

No. 627,951.

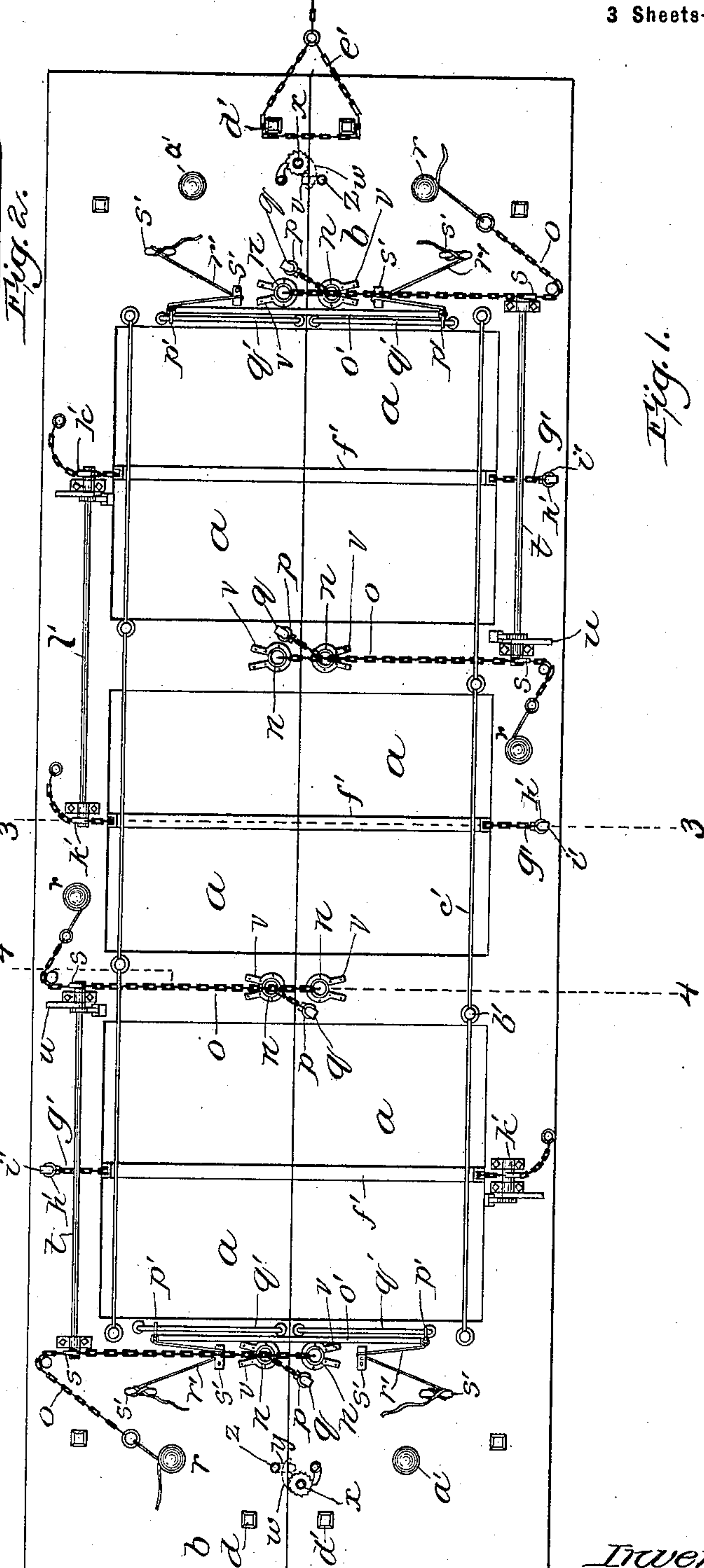
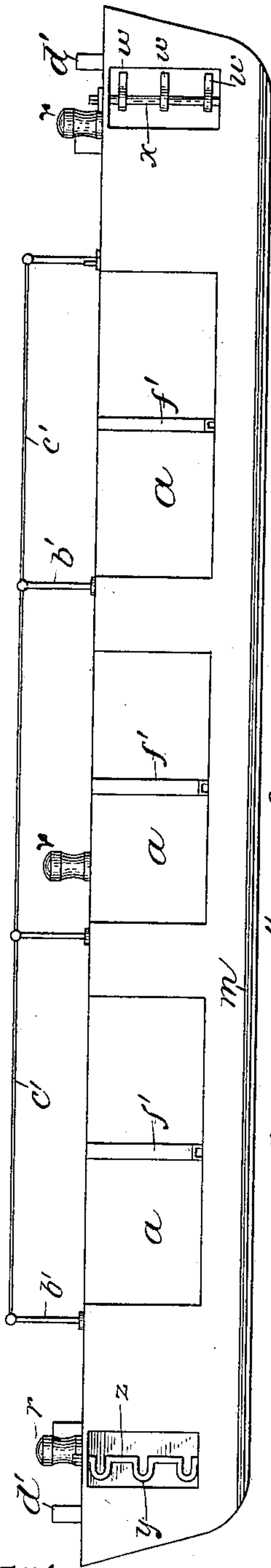
Patented June 27, 1899.

J. ATKINS.
DUMPING SCOW.

(Application filed Apr. 22, 1898.)

(No Model.)

3 Sheets—Sheet 1.



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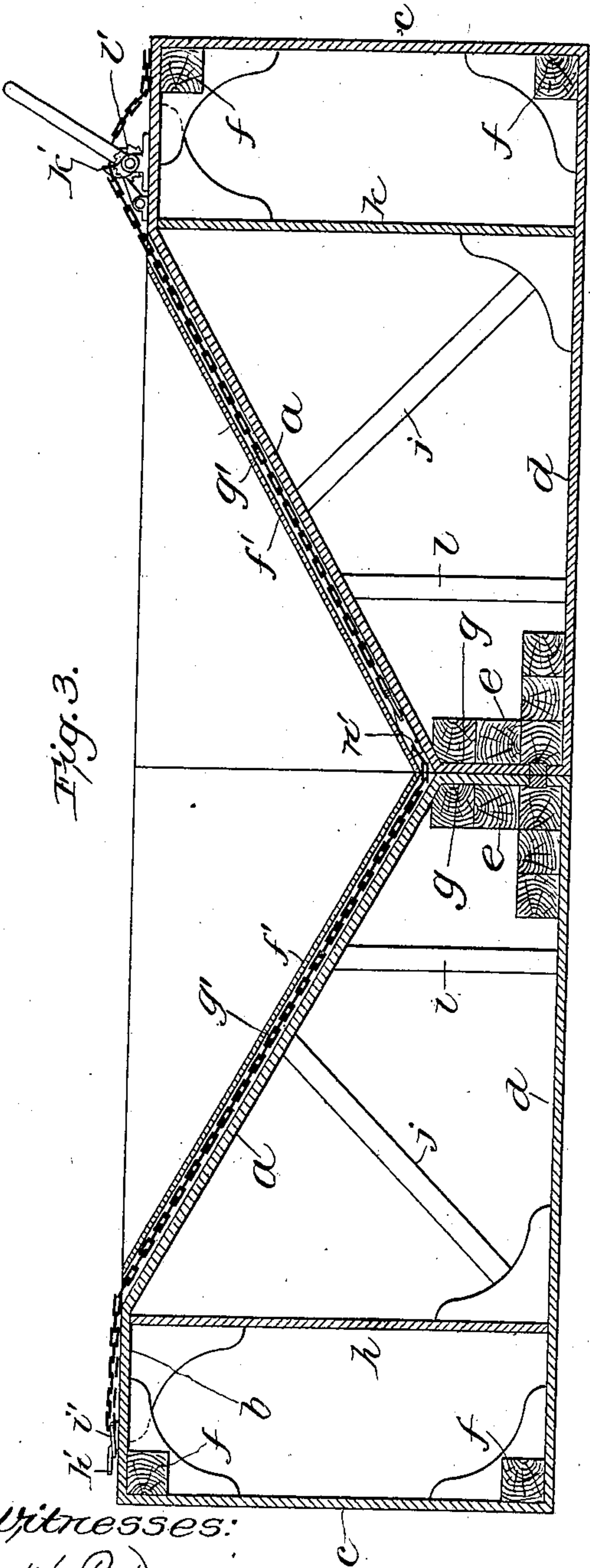


Fig. 3.

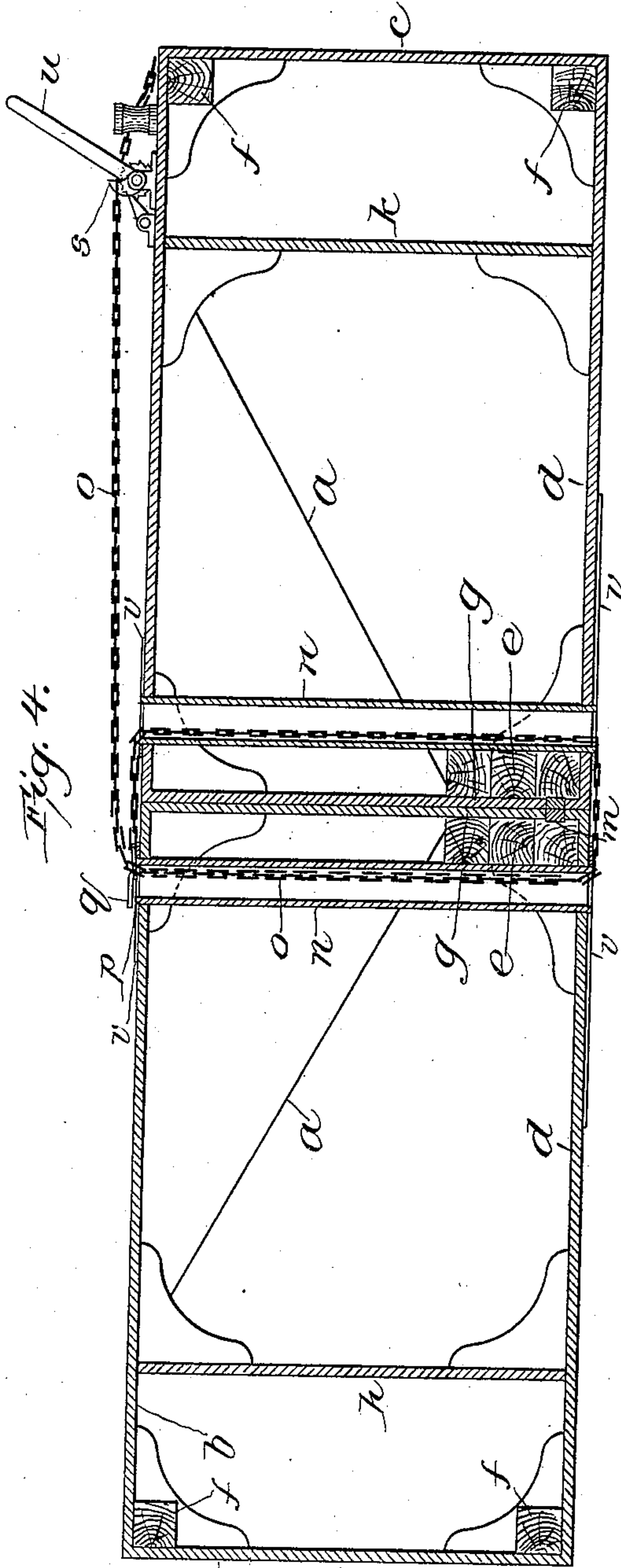


Fig. 4.

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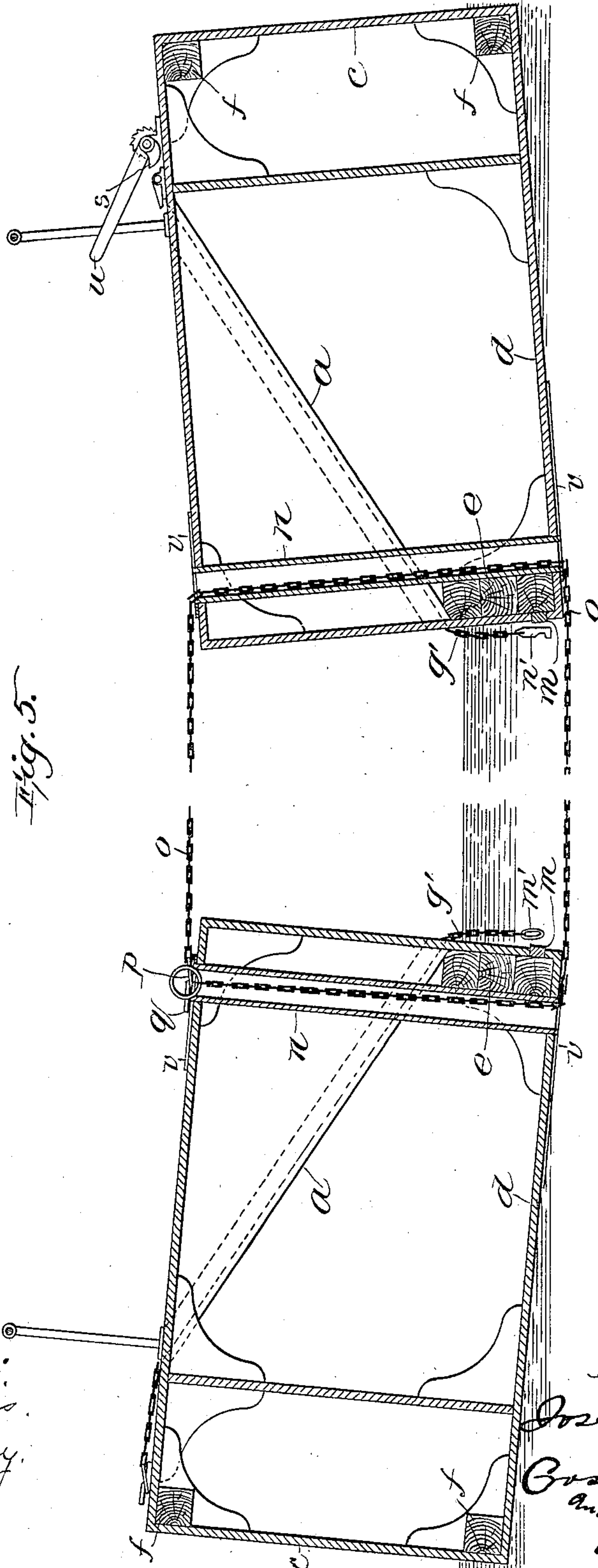
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UNITED STATES PATENT OFFICE.

JOSEPH ATKINS, OF CHATHAM, MASSACHUSETTS.

DUMPING-SCOW.

SPECIFICATION forming part of Letters Patent No. 627,951, dated June 27, 1899.

Application filed April 22, 1898. Serial No. 678,465. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH ATKINS, of Chatham, in the county of Barnstable and State of Massachusetts, have invented certain new and useful Improvements in Dumping-Scows for Large and Weighty Material, of which the following is a description sufficiently full, clear, and exact to enable those skilled in the art to which it appertains or with which it is most nearly connected to make and use the same.

This invention relates to scows for dumping loads of material, and particularly to that class of such devices of marine architecture as include a longitudinally-divided hull the two parts of which are separable from each other to permit the force of gravity alone to remove or discharge into the sea the load carried by the scow. Structures of this type have been produced, but, so far as known at present, none of them permit of the automatic discharge by gravity of the entire load, whether composed of soft or moist material or large and heavy and rigid pieces, such as stones or rocks of the size and weight sometimes used in building breakwaters and the foundations for lighthouses.

The object of this invention is the production of a scow which may be easily towed, which may be readily operated to permit of the automatic discharge of the largest and heaviest blocks of stone or rock used in the building of breakwaters and other submarine structures, and which may be made use of in the roughest seas.

A further object of the invention is the production of scows possessing these characteristics and which will afford safe support and foothold for the crew under all circumstances.

To these ends the invention consists in a scow comprising two separable and independently-buoyant hulls having inclined portions which when the hulls are secured together form a pocket or a series of pockets and provided with means for positively separating the hulls and holding them in spaced position for dumping.

The invention further consists in the construction and combination of parts, substantially as hereinafter described and claimed.

Reference is to be had to the annexed drawings, and to the letters of reference marked thereon, forming a part of this specification, the same letters designating the same parts or features, as the case may be, wherever they occur.

Of the drawings, Figure 1 represents a plan view of a scow embodying the features of this invention. Fig. 2 represents a side elevation of one of the hulls, looking from the direction of the center or line of division of the scow. Fig. 3 represents an enlarged section on line 3 3 of Fig. 1. Fig. 4 represents an enlarged section on line 4 4 of Fig. 1. Fig. 5 represents a view similar to Fig. 4, but with the parts in dumping position.

In the drawings the two hulls, pontoons, or floats are practically identical in construction and may be built of metal, such as steel, or of wood. As illustrated, they are constructed of wood and may be and preferably are formed to provide a plurality of pockets rather than one pocket. The inclined bottoms *a a* of the pockets may be of planking sheathed with iron or other material, such sheathing not being necessary, however, for the deck-planking *b*, sides *c*, and bottom *d*. The inner sides of the hulls—that is, the sides which abut against each other—are provided with keelsons *e*, bolted through, and with strengthening side keelsons *f*. The outer sides of the keelsons *e* are planked over at *g* for wear. Fore and aft bulkheads are provided in each hull, as at *h* and *k*, timber braces *j* and *l* cooperating with the bulkheads in supporting the pockets and strengthening the entire structure. In the planking *g* each hull is provided with one or more grooves supplied with rubber or other packing, as at *m*, in order that when the scow is used for mud or similar material it will not wash through, said packing also serving as a buffer when the two parts come together.

As above stated, it is at present deemed preferable that the scow shall be constructed so as to form a plurality of pockets; but it is to be understood that nothing herein is to be construed as limiting the invention to that arrangement, for many of the features of this invention relate and apply to scows having a single pocket and of any practicable length

desired; but it may be stated here, however, that one of the advantages of providing the plurality of pockets is that there is less liability of any shifting of the load in a pitching sea, and another advantage is that the partitions between the pockets form abutments and provide locations for midship means, whereby the two hulls may be firmly drawn and held together against the spreading tendency of the load on the inclined bottoms, besides forming additional water-tight compartments, which increase the buoyancy of each float. When the holding or locking means are located only at the ends of the scow, there is a tendency to spread the midship-sections, if the scow is of a tonnage of the type preferable for heavy seawork, and thus produce an undue and sometimes disastrous strain on the end fastenings. Practically no dumping-scow has heretofore been constructed with separable hulls which would stand the carrying of large and heavy breakwater material through the seas which often have to be encountered.

Referring now again to the drawings, it will be seen that chain-pipes *n* extend vertically through each hull in each end and in each partition thereof, the said pipes being located adjacent to the abutting sides of the two hulls. A chain *o* passes through each pair of adjacent pipes, one end of each chain being secured, as by a ring *p*, caught to a deck hook or cleat *q*, and extending thence down through one pipe under the scow and up through the adjacent pipe on the other side of the dividing-line of the hulls, and thence across the said line on deck to a suitable winch, windlass, or capstan *r*. In Fig. 1 of the drawings there are two partitions and four of the chains *o* indicated, two being at the ends of the scow. If more partitions are constructed, they will preferably have a chain each. In said Fig. 1 two of the chains are shown as carried to windlasses on one hull and two to windlasses on the other hull; but inasmuch as it is difficult to get sufficient power from a hand-windlass to haul in these chains with sufficient force when closing up the scow it is advisable to provide means by which these chains may be heaved up. At a point intermediate of the top of the chain-pipe and a suitable block or bit around which the chain passes to the windlass is a hook *s*, secured to a shaft or rod *t*, having a bar or handle *u*, said hook being adapted to engage any link of the chain and to be operated by means of the bar *u* to heave up the chain one link at a time. In said Fig. 1 two of said hooks are shown as carried by a single shaft *t*, whereby one man can heave up two chains. Hence with a scow constructed as in said figure two men, one on each hull, can heave up and secure the hulls after dumping. The ends of the chain-pipes are shown in Fig. 1 as being provided with deck-irons *v* to receive the strain.

For some scows the means so far described

may be sufficient to lock the hulls together; but in Figs. 1 and 2 there is illustrated additional mechanism, which may be relied upon alone to lock the hulls after they have been closed. At each end of the scow the abutting sides of the hulls are provided with a series of hooks *w*, carried by a shaft *x* on one side of the line of division and with a series of links *y*, carried by a shaft *z* on the other side of said line. The upper ends of the shaft *x* are provided with ratchets engaged by suitable pawls pivoted to a deck-plate, and the upper ends of said shafts, and preferably also the shafts *z*, are squared, so that the shafts may be rotated by suitable wrenches to cause the hooks and links to be engaged or to disengage them. When the parts just described are in the position shown in Fig. 1, the pawls being in engagement with the ratchets, the two hulls are firmly locked together at the ends. If desired, similar hooks and links may be located on the abutting or meeting sides of the partitions.

Extra capstans *a'* may be located on deck for general work, and stanchions *b'* and handrails *c'* for the crew are also represented.

Towing-bits are represented at *d'*, one or more on each side of the line of division, whereby the two cable or chain *e'*, forming a loop over both, further serves to draw and hold the hulls together.

Along the inclined floors *a* of the hulls forming the pockets are pipes or runways *f'* for chains *g'*, which form additional means for locking the hulls together. At one end each of said chains is provided with a ring *h'* to be secured to a hook or cleat *i'* on the deck of one hull, the said chain passing through a runway and at the other end being adapted to be secured to a hook *k'* on a shaft *l'* on the deck of the other hull and similar to the hooks *s* on the shaft *t* above described. By means of the hooks and shafts *k' l'* the chains *g'* may be heaved up to draw the bottoms of the pockets close together and lock them, the shafts *l'* being provided with suitable ratchets and pawls.

It is desirable that the chains *g'* be separable in order that they may not interfere with the dumping of the load in the pockets, since these chains cross the middle of the space between said pockets.

In Fig. 5 a chain *g'* is shown as separate, the two parts being provided with a ring *m'* and a hook or catch *n'*. The engaging portion of the hook or catch *n'* is slightly beveled off, and hence when the two hulls are released, so that the load can slip down the inclined bottoms *a*, a portion of said load will either push the hook out of the ring or will push the ring off from the hook. After a load has been dumped the two parts of the chains *g'* may be joined by any members of the crew going down into the pockets for this purpose, and then when the two hulls are to be drawn together these chains may be heaved up first, so as to draw the bottoms of the pockets together and

enabling the chains *o* to be freely hauled in, the said chains *o* being finally heaved up to bring the hulls close together for locking.

When it is desired to open the hulls to dump
5 or empty the pockets, the chains are cast off from their fastenings and the hook and link shafts *x* and *z* are turned to separate the hooks *w* and links *y*. It is now desirable that the hulls shall be spread apart in a substantially horizontal plane to permit the load
10 to slide down the inclined bottoms *a* with little perceptible tilting of the two hulls toward each other. This is done by means of spars *o'* on deck. Each of said spars has a ring *p'*
15 at each end, said rings sliding on travelers *q'*, secured to the two hulls. To each end of the spar is secured a tail-rope *r'*, adapted to be passed around cleats *s'*, and by means of which the hulls are forced apart and held
20 against being thrown together by the seas. When the load is discharged by gravity, the tail-ropes *r'* are cast off and the hulls heaved and brought together and locked in the manner heretofore described, the chains *o* being
25 preferably provided with tail-ropes, as indicated in Fig. 1.

Having thus explained the nature of the invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which
30 it may be made or all of the modes of its use, it is declared that what is claimed is—

1. A dumping-scow comprising in its construction two separable and independently
35 buoyant hulls having inclined portions to cooperate in forming pockets, said hulls being also provided with buoyant partitions adapted to abut against each other, and means for locking the hulls together and for permitting
40 them to separate bodily from each other.

2. A dumping-scow comprising in its construction two separable and independently
45 buoyant hulls having inclined portions to cooperate in forming pockets, means for holding them together when loaded, which also

serves to keep them loosely secured to each other at both ends when separated for unloading, and means for preventing them from tilting when they are separated, substantially
50 as described.

3. A dumping-scow comprising in its construction two separate hulls, each having a plurality of partitions and inclined bottoms
55 *a* between said partitions, chain-pipes *n*, chains *o* passing through the pipes *n* of the two hulls, and means for securing said chains.

4. A dumping-scow comprising in its construction two separate hulls having inclined bottoms and provided with vertical abutting
60 sides, the said abutting sides being provided with hooks and links adapted to lock the two hulls together.

5. A dumping-scow comprising in its construction two separate hulls having inclined
65 bottoms to form pockets, vertical chain-pipes adjacent to the meeting or abutting sides of the hulls, chains passing through said pipes and across the dividing-line, means for securing one end of each of said chains, and
70 the shafts *t* provided with hooks *s* for engaging the chains, and means for rotating said shafts.

6. A dumping-scow comprising in its construction two separate hulls having inclined
75 bottoms which cooperate to form pockets, means for moving said hulls from and toward each other in a substantially horizontal direction said means including the spars *o'* having sliding connections with the two hulls and
80 connecting the said hulls, and suitable tail-ropes for operating said spars, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 2d day of
85 April, A. D. 1898.

JOSEPH ATKINS.

Witnesses:

ARTHUR W. CROSSLEY,
ANNIE J. DAILEY.