

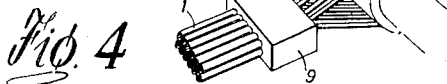
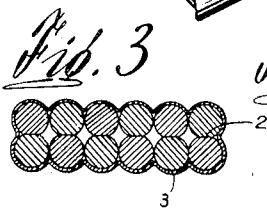
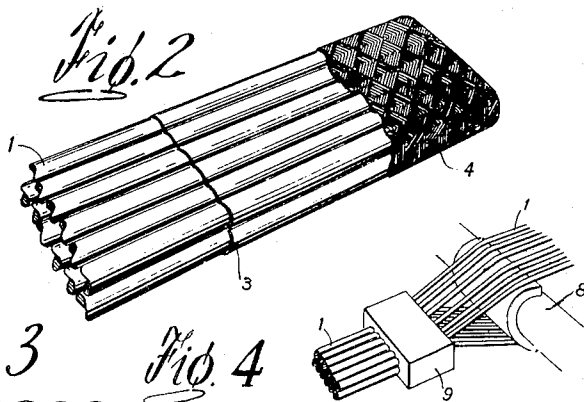
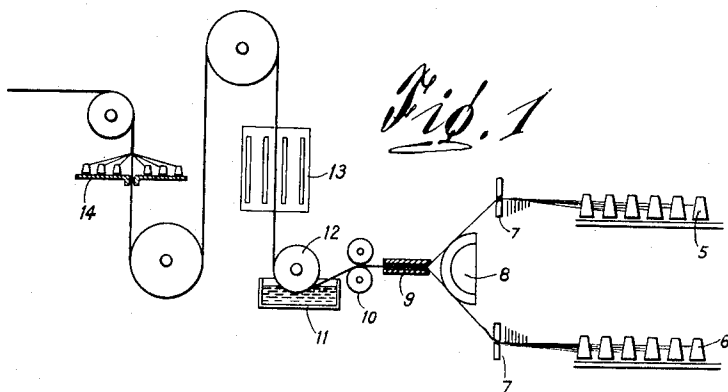
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BONING STRIP AND METHOD OF MAKING SAME

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BONING STRIP AND METHOD OF MAKING SAME

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8 Claims. (Cl. 154—91)

The present invention relates to a stiffening member and more particularly to a boning strip of the type which may be used in conjunction with corsets, belts, cuffs, collars or the like, and to the method of manufacturing the same.

The general object of the present invention is the provision of an improved boning strip having sufficient stiffness so that it will serve in the proper manner to stiffen and reinforce the garments or other articles for which it is used but which is nevertheless flexible so that it may bend or yield in response to pressure without breaking and is resilient so that it will return to its normal position when the pressure is released.

Another important object of the present invention is the provision of a boning strip of the character described which is unbreakable, is corrosion and water proof and which may be manufactured at low cost.

Still another important object of the present invention is the provision of a boning strip of the character described which may be sewn through the strip to the garments or other articles.

Yet another important object of the present invention is the provision of a boning strip of the character described which may be sewn along the entire length thereof, whereby displacement of the member relative to the garment is prevented.

Still another object of the present invention is the provision of a method or process of manufacturing a boning strip of the above mentioned character.

The foregoing and other important objects of the present invention will become more apparent during the following disclosure and by referring to the drawings in which:

Figure 1 is a schematic representation of the manner of manufacturing the boning strip according to the invention;

Figure 2 is a partial perspective view of the boning strip;

Figure 3 is a cross-section of the same; and

Figure 4 is an enlarged perspective view of some of the elements shown in Figure 1.

Referring now more particularly to the drawings in which like reference characters indicate like elements throughout, the boning strip consists in a plurality of rod-like monofilaments 1 which are partially fused and pressed together in two or more rows so that their contacting surfaces are flattened as shown at 2 in Figure 3 and form a good adhesion between the several rows of monofilaments 1. The monofilaments 1 are coated on their exterior face with a layer of tacky material 3 which secures the braided sheath 4 and thus prevents relative displacement between said sheath 4 and the monofilaments 1. The assembled boning strip is resilient and unbreakable, is corrosion and water proof and has a relatively low cost. It can be stitched directly to garments or other articles because the sewing needle will pass easily between the adjacent or juxtaposed monofilaments 1 of the successive rows. This is due to the fact that the

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monofilaments 1 have a circular crosssection and that each monofilament of a row is directly opposite the monofilaments of the succeeding rows.

Normally the monofilaments 1 are all made of a thermoplastic material, preferably the thermoplastic known under the trademark of "nylon," but it is possible to alternate the "nylon" monofilaments with monofilaments made of non-heat fusible plastics such as, for instance, polymerized phenolic plastic known under the trade name of "Bakelite," in which case each heat fusible "nylon" monofilament will connect two adjacent "Bakelite" monofilaments.

By varying the number of filaments in each row boning strips of any desired width may be obtained. Similarly the stiffness of the boning strips may be varied according to the number of rows of monofilaments used.

Figures 1 and 4 show a preferred manner of manufacturing the boning strips according to the invention. The monofilaments unwind from an upper and lower series of bobbins 5 and 6 respectively, are brought together by gauge members 7 and pass in contact with the surface of a semi-circular heating member 8 where their surface is heated to softening temperature. The two rows of monofilaments converge and pass through the strip dimensioning gauge 9 and between the pressing cylinders 10 whereby the monofilaments are fused together to form a unitary structure. Then the strip passes into a tacky coating vat 11, is trained on a roller 12 and passes through an infrared drying system 13 for drying the tacky coating. Then the coated strip goes through a braiding machine 14 which covers the strip with the braided sheath 4, shown in Figure 2. Said sheath adheres to the strip due to the tacky coating 3. The finished boning strip is then cut according to the length desired.

The braiding 4 may be made of cotton or any other suitable yarn.

Since the monofilaments of any one row adhere only slightly to one another and the monofilaments of the several rows are opposite one another, a sewing needle can readily penetrate between the monofilaments for sewing purposes, therefore no pockets or sleeves are necessary to attach or secure the boning strip to garments or other articles.

Furthermore, the boning strip may be stitched to the garment along the whole length of said strip thereby positively preventing relative displacement between the garment and the strip.

While a preferred embodiment according to the present invention has been illustrated and described it is understood that various modifications may be resorted to without departing from the spirit and scope of the appended claims.

I claim:

1. A method for manufacturing a boning strip of the character described comprising the steps of heating to the softening point the outer surface of a plurality of thermoplastic monofilaments, arranging said monofilaments in superposed rows so that each monofilament of a row is disposed opposite a monofilament of an adjacent row, and pressing the heated monofilaments of one row against those of an adjacent row so as to cause fusion of said monofilaments to one another to form a unitary structure with air spaces between said monofilaments.

2. A method as claimed in claim 1, further including the steps of applying a coating of tacky material to said unitary structure and surrounding said coated structure with a braided sheath.

3. As a new article of manufacture, a resilient boning strip adapted to be stitched through, comprising an assembly of parallel thermo-plastic monofilaments in juxtaposed and stacked rows, each monofilament being partly fused to the adjacent monofilaments, whereby a

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free unfused space exists beyond each said monofilaments and the surrounding ones, and a braided covering surrounding the monofilament assembly.

4. As a new article of manufacture, a resilient boning strip adapted to be stitched through, comprising an assembly of parallel thermo-plastic monofilaments in juxtaposed and stacked rows, each monofilament being partially fused to the adjacent monofilaments, said boning strip having air spaces extending longitudinally thereof and each defined by two adjacent monofilaments of each of two juxtaposed rows, and a braided covering surrounding the monofilament assembly.

5. As a new article of manufacture, a resilient boning strip adapted to be stitched through, comprising an assembly of parallel thermo-plastic monofilaments of substantially circular cross-section, said monofilaments being disposed in a plurality of juxtaposed plane rows, each monofilament of a row being disposed opposite a monofilament of an adjacent row, each monofilament being partly fused to the adjacent monofilaments, said boning strip having air spaces extending longitudinally thereof, each defined by two adjacent monofilaments of a row and two opposite adjacent monofilaments of an adjacent row, and a fabric sheath surrounding the monofilament assembly.

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6. A resilient boning strip as claimed in claim 5, wherein the opposite monofilaments of two juxtaposed rows having a contacting flattened face by which they are fused and adhere to each other.

7. A resilient boning strip as claimed in claim 6 further including a layer of tacky material applied to the outer surface of the monofilament assembly, said fabric sheath being applied over said tacky material and adhering thereto.

8. A resilient boning strip as claimed in claim 5, wherein the monofilaments of one row are fused to each other over a limited curved contact surface to permit a stitching needle to pass therebetween.

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