BRIEF DESCRIPTION OF THE SELF-PROPELLING, ELECTRICALLY DRIVEN, DERRICKING AND REVOLVING FLOATING CRANE "MAMMOTH"

GENERAL ARRANGEMENT.

The principal parts of the crane are:

1) A pontoon in which boilers and steam engines are placed;
2) A tower, being the spindle on which the framework revolves, strongly fastened to the pontoon;
3) A crane framework resting on and revolving round this tower. It consists of a lower platform with winch-house and counterweight, upper platform, connecting structure between the two platforms, driver's cabin placed at the top of the framework and derricking spindles with movable ballast-box;
4) A crane-jib hinged to the upper platform;
5) Two blocks capable of lifting a load of 100 tons each and a load of 200 tons when coupled together;
6) Two trolleys travelling along the jib, capable of hoisting a load of 30 tons each and a load of 60 tons when coupled together;
7) Electrical installation.

SPECIAL CONSTRUCTION.

The hull of the pontoon is of a special shape, allowing the tower to be placed forward of the midships, and at a distance from the fore-end equal to that from the sides of the pontoon, i.e. half the breadth of same, thus affording in the forward direction, a field of operation of the same extent as at the sides.

OPERATIONS.

The different operations of the crane are performed by one crane-driver who has within his reach all the switches and controllers in the cabin situated at the top of the framework, so that he has an unobstructed view of what is going on.

CAPACITY.

The crane is capable of lifting a load of 200 tons at a radius of 65 feet, measured from the centre of the block to the side of the pontoon, at a speed of 3½ feet per minute. With a load of 200 tons, the jib can be derricked to such a height that the block is 170 feet above the waterline. A load of 150 tons can be lifted at a distance of 98 feet, measured from the centre of the block to the side of the pontoon.

By means of the trolleys a 50 tons load can be lifted at a radius of 140 feet, measured from the centre of the block to the side of the pontoon at a speed of 16½ feet per minute. With this load, the jib can be derricked to such a height that the block is 197 feet above the waterline.

The travelling speed of the trolleys along the jib with the 60 tons load is 12 feet per minute.

With loads up to 200 tons the crane can revolve round the tower, and with a load of 200 tons a complete revolution can be made in ten minutes.

ALL THE SPEEDS MENTIONED ABOVE ARE CONTRACTED SPEEDS WHICH AT THE TRIALS, HOWEVER, WERE CONSIDERABLY SURPASSED.

ELECTRICAL EQUIPMENT.

The dynamo driven by the steam engine is of the Ward Leonard System and is placed in a separate engineroom below the deck. The motors which are placed in the winch-house are as follows:

2 motors for the 200 tons hoisting gear;
2 motors for the hoisting gear of the 30 tons trolleys;
2 motors for the travelling gears of the 30 tons trolleys;
2 motors for the revolving gear;
2 motors for the derricking gear;
1 motor for the oilpump.

All the controllers and switches for these motors are placed in the driver's cabin at the top of the crane-framework.

The Ward Leonard System enables the speeds of the different movements to be perfectly controlled, and allows the hoisting or lowering of loads at extremely low speeds, which is a great advantage where heavy loads have to be handled.

DIMENSIONS OF THE PONTOON.

The principal dimensions of the pontoon are as follows:

Length (between perpendiculars)	154 feet.	Depth (forward)	16 feet.
Breadth	88 feet 6 ins.	Depth (aft)	8 feet 5 ins.

BOILERS, STEAM ENGINES AND AUXILIARIES.

Two boilers, each having a heating surface of 1040 square feet, supply the steam required.

Two sets of triple expansion engines, each of about 250 I. H. P. with surface condenser, drive the propellers. The portside engine is also fitted for driving the dynamo.

There are also the usual steam driven auxiliaries in the engineroom.

WINCHES, CAPSTANS AND STEAM STEERING GEARS.

Two heavy steam-winches, four steam capstans and a steam steering gear are fitted on deck.
In order to keep the deck as clear as possible, the engines for the capstans are placed below deck.

PROPELLING PLANT.

The speed of the vessel is about four knots.

ELECTRIC LIGHTING.

There is an independent electric lighting installation which can be used when the crane is not at work.

INVENTORY.

The crane is provided with an inventory as required for vessels of this type.

SERVICE.

The working of the crane is very easy and can be carried out by four hands only, i. e. a crane-driver, engine-driver, stoker and deckhand.