

4 SHEETS—SHEET 1.



O. LINDSAY.
CARGO HANDLING APPARATUS.
APPLICATION FILED JULY 1, 1910.

994,171.

Patented June 6, 1911.

4 SHEETS—SHEET 2.

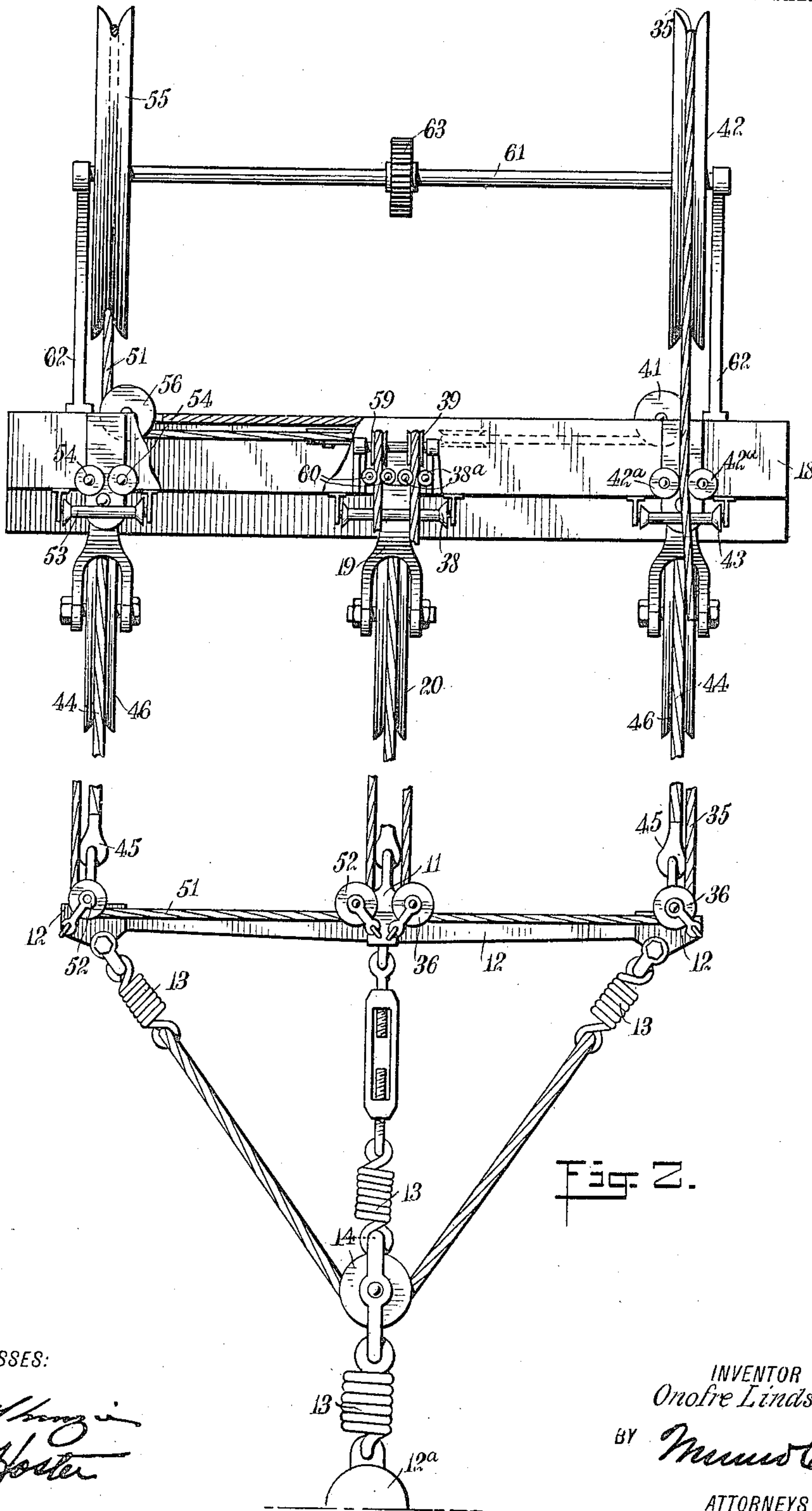


Fig. 2.

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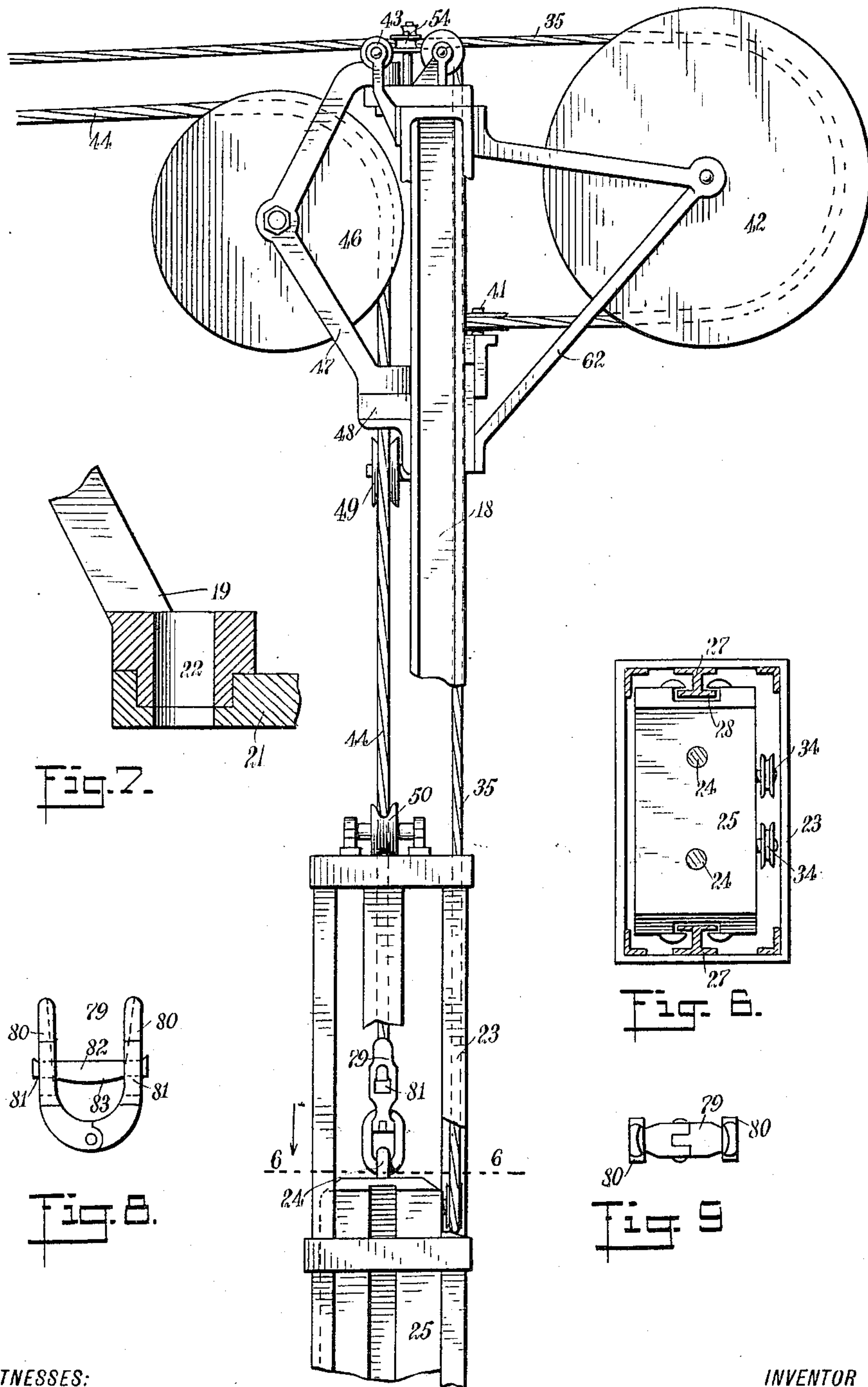


Fig. 7.

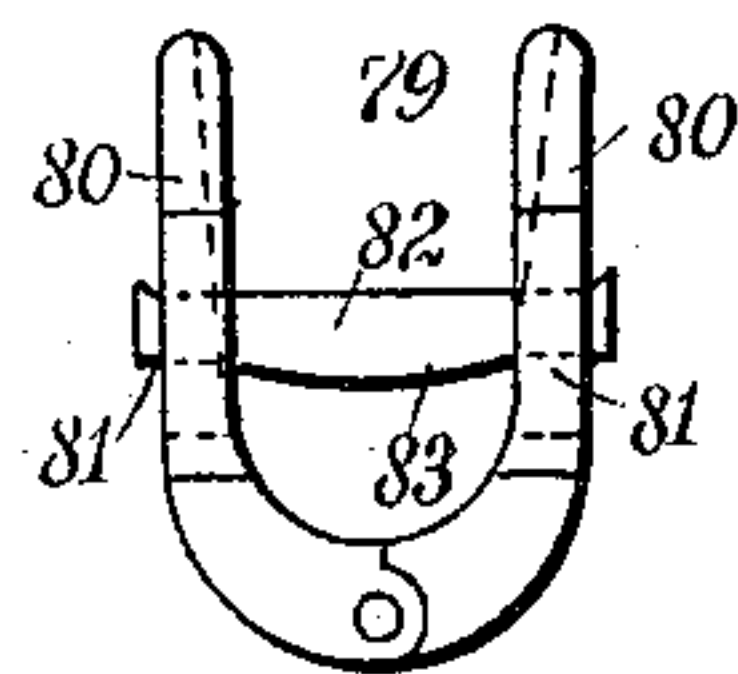


Fig. 8.

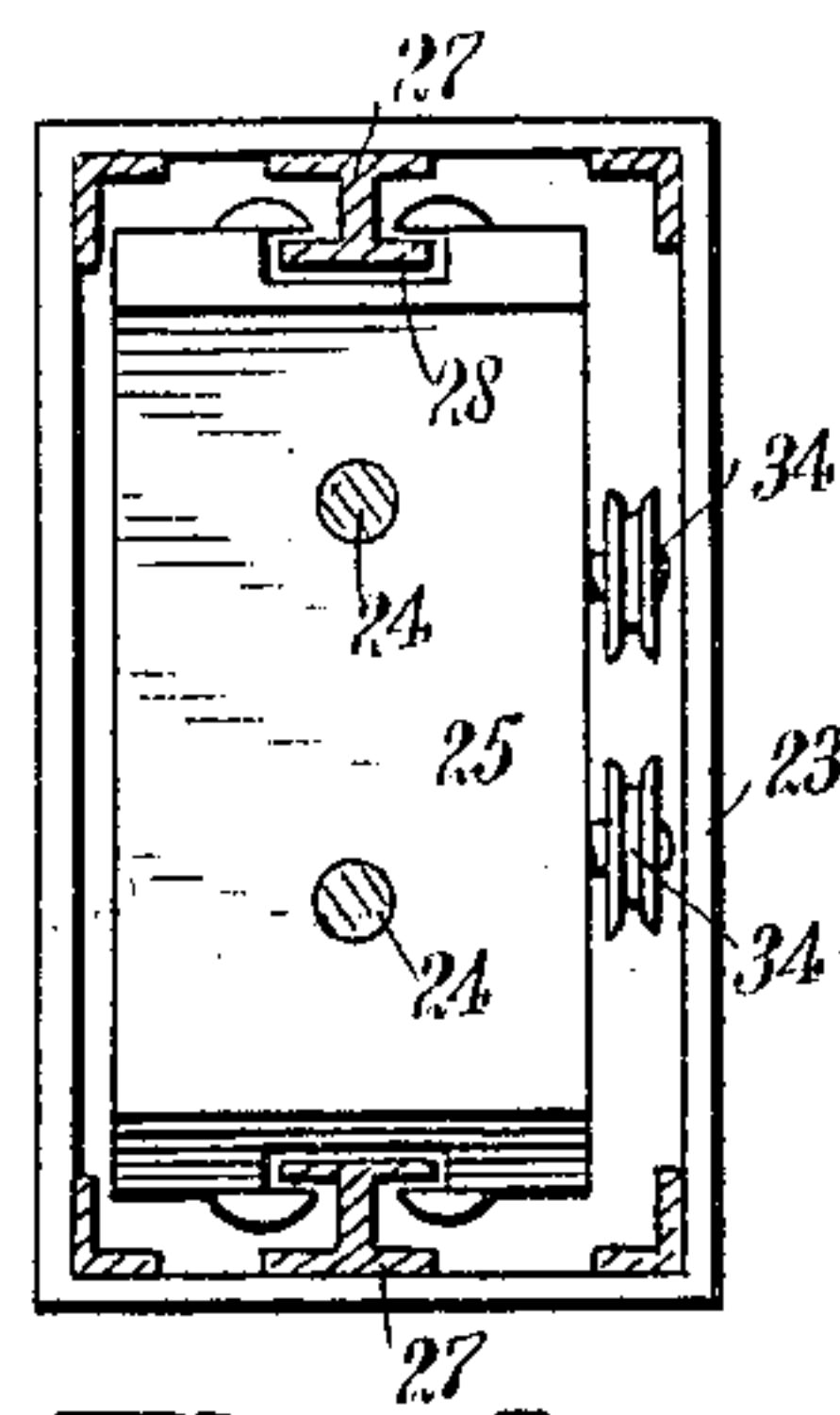


Fig. 9.

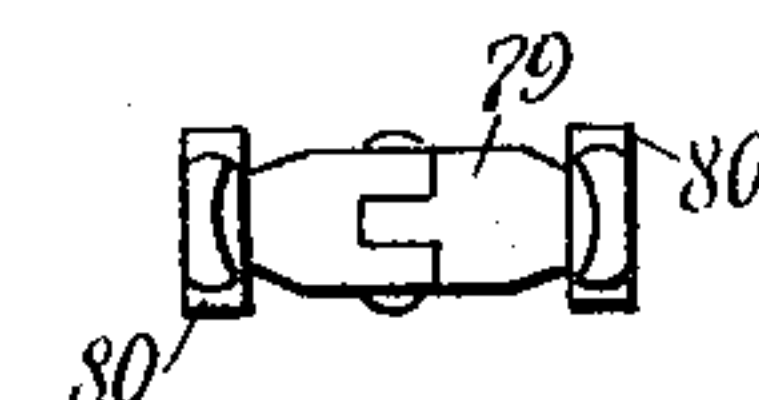


Fig. 10.

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Fig. 4.

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ONOFRE LINDSAY, OF VALPARAISO, CHILE.

CARGO-HANDLING APPARATUS.

994,171.

Specification of Letters Patent.

Patented June 6, 1911.

Application filed July 1, 1910. Serial No. 569,949.

To all whom it may concern:

Be it known that I, ONOFRE LINDSAY, a citizen of the Republic of Chile, and a resident of Valparaiso, Chile, South America, have invented a new and Improved Cargo-Handling Apparatus, of which the following is a full, clear, and exact description.

The invention relates to cargo-handling apparatus, more particularly to apparatus of the class used for transferring cargoes from vessels at sea to other vessels towing or adjacent to the first vessels, and resides in improvements upon the construction of a cargo-handling apparatus for which application papers for Letters Patent of the United States were filed November 17, 1908, Serial No. 463,095, renewal filed November 15, 1909, Serial No. 528,145.

An object of the invention is to provide a device of the class described, for transferring cargoes at sea from one vessel to another by means of a cableway, stretched from the first vessel to the second, and upon which suitable carriages, having conveying receptacles thereon, are arranged to travel, the said cableway being connected with means for keeping the same taut, to permit the carriages being easily hauled thereover by suitable hauling means engaging the carriages and extending from one vessel to the other.

A further object of the invention is to provide a counterpoise having an end of the cableway secured thereto, and slidably arranged in a well on one of the vessels, and means on the counterpoise for preventing the same from dropping through the well to the bottom of the sea, should the cableway in any manner become broken or disconnected from the other vessel.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a side elevation of parts of two vessels equipped with my apparatus and showing the same in operation; Fig. 2 is an enlarged plan view disclosing the manner of connecting the cableway to one vessel and showing how the same is received on the other vessel; Fig. 3 is a partial front elevation of the counterpoise and showing the manner of connecting the cableway thereto and how the same is then disposed over pulleys to extend to the other vessel; Fig. 4 is a partial side elevation of the framework and

adjacent parts shown in Fig. 3; Fig. 5 is a side elevation disclosing the manner of connecting the cableway to one of the vessels; Fig. 6 is a sectional view, taken on the line 6—6 in Fig. 4; Fig. 7 is a partial sectional view of one of the pulley hangers; Fig. 8 is a front view of the connection between the cableways and counterpoise; Fig. 9 is a view of the same connection, looking at the same from the under side; Fig. 10 is a side elevation of the counterpoise, and Fig. 11 is a front elevation of the same.

Referring more particularly to the various figures, A represents a vessel, for example, a collier, B represents a second vessel, for example, a warship, to which it is desired to transfer a cargo of coal from the collier. A cableway 10 is secured by a fastening 11, secured to a brace 12 connected to a mast 12^a of the warship B by springs 13 and a pulley 14, and the brace 12 is held to the deck of the ship B by a rope 16 disposed over pulleys 17. The cableway extends from the brace 12 on the warship B to a framework 18 on the collier A. The framework 18 has mounted thereon a hanger 19, constituting a bearing for a sheave 20, over which the cableway 10 is disposed. The hanger 19 is mounted on a support 21 on the framework 18, and the hanger and support have a hole 22 therein through which the cableway 10 is extended. After passing through the hole 22 the cableway passes into a well 23 and engages a hook 24 of a counterpoise 25, slidably mounted in the well 23. The well 23 extends vertically through the ship A and is closed at the bottom by a frangible closure 26, thus preventing any water from entering the well. Suitable guides 27 are provided on the well 23, and slots 28 are formed in the counterpoise 25, so that the counterpoise can easily slide on the guides 27, as may be easily seen by referring to Fig. 6. The hook 24 of the counterpoise extends loosely through the counterpoise and engages a plate 29, with springs 30 disposed in the ends of the hook 24 and intermediate the counterpoise 25 and plate 29. A hanger 31 depends from the counterpoise 25 and has thereon a cross plate 32. On the cross plate 32 notched cams 33 are mounted and connected with the plate 29 by connecting members 33^a. Thus, when a pull is exerted on the hook 24, the cams 33 tend to move toward the counterpoise, and when the pull is released the cams tend to move away from

the counterpoise. On the upper end of the counterpoise is a pulley 34, the object of which will be hereinafter more fully described.

5 An endless hauling rope 35 is provided and passing through pulleys 36 on the brace 12 on the warship B extends across to the collier A over a roller 38 and guide roller 38^a and around a pulley 39 and then extends
10 downwardly to pass over the pulley 34 on the counterpoise 25, then over a pulley 40 on the framework 18 to a pulley 41; from thence the rope passes over a sheave 42, then between guide rollers 42^a and over a
15 roller 43, and the rope is then returned to the warship B to pass over the pulleys 36, as mentioned hereinbefore.

For the purpose of facilitating the handling of the cargo from one ship to another,
20 additional cableways 44 are provided, adapted to be used to convey the cargo in the same manner as the cableway described, and in order to conveniently dispose these cableways, they extend from the brace 12 to
25 which they are secured by fasteners 45 to the collier A, over sheaves 46 mounted on hangers 47, supported at 48, over pulleys 49 on the framework 18, over pulleys 50 on the well 23, and the cableways are then secured
30 to the counterpoise 25 in a manner similar to the connection of the cableway 10 to the counterpoise 25.

With the additional cableways 44, it is essential to have additional hauling means,
35 and for this purpose an additional endless haul rope 51 is provided, similar in all respects to the haul rope 35. The haul rope 51 extends over pulleys 52 on the warship B, to the collier A, and passes over a guide
40 roller 53 and guide pulleys 54; then over a sheave 55, over a pulley 56, then over a pulley 57, downwardly, to pass over a pulley 58 on the counterpoise 25, then up again and over a pulley 59, between guide rollers 60
45 to the pulley 52, as has been mentioned hereinbefore. The sheaves 42 and 55 are keyed to a shaft 61 mounted in bearings 62, and a gear 63 is provided on the shaft 61, for connection with means for driving the haul
50 ropes 35 and 51.

A releasable connection 79 is provided, to connect the cables 10 and 44 to the hanger 24 of the counterpoise 25. This connection comprises hinged members 80, having slots
55 81 therein, the lower ends of the slots being larger than the upper ends. A bar 82 having a curved side 83 is disposed with its ends projecting through the slots 81, as may be easily seen in Fig. 8, and the cables 10 and
60 44 are secured to this bar. Now if, owing to a break in the towing hawsers, the ships swing apart, the cableways 44 in their upward pulls tend to make more obtuse the angle formed between them, thus gradually in-
65 creasing the space between these cableways,

which, after spreading outwardly a distance, engage the members 80 of the connecting shackle 79 and tend to spread the said members 80 outwardly. When the members 80 spread outwardly, they force the ends of
70 the pin toward the larger ends of the slots 81, and at a certain moment the said members spread beyond the extremities of the pin or bar 82, and simultaneously the eyes of the cableway 44 are forced past the ends
75 of the pin 82, being assisted in this movement by the curved under side 83 of the pin. Thus the arms or members 80 open outwardly and the pin, being free, the counterpoise is disconnected from the cableways,
80 which are drawn upwardly through the various pulleys without injuring the apparatus.

When it is desired to transfer cargo from the transport A to the warship B, the de-
85 vice is rigged as is shown in Fig. 1. The springs 13 secured to the warship B and the springs 30 on the counterpoise 25 absorb the strains on the cableways due to the inertia of the counterpoise, stays or the like
90 being preferably added at suitable places to add to the stability of the apparatus. Suitable carriers are then mounted to operate over the cableway and are controlled by the haul rope, so that the carriers will not con-
95 flict with one another. In this manner, an unlimited amount of cargo can be quickly transferred from one ship to another without first anchoring the ships.

From the foregoing description it will be
100 seen that a convenient and safe method of handling cargoes is provided, and various means for preserving the apparatus, should a break occur at any time on one of the
105 cables. For instance, should the counterpoise become disconnected from the cableways, the releasing of the pull exerted on the hanger 24 by the cableways and the force of the springs 30 exerted against the
110 pull of the cableways, force the cams 33 outwardly, and they engage the sides of the well 23 and prevent the counterpoise from dropping into the sea.

It will be understood that my apparatus is not confined to the transferring of car-
115 goes at sea, although it is particularly efficient therefor, but can be conveniently used for various kinds of cargo-handling, either on land, sea, from land to sea, or vice versa, and although for the purpose of describing
120 my device I have shown a particular form of my invention, it will be understood that the scope of my invention is defined in the appended claims.

Having thus described my invention, I
125 claim as new and desire to secure by Letters Patent:

1. A cargo-handling apparatus, comprising a cableway having one end fixed and the
130 other end movably supported, a counter-

poise releasably connected to the said other end, and a haul rope engaging the counterpoise and extending around the said fixed end.

5 2. A cargo-handling apparatus, comprising a cableway having one end fixed and the other end movably supported, a counterpoise releasably connected to the said other end, and an endless haul rope engaging the
10 counterpoise and the said fixed end.

3. A cargo-handling apparatus comprising a cableway having one end fixed and the other end mounted to depend in a well, a counterpoise releasably connected to the said
15 other end of the cableway, means on the counterpoise for holding the same in the well when the cableway is released from the counterpoise, and a haul rope engaging the counterpoise and the said fixed end of the
20 cableway.

4. A cargo-handling apparatus comprising a cableway having one end fixed and the other end mounted to depend in a well, a
25 spring controlled hanger slidably mounted on the counterpoise, a connection between the hanger and the said cableway for releasably connecting the cableway and the counterpoise, and an endless haul rope engaging
30 the counterpoise and the said fixed end of the cableway.

5. A cargo handling apparatus comprising a supporting frame, a well beneath the frame, a cable way having one end fixed and
35 the other end adapted to pass over the frame, a counterpoise slidably disposed in the well and releasably engaged by the cableway and a haul rope engaging the counterpoise and extending around the fixed end
40 of the cableway.

6. A cargo handling apparatus comprising a supporting frame, a well beneath the frame, a cableway having one end fixed and the other end adapted to pass over the frame,
45 a counterpoise slidably disposed in the well and releasably engaged by the cableway, and an endless haul rope engaging the counterpoise and adapted to pass over the said frame.

50 7. A cargo handling apparatus comprising a supporting frame, a cableway having one end fixed and the other end adapted to pass over the frame, a counterpoise releasably secured to the cableway and a haul
55 rope engaging the counterpoise and extending around the fixed end of the cableway.

8. A cargo handling apparatus comprising a supporting frame, a cableway having one end fixed and the other end adapted to
60 pass over the supporting frame, a well beneath the supporting frame, a counterpoise slidably disposed in the well and releasably connected to the said cableway, means on the counterpoise for holding the same in the
65 well when the cableway is released from the

counterpoise and a hand rope engaging the counterpoise and the fixed end of the cableway.

9. A cargo handling apparatus comprising a supporting frame, a cableway having
70 one end fixed and the other end adapted to pass over the supporting frame, a well beneath the supporting frame, a counterpoise slidably disposed in the well and releasably connected to the cableway, means on the
75 counterpoise for holding the same in the well when the cableway is released from the counterpoise, and an endless haul rope disposed to pass over the said supporting frame and engaging the said counterpoise.
80

10. A cargo handling apparatus comprising a supporting frame, a cableway having one end thereof adapted to pass over the frame and depend therefrom, a counterpoise releasably connected to the cableway and a
85 haul rope adapted to pass over the frame and engaging the counterpoise.

11. A cargo handling apparatus comprising a supporting frame, a plurality of sheaves mounted thereon, a cableway having
90 one end fixed and the other end adapted to pass over the sheaves, a counterpoise releasably connected to the cableway, and a haul rope adapted to pass over the supporting frame, and engaging the said counterpoise.
95

12. A cargo handling apparatus comprising a supporting frame, a plurality of sheaves mounted to swing thereon, a cableway having one end fixed and the other end
100 adapted to pass over the sheaves, a counterpoise releasably connected to the cableway and an endless haul rope engaging the counterpoise and adapted to pass over the supporting frame.

13. A cargo handling apparatus comprising
105 a supporting frame, a plurality of sheaves thereon, a cableway adapted to pass over the sheaves, a well, a counterpoise slidably disposed in the well and releasably connected to the cableway, and a haul rope
110 engaging the counterpoise and adapted to pass over the supporting frame.

14. A cargo handling apparatus comprising a supporting frame, a plurality of sheaves mounted to swing thereon, a cableway adapted to pass over the sheaves, a well,
115 a counterpoise slidably disposed in the well and releasably connected to the cableway, and an endless haul rope engaging the counterpoise and adapted to pass over the supporting frame.
120

15. In a cargo handling apparatus an adjustable connection between moving bodies, a counterpoise releasably connected to one
125 end of the connection and a haul rope extending from one movable body to the other and engaging the counterpoise.

16. In a cargo handling apparatus an adjustable connection between moving bodies, a counterpoise releasably connected to one
130