

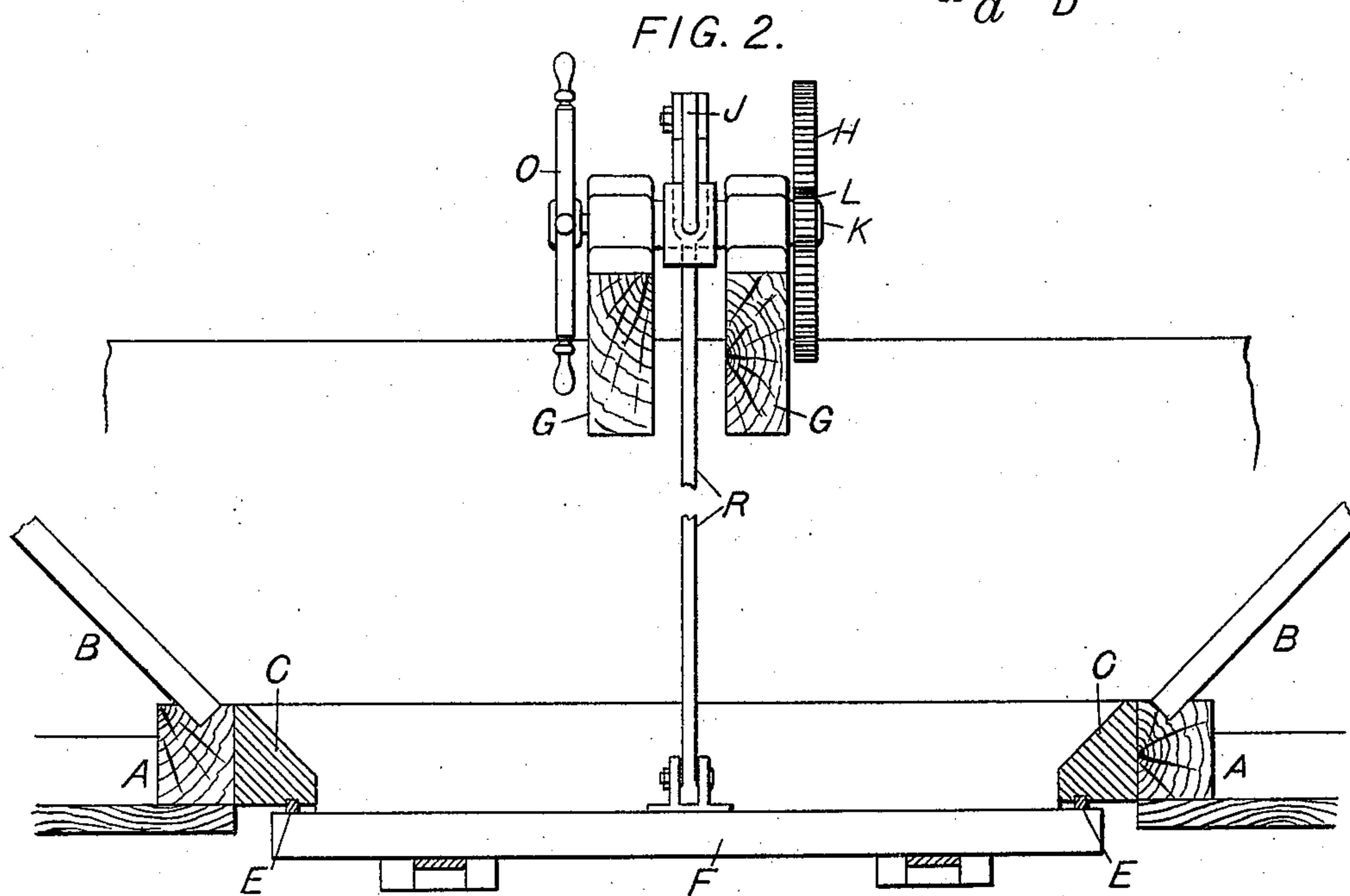
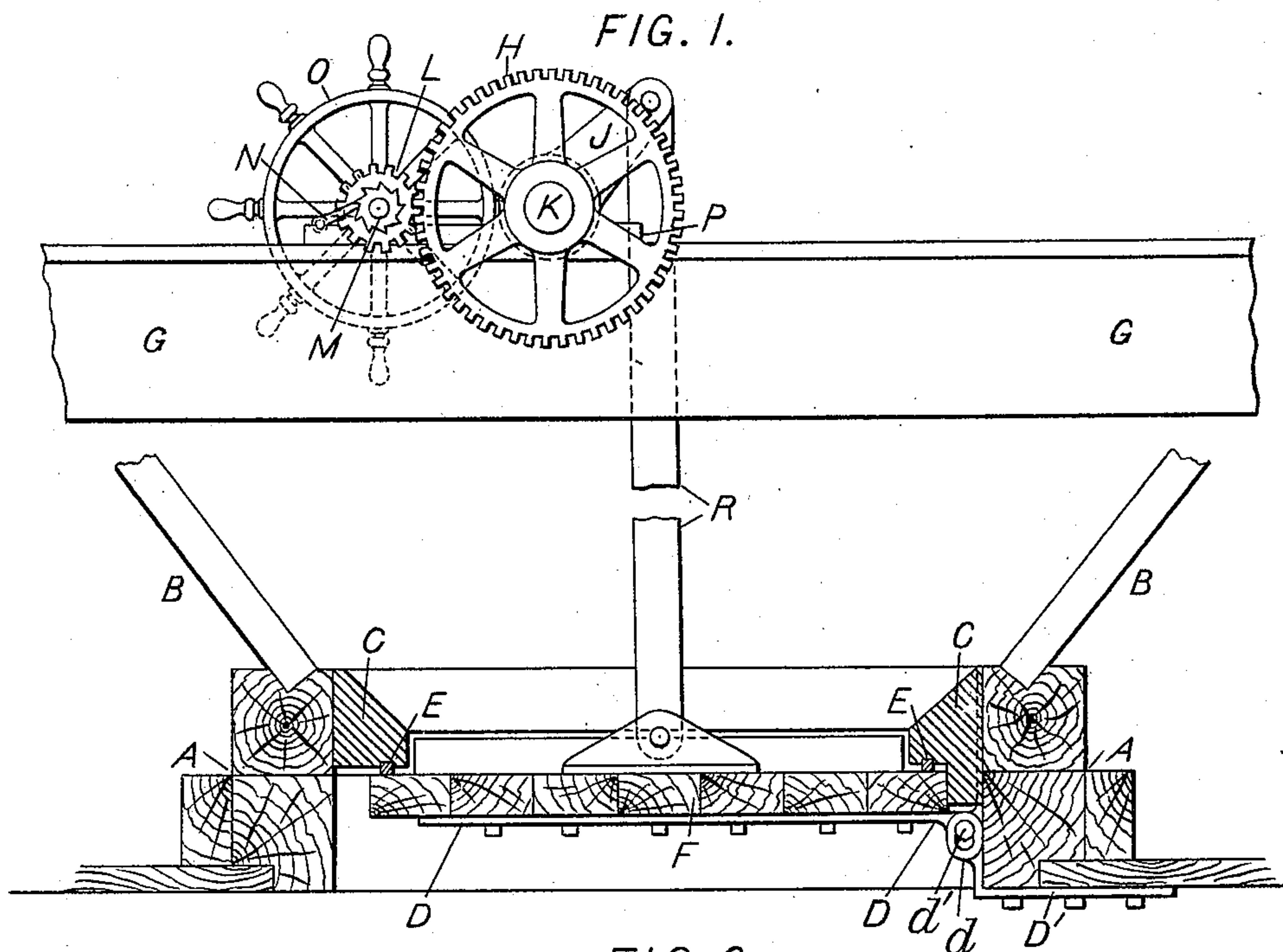
No. 619,737.

Patented Feb. 21, 1899.

J. EDWARDS.
DUMPING DOOR FOR DREDGING VESSELS.

(Application filed May 16, 1898.)

(No Model.)



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JOSEPH EDWARDS, OF NEW YORK, N. Y.

DUMPING-DOOR FOR DREDGING VESSELS.

SPECIFICATION forming part of Letters Patent No. 619,737, dated February 21, 1899.

Application filed May 16, 1898. Serial No. 680,768. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH EDWARDS, a citizen of the United States, residing in the borough of Brooklyn, in the city and State of New York, have invented a new and useful Improvement in Dumping-Doors for Dredging Vessels, of which the following is a specification.

My invention relates to improvements in the method of constructing, operating, rendering tight, and holding dumping-doors of self-containing dredging vessels, especially self-containing dredging-steamers. Such doors, especially when fine sand is the material being dredged, need to be very tightly closed and provided with means of forcing them open, as well as for closing and holding them, as they will not open without being forced down, owing to the impacted condition of the wet sand, which of itself will not move and cuts off atmospheric pressure. A patent for this purpose was granted to me August 6, 1889, No. 408,298; but I have found by experience that the method of operating such doors under this patent takes too much time and that the doors do not close sufficiently tight.

The object of my improvement as herein specified and claimed is to overcome these objections, which I accomplish by mechanism illustrated in the accompanying drawings, in which—

Figure 1, referring to the vessel, is a transverse section; and Fig. 2, a longitudinal section and a reverse view of Fig. 1.

Similar designating-letters refer to similar parts in both views.

A represents the timber-work of the bottom of the vessel; B B, the slanting sides of the lower part of the vessel's carrying-bins, which converge and form a tapering discharging-hopper, at the bottom of which is located the dump-door F; C, a heavy quadrangular door-frame secured to the framework of the vessel within the mouth of the said hopper, against the bottom face of which the swinging door is fitted and strikes; D D, an adjustable hinge, (of which two or more are provided for each door,) the fixed or immovable part of this hinge D' being provided with an oval or oblong hole *d*, in which the pin *d'* of the hinge can

move up and down; E E, a suitable endless strip of elastic rubber slotted into the lower face of the door-frame C to form a yielding sand and watertight packing between the door and its frame C; G G, the deck of the vessel; H, a cog-wheel; J, an operating-arm fastened to the shaft K, on which is mounted the said cog-wheel; L, a pinion which fits into and rotates the said cog-wheel; M, a ratchet-wheel secured to the face of the said pinion; N, a pawl which holds the said ratchet-wheel; O, a hand-wheel connected with and by which the pinion is rotated; P, the frame on which is mounted the cog-wheel and pinion; R, a connecting-rod which connects the swinging door F to the operating-arm J.

Having pointed out the various parts of my device, I will now explain its operation.

The dumping-door, as illustrated in the drawings, is in a closed position. To open it, it is only necessary to remove the pawl N from the ratchet-wheel M and turn the hand-wheel O to the left, which rotates the pinion L and turns the cog-wheel H to the right, which throws the operating-arm J downward, and depress the connecting-rod R, which will force open the dumping-door F. To now close the dumping-door, it is only required to place the pawl in position on the ratchet-wheel and reversely turn the hand-wheel—that is, to the right—which will close the door.

It will be seen that if the hinges of the door were of ordinary construction—that is, not provided with the oblong hole *d*, (see Fig. 1)—the hinged side of the door could not be drawn up to compress the elastic packings E E; but the hinge constructed as shown allows all sides of the door a sufficient vertical motion to properly compress the elastic packing.

I am aware that swinging dump-doors have been employed and operated by a connecting-rod worked by an additional sliding rod, as shown in Patent No. 408,298, granted to me August 6, 1889. Therefore I do not claim, broadly, a swinging dumping-door operated by a connecting-rod.

What I claim as new and useful, and desire to secure by Letters Patent, is—

In a dredging vessel, a swinging dump-door having vertically-adjustable hinges and elas-

tic packing between the said door and its seat
in combination with a vertical connecting-rod
and a cog-wheel having a projecting arm and
a motor-pinion and hand-wheel, whereby the
5 rotating of the hand-wheel in one direction
will force open the said door, and if rotated
in the opposite direction will tightly close

and hold the same, substantially as and for
the purpose described.

JOSEPH EDWARDS.

Witnesses:

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