T. C. JACKSON.

SCOW FOR TRANSPORTING GRAVEL.

APPLICATION FILED OCT. 24, 1911.

1,047,234.

Patented Dec. 17, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

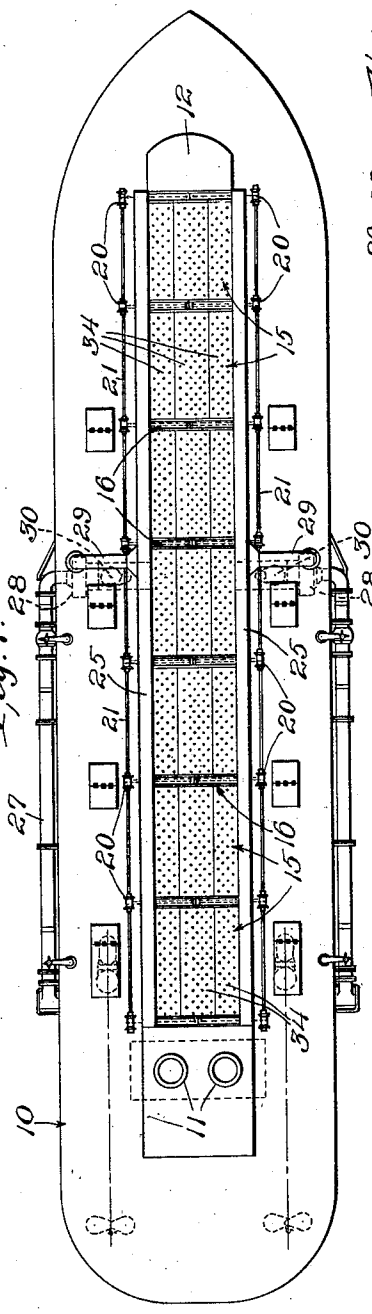


Fig. 4.

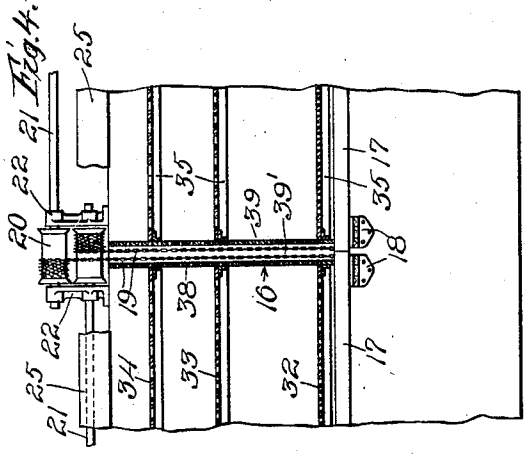
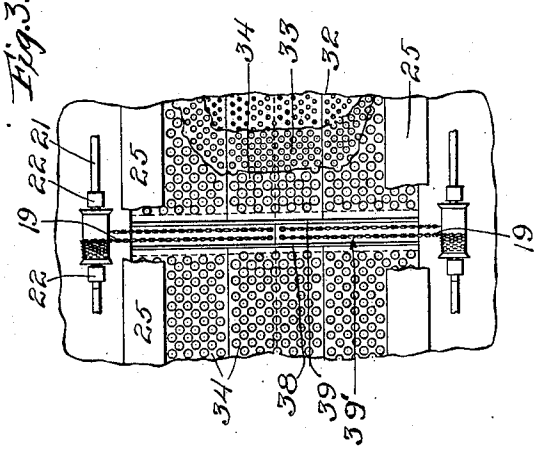


Fig. 3.



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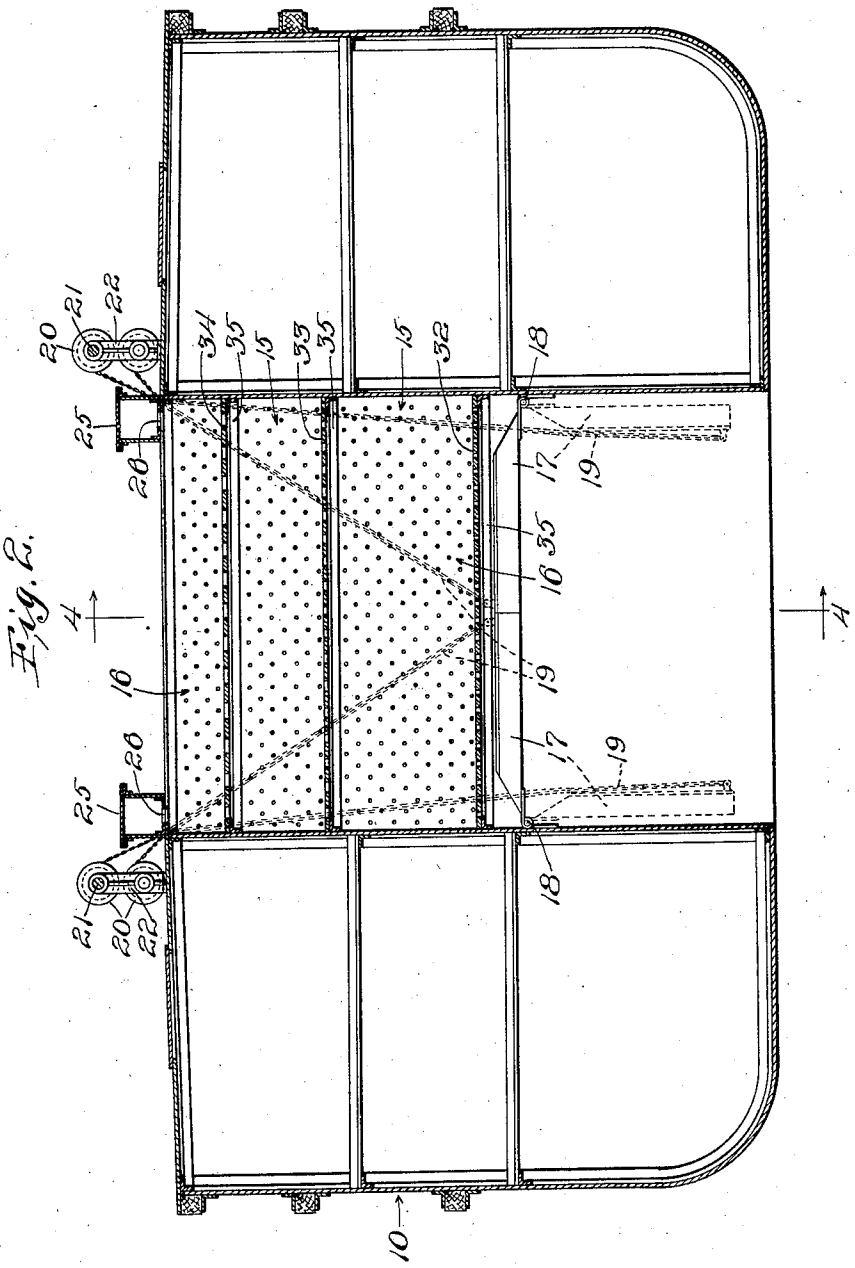
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Patented Dec. 17, 1912.

2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

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SCOW FOR TRANSPORTING GRAVEL.

1,047,234. Specification of Letters Patent. Patented Dec. 17, 1912.

Application filed October 24, 1911. Serial No. 656,518.

To all whom it may concern:

Be it known that I, THOMAS C. JACKSON, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Scows for Transporting Gravel; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in scows or boats for transporting gravel or gravel and sand loaded thereon from the bottom of a lake or other body of water, the scow being of that kind illustrated in my co-pending application for U. S. Letters Patent, Serial No. 654,452 filed October 13th, 1911, and having a screen or screens extending across the compartment of the scow arranged to grade the material in predetermined meshes and to return the material which is too fine for use back to the deposit from which the material is taken.

The object of the invention is to provide improvements in scows designed for transporting gravel or gravel and sand in this manner, and also for transporting excavated material, garbage and the like; the arrangement being such that the usual swinging or dumping doors at the bottom of the compartments may be raised and lowered when the screen or screens are in place, so as to prevent injury to the doors by obstructions in the water, such as floating ice, which is liable to occur when the doors occupy their open positions when the boat is returning with a load of gravel.

In accordance with my present invention the transverse bulkheads which separate the compartments from top to bottom thereof, are made hollow, each being constructed of two separate plates, so as to provide clearance spaces for chains by which the dumping doors are controlled to open and close the same at a time when the screens are in place. Contiguous doors extend at their adjacent side edges across such spaces, so as to afford means for attaching the chains thereto.

The invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claims.

As shown in the drawings, Figure 1 is a plan view of a gravel transporting scow embodying my invention. Fig. 2 is a transverse section thereof. Fig. 3 is a fragmentary plan view showing the screens of two compartments at the two sides of a hollow bulk-head. Fig. 4 is a vertical section on the line 4—4 of Fig. 2.

The scow 10 may be of any suitable or preferred construction or design, and is herein shown as a self-propelled scow, with its propelling power plant 11 located at the stern of the scow and its pilot house 12 located near the bow thereof. Disposed along the longitudinal center of the scow are a plurality of compartments 15, seven being shown. Said compartments are open at their tops and at their bottoms and are separated from each other by the hollow, transverse bulk-heads 16 referred to, as best shown in Fig. 1. Each of said compartments is adapted to be closed at its lower ends by swinging, dumping doors 17 that are hinged at their sides by the hinges 18 to the side walls of the compartments and with their inner edges when closed at the longitudinal center of the compartment. Said doors when swung upwardly to the full line position shown in Figs. 2 and 4 constitute the bottoms of said compartments, and, when released, swing down to the dotted line positions shown in Fig. 2 to permit the contents of the compartments to be dumped.

The doors are held in their upper or closed positions by chains 19 that are connected at their lower ends to the inner sides of the doors at the corners thereof, and are trained about windlasses 20 at the sides of the compartments on the scow deck. Said windlasses are attached to shafts 21 supported in suitable bearings 22 fixed to the deck and are adapted to be driven by any suitable source of power. In the construction herein shown, and preferably, the windlasses, about which are trained the chains attached to contiguous sides of the adjacent doors, are arranged one above the other, as most clearly illustrated in Figs. 2 and 4, for a purpose which will hereinafter fully appear.

Located above and at the sides of the compartments are flumes 25 through which the mixture of water, gravel and sand may be distributed to the several compartments. Said flumes are provided over each compartment with a discharge opening 26 through which the mixture falls from the

flumes to the compartments below. The mixture of water, gravel and sand may be discharged into said flumes through the usual sucker pipes 27, suitably mounted at the sides of the scow, and the pumps 28 which are located midships at the sides of the compartments 15. The outlet pipes 29 of said pumps discharge centrally into the flumes, as shown in Fig. 1, so as to first fill the central compartment, and to progressively fill the compartments toward the ends of the scow. The engines 30 which operate said pumps may receive steam from the boilers of the propelling power plant when the scow is self-propelled; or said engines may be otherwise operated.

Extending across each compartment and supported on the side walls thereof are a plurality of grading and supporting screens 32, 33 and 34 which may be removably supported on the brackets 35 attached to the bulk-heads and lateral side walls of the compartments, and made of " L" shape in cross section, as herein shown. In the arrangement shown the top screen is of the coarsest mesh, the bottom screen of the finest mesh, and the middle screen of a mesh intermediate the top and bottom screens. The screen of each compartment may be made of a single piece or of a plurality of sections, as desired. The upper screen intercepts the largest material discharged into the compartments from the flumes, while the remainder or finer material passes to the intermediate screen, and said intermediate screen intercepts the larger particles which fall thereon, allowing the remainder or finer material to fall to the lowermost screen where the finest particles of material intended for use are intercepted, while allowing the fine sand to fall through said lowest screen back to the deposit at the bottom of the body of water. In this manner the granular material is automatically graded into different sizes required, while the scow is being loaded, thereby facilitating the handling of the material at the dock, and rendering it unnecessary to transport a large tonnage of material having little or no value, to wit, the fine or so called " torpedo " sand. In some locations a single or less number of screens than shown may be employed, and in cases where it is desired to retain the finest sand, an imperforate or solid plate may be substituted for the lowermost screen.

In accordance with the present invention, each bulk-head 16 is composed of two separate plates 38, 39, shown as arranged parallel with each other and extending transversely between the side walls of the compartments. Said plates of each bulk-head are separated a sufficient distance to provide a space 39′ to receive the controlling chains 19 of the dumping doors. The adjacent edges of each two contiguous dumping doors extend partially across the lower sides of said spaces 39′ as more clearly shown in Fig. 4, and abut against each other, so as to provide means for properly connecting the chains thereto. For the reason that the dumping door controlling chains of contiguous doors are arranged closely to each other, as shown in Fig. 4, it is necessary to space the windlasses 20 close to each other; and a convenient arrangement for such close spacing is found in locating two adjacent windlasses one above the other. With this arrangement the windlasses and their shafts are located alternately out of line with each other, as indicated in Fig. 4. The arrangement shown of the bulk-heads and controlling chains and dumping doors permits the doors to be raised to their uppermost positions when the screens are in place. In some instances, as when the scow is in use in fresh water lakes, the passage of the scow through the water when filled with floating ice has a tendency to break the doors from their hinges when occupying their open positions. The arrangement herein shown avoids such liability of accident or injury. As a further and separate improvement, the said walls or pltaes 38 constituting the hollow bulk-heads are perforated so as to permit the water and the finest sand not to be retained to readily escape from the compartments, so as to thereby avoid the necessity of all the water and fine sand passing through the bottom screen. In this way the disposition of the granular material in the compartments is facilitated. I may also make the lateral side walls of the compartments hollow or composed of inner perforated plates and outer imperforate plates. The perforations of the inner bulk-head plates are made of a smaller mesh than those of the bottom screen, so as to avoid the escape of material of a mesh desired to be retained.

I claim as my invention;—

1. A scow provided with a longitudinal series of open compartments separated by hollow, transverse bulk-heads, dumping doors hinged to the sides of the compartments to constitute the bottoms of the compartments, flexible elements attached to the doors and extending through the hollow bulk-heads, door controlling means above and at the sides of the compartments and connected to said elements, and screens extending across said compartments.

2. A scow provided with a longitudinal series of open compartments separated by hollow, transverse bulk-heads, dumping doors hinged to the sides of the compartments to constitute the bottoms of the compartments, and extending at their adjacent margins partially across the hollow bulk-heads to meet in planes intermediate the

sides of the hollow bulk-heads, door controlling chains extending through the hollow bulk-heads and attached at their lower ends to said doors, windlasses above and at the sides of said compartments about which said chains are trained, and screens extending across said compartments.

3. A scow provided with a longitudinally arranged series of open compartments separated by hollow, transverse bulk-heads having perforated walls, dumping doors for closing the bottoms of the compartments, door controlling means extending through said hollow bulk-heads and screens extending across said compartments.

4. A scow provided with a longitudinally arranged series of open compartments, separated by hollow bulk-heads, swinging dumping doors for closing the bottoms of said compartments with the doors of contiguous compartments meeting in planes between the sides of said bulk-heads, door controlling chains attached to said doors and extending through the hollow bulk-heads, and windlasses arranged opposite to the hollow bulk-heads about which said chains are trained, the windlasses of contiguous doors at each bulk-head being arranged one above the other.

In testimony, that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 20th day of October, A. D. 1911.

THOMAS C. JACKSON.

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."