

Oct. 19, 1971

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3,613,376

FENCE FOR ENCLOSING IMPURITIES FLOATING ON WATER

Filed May 12, 1969

4 Sheets-Sheet 1

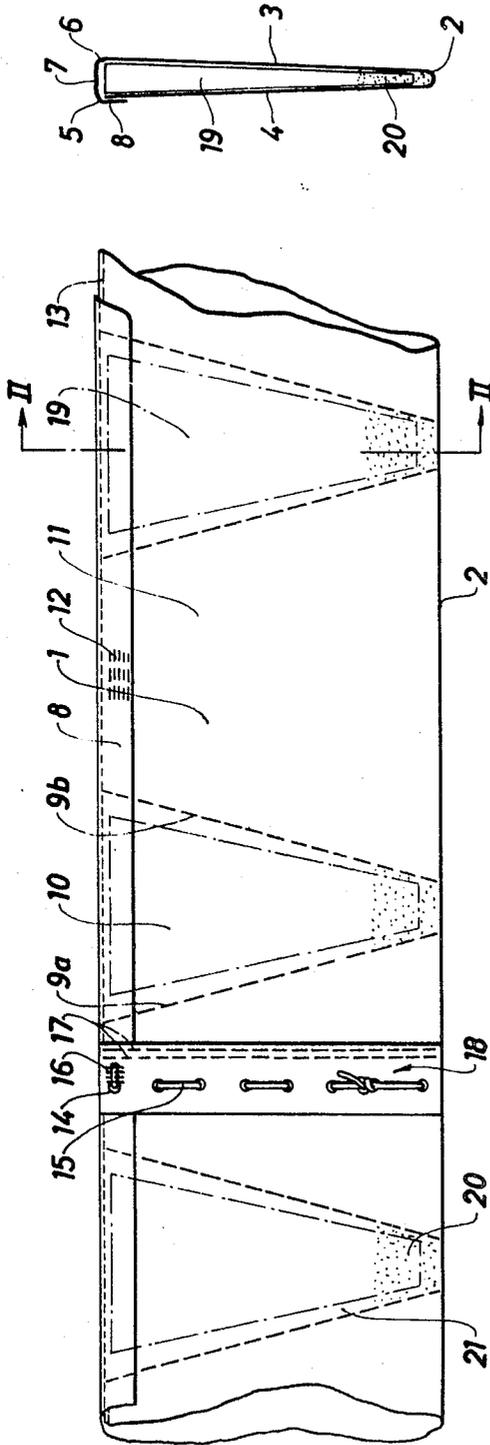


FIG. 1

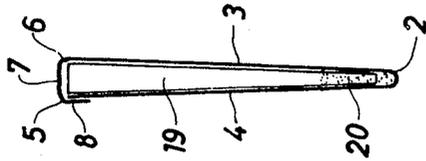


FIG. 2

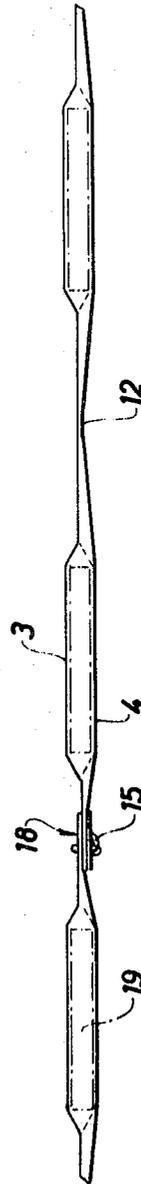


FIG. 3

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4 Sheets-Sheet 2

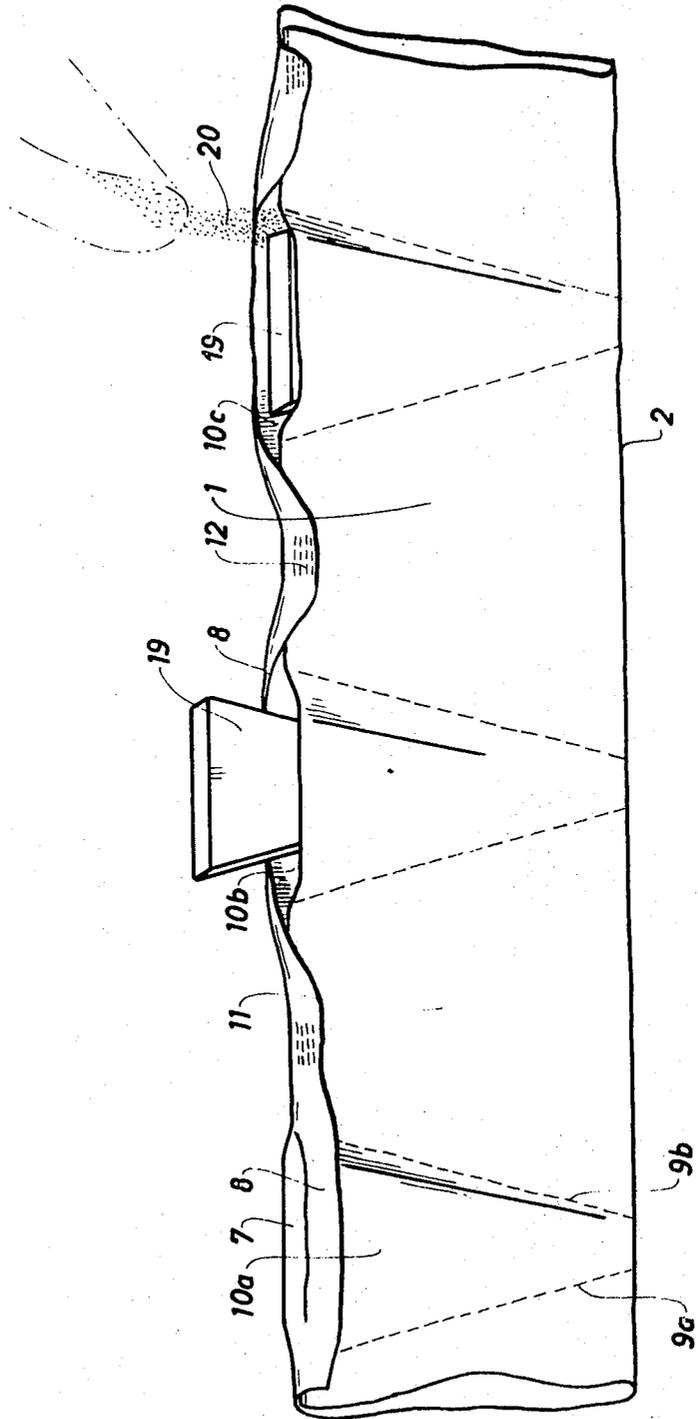


FIG. 4

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4 Sheets-Sheet 3

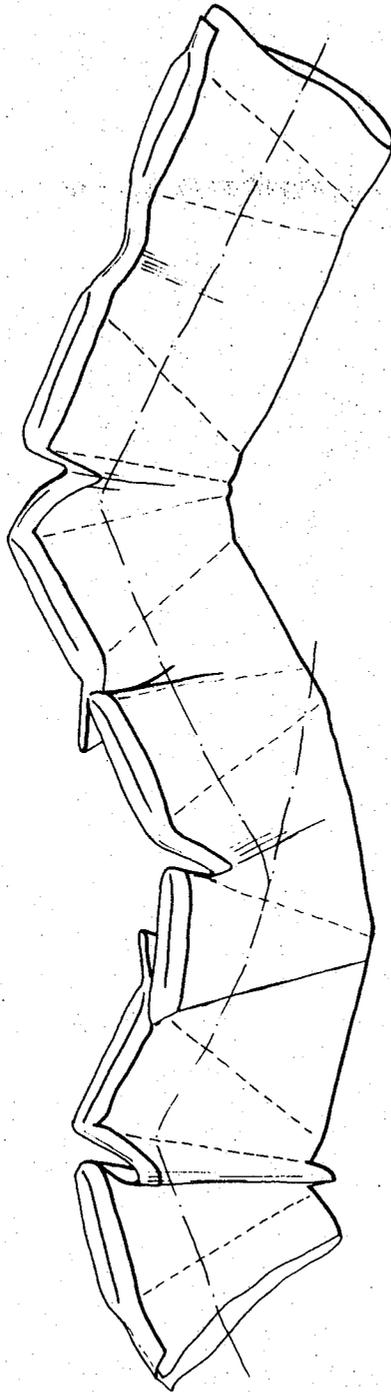


FIG. 5

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FENCE FOR ENCLOSING IMPURITIES FLOATING ON WATER

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4 Sheets-Sheet 4

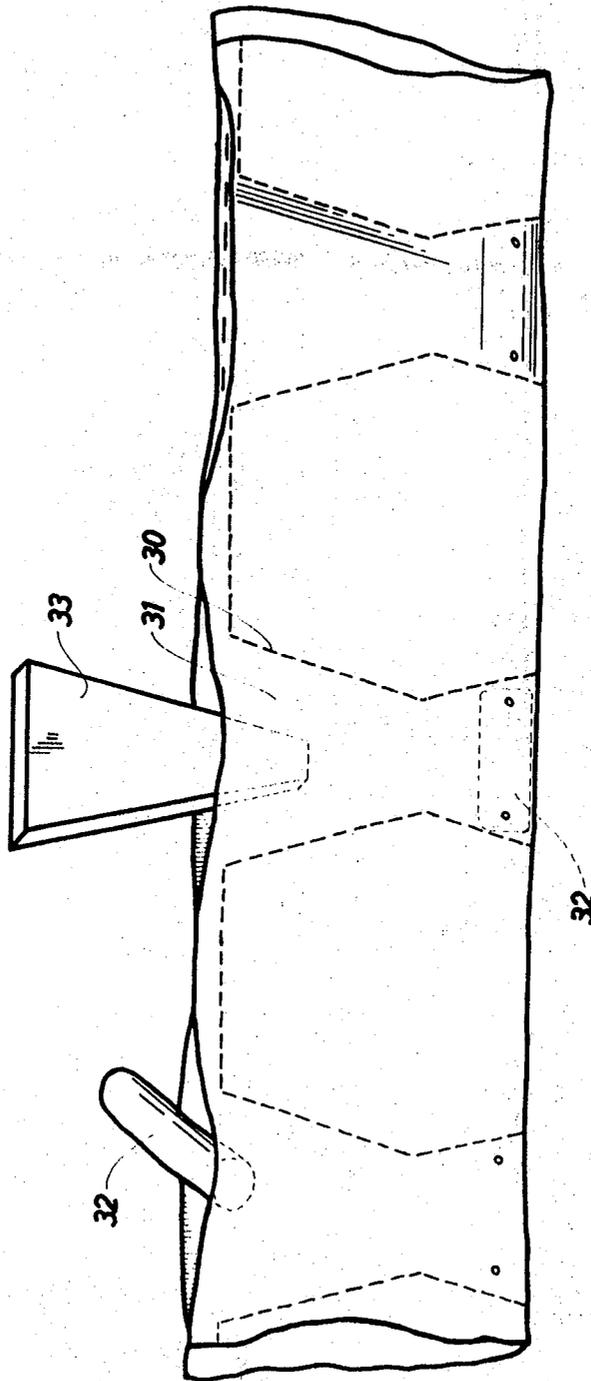


FIG. 6

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3,613,376
**FENCE FOR ENCLOSING IMPURITIES
 FLOATING ON WATER**

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U.S. Cl. 61—1

6 Claims

ABSTRACT OF THE DISCLOSURE

A fence for enclosing impurities floating on water, having an elongated two layer piece of material with spaced apart pockets provided by connections to the two layers of material which pockets have openings facing one longitudinal edge of the material and floats and weights in said pockets capable of keeping the fence floating in water with the sides of the fence substantially vertical and the longitudinal edges of the fence substantially parallel with the surface of the water.

The present invention relates to a fence for enclosing impurities floating on water.

The fence according to the invention is characterized in that it comprises an elongate two layer piece of cloth, plastic foil or the like with pockets formed by transverse seams or similar connections between the layers, said pockets having their openings facing one of the longitudinal edges of the fence and each being adapted to receive a float element, said float elements being adapted to keep the fence in a floating position with the sides of the fence substantially vertical and the longitudinal edges of the fence substantially parallel with the water surface.

The invention will be described more closely herebelow with reference to the accompanying drawings, wherein FIG. 1 is a side view of two interconnected end portions of the fence or two similar fences, FIG. 2 is a cross-section taken on the line II—II in FIG. 1, FIG. 3 is a view from above of the fence shown in FIG. 1, FIG. 4 is a view in perspective of a portion of a fence during the insertion of the float elements, FIG. 5 is a view in perspective of a fence floating in water, and FIG. 6 illustrates a fence according to another embodiment of the invention.

The fence according to FIGS. 1-5 inclusive comprises a main portion 1 which is made of cloth, plastic coated fabric, or similar material. The piece of cloth or the like constituting the main part 1 has a length corresponding to the length of the fence and a width slightly exceeding the height of the fence. As shown most clearly in FIG. 2, the piece of cloth is folded along a line 2 slightly to one side of the longitudinal middle line of the piece of cloth. The cloth layer indicated at 3 will thereby extend slightly past the edge of the layer indicated at 4 at the edge opposite to the fold 2. This edge portion of the layer 3 is bent as at 5 and 6 to form, at the open side of the folded piece, a lid 7 with a flap 8 (see also FIG. 4).

After folding, the layers 3 and 4 are interconnected by a number of seams 9. In the embodiment shown, the seams 9 are arranged in pairs 9a and 9b converging towards the fold 2 in each such pair. As will appear from FIG. 1, the pairs of seams 9a and 9b form a number of pockets 10, spaced from one another, the portions between said pockets being indicated at 11. At the middle of the portions 11 the flap 8 is secured to the two layers 3 and 4 by means of one or several seams 12 or the like.

The portions 11 between the pockets 10 are thus substantially closed by means of the seams 9 and 12. In the embodiment shown there is also provided a seam

13 which can be seen to the right in FIG. 1 and which seals off the portions 11 completely. On the other hand, each of the pockets 10 may be opened at their wider edge by folding up the flap and the lid 7 when the fence is slack, whereas the flap 8 will be maintained in its closed position as illustrated in FIG. 2 when the fence is straightened out.

The elongated part 1 is provided with coupling means at both ends. For this purpose a number of holes 14 are provided in a transverse row at the end of the main part as shown in FIG. 1. If two such end portions 18 are put together, they may be laced together as illustrated in FIG. 1 by means of a piece of string 15 threaded through the holes 14. The string 15 may preferably be stitched to the main part 1 as shown at 16 in FIG. 1 in order to prevent the string from becoming lost when not in use. The holes 14 may preferably be provided with metal eyelets. The end portion 18 of the main part 1 may preferably be strengthened by folding over and stitching at 17 in FIG. 1, or by stitching an extra piece of material to said end portion.

Float elements are inserted in the pockets 10 in the main part 1. In the present embodiment the pockets contain both float-elements 19 and weights 20. (See FIGS. 1 and 2.) The float elements 19 are made from a comparatively stiff material with a weight per volume of unit which is less than that of water. The float elements may for instance consist of cork or cellular plastic or may be made in the form of an air filled container. The shape of the float elements 19 closely corresponds to the shape of the pockets 10. As shown in FIG. 1, the float elements are triangular with one edge cut off. As illustrated in FIG. 2, the thickness of the float elements is reduced towards the cut off edge.

The float elements 19 are dimensioned in such a way that there will be a certain play (the spaces 21 in FIG. 1) around the float element in each pocket 10. This space is intended to receive the weight material 20 which preferably consists of granular material with a weight per unit of volume exceeding that of water. Sand or metal balls or the like may be used for this purpose.

FIG. 4 illustrates the insertion of the float elements 19 and the weight material 20. The float element 19 is shown during insertion in the pocket indicated at 10b. The lid 7 and flap 8 have been folded away so that the pocket is open and the float element 19 may be inserted. In the pocket 10c shown to the right in FIG. 4 the float element 19 is completely inserted in the pocket. FIG. 4 also illustrates how the granular weight material 20 is poured into the pocket 10c around the float element 19. The weight material collects at the bottom of the pocket. The float elements and the weight material will be maintained in the pockets by the lid 7 and flap 8 which will cover the openings of the pockets effectively as long as the fence is maintained tightened in the longitudinal direction.

For the purpose of preventing the spreading of floating impurities on the water the fence must float partly under the water surface. This floating position is illustrated in FIG. 5 wherein the dot and dash line indicates the water surface. In order to obtain a suitable floating position the float elements 19 and the weight material 20 must be chosen correctly with respect to the material chosen for the main part 1. By varying the amount of weight material 20 the floating position of the fence may be adjusted. Also, the amount of the weight material 20 may be varied for adjusting the floating position of the fence to waters of different specific gravity.

The upright floating position of the fence illustrated in FIG. 5 is necessary for its proper function. Due to the comparatively large height of the fence obtained in this

way the impurities are prevented from passing above or below the fence. Also, the fence according to the invention is easy to fold for transportation and storage and takes little space in its folded condition.

The upright floating position according to FIG. 5 is obtained by placing the weight material 20 in the bottom of the pockets 10 and also by the triangular shape of the float elements 19.

The portions 11 of the fence between the pockets 10 form flexible connections between the pockets containing the stiff float elements, so that the fence as a whole becomes very flexible and will follow the movements of the water, as illustrated in FIG. 5. At the same time the fence has sufficient stiffness to always maintain its upright floating position.

The connecting device illustrated in FIGS. 1, 3 and 5 and comprising the string 15 makes it possible to connect together the ends of a fence so as to form a closed ring. Also, several fences may be interconnected by the same means to form a larger fence.

The embodiment hereinbefore described has been chosen as an example only. The details of this embodiment may be varied within the scope of the appended claims. As an example, the seams 9, 12, 13 etc. may be replaced by glueing or any other method of connection. The shape and the volume of the pockets 10 and the spacing between them may also be varied within wide limits.

The separate float element 19 and weight material 20 may be replaced by a single float element with a suitable weight per unit of volume and with a suitable location of the point of gravity.

The interconnecting device between the end portions 18 may also be made in many different ways within the scope of the appended claims. The interconnection may be effected for instance by means of buttons or screws.

In the embodiment illustrated in FIG. 6, the pockets 31 formed by the seams 30 have an "hour glass" shape. The weight 32 may consist of granular material packed in plastic bags or may consist of larger stones. The weights are intended to be inserted into the pockets before the float elements 33 are inserted therein. Due to the shape of the pockets the weights are prevented from being displaced upwardly in the pockets after the float elements 33 have been inserted. In the embodiment according to FIG. 6 there are no lid and flap portions for closing the open end of the pocket. Instead, the pockets are closed by folding and securing the upper edge portion of the fence as illustrated to the right in FIG. 6. The folded around edge portion may be secured by stitching or by metal staples or the like.

I claim:

1. A fence for enclosing impurities floating on water wherein said fence comprises an elongated piece of material of cloth, plastic foil or the like with pockets, said pockets having openings facing the same one of the longitudinal edges of said material, float elements each positioned in one of said pockets and extending over the main part of the height of the fence and tapering downwardly towards the other longitudinal edge of said material, weight material in said pockets, wherein said weight material together with the float element is adapted to maintain the fence in a floating position with the side surfaces of the fence substantially vertical and the longitudinal edges of the fence substantially in parallel with the water surface.

2. A fence as claimed in claim 1, wherein said fence is formed by folding of a single piece of said material over itself providing two layers of said material.

3. A fence as claimed in claim 2, wherein one of said layers of material extends past the edge of the other layer at that edge of the fence where the openings of said pockets are disposed for forming a lid adapted to be folded over said pocket openings.

4. A fence as claimed in claim 2, wherein said pockets enclosing said float elements are spaced from one another along the length of said material.

5. A fence as claimed in claim 2, wherein each of said pockets enclosing said float elements has substantially the shape of a triangle one side of which is defined by the opening of the pocket, and the other sides being defined by seams.

6. A fence as claimed in claim 2, wherein said pockets are partly filled with said float elements, and said weight material at least partly fills the remaining space in said pockets.

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