

[54] OFF-SHORE FIRE AND POLLUTION CONTROL SYSTEM

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[52] U.S. Cl.....61/1 F

[51] Int. Cl.....E02b 15/04

[58] Field of Search.....61/1 F, 5; 210/242, DIG. 21

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\*Note- No. 77350 is an addition of No. 1249315

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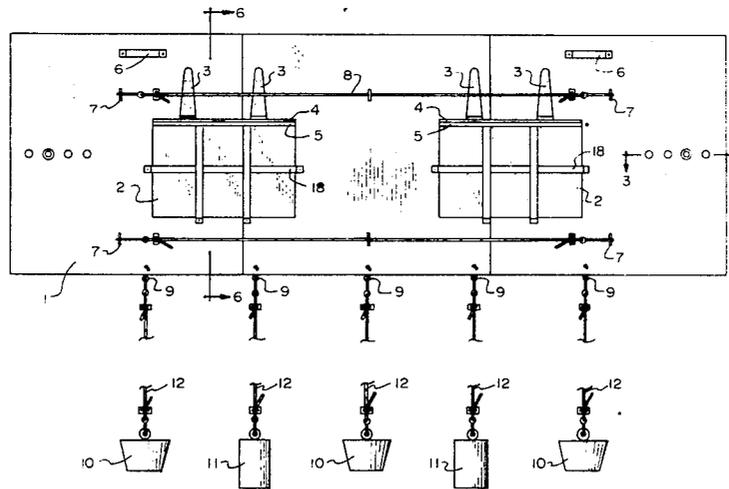
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[57] ABSTRACT

A portable, flexible, floating firewall having a rectangular galvanized metal body and four essentially identical flotation packets, two disposed on each side of the metal body. The flotation packets are formed of Styrofoam and encased in a plastic container which is covered with a layer of asbestos cloth on all exposed portions of the container. A plurality of steel bands secure the flotation packet to the body and an outwardly projecting rigid shelf is mounted immediately above the flotation packet to hold the flotation packet in place. Two horizontally directed cables are anchored near each end of the body on both sides thereof. The cables are adjustable in length in order to control the degree of bending which will be allowed the body. Ballast weights removably connected by cables to the bottom edges of the body continuously urge the body in the upright position in the water.

1 Claim, 13 Drawing Figures



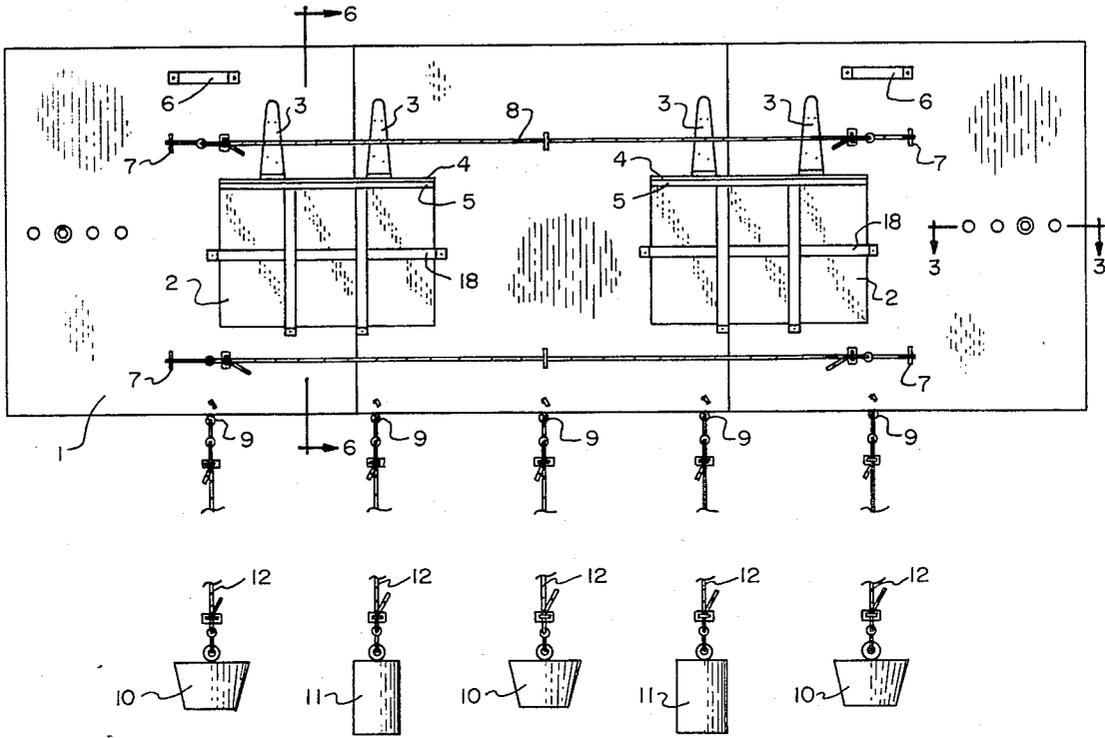


FIG. 1

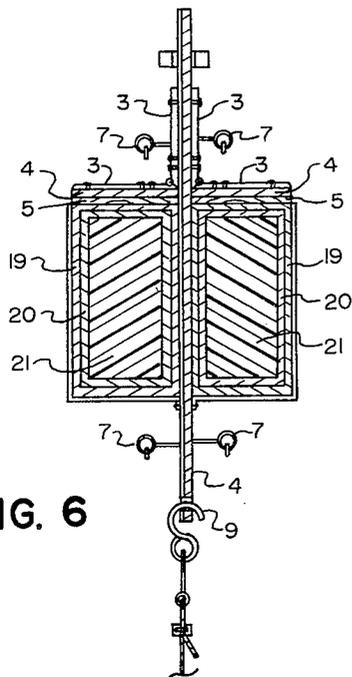


FIG. 6

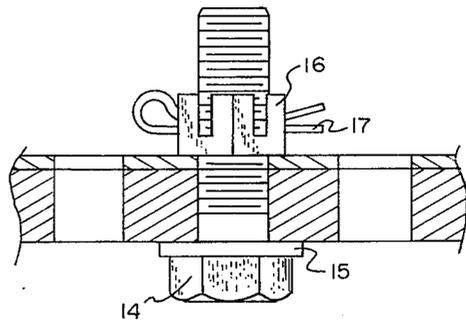


FIG. 3

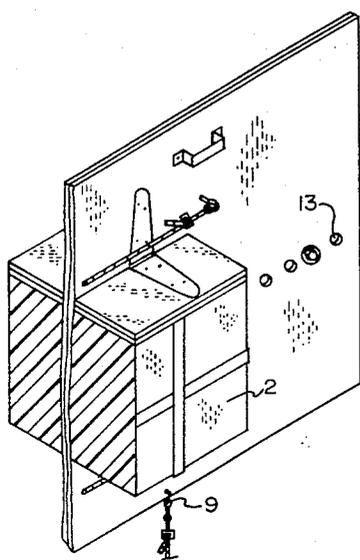


FIG. 2

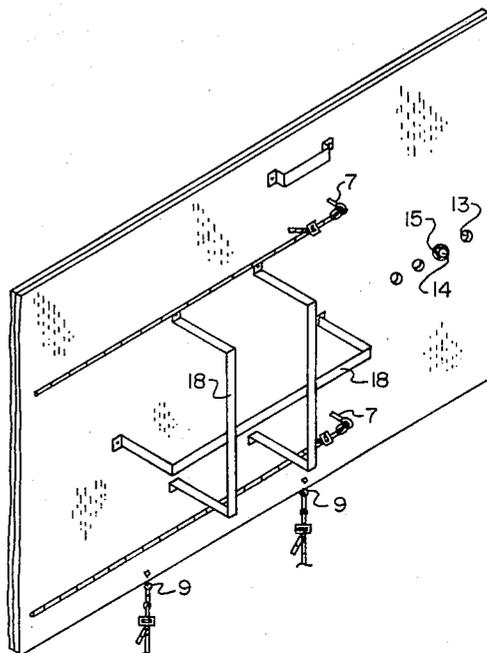


FIG. 4

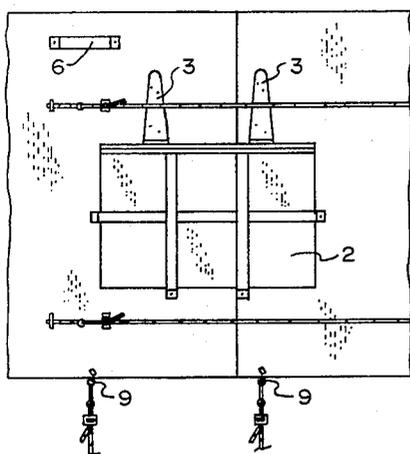


FIG. 5

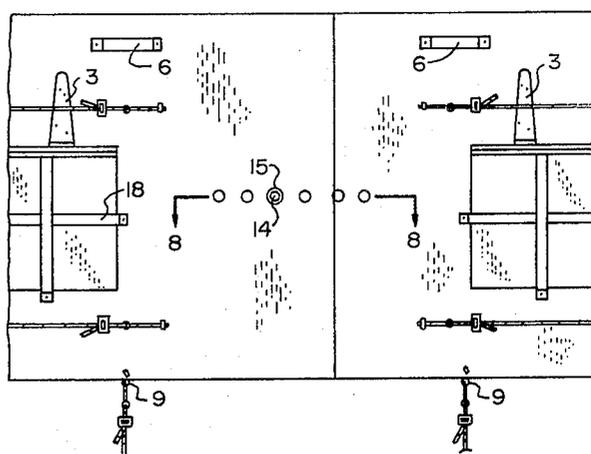


FIG. 7

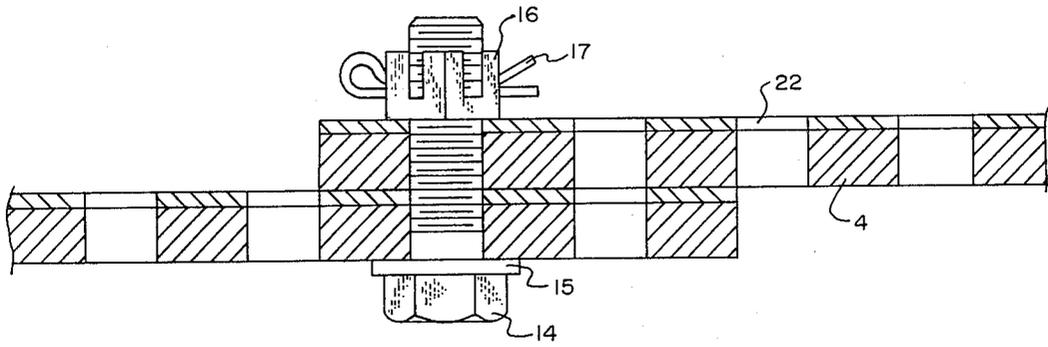


FIG. 8

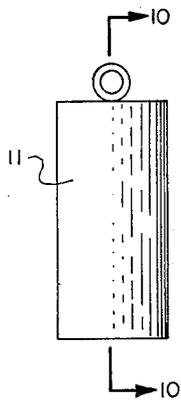


FIG. 9

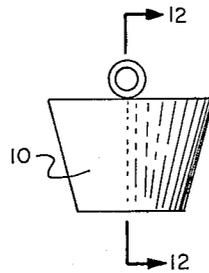


FIG. 11

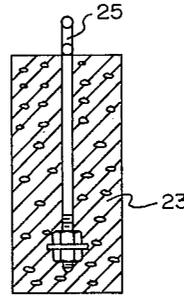


FIG. 10

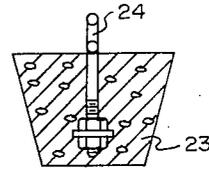


FIG. 12

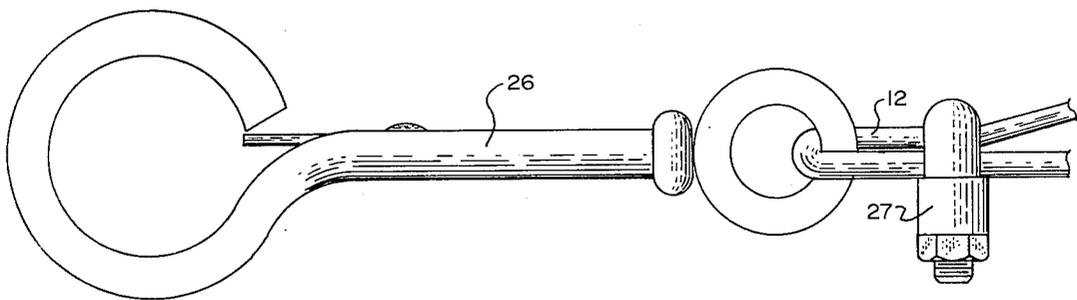


FIG. 13

## OFF-SHORE FIRE AND POLLUTION CONTROL SYSTEM

## BACKGROUND

## Field of the Invention

The invention relates to an improved off-shore fire and pollution control system.

As a direct result of the Santa Barbara, Calif. oil spill disaster which occurred, I was motivated to seek a solution to this problem, and after many hours of work, meditation, and testing, I came up with what I choose to call a "Floating Firewall". My desire was to design something which would make it possible to keep the escaping oil or chemical within a given area, while the cause of the leakage was being repaired, and to make it possible to reclaim and recycle said material and at the same time make it simpler for a skimmer type barge to recover any of the material which might in all probability escape from within the enclosed area.

## A BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevation to show the embodiment of the invention.

FIG. 2 is a perspective view on an enlarged scale, partially in vertical section, showing one end portion of the embodiment of the invention.

FIG. 3 is a cross-sectional view taken along the line 3—3 of FIG. 1.

FIG. 4 is a perspective view showing one of the strap members and also showing a portion of the reinforcement cable and the attachment of the ballast cables in relation to the straps.

FIG. 5 is a side elevation on an enlarged scale of one of the four Styrofoam flotation packets on the illustrated embodiment of the invention.

FIG. 6 is a vertical cross-sectional view taken along the line 6—6 of FIG. 1.

FIG. 7 is a perspective view similar to FIG. 5, and showing joint means for connecting the ends of two units together.

FIG. 8 is a cross-sectional view taken along the line 8—8 of FIG. 7.

FIGS. 9 and 11 are side elevational views of two sizes of ballast blocks used to stabilize each unit.

FIGS. 10 and 12 are vertical sections taken along lines 10—10 and 12—12 of FIG. 9 and FIG. 11, respectively.

FIG. 13 is an enlarged side elevation of the cable attachment used on the reinforcement and ballast cables.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The embodiment of the system in accordance with the invention will now be more fully described by way of explanation with reference to the drawings.

FIG. 1 is a view of one side of a unit. Each side appears to be the same or similar, however the side which will be exposed to heat from a fire has an insulation on it consisting of Johns-Manville Permatone "S" Flex beard. There are two flotation packets 2 on each side of a unit, one side being encased with asbestos cloth, and the other left uncovered as far as fireproofing is concerned. Each unit is held upright in the water via ballast blocks 11 and 10 of either the 20 lb or 10 lb weight, respectively. Ballast cables 12 and reinforcement cables 8 are preferably aircraft cables. Ballast cables are a minimum one-eighth inch, whereas those for the reinforcement vary from one-eighth to three-eighths inch in accordance with the demand of the purchaser. Each flotation packet is mounted beneath a rigid shelf and held in place by 3/4 inch steel bands 18, bolted to the unit in such a manner that the same bolt will extend to the flotation packet on the opposite side of the unit

as well. The rigid shelf 4 is secured to the main body by an L-shaped bracket 3. Each unit is equipped with handles 6, on both sides of the unit, and on both ends. Each unit has "S" bolts 9 on the lower edge, to which the ends of the ballast cables are connected via snap hooks 26 (see FIG. 13). Each unit has holes 13 on each end for selection of wave heights to be encountered.

FIG. No. 2 is a cross-sectional view of the rigid shelf 4 and adjacent flotation packet 2. Directly beneath the shelf 4 is a piece of the Permatone "S" fireproofing 5 (see also FIG. 6) to protect the piece of 3/4 inch plywood against which the flotation packet will press in order to maintain a maximum lift without placing any strain on the steel bands 18, which are used merely to retain the packet closely against the unit. The main body 1 of each unit consists of a galvanized eighteen gauge metal body measuring 3 x 10 feet.

Each flotation packet is 6 x 15 x 24 inches and made of a block shaped member of Styrofoam 21 which is first encased in a plastic cover 20, then covered by a waterproof ducking (not shown), then covered in asbestos cloth 19 on the fireproof side. No asbestos is necessary on the side not to be fireproofed.

FIG. 6 shows the flotation packet 2 including Permatone 5, plywood shelf 4, plastic cover 20, waterproof ducking (not shown), and asbestos pillow-like cover 19.

FIG. 7 shows two units joined together with only a small overlap at each end to be used when the water is fairly calm. It also shows how the two reinforcement cables 8 fit on each side. The amount of slack left in each reinforcement cable 8 will govern the amount of bending the unit will need to describe the circle like area it is to enclose.

FIG. 8 shows how the units being connected together overlap, the bolt, washers, nut and cotter pin to be used to prevent the bolt from coming loose due to the wave action it will have to withstand.

FIGS. 9 through 12 show how the anchor bolt on each ballast block extends almost to the bottom and is kept from slipping out by a bolt and washers after the cement hardens into a solid block.

FIG. 8 shows an enlarged drawing of a snaphook, cable clamps and aircraft cable used.

What is claimed and desired to be secured by United States Letters Patent is:

1. A flexible floating firewall for use in confining oil and buoyant chemical deposits on the surface of a body of water comprising:

- a rectangular galvanized metal body;
- two essentially identical flotation packets mounted at corresponding vertically centered locations upon each side of the body, the flotation packets comprising a block-shaped member of Styrofoam enclosed in a plastic container which is in turn covered with a layer of asbestos cloth on all exposed portions of the plastic container;
- a plurality of steel bands tightly formed over each flotation packet and secured to the body with bolts so that the same bolt secures corresponding bands on the opposite sides of the body;
- an outwardly projecting rigid shelf mounted upon the body immediately above the flotation packet and a similarly shaped fireproof material sandwiched between the flotation packet and the shelf;
- a plurality of horizontally directed cables anchored near each end of the body, each cable being adjustable in length to control the degree of available bending in the body; and
- a plurality of ballast weights removably connected by cables to the bottom edge of the body to continuously urge the body to maintain an upright position in the water.

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