

No. 734,974.

PATENTED JULY 28, 1903.

H. SHOOSMITH.  
APPARATUS FOR CHARGING OR DISCHARGING VESSELS.

APPLICATION FILED SEPT. 15, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

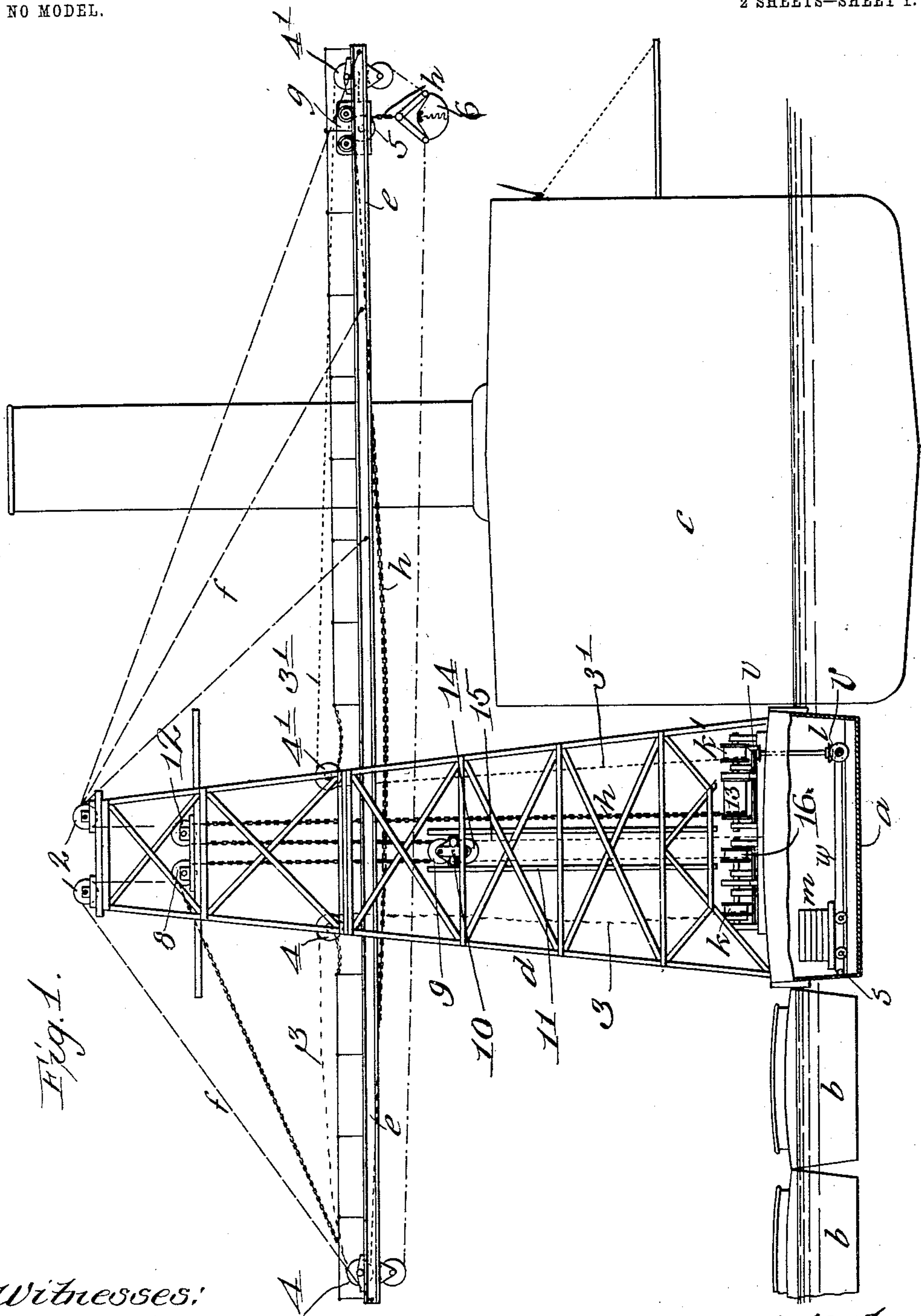


Fig. 1.

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By  
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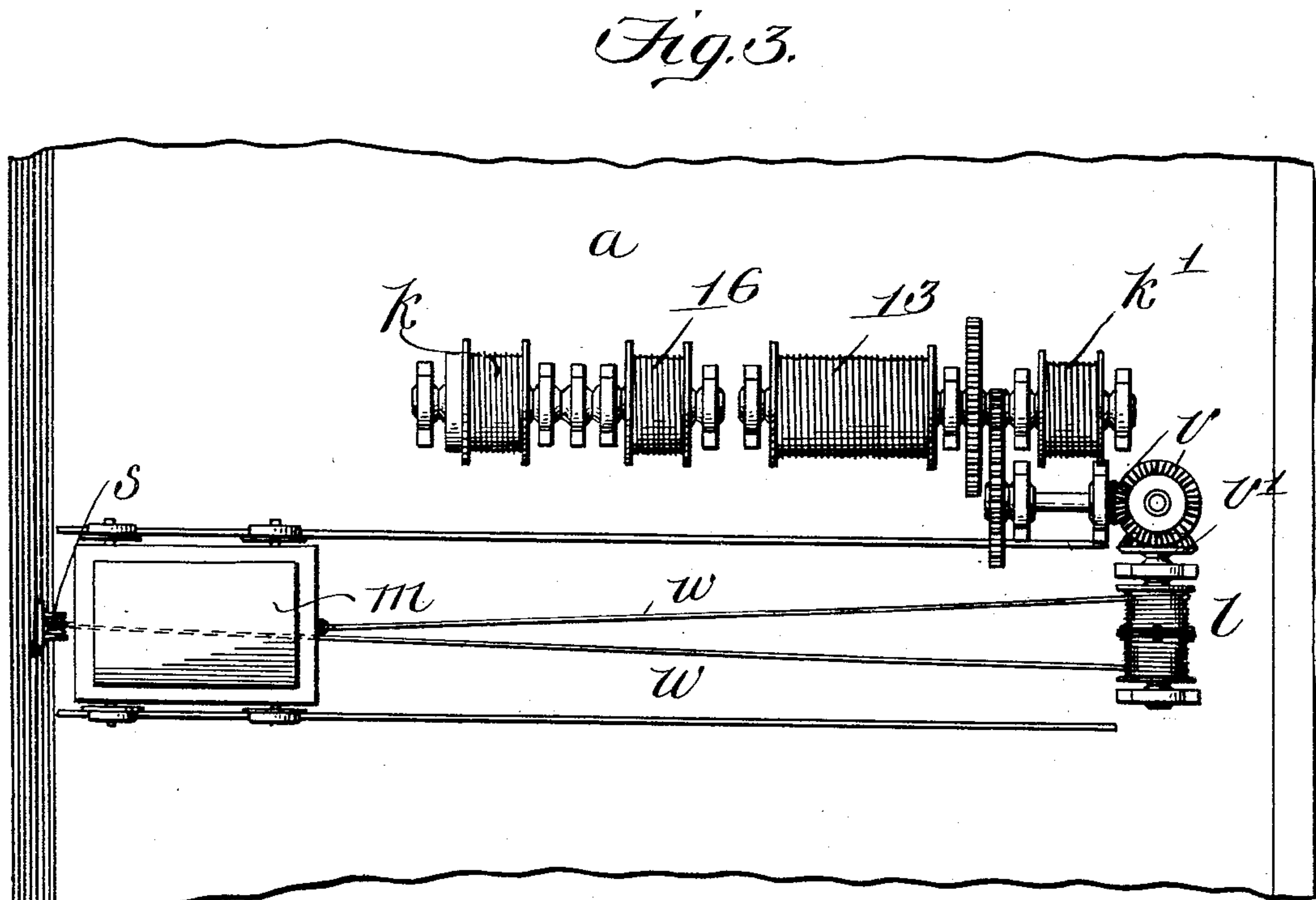
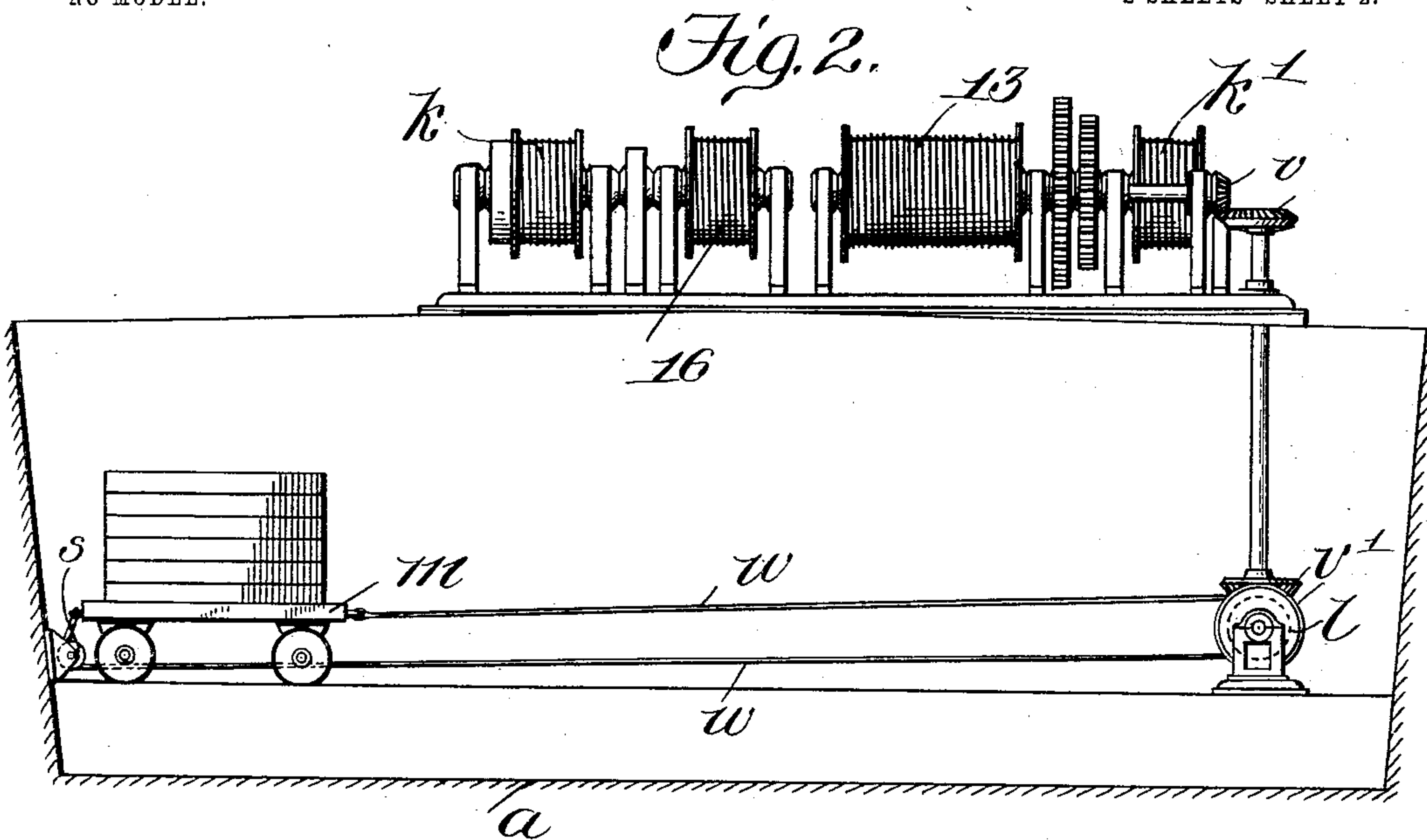
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2 SHEETS—SHEET 2.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

HARRY SHOOSMITH, OF ERITH, ENGLAND.

## APPARATUS FOR CHARGING OR DISCHARGING VESSELS.

SPECIFICATION forming part of Letters Patent No. 734,974, dated July 28, 1903.

Application filed September 15, 1902. Serial No. 123,508. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY SHOOSMITH, a citizen of England, residing at Ormiston, Erith, in the county of Kent, England, have  
5 invented certain new and useful Improvements in Apparatus for Charging or Discharging Vessels, (for which I have applied for a patent in Great Britain, dated February 21, 1902, No. 4,440,) of which the following is  
10 a specification.

This invention relates to apparatus for charging and discharging the cargo of a vessel from or into a barge by means of a pontoon provided with a framework that supports a laterally-extending beam along which a truck  
15 carrying a clam-shell scoop or other receptacle travels, the object of the invention being to provide means for preserving the equilibrium of the pontoon at all times by counterbalancing the truck and scoop as they travel along the laterally-extending beam, which  
20 object is attained by means of a weighted truck in the hold of the pontoon connected to the operating-gear of the truck and scoop on the laterally-extending beam and caused  
25 to travel in one direction as said truck and scoop travel in the opposite direction.

The invention is illustrated by the accompanying drawings, in which—

30 Figure 1 is an elevation of my complete apparatus; Fig. 2, an elevation, drawn to a larger scale than Fig. 1, of the gearing connecting the drums which are used for moving the trucks *g* and *m*; and Fig. 3, a plan view of  
35 the arrangement illustrated in Fig. 2.

Like reference characters indicate like parts in the different views.

The pontoon *a*, which carries my improved apparatus, is placed between the barges *b*  
40 and the vessel *c* to be charged or discharged. Mounted upon the pontoon *a* is a framework *d*, from which an elevated laterally-extending beam *e* is supported by means of the flexible ties *f*, which pass over the pulleys 2 and are  
45 attached to any suitable windlass, motor, or cleat (not shown) on the deck of the pontoon. By means of these ties *f* the beam *e* can be adjusted to different angles if this prove necessary or desirable. The beam *e* is provided  
50 with suitable trackways along which the truck *g* is drawn by the ropes 3 3', which pass over

suitable pulleys 4 4' 4' and are connected to winch-barrels or drums *k k'* on the deck of the pontoon. These drums or winch-barrels *k k'*  
are operated by any suitable means, such as a 55 motor, and it will be understood that they revolve in opposite directions, so that as the rope 3 is wound upon the drum *k* in pulling the truck *g* to the left the rope 3' is wound off the drum *k'*, and vice versa. 60

The truck *g*, in addition to the wheels by which it runs upon the trackways of the beam *e*, is provided with a pulley 5, over which passes a chain *h*, to one end of which is attached a clam-shell scoop or other receptacle 6. The  
65 other end of the chain *h* passes around a pulley similar to the pulley 4 and mounted on the journal of said pulley 4, thence around the stationary pulley 8, thence around the pulley 9 on the truck 10, which is mounted to slide in  
70 the vertical guideways 11, thence over the stationary pulley 12, and thence around the drum 13, which is revolved by any suitable means.

The truck 10, mounted in the vertical trackways 11, is provided at its lower end with a pulley 14, around which passes a cord 15. One  
75 end of the cord 15 is secured to the deck of the pontoon and the other end is attached to the hoisting-drum 16, which is rotated by any suitable means. The truck 10 is provided to  
80 keep the chain *h* taut at all times by taking up slack in said chain as the truck *g* travels to the left on the beam *e*. It may also be employed to multiply the motion of the chain *h*  
85 in raising or lowering the scoop 6, for it will be seen that by operating the drum 10 and the hoisting-drum 16 simultaneously the movement of the scoop 6 will be greatly quickened. 90

Arranged at the lower part of the pontoon, in the hold thereof, as shown in drawings, is a wheeled truck *m*, which is adapted to be weighted in any desired manner to correspond with the weight of the upper truck *g*  
95 and the scoop or receptacle carried thereby. The lower truck *m* is operated by the drum *l* through the cord *w*, which is connected to the left end of the truck *m*, passes around the pulley *s*, then around the drum *l*, and is  
100 connected to the right end of the truck *m*. It will be seen that the pulley *l* is operated



by the drum  $k'$  through the bevel-gearing  $v v'$ , Figs. 2 and 3, and the arrangement of this gearing is such that as the upper truck is moved in one direction on the beam  $e$  by the cords  $3 3'$ , connected to the drums  $k k'$ , the lower truck  $m$  is moved in the opposite direction. The gearing  $v v'$  is also reduced in such manner that the lower truck  $m$  consumes the same length of time in traversing its comparatively-short trackway that the upper truck  $g$  consumes in traversing its comparatively-long trackway, whereby the lower truck always occupies the same relative position on its trackway that the upper truck occupies on its trackway. In this way the lower truck is caused to always counter-balance the upper truck and so preserve the equilibrium of the pontoon.

By arranging the counterweight-truck  $m$  at a lower part of the pontoon it is most effectually placed to do its work, and when it is in the hold it is out of the way, and by actuating the same from the winches which control the movement of the scoop or bucket for transferring the load by means of reducing-gearing the essential extent of travel of said counterweight-truck is much reduced, and by reason of location and operation thereof a very efficient service is secured.

Having described my invention, what I claim is—

1. In apparatus for charging and discharging vessels, the combination with a pontoon, of a framework, an elevated laterally-extending beam supported thereby, a truck arranged on said beam, a load-conveying receptacle having operative connection with said truck whereby its movement is controlled, means for moving said truck on the beam, a movable counterweight at the lower part of the pontoon, and a suitable reducing-gear for

moving said counterweight, connected to and operated by the means which move said truck.

2. In apparatus for charging and discharging vessels, the combination with a pontoon, of a framework, an elevated laterally-extending beam supported thereby, a truck arranged on said beam, a load-conveying receptacle having operative connection with said truck whereby its movement is controlled, means for moving said truck on the beam, a movable counterweight arranged in the hold, and a suitable reducing-gear for moving said counterweight, connected to and operated by the means which move said truck.

3. In apparatus for charging and discharging vessels, a pontoon, a laterally-extending beam on said pontoon, a truck on said beam, a pair of drums  $k k'$ , a flexible connection between each of said drums and said truck, a receptacle carried by said truck, a drum 13, a flexible connection between said drum 13 and said receptacle, a second truck, guide-ways for said second truck, a pulley on said second truck around which the flexible connection between said receptacle and said drum 13 passes, a second pulley on said second truck, a drum 16, a flexible element connected to the deck of the pontoon, passing around the second pulley of said second truck and attached to said drum 16, a counterbalancing-truck, a drum  $l$ , a flexible connection between said counterbalancing-truck and said drum  $l$ , and gearing connecting said drum  $l$  to one of said drums  $k k'$ .

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

H. SHOOSMITH.

Witnesses:

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