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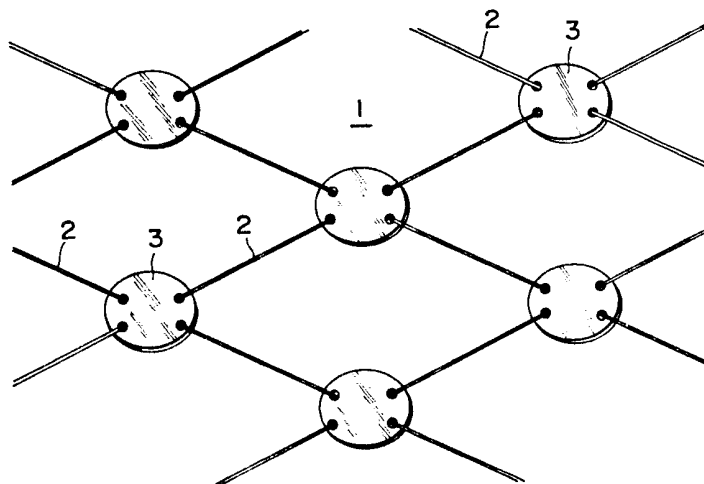
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(54) **Net fabric for trawling**

(57) A net fabric for a trawl net is formed by metallic net filaments (2) which are connected at their intersections to resistance plates (3) which resist the flow of water and may have a curved surface and are provided with four or more peripheral holes for attaching the metal filaments. The resistance plates (3) make it possible to spread the trawl net vertically and horizontally and keep its shape efficiently. The size and material of the plates (3) may be different in different parts of the net e.g. larger plates at the wings and net mouth, lighter plates of synthetic resin in the upper part.

FIG.1



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FIG.1

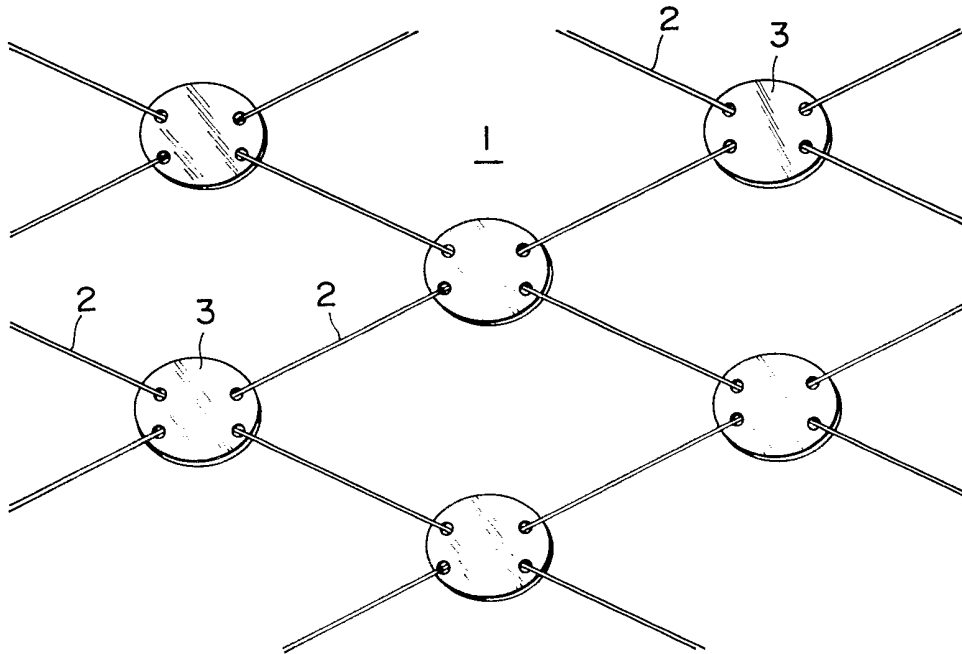


FIG.2

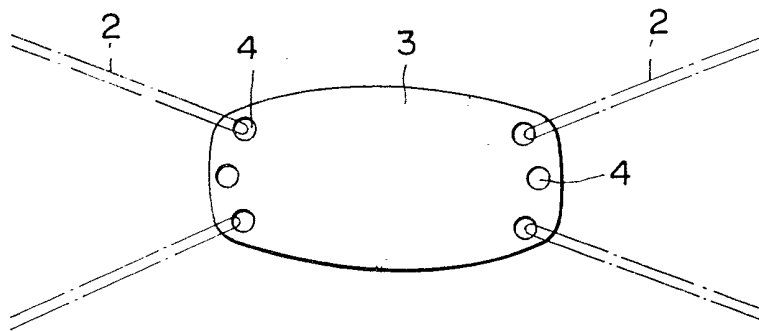


FIG.3

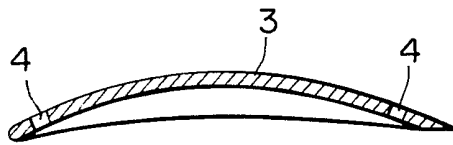
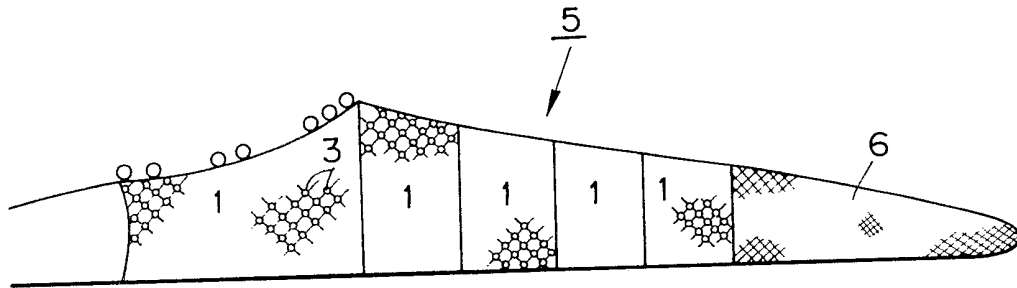


FIG.4



SPECIFICATION

Net fabric for trawling

5 The present invention relates to an improved net fabric for trawling.

It is already well known that net fabrics could be made of metallic materials to improve the abrasion resistance and drying property thereof, and also to increase the specific gravity. However, the net fabric made of metallic materials are used in practice only, for example, for fixed nets, and fish or seaweed farming nets.

15 Based on long experience in the trawling industry and various experiments, the inventor has reached the conclusion that metallic net fabric has a remarkably threatening effect on a school of fish, and has investigated the method of adopting metal net fabric which has a greater threatening power, for the wing part and the forward part of the body of a trawl net.

20 However, in practice, it is very difficult to maintain the net mouth in a wide-open position and keep the trawl net in proper shape when it is towed, due to the greater specific gravity of metallic net fabric.

It is a main object of the present invention to overcome these difficulties and provide an efficient net fabric for a trawl net which, although made of metal having a large specific gravity, permit efficient maintenance of both a widely opened net mouth and a proper shape as a trawl net, while making the most of the advantages of this net fabric, namely durability, less water resistance, and increased threatening power against fish, by means of installing small resistance plates at the intersections of metallic net filaments.

40 According to the invention there is provided a net fabric for a trawl net wherein the mesh is made of metallic material, and which is formed by connecting the intersections of the net to plates which resist the flow of water.

This net fabric for a trawl net provides more efficient spreading of the metal net and can be employed to form the most suitable trawl shape in accordance with the different requirements at each part of the trawl net, by selecting and adjusting the size, shape and weight of material used for the resistance plates at the interconnections of the net filaments.

The present invention also provides a net fabric for a trawl net which facilitates an increase or decrease in the number of metal net filaments connected to the resistance plates, and the mesh size.

60 Some embodiments of the invention will now be described, by way of example, with reference to the accompanying drawings in which:—

Figure 1 is a front view of a net fabric according to the invention.

65 *Figure 2* is a front view of a resistance plate

embodied in a net fabric of the invention,

Figure 3 is a cross-section through the resistance plate of Fig. 2, and

70 *Figure 4* is a side view of a trawl net employing net fabric of the invention.

In the embodiment illustrated in Fig. 1 a net fabric 1 is formed of metal net wires 2 which are stranded or braided or flexible single wires made of stainless steel or any other metal, and of resistance plates 3 connecting the intersections of those wires. The resistance plates 3 can be of any shape, including disc-shaped, elliptical, rectangular, single plate or shaped as an airfoil, and be made of a metal such as stainless steel or aluminium, or a synthetic resin. The dimensions of each plate vary according to the part of the trawl net in which it is employed. If is preferred, for example, that larger plates be employed at the wings and the vicinity of net mouth. When disc-shaped plates are employed, the diameter of those plates is preferably between 2 to 30 cm.

The effect of the resistance plates 3 in spreading the net and maintaining its shape are further enhanced when the section has an airfoil shape as shown in Figs. 2 and 3, so that the lifting power of the plate against flowing water is increased. Around the edge of each resistance plate 3 there are four or more holes 4 for attaching the metal net wires 2. The number of the attached wires 2 can be increased or decreased, thereby increasing or decreasing the mesh size.

100 The material of the resistance plate 3 can be different in different parts of the net. For instance, in the upper part of the net resistance plates of synthetic resin or the like are used, which are lighter in weight than those used in the lower part of the net.

105 The net fabric of the present invention can be used in the whole or in part of the portions of a trawl 5, as shown in Fig. 4, including both bottom trawl nets and mid water trawl nets, except for a cod end 6 thereof. If required, the net fabric can be used for only a part of the body of the net together with conventional synthetic fiber net.

115 With the net fabric constructed as described, the resistance plates efficiently spread the net fabric, even when the net is a metal net which has a relatively high specific gravity, and open the net mouth easily and widely, by utilizing the resistance to water flow which is generated as the net is towed through the water, as in trawling. At the same time, the metal wire mesh can intimidate the fish so as to drive them from the center part of the body net into the cod end. Schools of fish can be caught effectively without dispersing the fish, even with a net fabric of large mesh size. Thus trawling operations can be performed efficiently employing less towing power.

125 Since the net fabric of the present invention

is made of metal, damage to the net is less than that to a conventional trawl net made of synthetic fibers. The durability of the net is increased, and gives improved water resistance, while the easy connections of the resistance plates to the metal net legs makes it easy to reduce or increase the mesh size so that the net can form a proper shape for trawling. Thus this netting material has superior characteristics which makes it possible to use metal net fabric for trawl nets.

CLAIMS

1. A net fabric for a trawl net wherein the mesh is made of metallic material, and which is formed by connecting the intersections of the net to plates which resist the flow of water.
2. A net fabric as claimed in Claim 1, wherein each plate is formed with a curved surface which resists water flow.
3. A net fabric as claimed in Claim 1 or Claim 2, wherein each plate has at least four locations for attaching net filaments around the peripheral part of the plate.
4. A net fabric for a trawl net substantially as herein described with reference to Fig. 1 or Figs. 2 and 3 of the accompanying drawings.
5. A trawl net comprising net fabric as claimed in any one of Claims 1 to 4.
6. A trawl net substantially as herein described with reference to Fig. 4 of the accompanying drawings.