

A. R. McNAIR.

Improvement in Floating-Docks.

No. 131,365.

Patented Sep. 17, 1872.

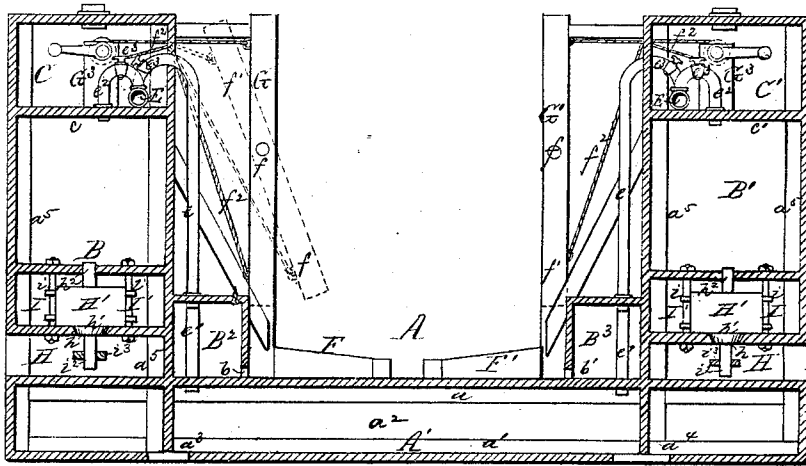


Figure 1.

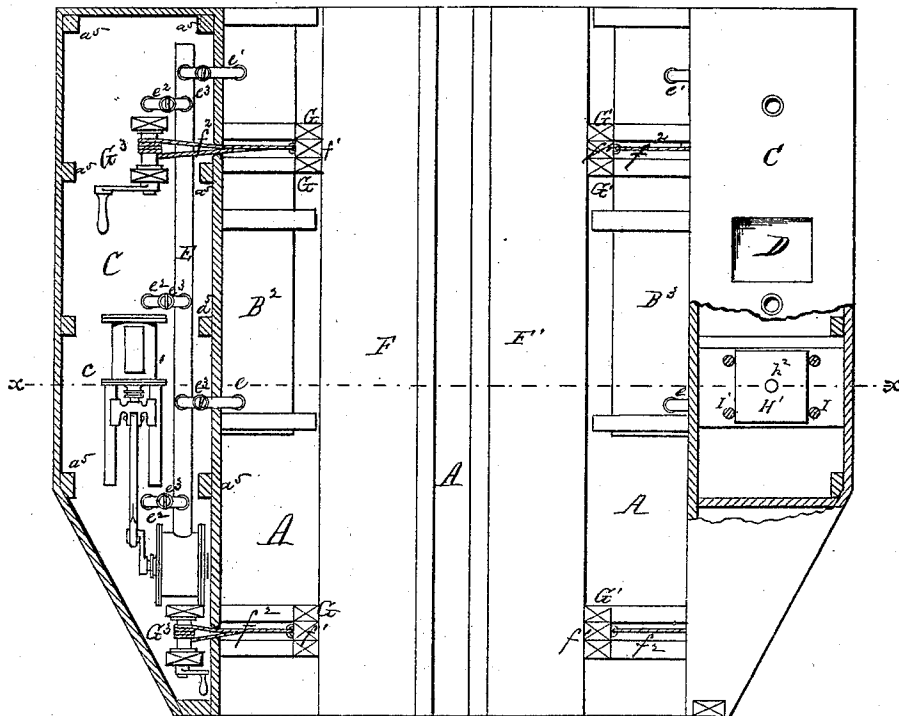


Figure 2.

Witnesses:

Robert Furness.
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UNITED STATES PATENT OFFICE.

ANTOINE R. McNAIR, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN FLOATING-DOCKS.

Specification forming part of Letters Patent No. 131,365, dated September 17, 1872.

To all whom it may concern:

Be it known that I, ANTOINE REILHE MCNAIR, of St. Louis, in the county of St. Louis and State of Missouri, have made a certain new and useful Improved Marine Camel; and I do hereby declare that the following is a full and true description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

The object of this invention is to provide a means for submerging and raising marine camels with less expense of power and with greater ease and dispatch than heretofore; and to this end the invention consists of a number of floats and valves arranged within the water compartments and chambers, operated by means of water and air pressure, as hereinafter more fully set forth.

To enable those skilled in the art to make and use my said improvements, I will now more fully describe the same, referring to the accompanying—

Figure 1 as a sectional elevation through the line *xx* of Fig. 2; to Fig. 2 as a top or plan view with a portion of the deck or covering broken away to show the float and valve.

The frame of the cradle *A* consists of suitable timbers *a a'* properly scarfed and secured together, and arranged parallel on top of each other a proper distance apart to form water-passages *a''*, as shown in Fig. 1. Between said frame-work are vertical cross-timbers, near the ends, and the whole securely fastened by screw-bolts in the most substantial manner. The bottom *A'* is made of stout plank, with a series of opened spaces, *a'' a''*, to allow water to enter, the ends and top being planked water-tight. At both sides of the cradle *A* are secured upright posts *a''* (see Figs. 1 and 2) to form the frame-work for the compartments *B B'*. Similar frame-work is made to form the compartments *B'' B'''* on top of the cradle *A*, contiguous to the side compartments *B B'*. All said frame-work is planked air-tight on each side in the most substantial manner. The compartments *B B'* and *B'' B'''* thus formed are further divided, by strong partitions, into air-tight chambers, and braced, strengthened, and otherwise constructed so as to render them capable of resisting the air-pressure. On top of each of the compartments *B B'* are constructed other compartments, *C C'*, the bottom

or floor *c c'* of said compartments *C C'* being formed air-tight so as to sustain the pressure of the compressed air necessary to expel the water from the different compartments and chambers below the spaces *C C'*. The water is allowed to enter and be expelled from each compartment *B B'* by means of the opened spaces *a'' a''* formed for this purpose. To enter and expel the water from the compartments *B'' B'''* opened spaces *b b'* are formed between the side planking of said compartments and the top or floor of the cradle *A*, as indicated in Fig. 1. This permits the water to enter and be expelled from said compartments over the floor of the cradle *A*. *E E* are the main air-pipes, provided with distributing-pipes *e e'* *e''*, which are provided with stop-cocks *e''*, and communicate with the compartments. To the floor of the cradle *A* are secured stout timber floorings *F F'* to strengthen the dock, and fitted to receive the keels of vessels to be raised. In order to drive or move the boat or vessel to be raised so as to be placed in the proper place on the cradle *A* there are arranged upright frames *G G'*, properly secured to both sides of the camel. Between said frames there are pivoted, at *f*, adjusters *f'*. These are connected at their ends by proper rope attachments *f''*, to be operated by suitable windlasses *G''*. (See Figs. 1 and 2.) The operation of said adjusters is clearly indicated by dotted lines in Fig. 1. By making the lighters in a structure with the camel the same is prevented from loss in case the pipes or cocks get out of order; also, it will be noticed that by the conjoint operation of the several compartments a greater buoyancy is obtained, the whole forming a powerful, compact, and improved camel for marine purposes. Each compartment *B B'* is provided with self-adjusting valves and floats, (which floats and valves, together with their connections, hereinafter described, constitute my invention,) constructed as follows: A water-chamber, *H*, of plate-iron, is formed in the sides of said compartments, having a valve-opening, *h*. Immediately above said valve-opening, *h*, is a float, *H'*, closed on all sides, also of sheet metal, having the valve *h'* properly constructed to fit perfectly the seat of the valve-opening *h*, as indicated in Figs. 1 and 2. The said float is guided by a rod, *h''*, passing through the bottom of the compart-

ments B B' in such wise that said float is permitted to be raised or lowered by water and atmospheric pressure. The said float H' is, moreover, guided in its vertical movement by slide-rods I I' passing through bearings *i i'* bolted to the sides of each float. The valve proper can be further guided true to its seat by a vertical slide, *i²*, attached thereto and passing through a cross-bar, *i³*, secured in the water-chamber H. Any number of valves and floats are constructed, one above the other in a series, according to the capacity of the chambers.

The water filling the compartments, all the floats are raised, which opens the valves. By atmospheric pressure, as soon as the water gets below the floats, the valves are closed. Thus,

by said arrangement of self-adjusting valves, the camels are submerged and raised with greater dispatch and less power.

Having thus fully described my said invention, what I claim is—

In a marine camel, the floats and valves H' *h'* arranged within compartments B B', having a valve-opening, *h*, leading out through the side of the structure, in combination with the chambers H, all constructed and operating as described, for the purpose set forth.

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

A. R. McNAIR.

Witnesses:

WILLIAM W. HERTHEL,
ROBERT BURNS.