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LOADER AND HAULER.

APPLICATION FILED OCT. 16, 1907.

Fig. 1.

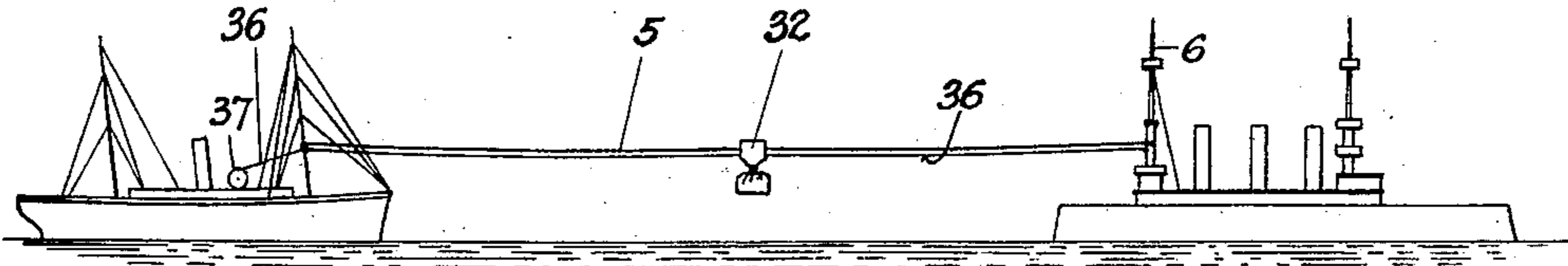


Fig. 2.

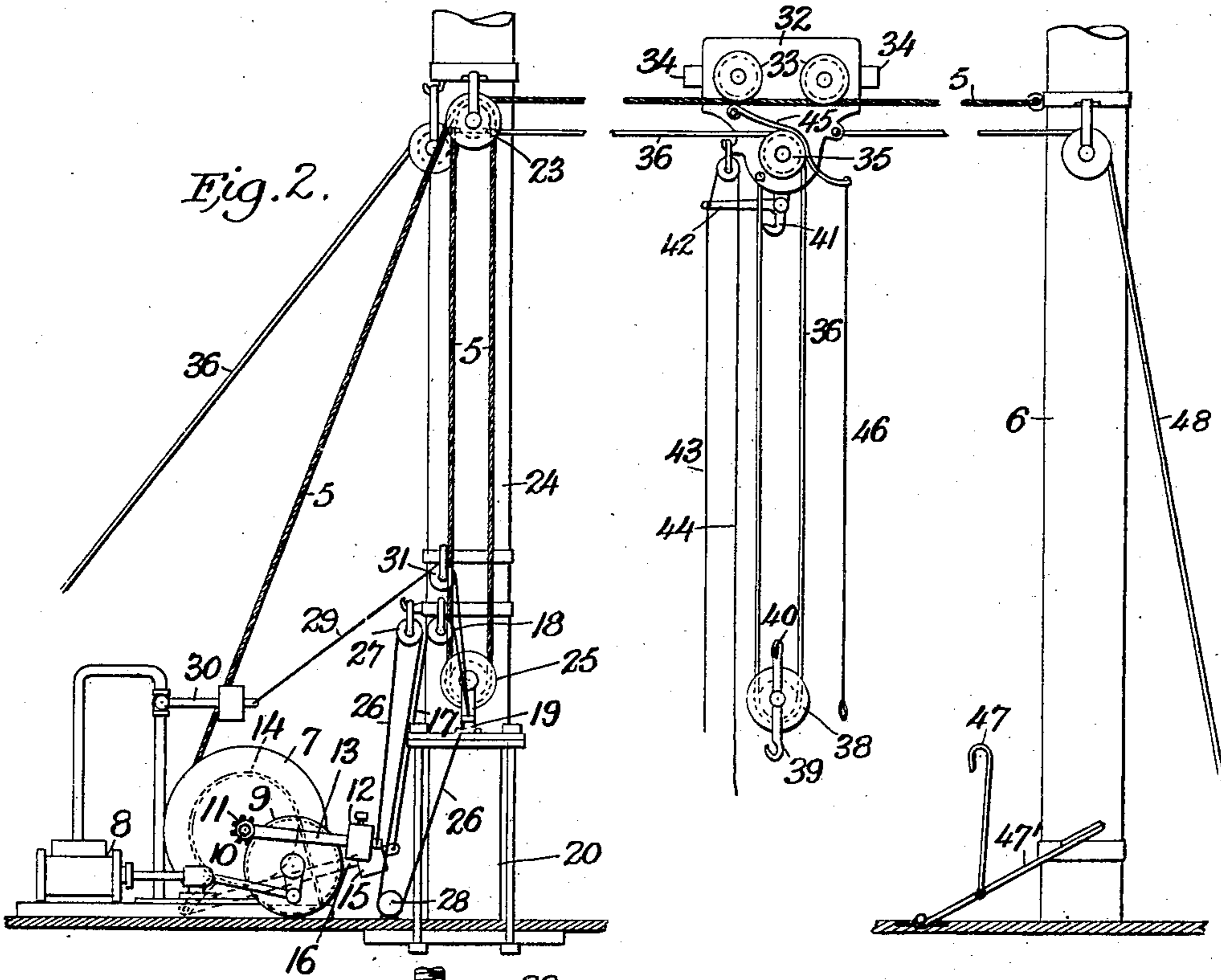


Fig. 3.

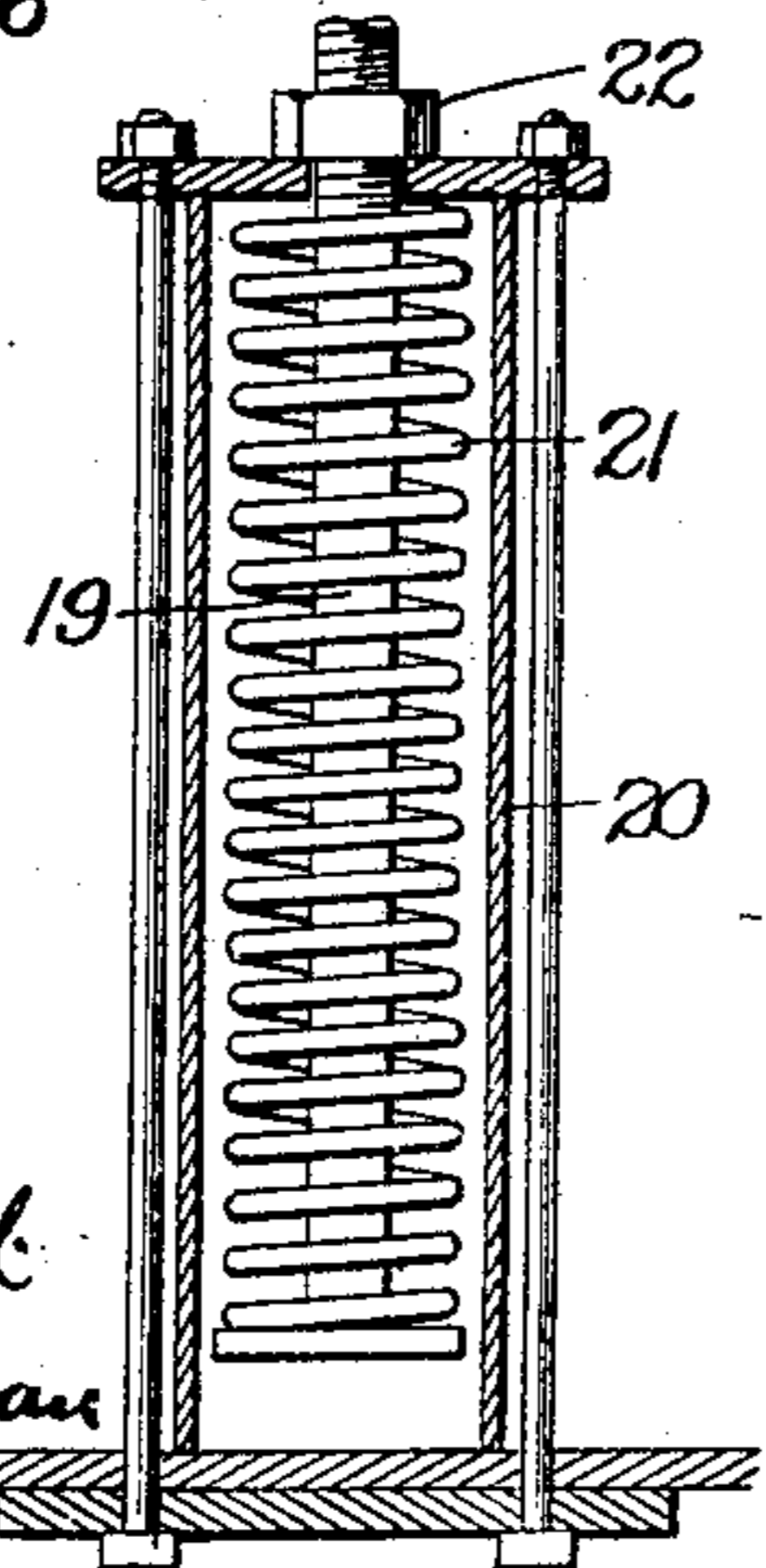
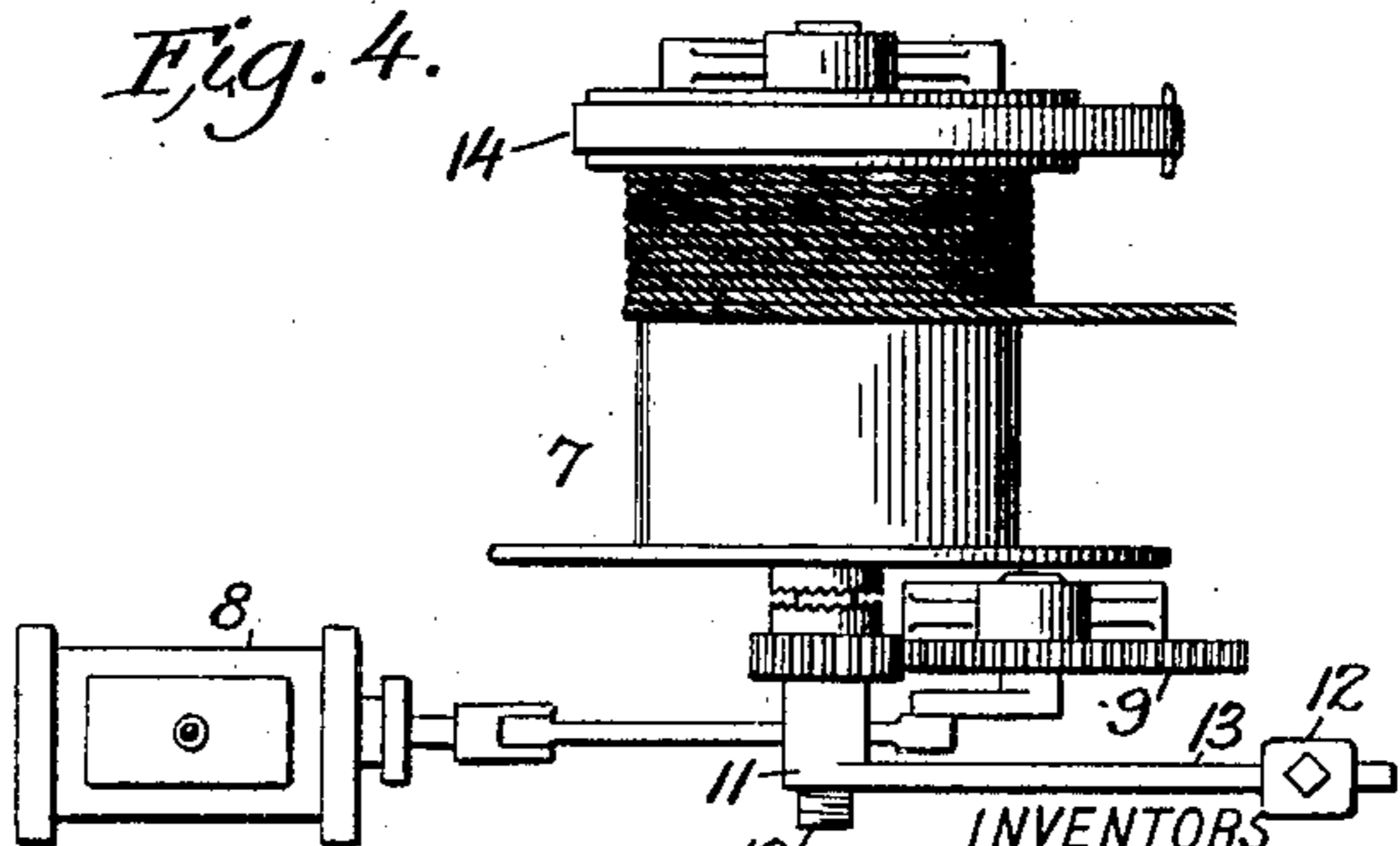


Fig. 4.



WITNESSES

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BERNARD OVERLACK, SR., OF PLAINFIELD, AND ARTHUR OVERLACK, OF NEWARK, NEW JERSEY.

LOADER AND HAULER.

No. 897,847.

Specification of Letters Patent.

Patented Sept. 1, 1908.

Application filed October 16, 1907. Serial No. 397,687.

To all whom it may concern:

Be it known that we, BERNARD OVERLACK, Sr., and ARTHUR OVERLACK, citizens of the United States, residing at Plainfield and Newark, in the counties of Union and Essex, respectively, and State of New Jersey, have invented new and useful Improvements in Loaders and Haulers, of which the following is a specification.

10 This invention relates to loading and hauling devices and is more especially adapted for the coaling of vessels at sea, its object being to provide a simple device for coaling or loading one vessel from another while at rest or at any rate of speed at which they may be traveling and without the use of a sea anchor or the towing of one of the vessels by the other.

20 The device may also be used to convey cargoes from the shore to vessels or to relieve distressed vessels and the construction, operation and uses of the device will be more fully described in the following specification, set forth in the claims and illustrated in the drawings, where:

25 Figure 1 is a view illustrating the operation of the device. Fig. 2 is an enlarged side elevation. Fig. 3 is a sectional view of the operating spring. Fig. 4 is a plan view of the hoisting drum and its mechanism.

30 A serious inconvenience in the coaling of large vessels at sea is the rocking of same or the tendency of the vessels to drift to and from each other which results in more or less slack being produced in the supporting cable and the impossibility to pass the bags or hods of coal over same unless the vessel being loaded tows the collier and anchors or various other devices are used to keep the cable taut.

35 The present invention is adapted to overcome these objections and to provide a device which will automatically gather up the slack supporting cable or pay it out as the occasion demands while the vessels rock or change position on account of the wind or tide or travel at any desired rate of speed.

40 The supporting cable 5 has one end secured to the mast 6 of the war ship while the other end passes around the winding drum 7. This drum 7 is operated by the engine 8 through the gearing 9, and on its shaft 10 is a clutch 11 to throw the rotating pinion in or out of connection but this clutch is normally

disconnected by an adjustable weight 12 on 55 the lever 13 so that the cable 5 will take in slack while the parts occupy the position shown in Fig. 2. The drum 7 is also provided with a band brake 14 normally held upon the drum so as to hold it against rotation by means of an adjustable weight 15 on 60 the lever 16. In Fig. 2 the lever is shown at its uppermost position and releasing the brake so that the drum can wind up the cable but it is lowered by means of a cord or chain 65 17 passing over a pulley 18 and attached to the rod 19 playing in the cylinder 20 and normally held therein by the spring 21. This spring is under tension and the latter may be increased or diminished by the nut 22 according to the weight to be carried by the cable 5 70 and as this cable passes over the pulley 23 secured to the mast 24 of the collier and around the pulley 25 at the upper end of the rod 19, the tension of the spring may be depended upon to haul in any slack existing. 75 The lever 13 is provided at its outer end with a cord or chain 26 which passes around the pulleys 27 and 28 and is secured to the rod 19. To this rod 19 is also connected a cord 80 29 also secured to the outer end of a weighted lever 30 controlling the throttle valve of the engine 8 (which is normally open) and passing over a pulley 31.

85 In Fig. 2 of the drawing the cable is taut with a normal weight upon it and the rod 19 is at its lowest point, but when a strain is put upon the cable by the rocking or drifting of the vessel, it lifts the rod 19 as far as the compression on the spring 21 will permit of and 90 the upward movement of the rod allows the lever 16 to drop setting the brake 14, elevates the lever 13 to release the clutch 11 and closes the throttle valve by allowing the lever 30 to fall. This allows the cable 5 to pay out 95 as much as necessary and prevents the breaking or bending of masts or other parts of the vessels to which the cable is attached and upon the releasing of the spring rod 19, by the slacking of the strain on the cable, it returns to its normal position within its cylinder and in doing so releases the cord 26 which causes the engagement of the clutch 11 at the same time opening the steam supply to the engine and releases the brake. The winding 100 drum is thus put in motion and the slack is wound upon it. The engine keeps on working till it shuts itself off at the same time re-

leasing the friction and setting the brake. The brake at this stage holds the drum while at rest. The movement of the rod or piston 19 produces opposite actions on the part of the levers 13 and 16 so that when the clutch 11 is released the brake 14 is applied and vice versa, the cords 17 and 26 being so arranged over the pulleys and secured to the rod to produce this effect.

When the device is put up preparatory to the transfer of coal or other substances the cable is wound upon the drum and the rod so adjusted within its spring by the nut 22 that the cable will withstand a certain load, for instance two tons, before it becomes sensitive to a greater strain, when it is automatically relieved as above described.

The winding drum is of the type commonly used in coal loaders and is more clearly shown in Fig. 4 where it will be seen that the clutch 11 consists of a screw which jams the pinion into connection with the drum. The brake 14 operates upon a wheel carried on the drum shaft and carrying a clutching means traveling around the drum while the drum is winding but is adapted to turn with the drum on a reverse movement. Hence when the normal load is two tons or less the rod 19 occupies the position shown, at its intermediate point, applying the brake band 14 and opening the clutch 11 but should a greater strain be put upon the spring and rod by the drifting or rocking of the vessels the rod uses and releases the band allowing the cable to pay out until the excessive strain is relieved when the spring 21 returns the rod to its normal position and then applying the brake 11. Before reaching the lowermost position the clutch 11 is applied and the valve 30 opened to take up any slack and finally the brake is applied.

A carriage or trolley 32 with rollers 33 is supported upon the cable 5 and adapted to run thereon. Each end is provided with a buffer 34 and in the lower end of the trolley is a sheave 35 over which passes the inhaul line 36 for hoisting or lowering the load, one end passing around a hoisting drum 37, Fig. 1, while the other end is secured to the trolley and this line carries the pulley 38 with the hook 39 for the load. The upper end of the hook 39 has an eye 40 which is engaged by the pivoted hook 41 secured to the lower end of the trolley and provided with an arm 42 controlled by the trip line 43 and the engaging line 44. Then the load is hoisted from the hold of the vessel the pulley 38 is carried upward until the eye 40 engages the hook 41 and is held thereby and when released the load is held at any desired point by the brake 45 which acts upon the pulley 35 and line 36. This brake 45 is provided with the cord 46 with a loop in the lower end to be secured to a hook 47 at the terminus of the cable 5 so that the load may be detained at

any desired height. The outhaul 48 is secured to the trolley and passes over a pulley on the mast 6 of the receiving vessel, being of sufficient length to follow the trolley back to the collier.

This device is not only applicable for hoisting and loading coal but it is obvious that the device may be rigged up between vessels at sea during storms and a distressed vessel be relieved of its passengers or valuable cargo. The relieving vessel may be a steamer which remains at a safe distance from the vessel in distress and the automatic release and take up of the cable affords a safe and effectual means of establishing communication. Landings may be also effected on coasts which are otherwise inaccessible as the cable may be attached to a pole or tree on the shore and the device operated from the vessel. In this way troops, stores and animals may be quickly and safely transferred after the cable has been carried ashore. The hook 47 may be carried by the lever 47' and operated by the foot to retain the brake 46 so the load may be held while the operator is doing other work.

While coaling under rate of speed the two vessels travel at the same rate and employ no tow line nor anchor. The automatic action of the device provides for the taut condition of the hauling cable so that if the speed of the two vessels varies the cable is always in condition for work. The coaling of vessels while moving at full speed is thus made possible and the movements of vessels in emergencies when it is desired to make all possible speed is not interfered with.

It is obvious that various modifications may be resorted to in the construction and operation of the device without departing from the essential features above described.

What we claim as new and desire to secure by Letters Patent is:

1. In a coal loader, the combination with a single cable adapted to carry a traveling trolley and having one end attached to a vessel, of automatic means on the vessel for releasing or taking up the cable.

2. In a coal loader, the combination with a cable adapted to carry a traveling load of means for securing one end of the cable, and means carried at the other end of the cable for automatically releasing and paying out the cable when the strain on it exceeds a certain limit.

3. In a device of the character described, the combination with a cable connecting two moving or substantially stationary objects, of means carried by one of the objects controlled by a predetermined strain on the cable for releasing the cable, and automatic means for taking up the slack when the strain ceases.

4. In a device of the character described, the combination with a cable adapted to

carry a pre-determined load between two moving or substantially stationary points, a winding drum carrying one end of the cable, means for releasing the cable from the drum when the pre-determined load has been exceeded and means permitting the rewinding of the cable when the load is at or below its normal.

5. In a device of the character described, the combination with a cable adapted to be hung between two rapidly moving or substantially stationary vessels, of a trolley and pulley, a spring connected with the cable and adapted to withstand the trolley and a pre-determined weight, a motor, a winding drum, and means connected with the spring to release the winding drum and pay out the cable when the weight on the trolley has been exceeded.

6. In a device of the character described, the combination with a cable connecting two moving or substantially stationary bodies, a drum carrying one end of the cable, a traveling pulley for the cable and adapted to carry a certain load, a motor for the winding of the drum, a brake on the drum, a spring adapted to withstand the weight carried by the pulley, and means connecting the spring and the brake so that the latter is removed from the drum when the normal weight on the pulley is exceeded.

7. In a device of the character described, the combination with a cable adapted to connect two moving or substantially stationary objects, of a traveling pulley on same, a winding drum for one end of the cable, a motor, a brake on the drum, a clutch connecting the motor and drum, and a spring adapted to withstand a certain load, and means connected with the spring for setting the brake and

releasing the clutch when the load exceeds the normal.

8. In a coal loader, the combination with a cable connecting two rapidly moving or substantially stationary vessels, of a traveling pulley on same, a winding drum, a motor, a brake normally applied, a clutch connecting the motor and drum and spring normally withstanding a certain load on the cable but when yielding to an excessive load is adapted to set the brake release the clutch and stop the motor.

9. In a coal loader, the combination with a cable adapted to establish communication between two rapidly moving or substantially stationary vessels, a winding drum, a motor, a brake for the drum, a clutch between the motor and drum, a spring supporting the cable and adapted to withstand a predetermined load, means connecting the spring with the brake, the clutch and the starting mechanism of the motor, means for securing or dropping the pulley and a brake to secure the pulley at any desired point.

10. In a device of the character described, the combination with a cable adapted to connect and afford a conveying means between two vessels, of means on one of the vessels for automatically taking-up the cable when the distance between the vessels decreases or paying it out when the strain exceeds a predetermined limit.

In testimony whereof, we affix our signatures in presence of two witnesses.

BERNARD OVERLACK, Sr.
ARTHUR OVERLACK.

Witnesses:

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ERWIN GLASER.