No. 714,465. Patented Nov. 25, 1902.

O. ELIASEN & P. C. NELSON.

COAL DERRICK FOR VESSELS.

(Application filed July 15, 1902.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

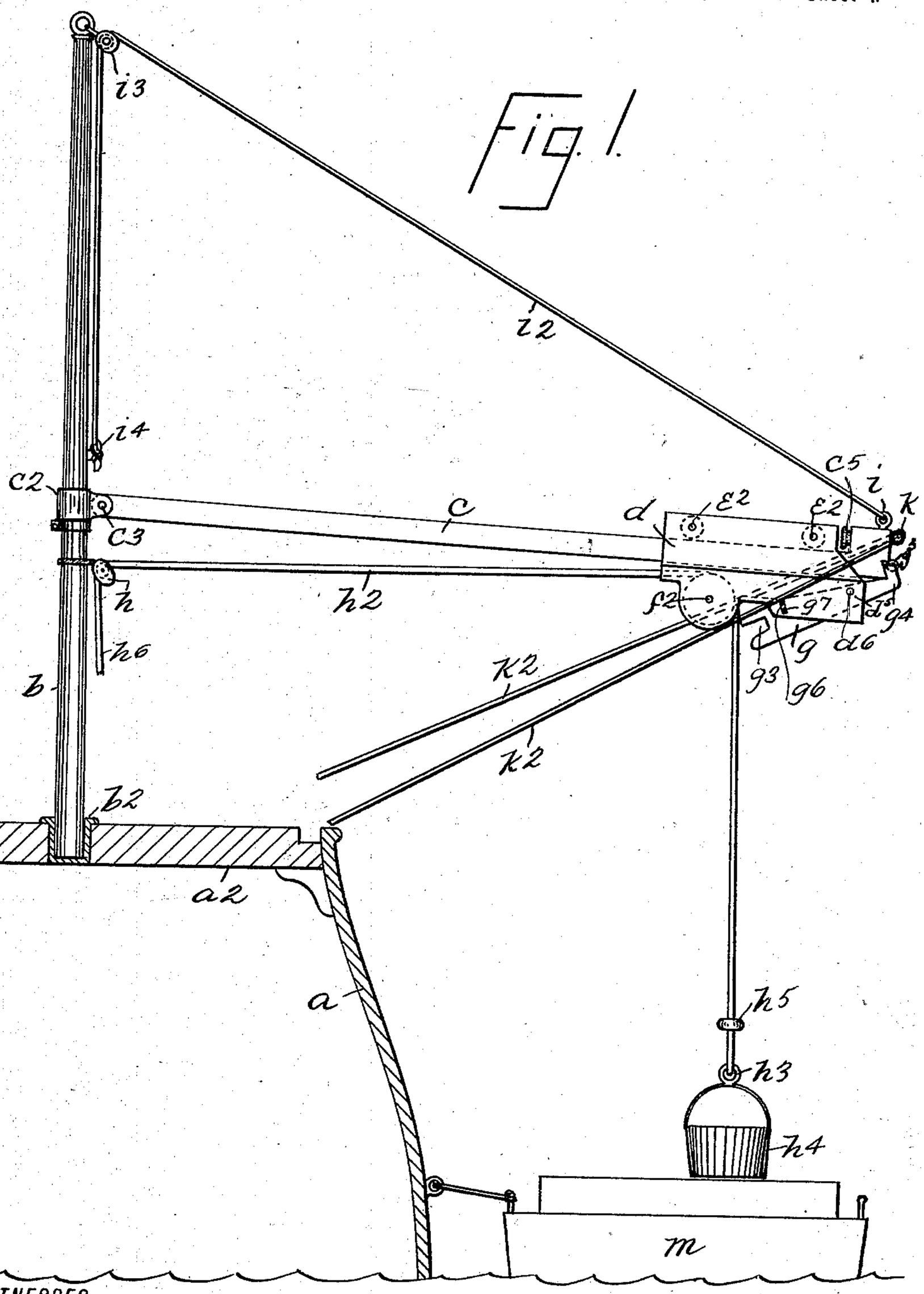

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Fig. 2

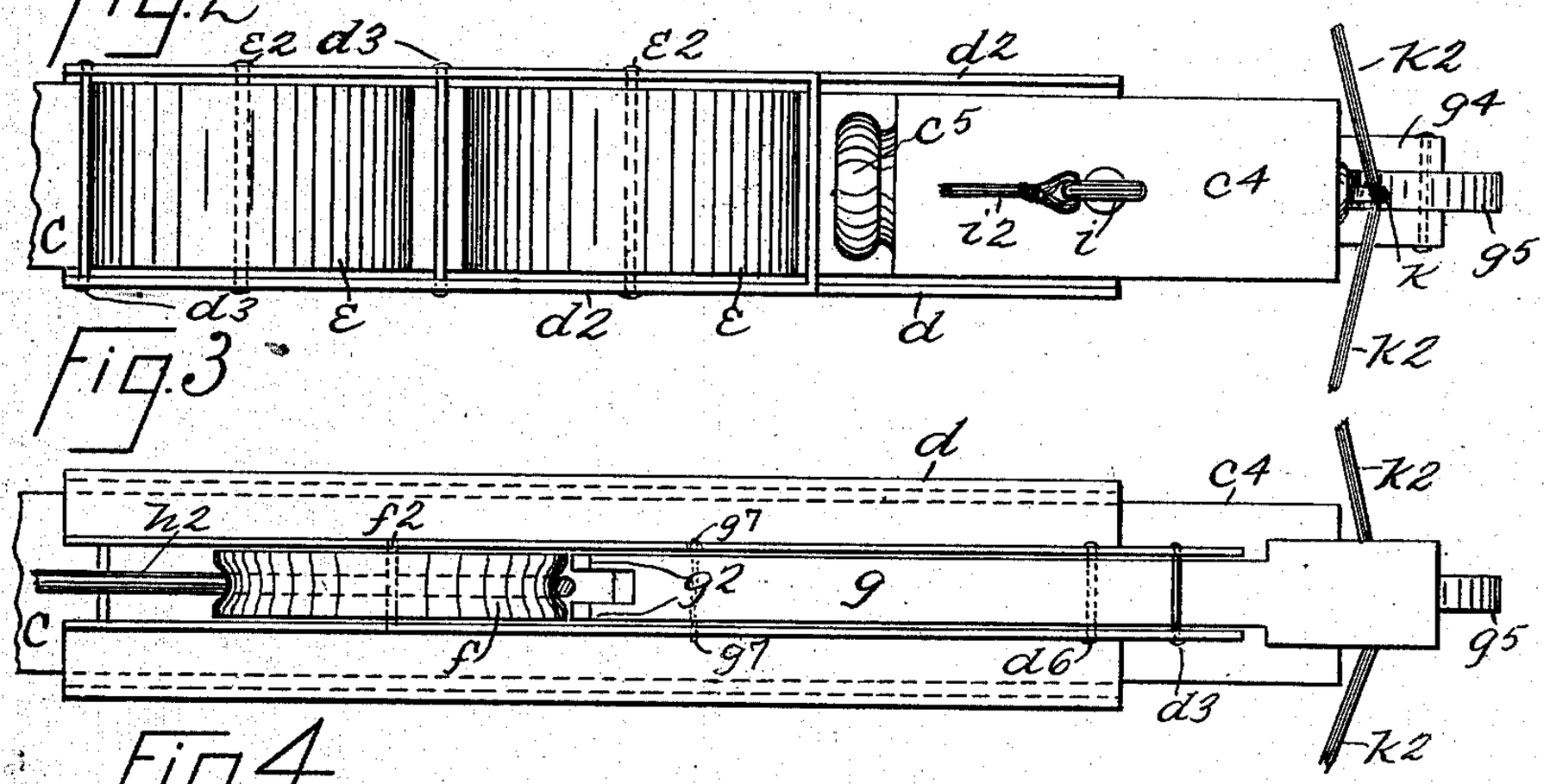
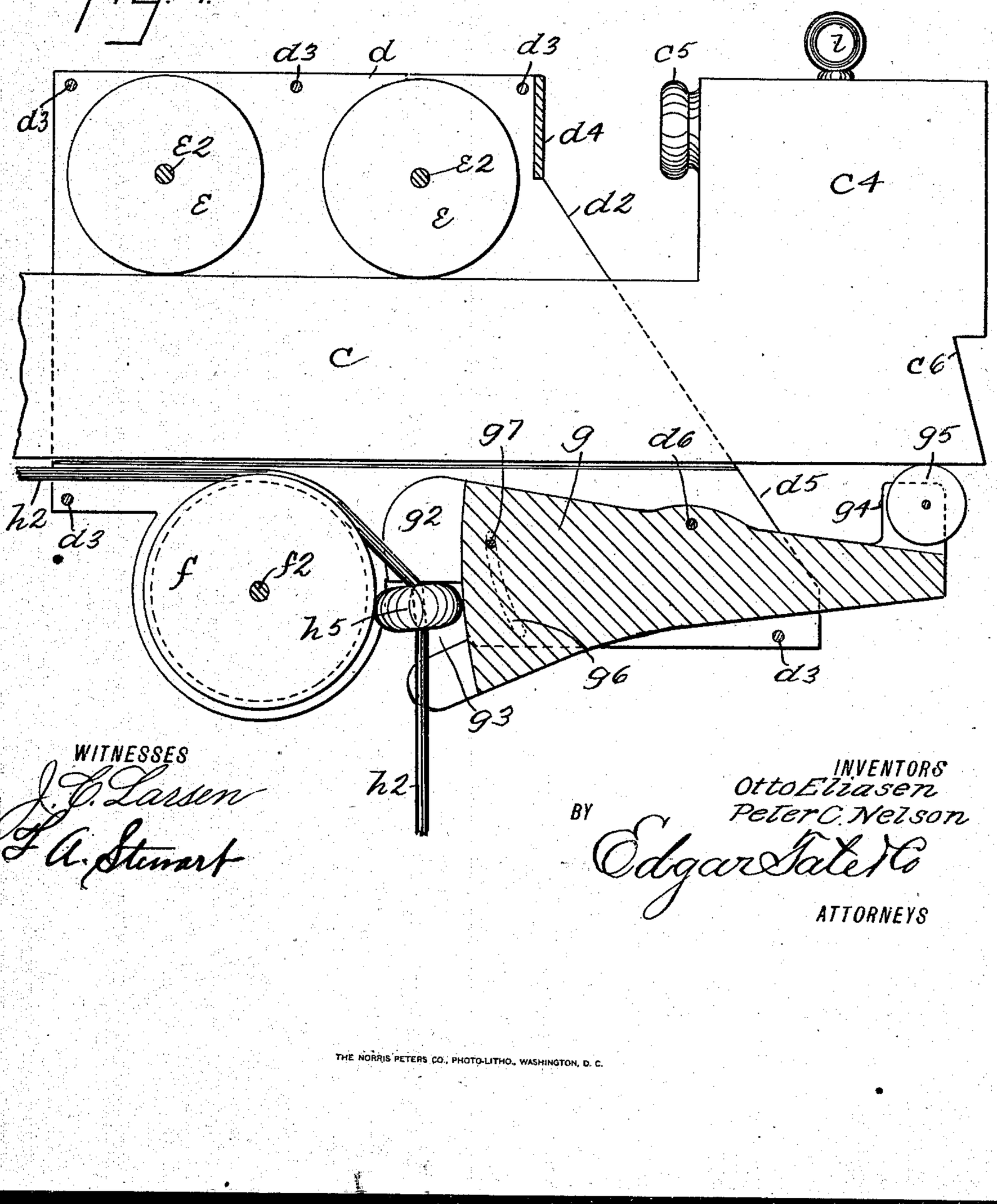


Fig. 3

Fig. 4.



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OTTO ELIASEN AND PETER C. NELSON, OF BROOKLYN, NEW YORK.

COAL-DERRICK FOR VESSELS.

SPECIFICATION forming part of Letters Patent No. 714,465, dated November 25, 1902.

Application filed July 15, 1902. Serial No. 115,639. (No model.)

To all whom it may concern:

Be it known that we, OTTO ELIASEN and PETER C. NELSON, citizens of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Coal-Derricks for Vessels, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide an improved apparatus or derrick particularly designed for use in loading vessels with their coal-supply or which may be used for other and similar purposes; and with these and other objects in view the invention consists of an apparatus of the class specified constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of our improvement are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a side elevation of our improved apparatus and showing a transverse section of part of the hull of a vessel; Fig. 2, a plan view of part of the apparatus which we employ; Fig. 3, a bottom plan view thereof, and Fig. 4 a sectional side elevation of that part of the apparatus shown in Figs. 2 and 3.

In the drawings forming part of this specification we have shown at a a vertical section of a part of the side of the hull of a vessel and at a^2 a similar section of a part of the deck of a vessel, and in the practice of our invention we provide an upright support b, one end of which in the form of construction shown is sunk into a suitable socket b^2, secured in the deck of a vessel, and the upper end of which may be provided with any suitable stay device or support. The upright support b may consist of an ordinary stanchion similar to those with which most vessels are provided, or it may be an independent support connected with the deck or decks of the vessel in any desired manner.

Connected with the upright support b is a boom c, and in the form of construction shown the boom c is connected with the upright support b by means of a band c^2, which is free to turn on said support and to which the boom c is pivoted at c^3, and the said boom is thus connected with said support in such a manner that the front end of said boom may be swung in a horizontal plane or moved in a vertical plane, as will be readily understood, and any device for connecting said boom with the support b may be employed that will accomplish the above result.

Mounted on the boom c is a traveler d, which is oblong in form and box-shaped in cross-section and which consists of side members d^2, connected by transverse rods d^3 at the top and bottom thereof and by a transverse top plate b^4 at the front end thereof; but the framework of the traveler d may be made in any desired manner.

Mounted in the top portion of the traveler d are two rollers e, which are mounted on transverse shafts e^2, and the rollers e bear upon the boom c and support the traveler d, and in the bottom portion of said traveler beneath the boom c is a pulley-wheel f, mounted on the shaft f^2. The front end of the traveler d is provided with a downwardly and forwardly directed extension d^5, in which is pivoted at d^6 a lever g, the rear end of which is much wider than the front end and provided with a vertical groove g^2, in the side walls of which are formed transverse recesses g^3. The front end of the lever g is provided with upwardly-directed members g^4, in which is mounted an antifriction-roller g^5, which in certain positions of the lever g is adapted to bear on the bottom of the boom c.

The boom c is provided at its outer or front end with an upright member c^4, which in the form of construction shown is integral with the end of the boom and block-shaped in form, and the end of which adjacent to the body of the boom is provided with a buffer c^5, which limits the outward movement of the traveler d. The boom c is also provided in its free end with a recess c^6, which is adapted to receive the antifriction-roller g^5 in a certain position of the lever g, as shown in Fig. 1.

Connected with the upright support b below the connection with said support of the boom c is a pulley h, and around this pulley is passed a rope h^2, which is also passed into the traveler d beneath the boom c and around the pulley-wheel f, and connected with the

free end of this rope at h^3 is a basket, bucket, or similar device h^4, and near the bucket or other device h^4 the rope h^2 is provided with a stop-collar or similar device h^5, which is secured thereto.

Connected with the front end of the boom c, as shown at i in Fig. 1, is a rope i^2, which is passed around a pulley i^3 at the top of the support b, and in the form of construction shown is connected with a hook or similar attaching device i^4, secured to the support b, and the rope i^4 is intended to be used for the purpose of raising and lowering the front or outer end of the boom c. Connected with the front end of the boom c, as shown at k, are two guide lines or ropes k^2, which may be carried to any desired point laterally of the support b and which are intended for use in swinging the boom c laterally or moving it from one side to the other. In practice the end h^6 of the rope h^2 is connected with a windlass or similar device for the purpose of raising and lowering the basket or bucket h^4 and for moving the traveler d on the boom c, and in Fig. 1 of the drawings we have also shown at m a barge or other vessel, which is supposed to contain coal, and the operation of the apparatus will be readily understood from the foregoing description when taken in connection with the accompanying drawings and the following statement thereof.

It will be understood that the boom c may be raised and lowered at any time and to any desired extent by means of the rope i^2; but it will also be understood that this boom is not while in operation raised or lowered, the position thereof being adjusted before the operation of loading coal is begun. In the operation of loading coal the rope h^2 is manipulated by a windlass or similar device in the usual manner, and the basket or bucket h^4 is lowered and filled with coal. The said basket or bucket is then raised by winding the rope h^2 on the windlass, and when the stop or collar h^5 approaches the pulley-wheel f it strikes said wheel and enters the transverse recess g^3 in the adjacent end of the lever g, and the rope h^2 at the same time is thrown outwardly into the vertical groove or recess g^2 in said lever, as clearly shown in Fig. 4. The stop or collar h^5 operates to throw the adjacent end of the lever h^2 upwardly and the outer end of said lever downwardly into the position shown in Fig. 4, and the traveler d at once moves backwardly on the boom c in the direction of the support b, and at the limit of its backward movement the basket or bucket h^4 is lowered and the coal emptied therefrom in the usual manner. After the basket or bucket has been emptied and released the windlass is unwound and the traveler d moves automatically back to the position shown in Fig. 1 and the basket or bucket descends, so as to be again filled with coal. In order to facilitate the movement of the traveler back to the free or swinging end of the boom c, the said boom c is held in a slightly-inclined position and the traveler moves on the boom by gravity, as will be readily understood. In the position of said traveler shown in Fig. 1 the lever g also assumes the position shown in said figure, and the antifriction-roller g^5 enters the notch c^6 in the end of the boom c and the traveler is locked to said boom till the basket or bucket h^4 is again raised, at which time the parts again assume the position shown in Fig. 4 and the traveler is moved backwardly along the boom c. It will be understood that the boom c may be swung in three directions, and the coal may thus be deposited at any point in or on the vessel.

The sides of the carrier d are provided with slots or grooves g^6, and the lever g is provided with a pin g^7, which moves in said slots or grooves in order to limit the movement of the lever g at any time, and particularly to arrest said movement when the traveler is off of the boom, and the entire apparatus is simple in construction and operation and comparatively inexpensive and may be applied to any vessel and also used in other relations, and changes in and modifications of the construction described may be made without departing from the spirit of our invention or sacrificing its advantages.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In an apparatus of the class described, the combination with a suitable support, of a boom connected therewith and adapted to swing vertically and in a horizontal plane, a traveler mounted on said boom and provided in the lower side thereof with a pulley, a rope passing over said pulley and adapted to support a bucket or similar device and provided near said bucket or similar device with a collar or stop, and a lever pivoted in the bottom of the traveler and adapted to engage the end of the boom at one end, and provided at its other end with a vertical recess to receive said rope, and a transverse recess to receive said collar or stop, substantially as shown and described.

2. In an apparatus of the class described, a traveler adapted to be mounted upon a boom and to move longitudinally thereof, said traveler being provided in the lower side thereof with a pulley, and a lever pivoted in the bottom of the traveler and provided at its forward end with an upwardly-directed member, and at its rear end with a vertically-arranged recess and also a transversely-arranged recess, substantially as shown and described.

In testimony that we claim the foregoing as our invention we have signed our names, in presence of the subscribing witnesses, this 14th day of July, 1902.

OTTO ELIASEN.
PETER C. NELSON.

Witnesses:
T. A. STEWART,
C. E. MULREANY.