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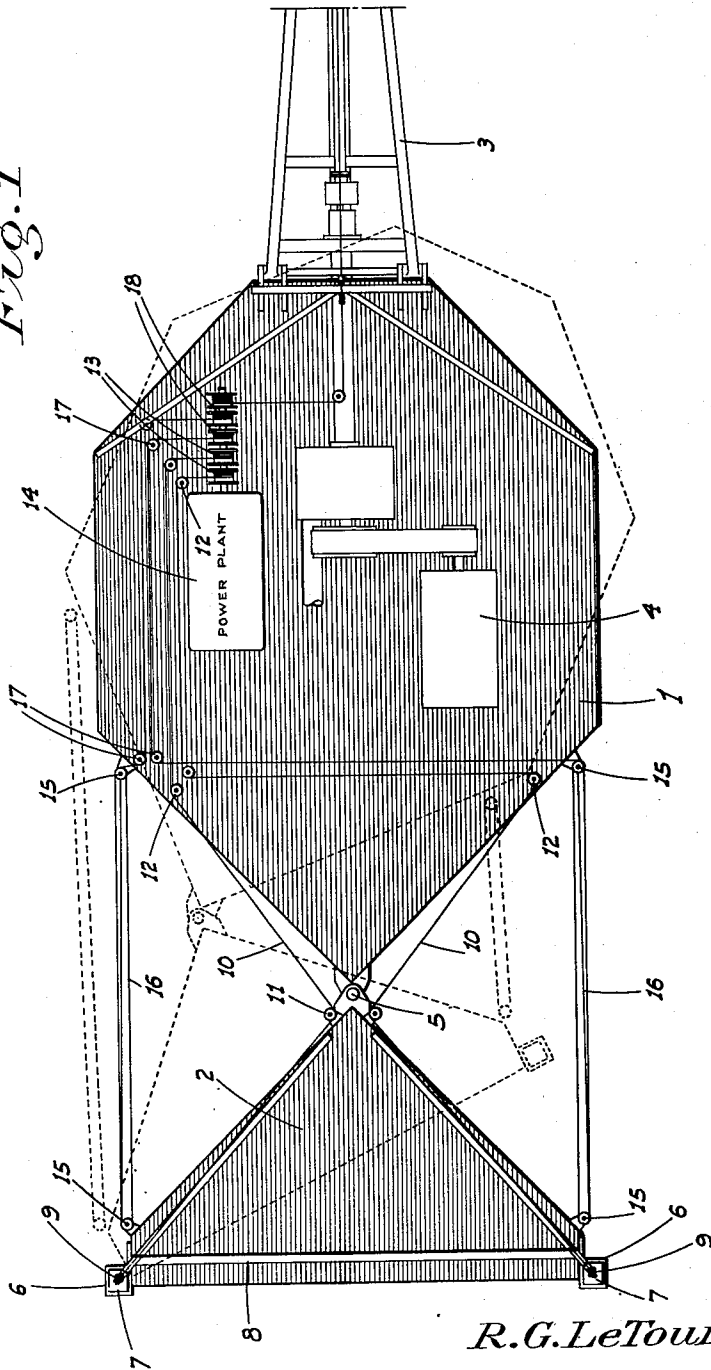
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DREDGER

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2 Sheets-Sheet 1

Fig. 1



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DREDGER

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6 Claims. (Cl. 37—73)

This invention relates to dredges such as are generally used in quiet inland waters and which are maintained in position by spuds, and particularly deals with the construction and manipulation of the hull of the dredger.

The principal object of my invention is to provide a dredger of the above general character whose hull is so constructed that the dredging element may be swung through a wide arc without disturbing the spuds, and which may be moved along the water by proper manipulation of the spuds in conjunction with the pulling action of certain cables, and without the aid of any tug or other external power or the use of any external anchor or deadman other than the spuds.

In this manner the dredging position of the dredge, and of the dredging element may be easily and quickly altered as the area being dredged necessitates and operating costs and time of operation are reduced accordingly.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Figure 1 is a top plan of my improved dredger hull, the arrangement of the cable drums, cables and their guide pulleys being shown somewhat diagrammatically.

Figure 2 is a side elevation of the structure.

Referring now more particularly to the characters of reference on the drawings, the hull comprises a main front portion 1 and a tail or fin portion 2. The main hull carries the dredging structure 3 which may be of the suction, bucket or other type, which projects from the front end of the hull and which of itself forms no part of my invention. The power plant 4 and other operating mechanism of the dredger structure is also mounted on the main hull.

The adjacent ends of the main hull and tail are cut on a longitudinal slope to a central apex, with an included angle of substantially 90°, so as to leave wide angular spaces between the hull sections at their sides when said sections are longitudinally aligned. At their apex the hull sections are connected together by a heavy vertical hinge or pivot pin 5 so that the sections can swing relative to each other in a horizontal

plane, but are maintained rigid with each other in a vertical plane.

At its rear corners the tail section 2 carries vertical guide sleeves 6 for the spuds 7. A derrick frame 8 is mounted on the tail at its rear end and supports pulleys 9 overhanging the spuds, the height of the derricks being of course sufficient to enable the spuds to be raised practically clear of the water. Individual cables 10 extend from the top of the spuds over the corresponding pulleys 9, about direction changing pulleys 11 on the tail adjacent the hinge pin 5, and then over other direction changing pulleys 12 on the main hull to separate cable drums 13 driven from a suitable power plant 14 mounted on said main hull. The type of hoist and power plant used may be of any suitable design, a heavy duty Diesel engine being preferably employed as the power plant. By means of this arrangement these spuds may be individually lowered or raised without imparting any material swinging action to the hull sections.

Mounted on the hull sections adjacent their sides approximately at the beginning of the sloping end portions thereof in sheave blocks 15 about which individual cables 16 extend, the cables being deadended at one pair of the blocks. The cables then extend over suitably disposed guide and direction changing pulleys 17 on the main hull section to other separate power driven drums 18 on said hull.

In operation, to move ahead one spud 7 is raised clear of the bottom and the cable 16 on the loosened spud side is shortened, thus closing up the angle between the adjacent ends of the hull sections and advancing the main hull section some distance. The loose or raised spud is then dropped and anchored and the other spud is raised and the cable pulling operation is repeated on the opposite side. These operations are alternately repeated until the dredge has been advanced the desired distance. To move the dredge in the reverse direction, the process or method of operation above described is just reversed. The dredge can also be moved in any other direction than relatively straight ahead by regulating the amount of pull on the opposed cables 16 with the alternate operation thereof. Also the main hull section can be swung through an arc of approximately 150° when both spuds are anchored, by pulling on one or the other of the cables 16 while allowing the opposed cable to run slack.

From the foregoing description it will be readily seen that I have produced such a device as sub-

stantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described my invention, what I claim as new and useful and desire to secure by Letters Patent is:

1. A dredge structure comprising longitudinally separate hull portions, means hinging said portions at adjacent ends for relative swinging movement in a horizontal plane, a dredging mechanism carried by one hull portion, separately operable spuds carried by the other portion, and means to swing said one portion about the hinge means as one axis.

2. A structure as in claim 1, in which said last named means comprises separate cable drums mounted on one of said hull portions, and cables extending from said drums to connections with the other hull portion adjacent the sides thereof.

3. A structure as in claim 1, in which the hull portions at their adjacent ends are formed with a longitudinal slope toward the hinging means.

4. A structure as in claim 1, in which the hull portions at their adjacent ends are formed with a longitudinal slope toward the hinging means, and said hinging means is disposed centrally of the width of the hull portions.

5. A dredge structure comprising a hull portion adapted to be directly supported by water, separately operable spuds carried thereby, another hull portion, dredging means carried by said other portion, means connecting the hull portions together for relative swinging movement in a horizontal plane, and means to control such movement.

6. A dredge structure comprising a hull portion adapted to be directly supported by water, another hull portion having a dredging mechanism thereon and disposed beyond the first named hull portion, means connecting the hull portions together at their adjacent ends in longitudinally extending relationship for relative swinging movement in a horizontal plane, and means between the hull portions whereby said other portion may be swung to one side or the other about said connecting means as an axis.

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