April 2, 1963 J. L. WIEGARDT, JR 3,084,309

OYSTER DREDGING BAG

Filed April 24, 1961 2 Sheets-Sheet 1

FIG. 1

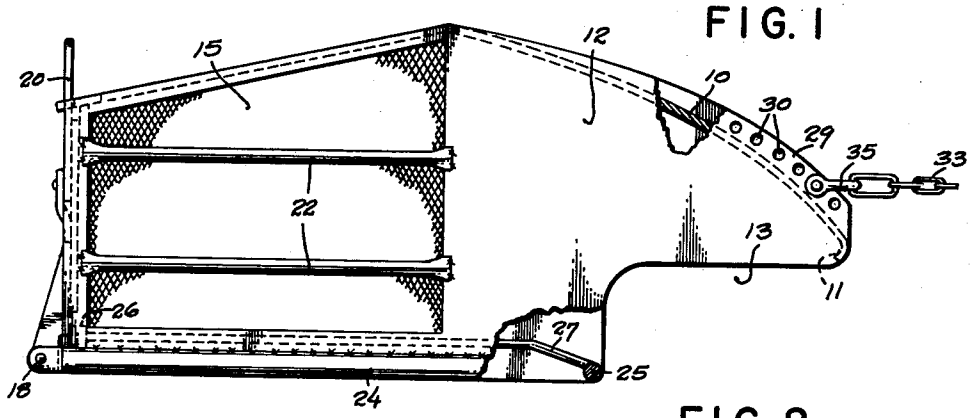


FIG. 2

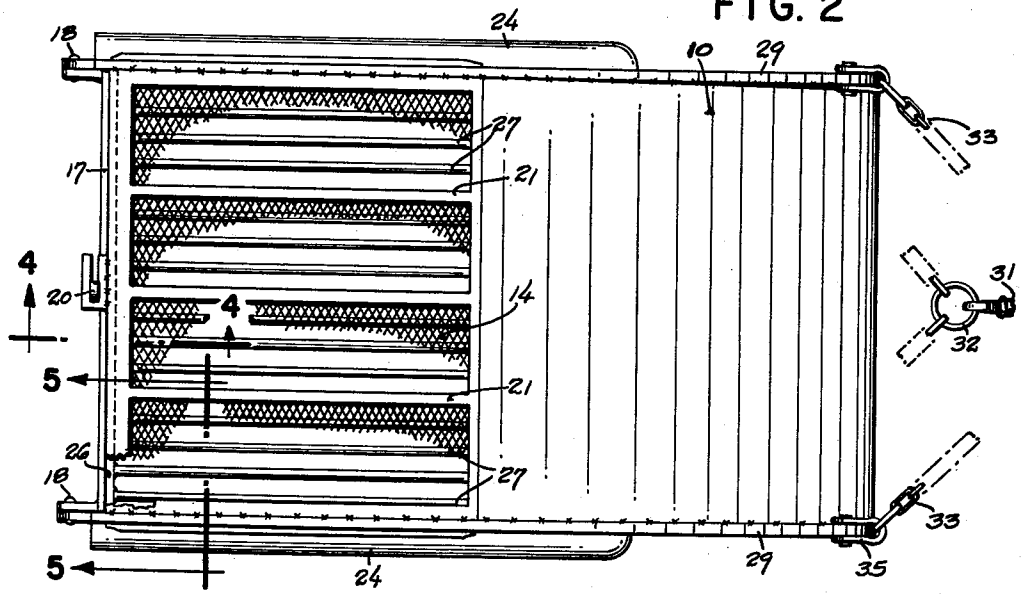
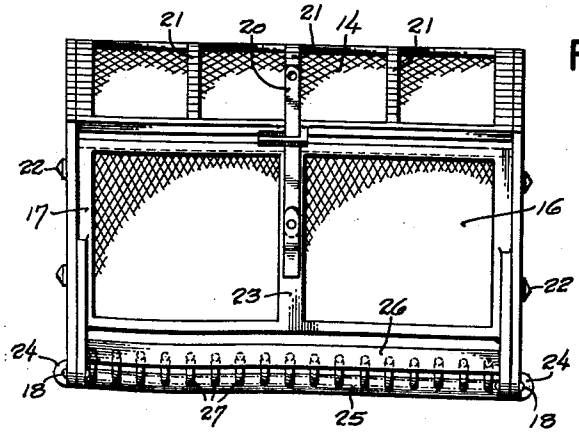


FIG. 3



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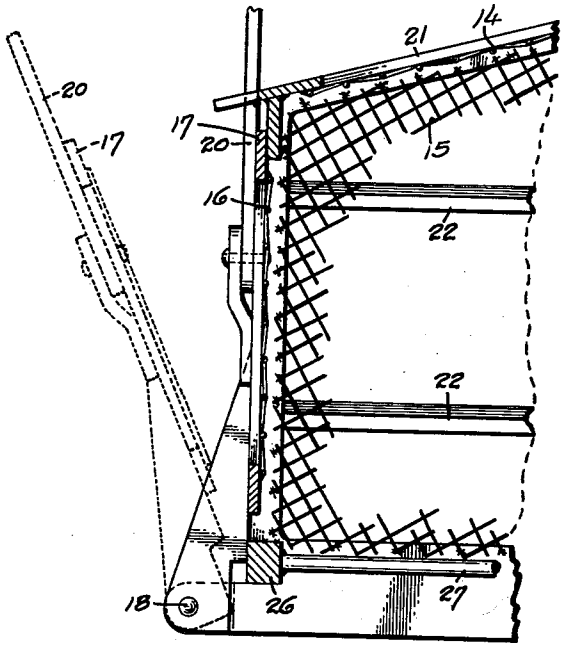


FIG. 4

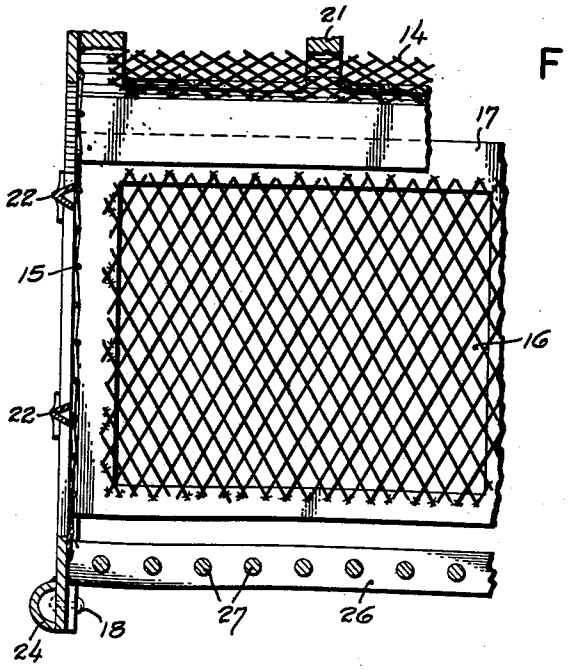


FIG. 5

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OYSTER DREDGING BAG

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12 Claims. (Cl. 37—119)

This invention relates to an oyster dredge bag, and namely a bag employed as a dredge in taking up oysters from an oyster bed. The present application is a continuation-in-part of my pending application Ser. No. 27,862, filed May 9, 1960, now abandoned.

For its principal object the invention proposes to provide a dredge bag which will take a greater percentage of the oyster crop from any given bed than has been possible employing bags or dragnets of previous design, one in which the oysters taken will suffer little or no damage in course of the dredging operation, and which will minimize the amount of sand present in the gills of the harvested oysters.

It is a further particular object to provide an oyster dredge bag which will cause little damage to the ground over which the bag passes and consequently allow re-use of such ground with a minimum amount of preparatory work.

The invention has the still further and important object of providing an oyster dredge bag which imposes considerably less resistant drag than has heretofore been the case so as to permit the dredge vessel to be powered at a lower engine r.p.m. while still obtaining a comparable over-the-ground speed. Ancillary to the power saving is the reduction in sand displacement obtained in consequence of the markedly reduced "wash" from the dredge's propulsion wheel.

These and other still additional objects and advantages in view, will appear and be understood in the course of the following description and claims, the invention consisting in the novel construction and in the adaptation and combination of parts hereinafter described and claimed.

In the accompanying drawings:

FIGURE 1 is a side elevational view, with parts broken away and in section, illustrating an oyster dredging bag constructed to embody the preferred teachings of the present invention.

FIG. 2 is a top plan view thereof, with the tow bridle and tow cable shown fragmentarily.

FIG. 3 is a rear elevational view of the bag.

FIG. 4 is a fragmentary longitudinal vertical sectional view drawn to an enlraged scale on line 4—4 of FIG. 2; and

FIG. 5 is a fragmentary transverse vertical sectional view on line 5—5 of FIG. 2, employing the same scale as that of FIG. 4.

The dredge bag of the present invention is a hollow box-like parallel-sided structure fabricated largely from sheet metal, and so formed that the interior space may be said to be divided into a feed chamber at the front and a collection chamber at the rear. These two chambers have unrestricted communication. The feed chamber is walled along the ceiling by an imperforate top wall **10** inclined upwardly from front to rear on a moderate slope from a bull-nosed front lip **11**, and along the sides by imperforate cheek walls **12**. These cheek walls each have their bottom edge cut away at the front to produce re-entrant openings **13**. Such side openings extend to approximately the same level as that occupied by the lip **11**, and have a length approximately one-half the length of the cheek walls.

The collection chamber is walled along its ceiling by a screen **14**, along its sides by screens **15**, and along the back by a screen **16**. Screen **14** is inclined downwardly from front to rear on a moderate slope. Screens **15** are

disposed co-planar or approximately co-planar with the cheek walls **12** perpendicular to the plane in which the bottom edges lie. A framework **17** carries the back screen **16** and functions as a swing-gate for the discharge of oysters collected in the collection chamber. The pivot for this gate is denoted at **18**, and a locking bar therefor is represented at **20**. The screens for said several walls are each suitably reinforced by slats **21**, **22** and **23**, respectively.

A runner **24** of curved cross-section which is or may be comprised of lengths of large-diameter pipe, say 3", split on a diameter, is welded to each side wall of the bag along the lower edge thereof to extend from the after end of the cheek openings **13** to the extreme rear end of the bag, and cross-members **25** and **26** extend horizontally from one to the other side wall of the bag at substantially the front and rear end limits of said runners. Cross-member **25** is composed of circular rod or pipe stock and occupies a level coinciding with said side runners **24**. As can be clearly seen from an inspection of FIGS. 3 and 5, cross-member **26** is elevated somewhat above this level.

A bottom wall for the bag extends between said cross-members and is made in the form of a grate from longitudinal bars **27** with the interstices therebetween being moderately smaller than the size of oysters which are to be gathered. These rods incline upwardly for a short distance from the front cross-member **25**, and thence extend horizontally to the rear cross-member **26**.

For drawing the dredge bag along an oyster bottom each of the side walls **12** is carried upwardly a short distance above the ceiling plate **10** to form flange prolongations **29**, and in each of these upwardly extending flanges there is provided a series of spaced holes **30**. A tow-line **31** from a dredge is hooked to a ring **32** which connects in turn to bridle lines **33**. These bridle lines connect by shackles **35** with the flanges, the set of holes employed being selected according to the downward pressure characteristic which it is desired to place upon the cross-member **25**.

The throat through which oysters enter the feed chamber of the bag may be said to lie between the bull-nosed lip **11** and the cross-member **25**, following the re-entrant profile of the side openings **13**. It will be apparent that oysters may enter this throat either from the front or the sides, and there in fact occurs a substantial in-flow of water through the side openings as the bag progresses along the oyster bottom. In addition to harvesting oysters over which the bag directly passes, lighter free oysters are pulled from both sides of the path being traversed by the bag. Smaller more fragile oysters are held more or less in suspension in the stream of water flowing into the bag's feed throat. There is, in addition to the stream flow produced by the bag's own forward progress, a fairly considerable kinetic force created by the propeller or propellers of the dredge. The expanding nature of the bag's feed chamber causes the water stream to enter the bag at a higher velocity than would otherwise be the case and has the further advantage of decelerating this velocity within the bag so that entrained oysters are not unduly agitated. The grate bottom performs a straining function to rid the bag of sand which then passes under the elevated lower edge of the rear cross-member **26**.

It is believed that the invention and the manner of its operation will have been clearly understood from the foregoing detailed description of my now preferred embodiment of the invention. Changes in the details of construction can be resorted to without departing from the spirit of the invention and it is accordingly my intention that no limitations are implied and that the hereto annexed claims are to be given the broadest interpretation which the employed language fairly admits.

What I claim is:

1. In an oyster dredge bag, a bag structure provided with a bridle for towing and formed with rigid top, bottom and side walls to produce a box-like body open at the front and rear and having a releasably secured tail gate for said rear opening, said top wall, the side walls, and the tail gate each having large screened openings therein so as to trap dredged oysters while permitting free escape of water from the interior of the bag, said side and top walls having imperforate portions of substantial length lying to the front of said screened openings, the bottom wall comprising front and rear cross-bars and a plurality of parallel closely spaced rods extending longitudinally of the bag between said front and rear cross-bars to produce a substantial grate.

2. The dredge bag recited in claim 1 characterized in that said imperforate portions of the top and side walls produce at the front of the bag a feed chamber the compass of which expands in a rearward direction.

3. Structure according to claim 1 in which said imperforate portion of the top wall slopes downwardly toward the front and terminates in a bull-nosed tip spaced above the plane in which said grate lies.

4. The dredge bag recited in claim 1 characterized in that the imperforate portions of said side walls and the top wall are prolonged a substantial distance forward beyond the transverse vertical plane occupied by the front cross-bar, said top wall prolongation sloping downwardly in a forward direction with its front edge located well above the plane of the grate, the bottom profile of said side wall prolongations being located well above the plane of the bottom wall so as to provide side openings through which water may course into the bag from both sides thereof as dredging proceeds.

5. In an oyster dredge bag, a rigid bag structure provided with a bridle for towing and formed with top, bottom, rear, and side walls to produce a box-like body open at the front, said bag being divided into a feed chamber at the front and a collection chamber at the rear and with both of said chambers communicating substantially free of any obstruction, the walls for said collection chamber having screened openings therein so as to trap dredged oysters while permitting free escape of water from the interior of the bag, the side walls and the top wall of the feed chamber being imperforate with said top wall sloping downwardly from back to front.

6. The dredge bag recited in claim 5 in which the imperforate side walls are relieved along the bottom to produce side openings through which water may course into the bag frmo both sides thereof as dredging proceeds.

7. The dredge bag recited in claim 5 in which the imperforate side walls extend upwardly as flanges above the imperforate top wall and have a plurality of holes in said flanges spaced at intervals of the length and arranged to be employed selectively for the attachment of the bridle to the bag.

8. Structure according to claim 5 characterized in that the bottom wall comprises front and rear cross-members, a plurality of closely spaced grate-forming rods extending longitudinally of the bag between said front and rear cross-members, said rods initially rising for a short distance at a moderate slope from the front cross-member and thence extending to the rear cross-member in a horizontal plane spaced above the bottom edge of the screened side walls.

9. Structure according to claim 8, said front cross-member being circular in cross-section.

10. Structure according to claim 8, said front cross-member and the bottom edges of the side walls occupying a common horizontal plane, the rear cross-member being spaced thereabove.

11. In an oyster dredge bag, a bag structure providing communicating feed and collection chambers at the front and rear, respectively, each having substantially a rectangular shape in cross section and with the former having perforated top, side and rear walls for screening dredged oysters while permitting free escape of water from the interior of the chamber, the collection chamber having an open-bottom access throat at its front and being defined along each side by an imperforate cheek plate and at the top by an imperforate ceiling plate, said ceiling plate sloping downwardly toward the front with its bottom edge spaced well above the horizontal plane in which the bottom of the bag lies, the bag being provided with a towing bridle at the front end.

12. Structure according to claim 11 characterized in that the bottom edges of the cheek plates are relieved to produce side openings through which water may course into the throat from both sides thereof as dredging proceeds.

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