

G. V. MITCHELL.
TILTING DUMPING SCOW.
APPLICATION FILED MAY 3, 1910.

995,624.

Patented June 20, 1911.

3 SHEETS-SHEET 1.

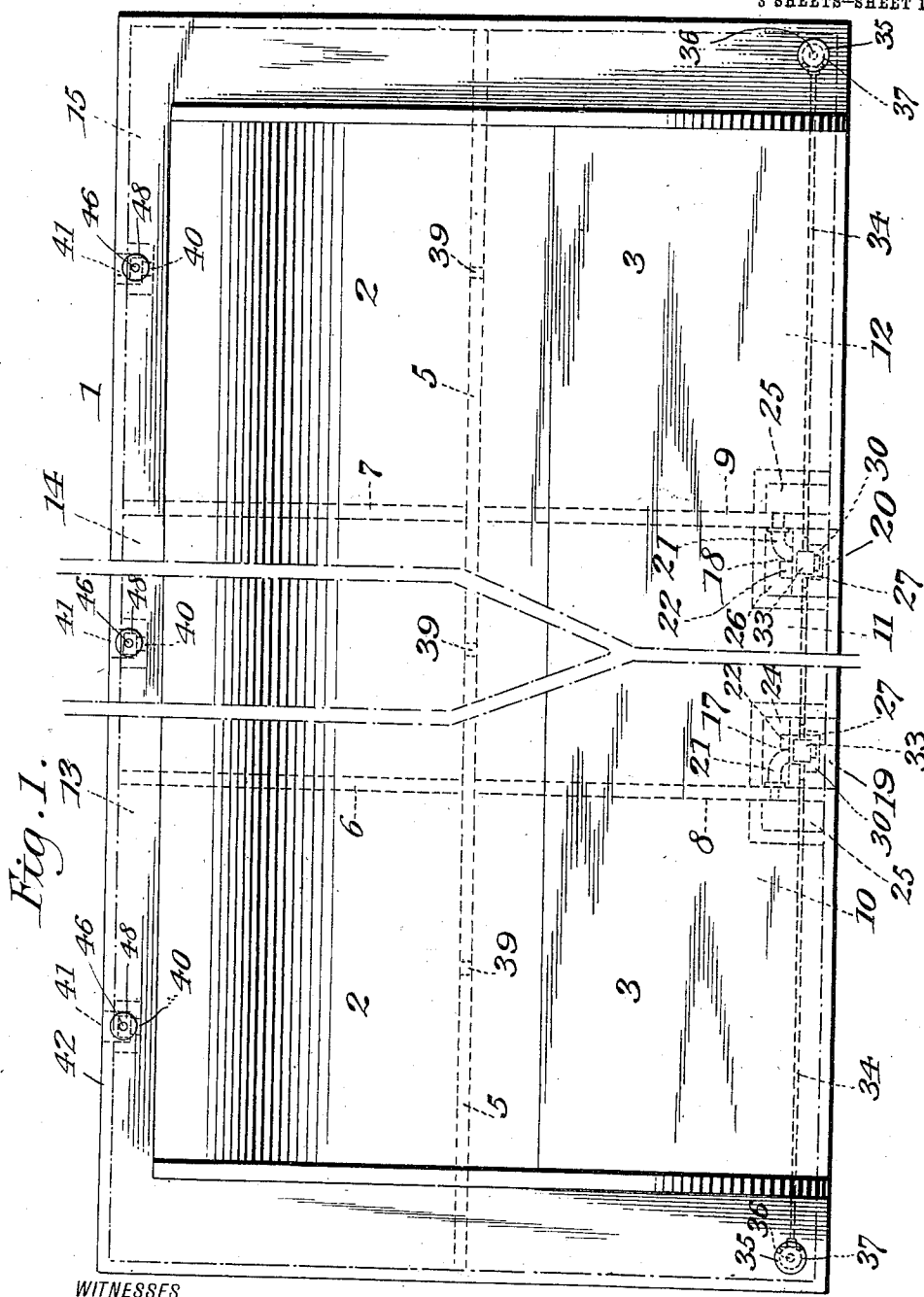


Fig. 1.

WITNESSES

A. R. Appleman.
R. M. Lepper.

BY

INVENTOR

Garrett V. Mitchell
Blackwood Bros.

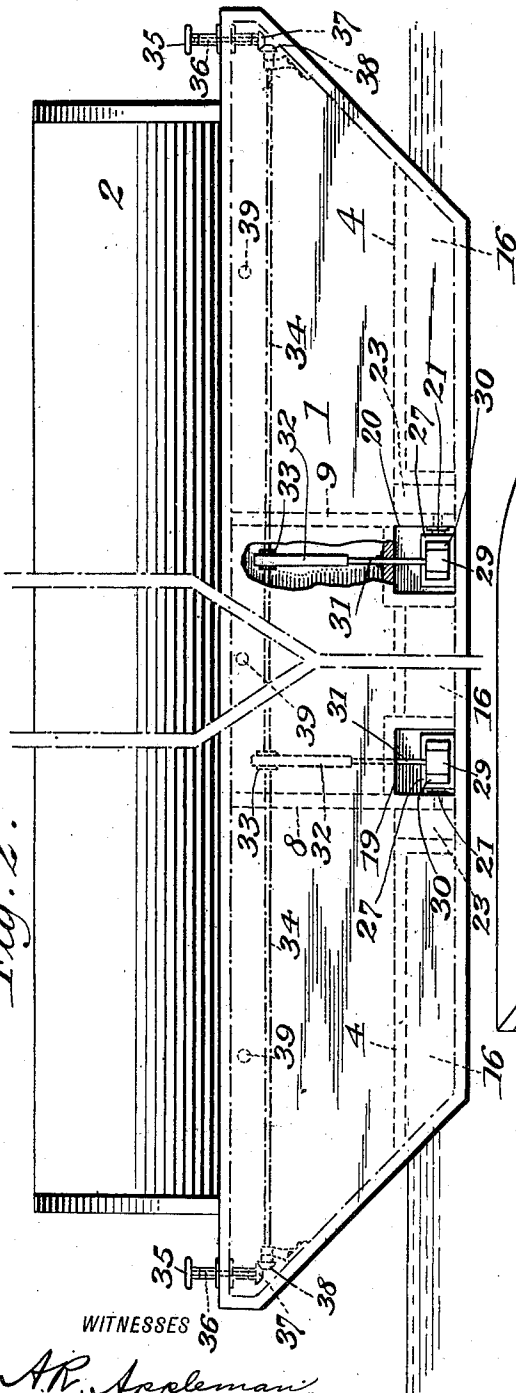
ATTORNEYS

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3 SHEETS—SHEET 2.

Fig. 2.

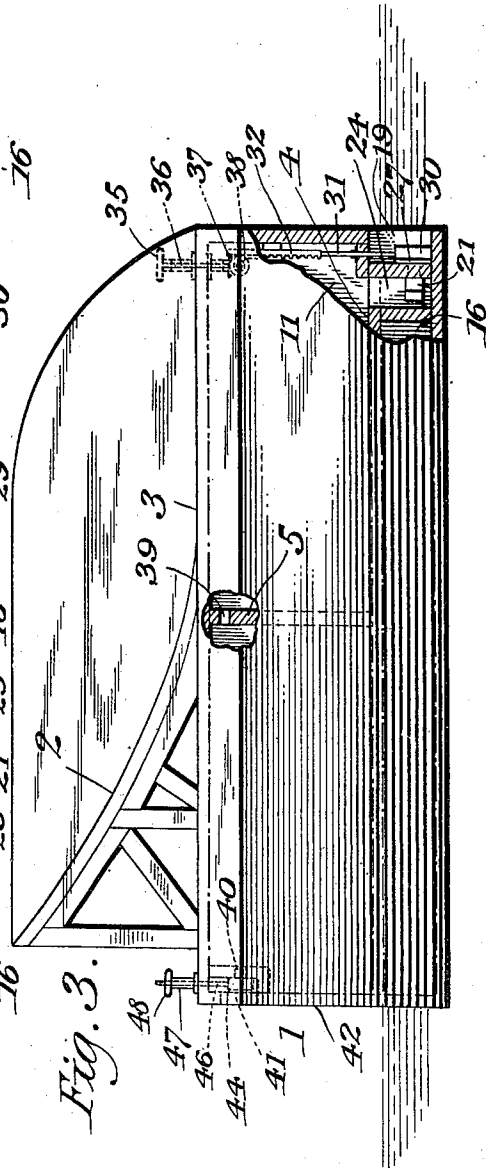


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Fig. 3.



INVENTOR
 Garrett V. Mitchell.
 Blackwood Bros
 ATTORNEYS

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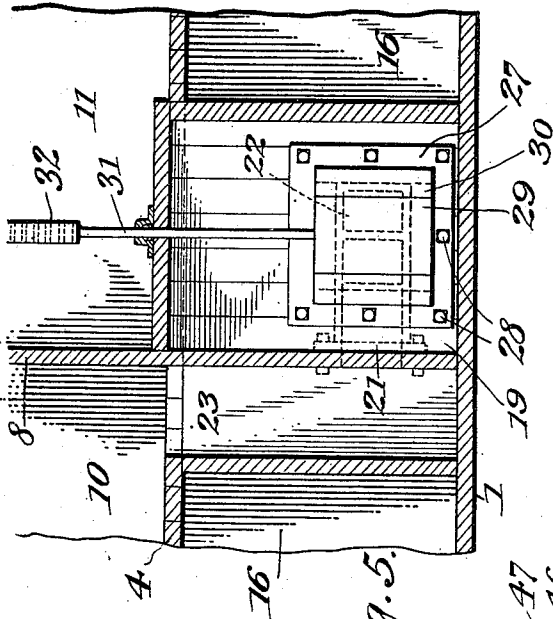


Fig. 5.

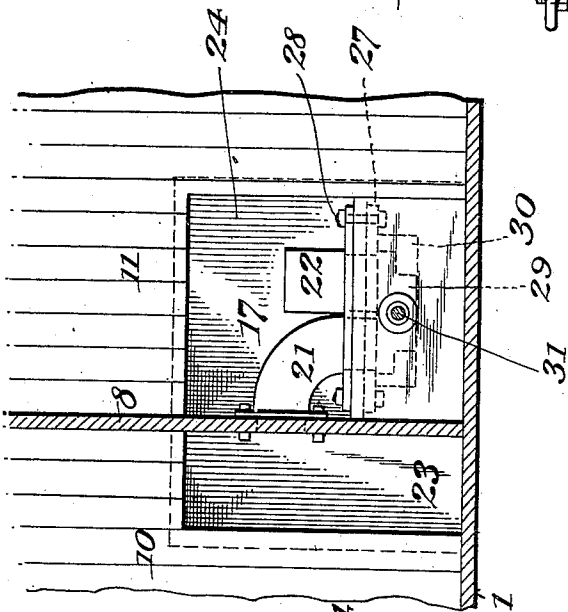


Fig. 4.

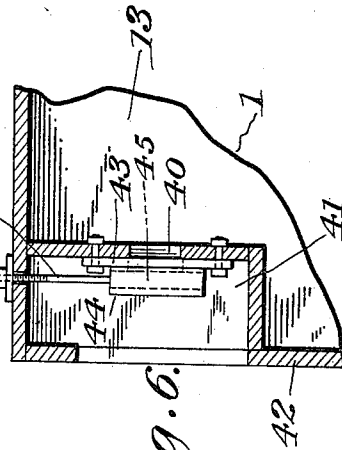


Fig. 6.

WITNESSES
A. R. Appleman.
R. M. Lepper

BY

INVENTOR
Garrett V. Mitchell
Blackwood Bros.
ATTORNEYS

UNITED STATES PATENT OFFICE.

GARRETT V. MITCHELL, OF BAYONNE, NEW JERSEY.

TILTING DUMPING-SCOW.

995,624.

Specification of Letters Patent. Patented June 20, 1911.

Application filed May 3, 1910. Serial No. 559,131.

To all whom it may concern:

Be it known that I, GARRETT V. MITCHELL, a citizen of the United States, residing at Bayonne, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Tilting Dumping-Scows, of which the following is a specification.

My invention relates to improvements in tilting dumping scows.

It has for its object to provide a scow of the character above mentioned, which is adapted, when loaded, to be tilted to one side to discharge its load and thereafter automatically return to light draft position.

It has for a further object to effect the automatic tilting movement of the scow, when loaded, by the admission of water into a water chamber, provided therein, and simultaneously exhausting air therefrom and automatically raising and draining the scow by means of an air chamber, provided therein, which acts to raise the scow so that, at light draft the floor of its water chamber will be above the water line.

It has for a further object to provide means for restraining the scow from tilting to the opposite side to that on which it tilts to discharge its load.

It has for a further object to provide means whereby the scow will discharge its load at the minimum degree of tilt or at the minimum degree of submergence and whereby the load will begin to move from the side of the scow opposite that on which it is to be discharged and be thereby practically discharged as a whole.

It has for a still further object to provide a device of the character and for the purpose above set forth embodying advantages in point of simplicity of construction and operation.

In the drawings:—Figure 1 is a plan view of my scow. Fig. 2, a side view thereof, partly broken away. Fig. 3, an end view thereof, partly broken away. Fig. 4, a fragmentary detail sectional view of the scow showing one of the valves for controlling the combined inlets and outlets of the water chamber. Fig. 5, another fragmentary detail sectional view of the scow showing one of the combined inlets and outlets of the water chamber. Fig. 6, a fragmentary detail sectional view of the scow showing one of the air valves for exhausting air from the air chamber.

Referring to the drawings illustrating my invention and in which like reference characters designate corresponding parts, 1 designates the scow, which is adapted, by the means to be hereinafter described, to tilt to one side to discharge its load. The portion 2 of the load deck of the scow along the side thereof opposite to that to which it tilts, is inclined laterally, preferably, on a curve, and extends to or slightly beyond a median line and the portion 3 of the deck of the scow which extends along the side thereof to which it tilts and from where the inclined portion terminates, is flat. From this arrangement of the deck, when the scow is tilted, the load begins to move from the side opposite that on which it is to be discharged and therefore the load will be practically discharged as a whole and it will only be necessary for the scow to be tilted to the minimum degree or be submerged to the minimum degree.

The hollow interior of the scow is divided by a floor 4, which is above the water line of the scow at light draft, and the space above said floor is divided by a longitudinal bulkhead 5, transverse bulkheads 6 and 7 on one side of the longitudinal bulkhead and transverse bulkheads 8 and 9 on the other side of the longitudinal bulkhead into a water chamber comprising the divisions 10, 11 and 12 and an air chamber comprising the divisions 13, 14 and 15 and the division 16 below the floor 4.

Water is admitted into and exhausted from the divisions of the water chamber of the scow through combined inlet and outlet openings formed by pipes 17 and 18 extending from the interior of the scow into openings in the rear walls of recesses 19 and 20 respectively in the side of the scow to which it dumps. Each of the pipes 17 and 18 (see Figs. 4 and 5 of the drawings) is formed of branches 21 and 22, the branch 21 of the pipe 17 leading through the bulkhead 8 into a well 23 opening into the division 10 of the water chamber, the branch 22 of the pipe 17 leading into a well 24 opening into the division 11 of the water chamber, the branch 21 of the pipe 18 leading through the bulkhead 9 into a well 25 opening into the division 12 of the water chamber and the branch 22 of the pipe 18 leading into a well 26 opening into the division 11 of the water chamber. Valve frames 27 are placed around the openings in the rear walls of the recesses 19 and

20 and are secured to the flanges of the pipes 17 and 18, by bolts 28 having nuts on their ends (see Figs. 4 and 5).

The admission of water into and exhaust
5 of water from the water chamber is accurately controlled by means of valves 29 slidable in ways 30 in the valve frames 27 and having rods 31 extending through stuffing boxes in the upper walls of the recesses
10 19 and 20 and being provided with racks 32 on their ends. The racks 32 are engaged and slid by gears 33 on a rotatable longitudinally extending shaft 34 and said shaft 34 is rotated by means of hand wheels 35
15 secured on the upper ends of shafts 36, which extend through sleeves on the deck of the scow, and have miter gears 37 secured on their lower ends and meshing with miter gears 38 on the shaft 34.

20 Openings 39, extending through the longitudinal bulkhead at the top, connect the divisions 10, 11 and 12 of the water chamber with the divisions 13, 14 and 15 respectively of the air chamber and allow the air to escape from
25 the divisions 10, 11 and 12 of the water chamber into the divisions 13, 14 and 15 respectively of the air chamber. To control the exit of the air from the divisions 10, 11 and 12 of the air chamber, outlet
30 openings 40 are provided in the inner walls of recesses 41 in the side 42 of the scow. Valve frames 43, having ways 44, are secured around the openings 40 and valves 45
35 are mounted in said ways and slid by rods 46, the upper threaded ends of which extend through sleeves 47 on the deck of the scow and engage threaded bores in hand wheels 48.

40 By reason of the floor in conjunction with the longitudinal bulkhead, dividing the scow into an air chamber which extends over the entire surface of the bottom and along one side from the bottom to the top and also

into a water chamber which extends along the other side between the floor and deck, the scow will be caused to tilt to the side on
45 which the water chamber is located, when water is admitted therein, by reason of the water overcoming sufficient buoyancy in such a manner as to impart a turning moment to the scow in that direction, and the
50 scow will be restrained from tilting to the other side by reason of part of the air chamber being therein. By reason of part of the air chamber extending entirely over the
55 bottom of the scow, when the load is discharged, the scow will recover part of its buoyancy and rise, discharging the water and recovering the balance of its buoyancy, thereby bringing the floor of the water
60 chamber above the water line at light draft.

I claim:—

A scow, tiltable to one side to dump, having an air chamber, a water chamber in the side to which it dumps, means for admitting
65 water to and exhausting water from said water chamber and a load deck having an inclined portion extending from the opposite side to that on which the scow dumps toward the side on which it dumps and forming
70 a confining wall and the said side to which the scow dumps having no confining wall, whereby the load begins to move from the inclined portion of the deck on the opposite side to which the scow dumps and is
75 dumped practically as a whole, substantially as described.

In testimony whereof, I have signed my name in the presence of two subscribing witnesses.

GARRETT V. MITCHELL.

Witnesses:

R. M. LEPPER,

I. VERNON WEISBROD.