>2</sup>, is towed to the required locality in the river, channel, or water, and anchored. The dams C C' C<sup>2</sup>, or any number thereof, are then lowered to the nature of the work required. This accomplished, the dams divide the current, and concentrate the water in the directions to the purpose sought to be accomplished, and that is, the water by its force and passage scours and washes the sand or accumulations from a wharf, landing, or levee. A similar result is produced by positioning the dam or boat for the removal of sand-bars and like impediments that obstruct a channel or navigation.

For the middle of a river, or for purposes where the sand-bars and obstructions are away from the bank, a similar portable wing-dam to the one above described can be used in conjunction, and a further dam or wing hinged to ends of both boats, and operated to lower

to a diagonal position, can be provided so as to deflect and concentrate in a given channel the current of water in the direction toward the sand-bar or impediment, and thus effect its removal, and insure a deepened channel for free navigation.

The dams, being portable, can be removed from one bar to another, or to any locality required, and as the gates or dams operate vertically they can be adapted to any depth of water.

What I claim is—

The combination of the dams  $C$   $C^1$   $C^2$ , gearing  $d$   $d^1$   $d^2$ , and vessel or boat  $A$ , having fastening-posts  $B'$ , and windlass attachments  $b$   $b'$ , to operate as and for the purpose set forth.

In testimony of said invention I have hereunto set my hand.

PRIMUS EMERSON.

Witnesses:

WILLIAM M. HERTHEL,  
JAMES DOYLE.