

(No Model.)

2 Sheets—Sheet 1.

C. GULLMANN.

APPARATUS FOR DISCHARGING REFUSE FROM SCOWS.

No. 507,902.

Patented Oct. 31, 1893.

Fig. 1.

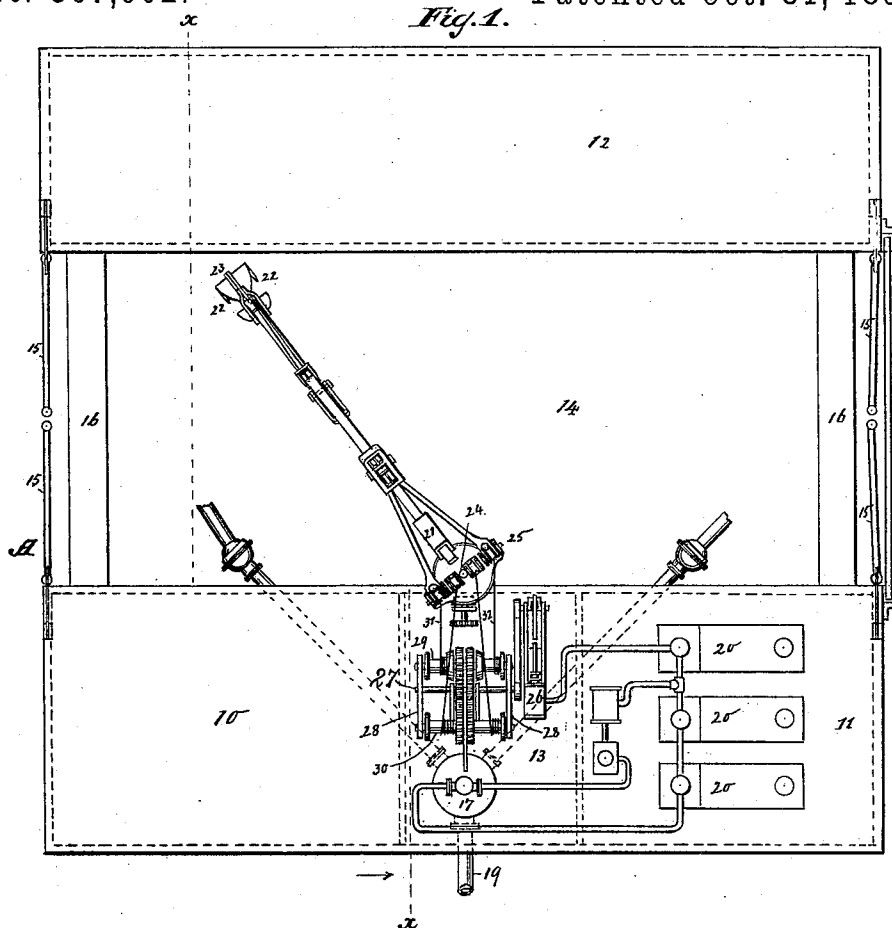
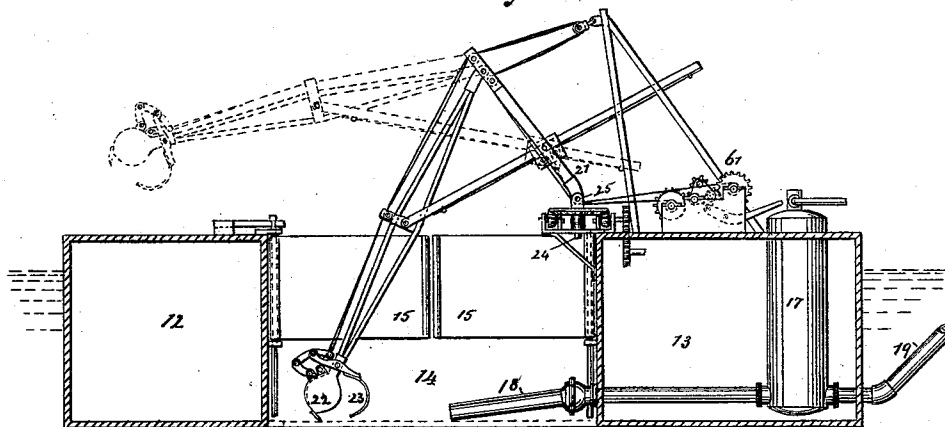


Fig. 2.



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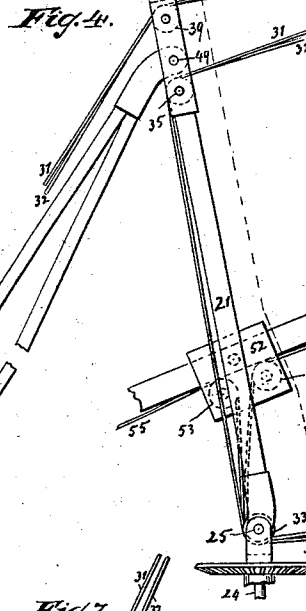
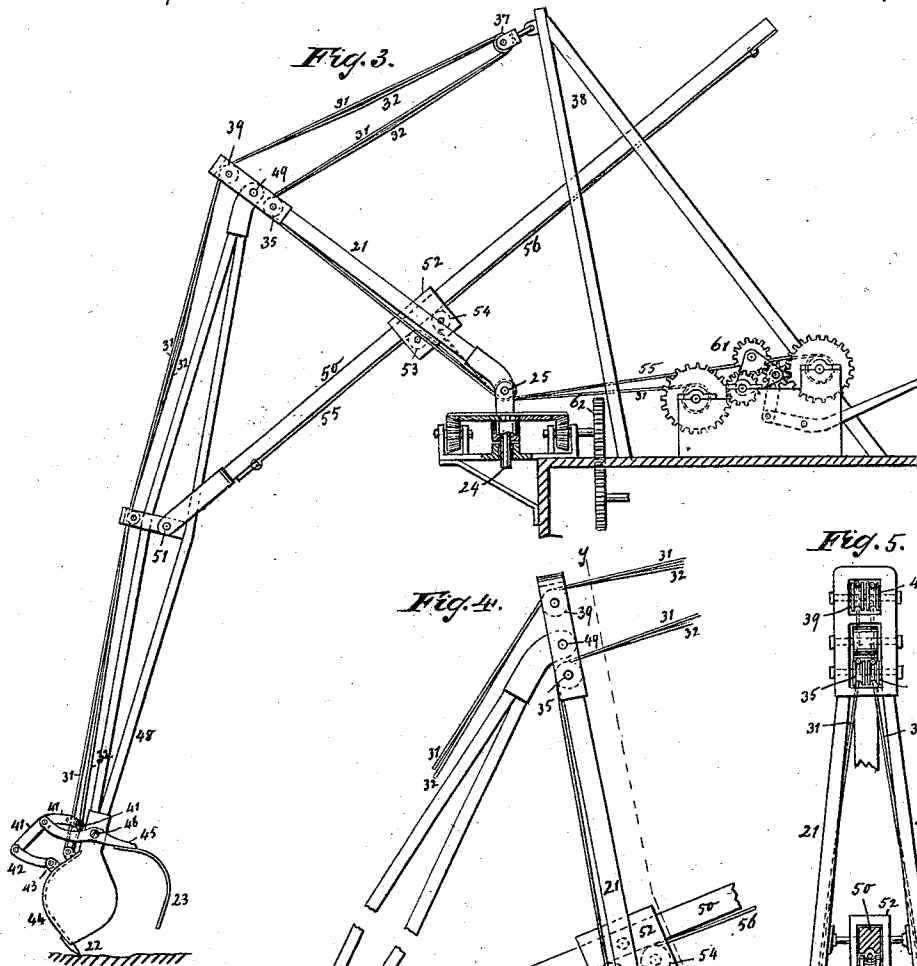


Fig. 5.

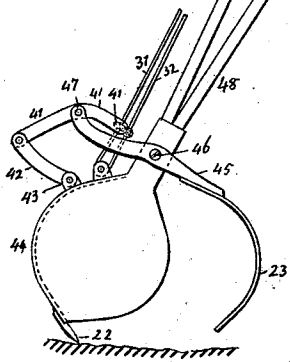
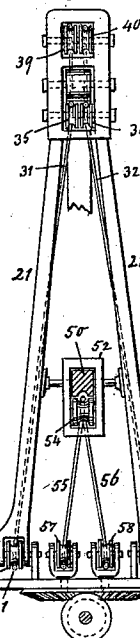


Fig. 7.

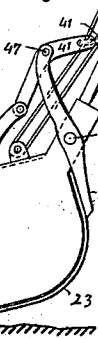
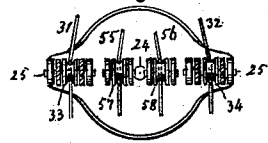


Fig. 8.



Fig. 6.



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CHRISTOPHER GULLMANN, OF NEW YORK, N. Y.

APPARATUS FOR DISCHARGING REFUSE FROM SCOWS.

SPECIFICATION forming part of Letters Patent No. 507,902, dated October 31, 1893.

Application filed February 2, 1893. Serial No. 460,673. (No model.)

To all whom it may concern:

Be it known that I, CHRISTOPHER GULLMANN, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Apparatus for Discharging Refuse from Scows, of which the following is a specification.

The object of this invention is an apparatus by means of which the refuse from scows can be removed to the dumping ground without the necessity of dumping the refuse into the open water and removing it from such open water to the dumping ground, a practice which involves the danger, that a large portion of the refuse is caused to float on the water and to be scattered in all directions.

The peculiar and novel construction of my apparatus is pointed out in the following specification and claims and illustrated in the accompanying drawings in which—

Figure 1, represents a plan or top view. Fig. 2, is a transverse vertical section in the plane $x x$ Fig. 1. Fig. 3, is a side elevation of the rotary crane and grapple on a larger scale than the previous figures. Fig. 4, is a partial side elevation of the crane and grapple on a still larger scale than the previous figures. Fig. 5, is a vertical section in the plane $y y$ Fig. 4. Fig. 6, is a horizontal section in the plane $z z$ Fig. 5. Fig. 7, is a side view of the grapple when closed. Fig. 8, is a back view of the same.

In the drawings the letter A designates my floating dock which consists of a water tight compartment 10, 11, 12, a pump chamber 13 and an open compartment 14 provided at its ends with doors 15. In the example shown in the drawings the water tight compartment consists of three sections 10, 11, and 12, the sections 10 and 11 being located on one side and the section 12 on the opposite side of the open compartment 14 and the sections 10, 11 are connected with the section 12 by strong timbers 16, 16, or a single plank may be used which will form a continuous bottom for the compartment 14. The pump compartment 13 is located between the sections 10 and 11 of the water tight compartment and it contains a suction and discharge apparatus 17 which serves to suck in the refuse from the

open compartment 14 through one or more suction pipes 18 and then to force the same out on the dumping ground through the discharge pipe 19. Any suitable suction and discharge apparatus may be used but in the example illustrated in the drawings, I have shown a drum which is charged with steam from a boiler 20 (one or more) and then the steam is condensed so as to create a partial vacuum in the drum and to produce the required suction, by which the refuse is drawn into the drum, and then live steam is admitted to the drum by the pressure of which the refuse is forced out to the dumping ground. On the top of the pump compartment 13 is mounted a crane 21 which carries a scraper 22 and a grapple 23 and which is so constructed that it can be swiveled round on a foot 24 to which it is connected by pins 25, so that it can be brought to an inclined or vertical position, while the scraper and grapple can be lowered to the position shown in full lines in Fig. 2 or raised to the position shown in dotted lines in the same figure. The floating dock A is brought as close to the dumping ground as circumstances will allow and then the water tight compartment 10, 11, 12, is filled with water, so as to lower the dock in the water to a depth sufficient to permit the scows which carry the refuse, to be floated into the open compartment 14. When a loaded scow arrives, it can readily be pushed through the doors 15 each of which is susceptible of opening and closing horizontally in both directions and when the scow has entered said compartment, the doors are closed behind so that any refuse which may drop from the scow and floats on the water, is prevented from being floated out of the compartment 14. If the scow carries a deck load of refuse, such deck load may be removed by means of the grapple 23 and the swivel crane 21, that is to say, when a quantity of the refuse has been grasped by the grapple, it can be raised up to the position shown in dotted lines in Fig. 2 and by turning the crane on its foot 24 the grapple can be brought in such a position that the refuse, when released from the grapple, will drop upon the dumping ground or upon a chute leading to said dumping ground. The refuse contained in the hold of the scow is dumped into the open compartment 14 and

removed from this compartment to the dumping ground by the combined action of the scraper 22 and of the suction and discharge apparatus 17, said scraper being used to move
5 the refuse up toward the suction pipe or pipes 18.

For the purpose of actuating the crane, the scraper and the grapple, I employ a steam engine 26 (Fig. 1) from which motion is im-
10 parted to a shaft 27 mounted in a frame 28 in which are also mounted two drums 29, 30. From the drum 29 extend the ropes 31, 32, under pulleys 33, 34, (Figs. 5 and 6) which are mounted on the pins 25 and from these
15 pulleys said ropes 31, 32, extend over pulleys 35, 36, to sheaves 37 attached to a standard 38 which is firmly secured to the top of the pump compartment 13, (Fig. 3.) From the sheaves 37 the ropes 31, 32, extend over pulleys 39,
20 40 (Figs. 5 and 3) mounted in the crane 21, thence down to the grapple 23 and their ends are fastened together and to the end of a lever 41. This lever is pivoted to a link 42 which swings on a pivot 43 secured in a bracket
25 connected to the head 44 of the scraper 22 (see Figs. 3, 4, and 7). The grapple 23 is secured to a lever 45 which swings on a pivot 46 secured in the shank 48 of the head 44 and the tail end of which is secured by a pivot 47
30 to the lever 41. The ropes 31 and 32 are wound in opposite directions upon the drum 29 (Fig. 1) and if this drum is turned so as to take up the rope 32 and let off the rope 31, the grapple 23 is moved from its open position (Fig. 4) to its closed position (Fig. 7) and
35 if the drum 29 is turned in the opposite direction, the grapple is opened. The shank 48 of the head 44 is connected to the crane 21 by a pivot 49 (Figs. 3 and 4) and to said shank 40 is secured a slide 50 by means of a pivot 51 and this slide extends through a guide 52 which is pivotally secured to the crane 21 (Fig. 3). In the guide 52 are mounted two pulleys 53, 54 and on the slide are secured
45 two ropes 55, 56, (see Fig. 3.) The rope 55 extends over the pulley 53 and under a pulley 57 to the drum 30 which is mounted in the frame 28 (Fig. 1) and the rope 56 extends over the pulley 54 and under a pulley 58 to
50 the drum 30 (see also Figs. 4 and 5). The ropes 55, 56, are wound in opposite directions upon the drum 30 and if this drum is turned so as to wind up the rope 55, the slide 50 is moved inward (Fig. 3) but when the drum 30
55 is turned so as to take up the rope 56, the slide 50 is moved outward. By these means an oscillating motion can be imparted to the scraper 22 and the head 44 can be moved from the

position shown in full lines in Fig. 2 to that shown in dotted lines in said figure.

The motion of the drums 29 and 30 can be controlled by a suitable reversing gear 61 such for instance as shown in Figs. 2 and 3, and in the same manner the swivel movement of the crane is controlled by a suitable
65 reversing gear 62 (Fig. 3).

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

1. A floating dock composed of a water tight chamber, a pump chamber and an open
70 compartment provided with doors, each of which opens and closes horizontally in both directions, substantially as described.

2. A floating dock having a center open compartment 14 provided with opening and
75 closing doors, water-tight compartments at opposite sides of said center compartment, one of which water-tight compartments is subdivided into three sections, and a pump and suction and discharge apparatus arranged
80 in the center section and having its suction pipe extending into the center open compartment to remove the contents of a scow passed into said center compartment, substantially
85 as described.

3. The combination with a floating dock composed of a water tight compartment, and an open compartment provided with opening and closing doors through which a scow can
90 pass, of a suction and discharge apparatus having its suction pipe extending into the open compartment to communicate with a scow passed therein, and mechanism for actuating the suction and discharge appa-
95 ratus, substantially as described.

4. The combination with a floating dock composed of a water tight compartment and an open compartment provided with doors, of a suction and discharge apparatus, a scraper
100 and mechanism for actuating said suction and discharge apparatus and scraper, substantially as described.

5. The combination with a floating dock composed of a water tight compartment, and an open compartment provided with doors, of
105 a swiveling crane, a grapple, and mechanism for imparting to the crane and to the grapple the requisite movements, substantially as described.

In testimony whereof I have hereunto set
110 my hand in the presence of two subscribing witnesses.

CHRISTOPHER GULLMANN.

Witnesses:

W. C. HAUFF,

E. F. KASTENHUBER.