

PATENT SPECIFICATION

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DRAWINGS ATTACHED.



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COMPLETE SPECIFICATION.

Fishing-Net.

I, KAZUO MOMOI, a Japanese Subject, of No. 670, Nakahiro Ako City Hyogo-ken, Japan, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to fishing-nets.

Fishing-nets made of a polyamide synthetic fibre such as Nylon, "Amilan" (Registered Trade Mark) and the like have been widely used because of its strength, anti-corrosiveness and fast-draining properties. However, it has some disadvantages as, for instance, low flexibility and pliability, increase in plasticity rate on heating and small coefficient of friction. It not only needs heat treatment after netting, but knots become loosened before it is heat-treated so that this operation is difficult. Even if the knots are in a good condition and heat-treatment can be performed satisfactorily, it is still difficult to prevent loosening of the knots. Therefore, a simple repair of the fishing-net has to be done by an expert and is not easily done by fishermen themselves.

An object of the invention is to provide a fishing-net formed of cord consisting of polyamide fibres and polyvinyl fibres so arranged that the deficiencies of each are compensated by the advantages of the other. By polyvinyl, I mean in this Specification, polymers of vinyl halides or of vinyl esters or their copolymers with one another or with vinylidene chloride or their after-chlorinated products.

A fishing-net according to the invention is formed from cord comprising a plurality of yarns twisted together, each yarn comprising a polyamide synthetic fibre and at least one polyvinyl fibre laid parallel to one another and twisted together, the polyvinyl

fibres being exposed on the outside of the cord.

Other objects and advantages of the invention will appear from the following description of the invention with reference to the accompanying drawings.

In the drawings:—

Fig. 1 is an elevation of the fishing-net according to this invention.

Fig. 2 is an elevation of one arrangement of the fibres.

Fig. 3 is a diagrammatical and sectional view of the arrangement.

Fig. 4 is an elevation of a yarn formed by twisting the fibres of Fig. 2

Fig. 5 is an elevation of another arrangement of fibres.

Fig. 6 is a diagrammatical and sectional view of the arrangement of Fig. 5.

Fig. 7 is an elevation of a yarn formed by twisting the fibres of Fig. 5.

Fig. 8 is an elevation of a cord made of three twisted yarns.

Fig. 9 is a diagrammatical and sectional view of the cord of Fig. 8.

Referring to the drawings of the invention, a fibre (1) of synthetic polyamide and a fibre (2) of polyvinyl synthetic fibre are arranged parallel to each other as shown in Figs. 2 and 3. These fibres are twisted as shown in Fig. 4 to form a yarn (3), the core of which consists of a twisted polyamide fibre (1) around which is twisted a polyvinyl fibre so that a spiral band (4) of the polyvinyl is exposed on the outside of the yarn. In the form shown in Figs. 5 and 6, fibres (2) and (2¹) of polyvinyl are arranged parallel to each other on opposite sides of the polyamide fibre so as to sandwich the fibre (1) between them. The yarn (5) (Fig. 7) formed by twisting this later form has a smaller surface (6) of the polyamide fibre

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exposed on the outside than the yarn (3) shown in Fig. 4, whilst the polyvinyl fibres (2) and (2¹) form spiral bands (7) and (7¹) to be exposed alternately on the outside of the cord.

Several of the yarns (3) or (5) thus made, are twisted together to form finally a cord (8) having polyamide cores, surrounded by polyvinyl fibres exposed on the outside of the cord as shown in Figs. 8 and 9 (these figures show the case of three yarns).

The polyamide fibre may be wholly surrounded by polyvinyl fibres instead of a part as mentioned above. However, in this case, the number of polyamide fibres would necessarily be diminished and the strength of the cord weakened. Hence, the number of polyvinyl fibres to be arranged around the polyamide fibre must be appropriately chosen in consideration of this strength reduction limit.

A yarn with polyvinyl fibre on the whole outside surface of a core of polyamide fibre is formed by arranging the fibres in parallel and then twisting them together. Polyamide synthetic fibres which are suitable for carrying out the invention are hexamethylenediamine adipamide, and polylactam. Examples of polyvinyl synthetic fibres that can be used are after-chlorinated polyvinyl chloride, copolymer of vinyl chloride and vinyl acetate, and copolymer of vinylidene chloride and vinyl chloride.

The cord (8) thus obtained is made into a knotted fishing-net as shown in Fig. 1.

The cord used in making the fishing-net of this invention is formed by twisting together yarns each formed by twisting a polyamide synthetic fibre with a number of polyvinyl synthetic fibres so that the polyvinyl is exposed on the outside of the cord. A disadvantage of the former fibre is its reduction in strength in water, though it is anti-corrosive. However, the low efficiency in flexibility and pliability of polyamide fibre is remedied by the addition of polyvinyl fibre while the strength of the polyamide fibre is preserved, so that the cord can be netted without heat-treatment and the knots thus made do not loosen. Owing to this appropriate flexibility given to the cord, any external force which tends to loosen the knots will not affect this net while it is in use because all external force will be exhausted by the flexion of the net itself. Furthermore,

the polyvinyl fibres exposed to the outside have a high rate of increase in plasticity on heating, and this is another reason why the knots are very strong and do not loosen before they are heat-treated. The net according to this invention need not be heat-treated and repairing can be done easily as in the case of cotton nets, without special treatment. Polyvinyl fibre has a greater coefficient of friction than polyamide synthetic fibre, and this characteristic contributes much to the prevention of loosening of the knots. Experiments show that a net-cord of the polyamide synthetic fibre sold under the Registered Trade Mark "Amilan" has 0.492 coefficient of friction in fresh water and one of the polyvinyl synthetic fibres sold under the Trade Mark "Mewlon" has 0.668 in the same condition while that sold under the Trade Mark "Teviron" has 0.563. As the polyvinyl fibres are exposed on the outside of the cord, the knots are maintained by the friction surfaces of these fibres and there is no occurrence of knot slip. Moreover, the specific gravity of the net is almost the same as that of a cotton net. It is cast more easily than a light net of polyamide fibre only and is less subject to be streamed by the tidal current.

It will be understood that the invention is not restricted to the details of the preferred forms as described by way of example, which may be modified without departure from the scope of the appended claims.

WHAT I CLAIM IS:—

1. A fishing-net formed from cord comprising a plurality of yarns twisted together, each yarn comprising a polyamide synthetic fibre and at least one polyvinyl fibre laid parallel to each other and twisted together, the polyvinyl fibres being exposed on the outside of the cord.

2. A fishing-net according to Claim 1 in which the whole outer surface of the cord is formed of polyvinyl fibres.

3. A fishing-net substantially as described with reference to the accompanying drawings.

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exposed on the outside than the yarn (3) shown in Fig. 4, whilst the polyvinyl fibres (2) and (2') form spiral bands (7) and (7') to be exposed alternately on the outside of the cord.

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