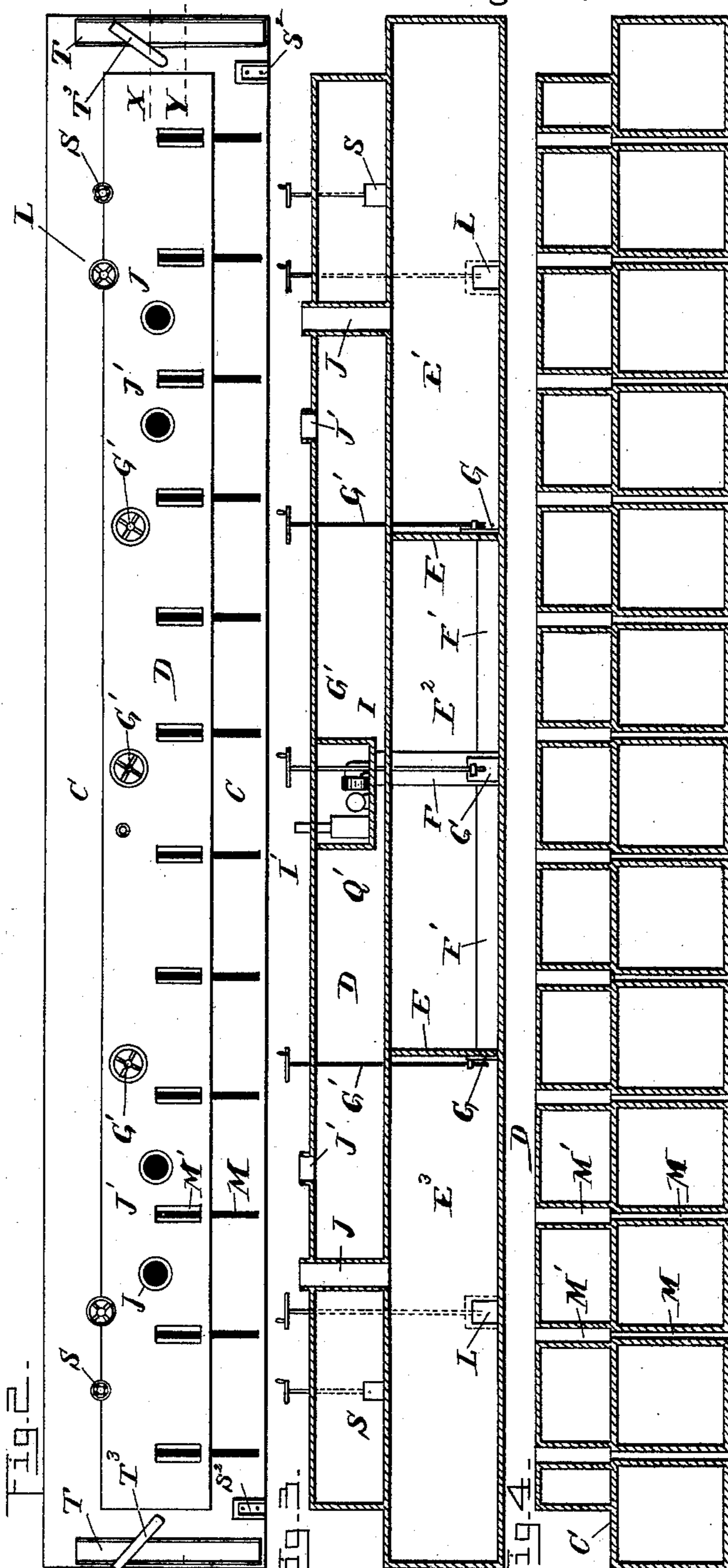
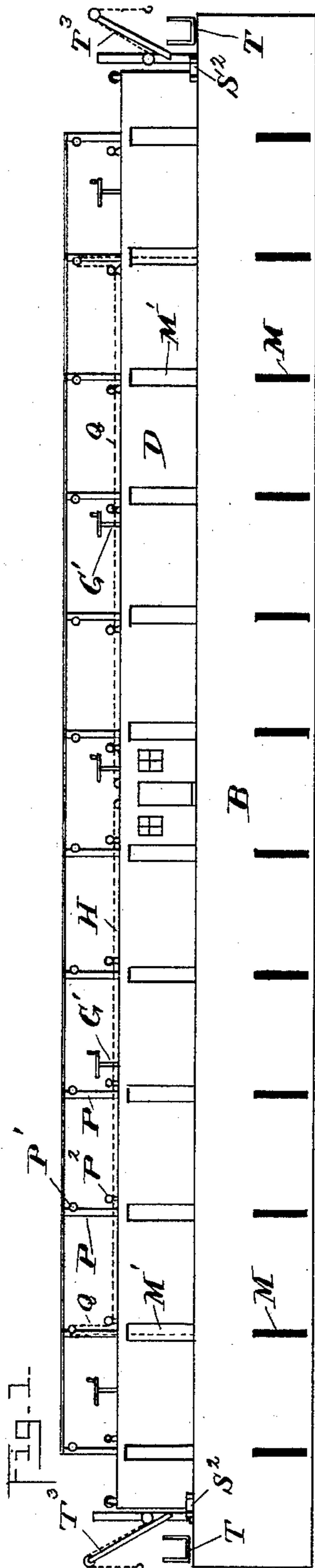


C. H. BROWN.

DEVICE FOR RAISING SUNKEN VESSELS.

No. 435,054.

Patented Aug. 26, 1890.



Witnesses
Geo. A. Gregg.
M. A. O'Leary.

Inventor
Charles H. Brown
James C. Whittemore
Att'y.

(No Model.)

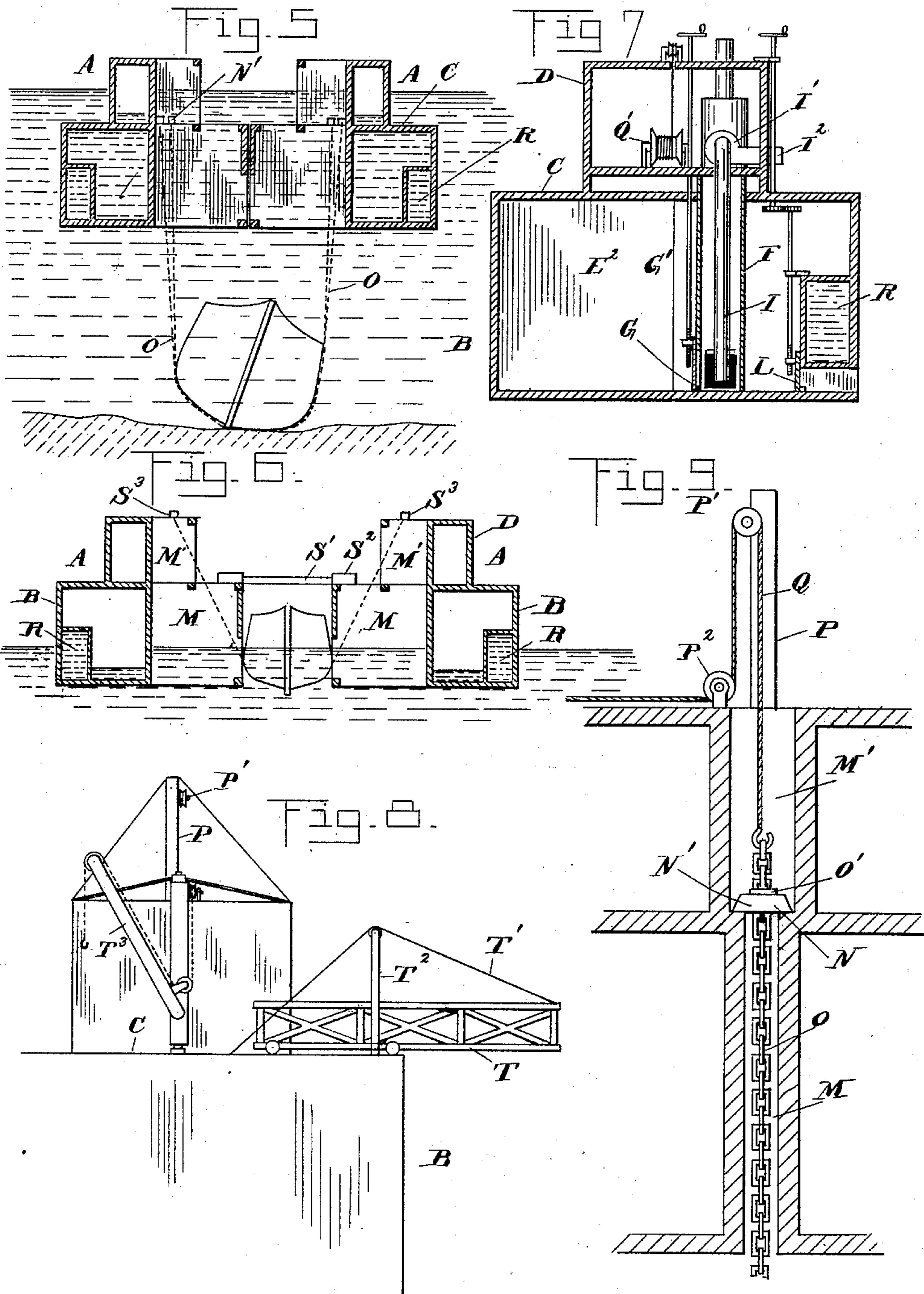
2 Sheets—Sheet 2.

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By James Whittemore
Att'y.

UNITED STATES PATENT OFFICE.

CHARLES H. BROWN, OF PORT HURON, MICHIGAN.

DEVICE FOR RAISING SUNKEN VESSELS.

SPECIFICATION forming part of Letters Patent No. 435,054, dated August 26, 1890.

Application filed April 15, 1890. Serial No. 348,062. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. BROWN, a citizen of the United States, residing at Port Huron, in the county of St. Clair and State of Michigan, have invented certain new and useful Improvements in Devices for Raising Sunken Vessels, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in devices for raising sunken vessels, and relates to that class of such devices commonly known as "camels."

The invention consists in the peculiar construction of the pontons or ships comprising the camel, whereby the draft-chains are connected centrally in the pontons; further, in the peculiar construction of the pontons whereby the filling and emptying of the water-compartment is facilitated; further, in the construction of the tackle; further, in the construction of the means for connecting the two parts of the camel, and, further, in the peculiar construction, arrangement, and combination of the various parts, all as more fully hereinafter described.

In the drawings, Figure 1 is a side elevation of one of the pontons. Fig. 2 is a plan view thereof. Fig. 3 is a vertical central longitudinal section on line *xx*, Fig. 2. Fig. 4 is a similar section on line *yy*, Fig. 2. Fig. 5 is a cross-section through the two pontons, showing them partially sunken and in use in raising a sunken vessel. Fig. 6 is a similar section showing the vessel partially raised. Fig. 7 is a vertical central cross-section through the engine-room and well. Fig. 8 is an end elevation. Fig. 9 is an enlarged cross-section through one of the pockets.

A A are two like pontons or ships, each of the following construction: B is the hull, forming the water-chambers, the top C of which forms the main deck. Upon this hull is constructed the deck-house D. The hull is divided into a suitable number of water-compartments by the partitions E.

In the drawings I have shown a hull formed into three compartments E', E², and E³. The compartments E' and E³ are connected with the main well F by means of the conduits F'. These conduits are controlled by valves G,

which have the shafts G' provided with suitable hand-wheels extending through the upper deck H. The compartment E² likewise connects with the well F, and is controlled by a similar valve G, having a similar shaft G'. The suction-pipe I extends into this well and connects with a suitable pump I', having a discharge-pipe I² extending through the side of the deck-house. This pump is driven by any suitable engine, which is located in a pump-house, which I preferably locate beneath the upper deck and within the deck-house, as shown.

J are suitable vents for the lower main chambers, and J' are vents for the deck-house.

L are inlet-valves controlling openings in the lower side of the hull to be used in filling the hull with water.

On the inner side of a ponton thus constructed I form a series of pockets or wells M through the hull, and a series of corresponding pockets M' through the deck-house, the pockets M' being wider than the pockets M, a shoulder N being formed at the junction of the two pockets which forms a bearing for the block N', suitably apertured to allow the chain Q to pass through, a pin or shackle O' being used on the top of this block to hold the chain in its adjusted position.

P is a stanchion secured above the well M', upon which is secured the sheave P', and at the base of which is secured the sheave P². Over these sheaves is looped the rope Q, which has a suitable hook at its end adapted to be engaged in the chain, and at its other end connects to the winding-drum Q' in the engine-house, so arranged that the chain may be raised or lowered by the engine.

To offset the loss in buoyancy upon the inside of the pontons caused by forming the wells, I place the water-ballast tank R upon the opposite side of the ponton, which I intend to keep filled with water at all times, so that in the upper position of the ponton, as shown in Fig. 6, it may remain as nearly level as possible.

The parts being thus constructed and arranged, they are intended to operate as follows: The pontons being towed over the sunken vessel, the valves L being open, the hull B is gradually filled with water and the

pontons sunk. If the lift is great, I can sink my hull still farther by opening the valves S in the deck-house to partially fill it. The engine-house being water-tight will be entirely
 5 secure, although partially under water. The chains may be now adjusted beneath the vessel and passed upward through the wells M M' and through the blocks N', and secured to their adjusted positions by means of the
 10 shackle O', as before described. When the chains have thus been properly secured, the pump I' being operated, water will be taken from the hull, and the buoyancy of the pontons cause them to rise. The valves S being open, as they rise the water will flow out
 15 from the deck-house. When the water is entirely pumped from the hull and the full effect of the buoyancy of the pontons exerted in lifting it as far as possible, the pontons
 20 are towed into shallow water until the vessel rests upon the ground. The pontons are separated a sufficient distance to allow the vessel to come between their inner edges, and are held in their separated position by means
 25 of the girders S', secured in suitable bearings S² formed upon the main deck. The chains are carried to the upper deck and pass through suitable blocks S³ thereon, and the pontons can be filled, pumped out, and the vessel
 30 lifted, when it will be in ordinary cases clear from the water, as shown in Fig. 6, and may then be towed to any desired point.

In order that I may pass from one ponton to the other when they are separated, I arrange the gangways T, which I slidably secure upon the ends of the ponton, supporting its outer edge by means of the chain or rope T' passing over the stanchion T² and connecting with the outer end. T³ are suitable
 40 derricks connected to the engine, preferably to the drum Q', so that small articles may be lifted out of the water, or for any desired purpose.

What I claim as my invention is—

45 1. In a camel, the combination of the hull, a series of vertical wells in one side thereof, a deck-house having corresponding wells of larger diameter, chains in said wells, and adjustable blocks on the chains in the upper
 50 wells of a diameter greater than the lower well, substantially as described.

2. In a camel, the hull formed of two independent sections, each having water-tight compartments, a conduit connecting the lower part of the end compartments, and a connection between the conduit and the central compartment, a suction-well leading from the conduit, suitable suction means, ingress and egress valves for the compartments, a deck-house, pockets in the inner portion of the hull,
 55 and wells between the pockets, substantially as described. 60

3. In a camel, the combination of the hull divided centrally, having a series of adjacent pockets in its inner portion, a counterbalance
 65 water-compartment in the outer portion of the parts, and intervening water-tight compartments, and a deck-house on each section formed with water-tight compartments, substantially as described. 70

4. In a camel, the combination of the hull, a series of vertical wells in one side thereof, a deck-house having corresponding wells, stanchions above said well, pulleys upon said stanchions, a winding-drum, and a rope on
 75 said drum adapted to connect to the chain in any well, substantially as described.

5. In a camel, the combination of the hull, a series of vertical wells in one side thereof, a deck-house having corresponding wells, a
 80 bearing at the top of each well of both series, the blocks N', chains O, passing through the wells on which the blocks are placed, rope Q, connected to the chains, pulleys P' P'', over which the rope passes, and winding-drum Q'
 85 for winding up the rope, substantially as described.

6. In a camel, the combination of the hull, a series of vertical wells in the hull on one side, pockets in the inner part, and a counter-
 90 balancing water-compartment at the other side, and an intervening water-tight compartment, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 22d day of
 95 January, 1890.

CHARLES H. BROWN.

Witnesses:

GEO. O. GREGG,
 M. B. O'DOHERTY.