

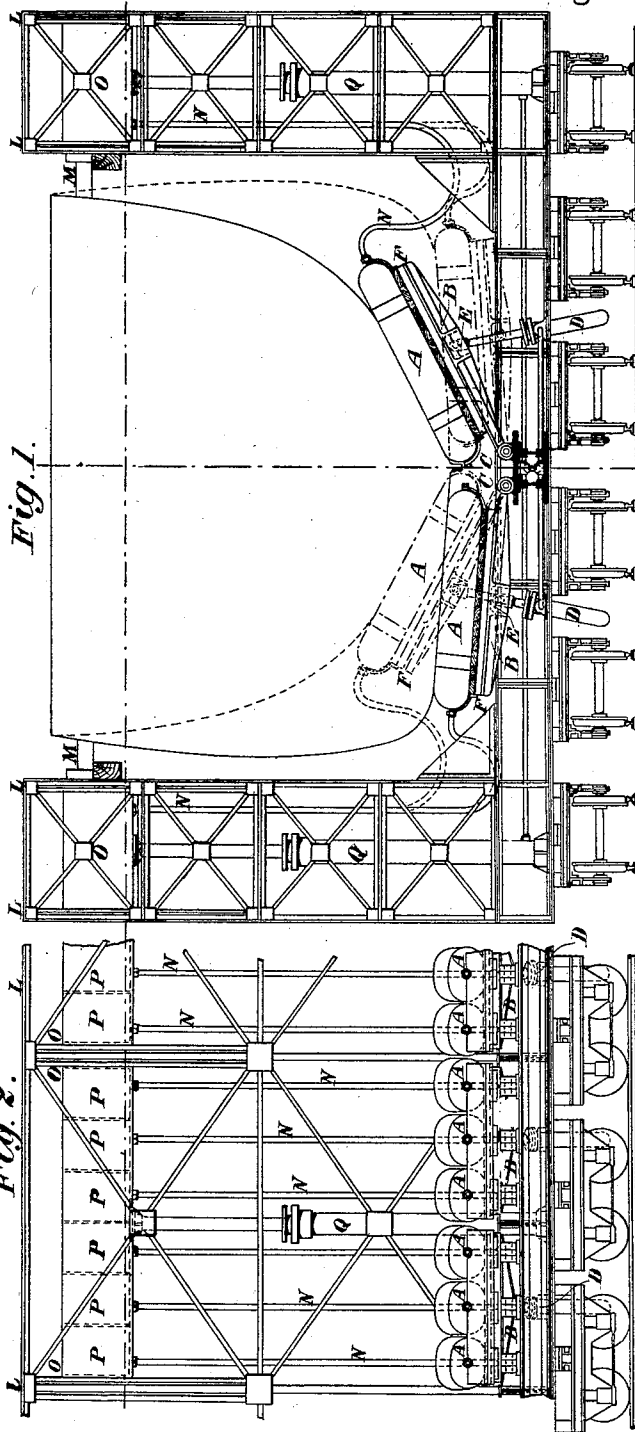
(No Model.)

2 Sheets—Sheet 1.

W. R. KINIPPLE.
OVERLAND SHIP CONVEYANCE.

No. 481,405.

Patented Aug. 23, 1892.



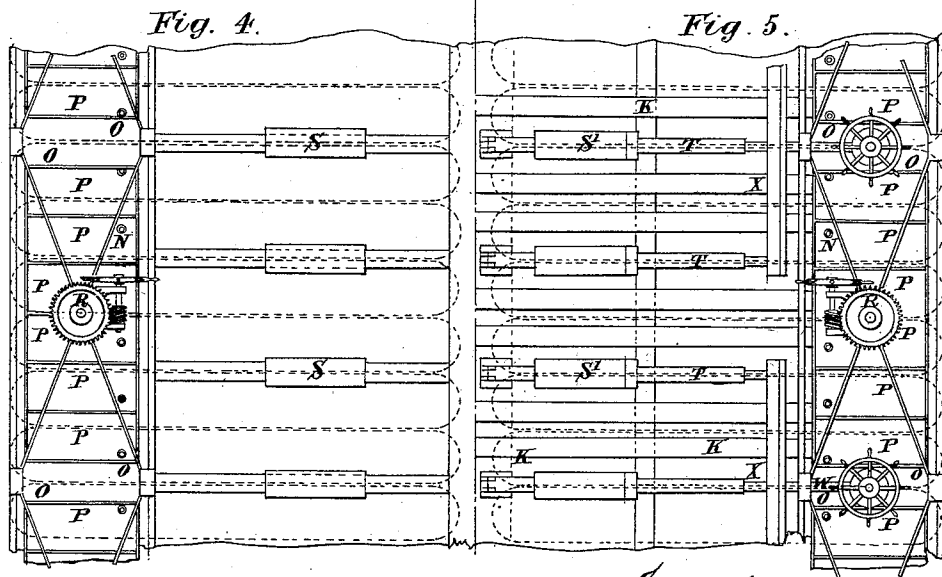
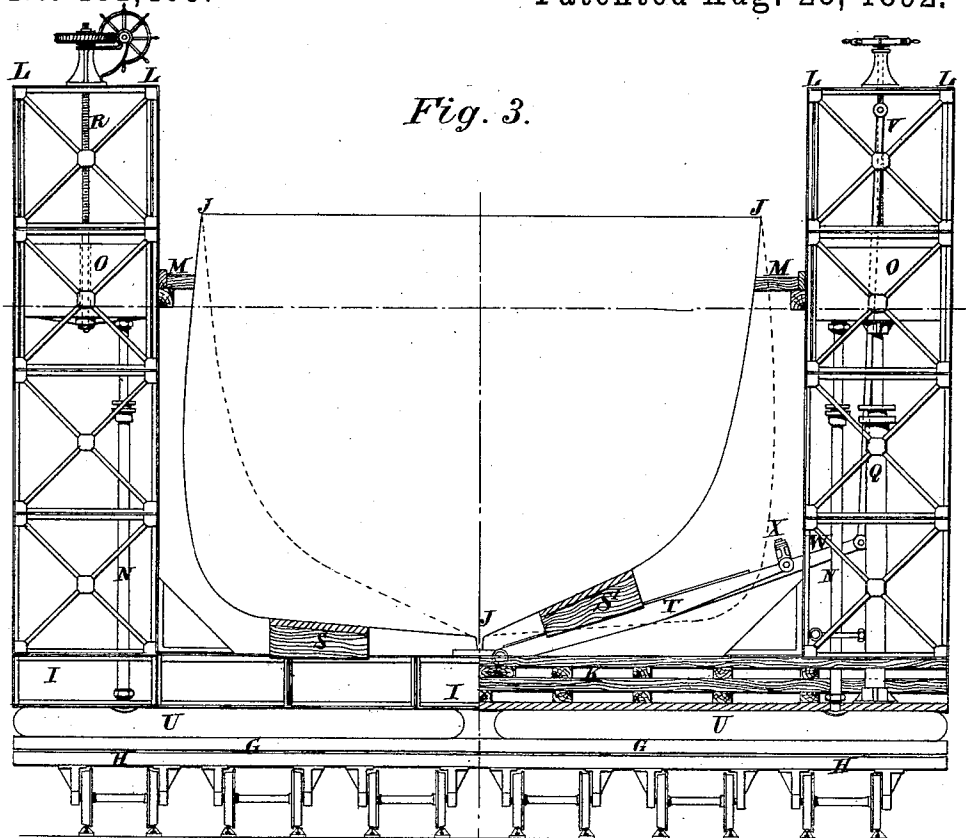
attest
Geo. T. Smallwood.
Rev. Lewis.

Inventor:
Walter Robert Kinipple
by F. J. Adams
his attorney.

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Attest:
Geo. T. Smallwood,
Notary Public.

Inventor:
Walter Robert Kinipple
by Tolson & Dorman
his attorneys.

UNITED STATES PATENT OFFICE.

WALTER ROBERT KINIPPLE, OF LONDON, ENGLAND.

OVERLAND SHIP CONVEYANCE.

SPECIFICATION forming part of Letters Patent No. 481,405, dated August 23, 1892.

Application filed May 2, 1892. Serial No. 431,414. (No model.)

To all whom it may concern:

Be it known that I, WALTER ROBERT KINIPPLE, civil engineer, a subject of the Queen of Great Britain and Ireland, residing at No. 3 Victoria Street, in the city of Westminster, England, have invented certain Improvements in Apparatus to be Employed for Conveying Ships or Large and Heavy Bodies Overland, of which the following is a specification.

My invention relates to apparatus to be employed for conveying ships or large and heavy bodies overland, in which apparatus bags or flexible containers of liquid are used in combination cradle-like structures carried upon trucks adapted to travel upon railways.

According to my invention I provide means whereby the bags or receptacles for the liquid (which I will refer to as the "hydraulic cushions") can be brought into position to adapt them to various sizes and forms of vessels or other bodies, and I also provide means whereby the heads of liquid giving the pressure in the various hydraulic cushions can be regulated to correspond with the various displacement-weights of different vessels or bodies. I place the hydraulic cushions upon frames, platforms, or carriers which can be adjusted in position to bring the hydraulic cushions against the vessel, so as to support it properly. For this purpose the frames, platforms, or carriers may be centered or hinged at one end, or in the center, or at other suitable part, and their operation may be effected by means of hydraulic rams or by screws, or they may be adjusted by wedges or the like. Instead of placing the hydraulic cushions on the top of the adjustable platforms and adjusting them, as described, the said hydraulic cushions may be laid on the structures on the trucks, and cross-bearers may be laid on the top of the cushions, and on these cross-bearers the vessel or body to be conveyed can be docked and shored, or a gridiron or ponton, or gridirons or pontons (with or without side girders) may be used instead of cross-bearers. The liquid contents of the hydraulic cushions are in communication by suitable pipes or connections with tanks or reservoirs placed at the sides or ends of the structures on the trucks or in any suitable position, so as to give the requisite heads of liquid at the various points required. There may be a sepa-

rate tank for each cushion, or each tank may be common to several cushions. To regulate the heads of liquid according to the varying weights of the vessel at different parts, the tanks are made adjustable as to their elevation, which adjustment may be affected by any suitable mechanism, such as hydraulic rams, screws, levers, or the like.

In order that my said invention may be fully understood, I now proceed more particularly to set forth the system, mode, or manner in or under which the same is or may be used or practically carried into effect, as applied to the overland transport of a ship, from which its application to other heavy bodies to be transported will also be understood, reference being had to the accompanying drawings and to the letters marked thereon—that is to say:

Figure 1 represents a transverse section of the ship and car and supporting devices, the left-hand side of the figure showing the midship-section and the right-hand side of the figure showing the section at about half-way between midships and the head or stern of the ship. Fig. 2 is a longitudinal section of part of the supporting device. Fig. 3 is a transverse section, the left-hand side at midships and the right-hand side at about half-way between midships and the head or stern of the ship showing an alternative method of arranging the apparatus according to my present invention. Fig. 4 is a plan of the left-hand half of Fig. 3, and Fig. 5 is a plan of the right-hand half of Fig. 3.

A A are the bags or receptacles for the liquids (which bags or receptacles I, as before stated, refer to as the "hydraulic cushions.") According to my invention, they are provided with means by which they can be brought into position to adapt them to various sizes and forms of vessel. This is effected by placing the said hydraulic cushions upon frames, platforms, or carriers B B B, which can be adjusted in position to bring the hydraulic cushions against the vessel, so as to support it properly. For this purpose the frames, platforms, or carriers B B B may be centered or hinged at one end C C or at any other suitable part. The said frames, platforms, or carriers may be operated by means of hydraulic rams D D, attached to the ends F F

of the platforms B B or to any suitable part—for instance, to the center, as shown at E—or they may be raised or lowered or adjusted by screws, wedges, sliding blocks, levers, or the like. For instance, they may be raised, lowered, and adjusted by levers and screws, as at V and W in Fig. 3, the hydraulic cushions being placed on the levers, in place of using the wedges S, as shown in that figure.

Instead of placing the hydraulic cushions on the top of the adjustable platforms B B B and adjusting them, as described, the said hydraulic cushions may be laid on the structure G G, as shown in Fig. 3, which can slide or move on the truck H H and cross-bearers, or pontoons I I may be laid on the top of these cushions, and on the pontoons I I the vessel J J J may be docked on ordinary sliding bilge-blocks S S or on bilge-blocks S' S', sliding on adjustable bearers T T. These may be arranged in groups of three, connected by a cross-bar or yoke X, the screw or other means of adjustment being connected to an extension of the middle or adjustable bearer T, as shown at W in Fig. 3. A gridiron K K K may be used instead of the cross-bearers or pontoons I I.

At the left-hand side of Fig. 3 the ponton arrangement is shown, and on the right-hand side the gridiron arrangement is shown. The ponton or gridiron may or may not have side girders or framework L L L, to which the ship may or may not be shored, as at M M.

The liquid contents of the hydraulic cushions U U are in communication by suitable pipes or connections N N N with tanks or reservoirs O O O, placed in the side girders or framework L L, or at the ends of the structures on the trucks, or in any other convenient position, so as to give the requisite head of liquid at the various points required. There may be a separate tank or compartment P for each hydraulic cushion, or each tank O O O or compartment of a tank may be common to several hydraulic cushions.

To regulate the heads of liquid according to the varying weight of the vessel at different parts of its length, the tanks are made adjustable as to their elevation, which adjustment may be effected by any suitable mech-

anism, such as by hydraulic rams Q Q, Figs. 1, 2, and 3, or they may be adjusted by screws R R, levers, or the like, for instance, as shown in Figs. 3, 4, and 5.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In apparatus for conveying ships or large heavy bodies overland, the combination, with suitable supports, of a series of hydraulic cushions between the ship and supports, each cushion being provided with an independent pressure-regulating device, substantially as described.

2. In apparatus of the kind and for the purpose referred to, the combination, with the hydraulic cushions, of tanks or reservoirs connected, respectively, with separate cushions and adjustable to vary the pressure in said cushions, substantially as described.

3. The combination, with suitable supports, of hydraulic cushions interposed between the ship and supports, supply-tanks connected, respectively, with different cushions or groups of cushions, and means for independently raising and lowering the respective tanks, substantially as described.

4. In apparatus of the kind and for the purpose referred to, the combination, with the hydraulic cushions, of movable carriers therefor and means for independently adjusting said carriers, substantially as described.

5. In apparatus of the kind described, the combination, with the framework and trucks, of carriers hinged at one end near the middle of the framework and extending in opposite directions, means for raising and lowering the free ends of the carriers, and hydraulic cushions on the respective carriers, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WALTER ROBERT KINIPPLE.

Witnesses:

WILLIAM JOHN WEEKS,

RUDOLPH CHARLES NICKOL,

Both of 9 Birchin Lane, London, E. C.