

E. D. CALLEN.
SAND SCOW.

APPLICATION FILED JUNE 21, 1910.

988,289.

Patented Mar. 28, 1911.

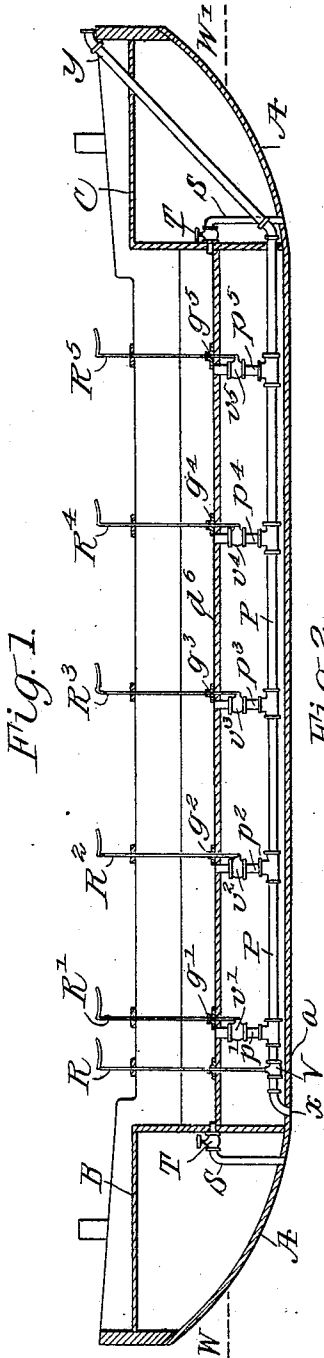
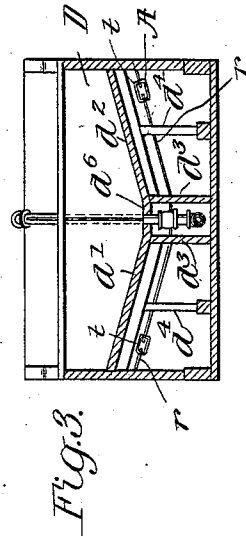
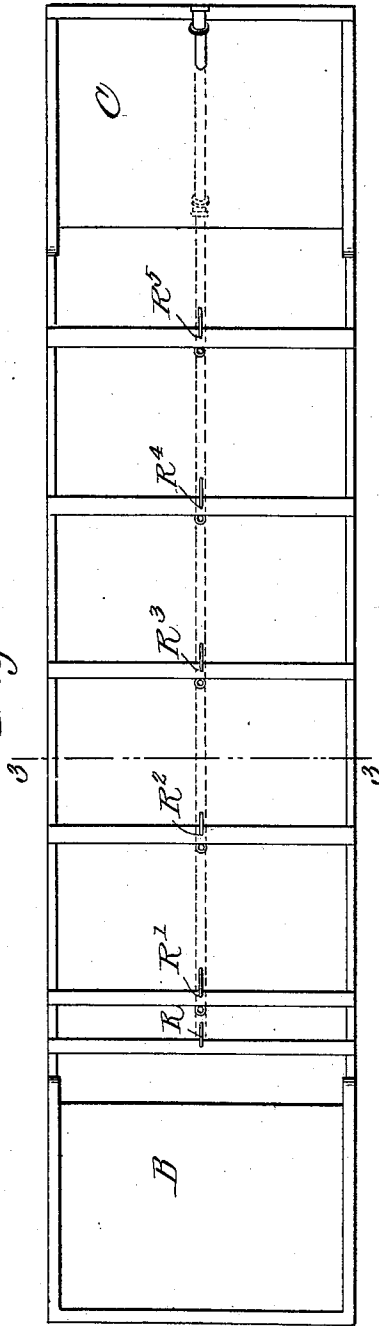


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

EDWARD DICKEY CALLEN, OF VICKSBURG, MISSISSIPPI.

SAND-SCOW.

988,289.

Specification of Letters Patent.

Patented Mar. 28, 1911.

Application filed June 21, 1910. Serial No. 568,106.

To all whom it may concern:

Be it known that I, EDWARD D. CALLEN, a citizen of the United States, and a resident of Vicksburg, in the county of Warren and State of Mississippi, have made certain new and useful Improvements in Sand-Scows, of which the following is a specification.

My invention relates to improvements in scows for handling and conveying sand, and it consists in the constructions, combinations and arrangements herein described and claimed.

An object of my invention is to provide an improved form of scow, by means of which the sand can be more conveniently unloaded than in the ordinary form, which necessitates the use of clam shell buckets, "orange peels" or the like.

A further object of my invention is to provide a scow, by means of which, unloading can be rapidly and cheaply accomplished, while at the same time protecting the cargo from the liability of becoming water-soaked, and thus rendering the vessel liable to sinkage through the extra weight.

A further object of my invention is to provide a system of suction pipes and valves by means of which the sand may be first mixed with water, and then the mixture of water and sand pumped out.

Other objects and advantages will appear in the following specification and the novel features of the device will be particularly pointed out in the appended claim.

My invention is illustrated in the accompanying drawings, forming part of this application in which similar reference characters indicate like parts in the several views, and in which—

Figure 1 is a longitudinal section through the device just off of the center line, Fig. 2 is a plan view, and Fig. 3 is a transverse section along the line 3—3 of Fig. 2.

In carrying out my invention, I provide a hull A of the general shape, shown in the drawings. At the ends of the hull, I form the raised decks B and C. Between these decks is a cargo box D, whose bottom slopes toward the center, as shown at d' and d'' , in Fig. 3. This bottom is provided with the supports d^3 and the stays d^4 . In order to brace the sides of the hull I, preferably, make use of set rods r , provided with turn buckles t .

Beneath the central portion d^5 of the cargo box D is a longitudinal pipe P, which is pro-

vided at intervals with branch pipes p', p^2, p^3, p^4 and p^5 . These pipes extend through the bottom d^6 of the cargo box, as clearly shown in Fig. 1. Each of the pipes $p'-p^5$, inclusive, is provided with a valve, such as those shown at $v'-v^5$, inclusive. These valves are manipulated by means of the valve rods R', R^2, R^3, R^4 , and R^5 , respectively, which extend through the bottom d^6 and are provided with the packing glands $g'-g^5$, inclusive. The main pipe P is bent downwardly and extends through the bottom a of the hull A at x . The opposite end of the pipe is curved upwardly, at approximately an angle of 45° , and extends through the deck C, terminating at y . The pipe P is provided with an emergency valve V, which is controlled by means of a rod R, which is similar to the rods $R'-R^5$, inclusive.

At each end of the cargo box is a drain pipe S, which is provided with a valve T.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood.

The scow may be either loaded by the ordinary means, such as by buckets, or it may be loaded by a sand pump. The loading is, preferably, done from one end, say near the deck B. In this case, the valve v' is closed by means of the valve rod R' , and the sand is deposited within the cargo box. The water will drain toward the pipes p^2, p^3, p^4 and p^5 , whose respective valves are open thereby permitting the water to run down into the pipe P and to drain out through the opening x in the bottom of the hull, the valve V, of course, being open. As the sand is piled in, the valves v^2, v^3, v^4 and v^5 are closed, successively, until finally the scow is loaded. In order to secure the complete draining of the sand, I provide the drain pipes S at either end. It will be observed that the cargo box is inclined toward the center, and also that the load is carried above the surface of the water, the lines W, W' indicating the approximate level of the water, when the scow is loaded. There is, therefore, no danger of the sand becoming soaked with water and rendering the barge liable to sink through overweight.

In unloading the barge, the operation is as follows: A suction pump is connected with the pipe P at the point y , and is started in operation, thus drawing water through the opening x . The valve v^5 , nearest the pump, is then opened and water is pumped

into the cargo box at this point, so as to wash the sand down into the pipe p^5 from whence it mixes with the water in the pipe and is rapidly carried up the inclined portion of the pipe to the place where it is to be deposited. As the sand is taken out, the valves v^4 , v^3 , v^2 and v' are opened, successively. The inclined bottom of the cargo box facilitates the movement of the sand toward the down pipes. The operation of unloading is accomplished with a minimum of power, owing to the conveying power of the water. Moreover, the operation is conducted more quickly than by means of buckets. The valve V may be used in cases of emergency, or when it is desired to repair the pipes.

It will be seen that I have provided a scow having an apparatus, which is simple in its nature, and, yet, which is effective for the purposes desired. I am aware that other forms of the device, based upon the same general principle, might be made, but I reserve the right to all such modifications as fairly fall within the spirit and scope of the invention.

In referring to the operation of unloading, it should be understood that the pump gets its supply of water from the main suction pipe and not out of the cargo box. The water which is allowed to flow back is only to keep any air from entering the open

valve, as it would be impossible to get enough water in the cargo box to unload the sand, as it requires 80% of water to move it. When the sand is removed the open valve is closed and the next one opened and so on. Then it should be understood there is no water pumped in, only as it is needed, which makes the barge safe at all times.

I claim:

In a scow, a cargo box having a V-shaped bottom spaced from the main bottom of the scow, a main suction pipe centrally disposed beneath said V-shaped bottom, having one end extending through the main bottom of the scow and the other end passing upwardly and adapted to be connected with a suction pump, a series of branch pipes extending upwardly through the V-shaped bottom to said cargo box, a valve for opening and closing each of said branch pipes, said valves all being disposed beneath the V-shaped bottom, a valve rod for opening and closing each of the valves in said branch pipes, and drain pipes at each end of said cargo box, the outlet openings of said drain pipes being just above the central portion of said V-shaped bottom.

EDWARD DICKEY CALLEN.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."