To all whom it may concern:

Be it known that I, ERNEST OTIS PATTERTON, of Charleston, in the county of Charleston and State of South Carolina, have invented a new and improved Drag for Suction-Pipes, of which the following is a full, clear, and exact description.

The invention relates to deep sea dredging apparatus, and its object is to provide certain new and useful improvements in drag for suction pipes, whereby the capacity of the apparatus is considerably increased, and in case of choking, the suction pipe can be readily relieved of surplus material.

The invention consists in certain parts and details, and combinations of the same, as will be hereinafter fully described and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the improvement. Fig. 2 is a sectional side elevation of the same, on the line 2—2 of Fig. 1. Fig. 3 is an inverted plan view of the improvement; and Fig. 4 is an end view of the improvement.

The improved drag is provided with the body A, adapted to be secured on a suction pipe, and carrying at its lower end a mouth B, having an inlet contracted in height but increased in width, as plainly illustrated in Fig. 1. The mouth B is strengthened at its front end by vertically disposed stays C, preferably made of channel iron, as indicated in Fig. 3. In the front of the mouth B is formed an opening B', adapted to be closed by a water supply valve D, secured on a shaft E, journaled in suitable bearings attached to the outside of the mouth B, as shown in Fig. 3. On one outer end of the shaft E is held a weighted lever F, connected at its free end with a rope G extending upward to the dredging boat containing the pumping machinery for the suction pipe.

Ordinarily the valve D is closed, but when a large amount of sand or other solid material fills the mouth then this material cuts off the supply of water necessary for properly sucking up the sand by the pump. Now when the mouth thus becomes choked, the operator in the dredging boat pulls the rope G to open the valve D so as to permit water to be drawn into the mouth by the suction action of the pump, to cut up the choking ma-

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Witnesses:

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