Dec. 28, 1943. J. H. HILL ET AL 2,337,818

DREDGE

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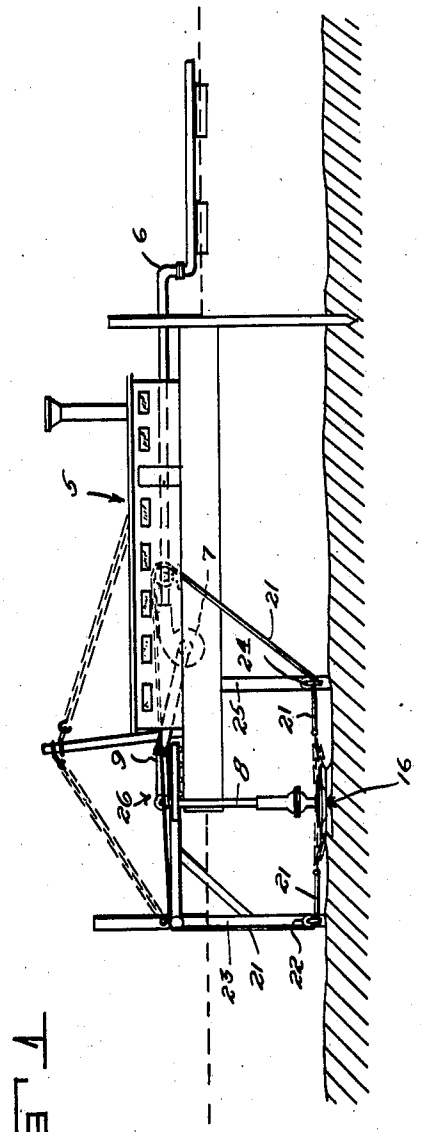


FIG. 1

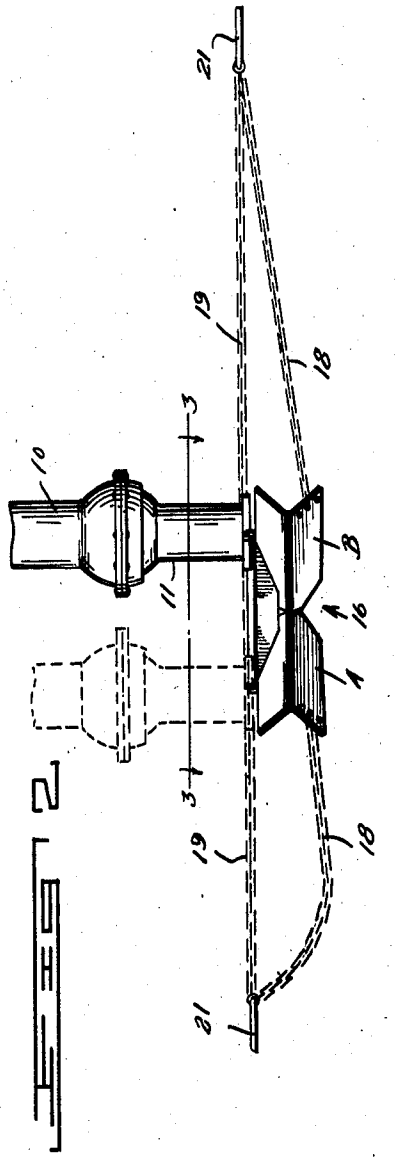


FIG. 2

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Fig. 3

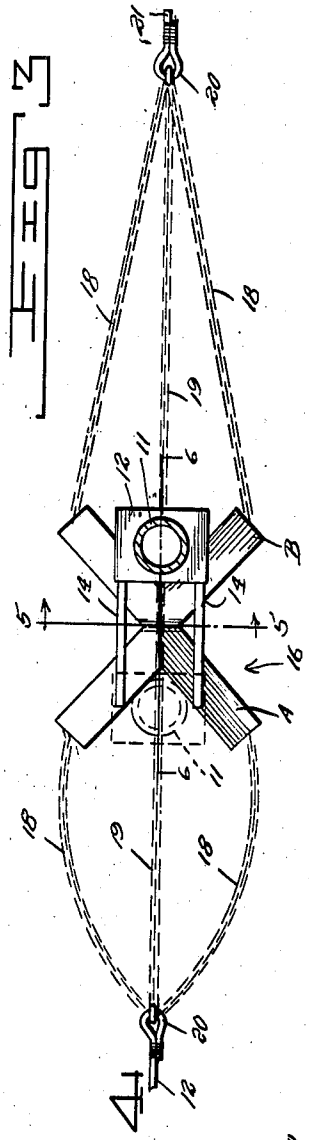


Fig. 4

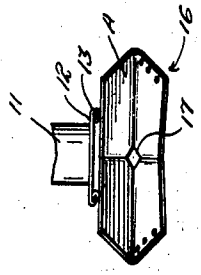


Fig. 6

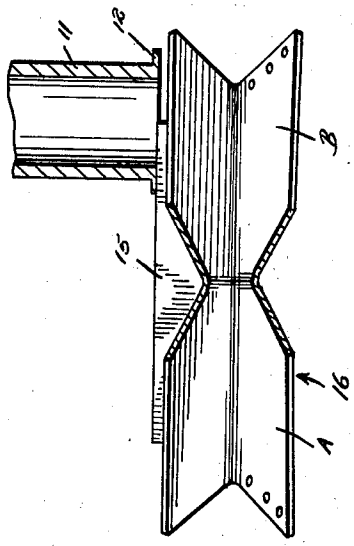
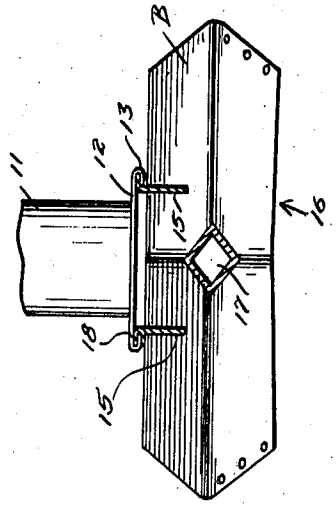


Fig. 5



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UNITED STATES PATENT OFFICE

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DREDGE

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Redondo Beach, Calif.

Application January 29, 1942, Serial No. 428,764

6 Claims. (Cl. 37—58)

This invention relates to new and useful improvements in dredging machines and more particularly to a dredger scoop and means for operating the same.

The principal object of the present invention is to provide a scoop structure for suction dredgers adapted to be operated in such a manner that the scoop is constantly filled with muck or other material to be sucked up by the dredging machine.

Another important object of the invention is to provide a scoop structure which can be used either for wet or dry dredging.

Other objects and advantages of the invention will become apparent to the reader of the following description.

In the drawings:

Figure 1 represents a side elevational view of the improved dredging machine.

Figure 2 is a fragmentary side elevational view of the dredger scoop.

Figure 3 is a sectional view taken substantially on the line 3—3 of Figure 2.

Figure 4 is an end elevational view of the scoop.

Figure 5 is a transverse sectional view on the line 5—5 of Figure 3.

Figure 6 is a sectional view taken substantially on the line 6—6 of Figure 3.

Referring to the drawings wherein like numerals designate like parts, it can be seen that numeral 5 generally refers to a dredging boat having an eduction conduit 6 extending from a suction plant 7 thereon. Numeral 8 denotes a stand pipe which at its upper edge is connected by a conduit 9 to the intake side of the suction plant 7. The lower end of the stand pipe 8 is connected by a universal union 10 to a short suction spout 11, this being provided at its lower end with a slide plate 12, the side edge portions of which are bent inwardly to define guide flanges 13 in overlapping disposition with respect to side flanges 14 on guide ribs 15, the latter being disposed on the top of a scoop structure generally referred to by numeral 16. This scoop structure in conjunction with the spout 11 represents the important part of the present invention.

The scoop 16 is made up of a pair of V-shaped blades A and B joined or merging together at their corner portions and each of the V-shaped blades is also V-shaped in cross section, it being further noted in Figures 4 and 5 that a by-pass opening 17 is formed through the joined portions of the blades A and B to permit for the passage of water to the end that sand, muck or other material can be fully gathered within the confines of the blades A or B being pulled and under the spout 11 located thereover.

Extending from each blade A, B are chain links 18, 18 and from each end of the slide plate 12 extends a chain link 19. These chain links at each end of the scoop 16 extend outwardly to connect to an eye 20 which, in turn, is connected to a drag cable 21.

One of these cables 21 extends under a pulley 22 on the lower end of a prop 23 supported by the boat 5, while the other cable 21 extends under a pulley 24 supported by the lower portion of a prop 25 carried by the boat 5. These cables 21 extend upwardly over other pulleys to a power plant 26.

It can be seen that it is the intention to pull the scoop 16 back and forth in long sweeps between props 23 and 25. In pulling the scoop, for instance, toward the left in Figure 3, it will be observed that as the chain link 19 pulls on the slide 12 the joint 10 will flex as the plate 12 rides to the dotted line position shown in Figure 2, it then being located over the blade A and in a position to suck up muck or other material which has been gathered by the blade A as it is being pulled. Obviously, surplus water can escape through the by-pass opening 17.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having described the invention, what is claimed as new is:

1. In a dredging machine, a scoop having a pair of gathering portions and adapted to be reciprocated, and a suction spout movably connected to the scoop and adapted to be moved on the scoop to sucking position at either gathering point depending upon the direction in which the scoop is being moved.

2. In a dredging machine, a scoop having a pair of gathering portions and adapted to be reciprocated, and a suction spout movably connected to the scoop and adapted to be moved on the scoop to sucking position at either gathering point depending upon the direction in which the scoop is being moved, a stand pipe, and a yieldable connection between the stand pipe and the spout.

3. In a dredging machine, a scoop having a pair of gathering portions and adapted to be

reciprocated, and a suction spout movably connected to the scoop and adapted to be moved on the scoop to sucking position at either gathering point depending upon the direction in which the scoop is being moved, and guide means between the spout and the scoop, said guide means movably connecting the spout to the scoop.

4. In a dredging machine, a scoop having a pair of gathering portions and adapted to be reciprocated, a suction spout movably connected to the scoop and adapted to be moved on the scoop to sucking position at either gathering point depending upon the direction in which the scoop is being moved, and pull means which when actuated first moves the spout to the proper sucking position on the scoop and then moves the spout and scoop simultaneously in the corresponding direction.

5. In a dredging machine, a scoop having a pair of gathering portions and adapted to be reciprocated, a suction spout movably connected to the scoop and adapted to be moved on the scoop to sucking position at either gathering point depending upon the direction in which the scoop is being moved, said scoop being made up of a pair of V-shaped grooved blades having their inner portions connected.

6. In a dredging machine, a scoop having a pair of gathering portions and adapted to be reciprocated, a suction spout movably connected to the scoop and adapted to be moved on the scoop to sucking position at either gathering point depending upon the direction in which the scoop is being moved, said scoop being made up of a pair of V-shaped grooved blades having their inner portions connected, and a water by-pass at the connected corner portions of the blades.

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