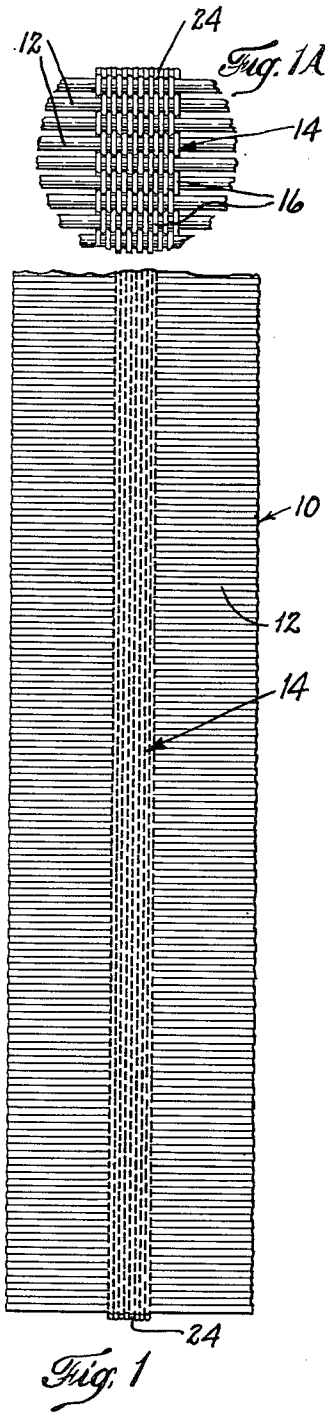
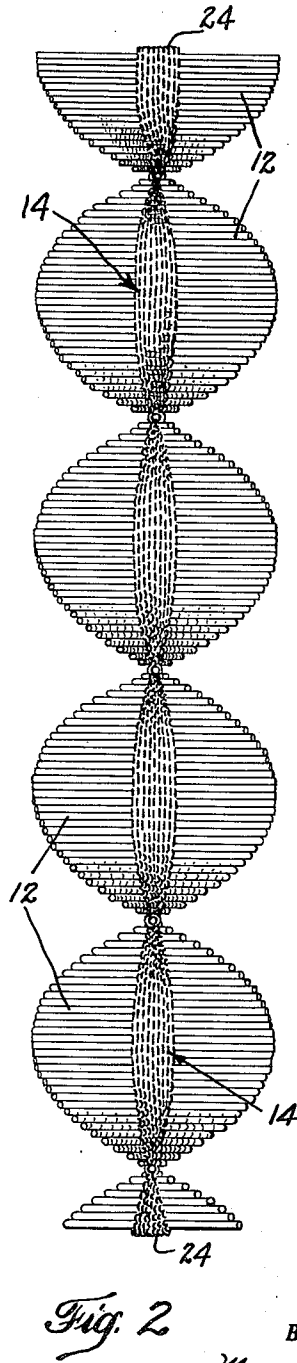
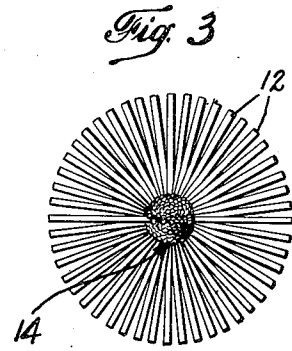
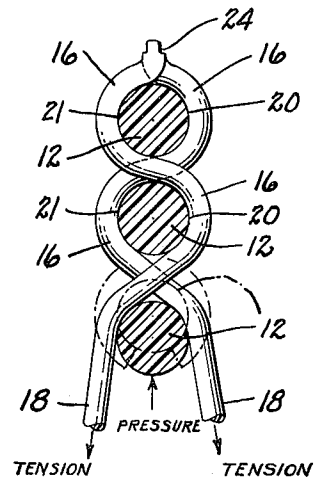
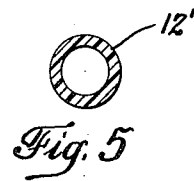


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ORNAMENTAL DECORATION
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ORNAMENTAL DECORATION

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8 Claims. (Cl. 139—383)

The present invention relates to a novel ornamental decoration made of synthetic fibres and yarns.

The present invention provides an ornamental decoration suitable for use as streamers at dances or parties, or as Christmas tree decoration or other similar ornamentation which is attractive, practical and long-lasting, relatively simple and inexpensive to produce and which may be easily and quickly stored. A material from which the ornamental decoration may be fashioned is disclosed in the co-pending application of Gilbert Shaw, Serial No. 409,998, filed February 12, 1954.

The invention in the illustrative embodiment herein shown comprises a plurality of relatively large-diameter, parallelly-disposed, synthetic fibres which, while relatively hard and inelastic, are at the same time easily flexible. These fibres are interwoven at their central portions with a synthetic yarn having elastic properties. The fabric is assembled or woven so that the elastic yarn exerts a continuing gripping engagement upon the plastic fibres, firmly holding them in place and preventing loosening of the fabric and accidental endwise removal of the fibres which, of course, serves to destroy the usefulness of the material. The elastic, synthetic yarn employed may derive its flexibility from use of a non-migratory plasticizer. Such plasticizer will not mar finished surfaces nor attack the material of the plastic fibres, as might be the case if a migratory plasticizer were used. The synthetic yarn is preferably thermoplastic so that the yarn may conveniently be heat-sealed or welded at the ends of a particular piece of the material, rather than tied together or otherwise secured against unravelling.

Objects and advantages of the invention will be set forth in part hereinafter and in part will be obvious herefrom, or may be learned by practice with the invention, the same being realized and attained by means of the instrumentalities and combinations pointed out in the appended claims.

The invention consists in the novel parts, constructions, arrangements, combinations and improvements herein shown and described.

The accompanying drawings, referred to herein and constituting a part hereof, illustrate an embodiment of the invention, and together with the description, serve to explain the principles of the invention.

Of the drawings:

Fig. 1 is a plan view of an ornamental decoration constructed in accordance with the applicant's invention.

Fig. 1A is a plan view of a portion of Fig. 1 magnified in order to show the detailed structure and the assembled relationship of the plastic fibres and yarn in the decoration.

Fig. 2 is a view similar to that of Fig. 1 showing the decoration twisted into the form of a helix.

Fig. 3 is a top view of the ornamental decoration shown in Fig. 2.

Fig. 4 is a longitudinal sectional view of the ornamental decoration with the plastic fibres in cross-section and the plastic yarn shown in side elevation; and

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Fig. 5 is a cross-sectional view of a modified form of fibre which may be employed in the ornamental decoration illustrated in Fig. 1.

Referring now in detail to the illustrative embodiment of the invention shown by way of example in the accompanying drawing, there is shown in Fig. 1 an ornamental decoration constructed in accordance with the teachings of the applicant's invention and adapted for use as an ornamental streamer for parties, dances or other festive occasion or as a Christmas tree decoration or other like ornamentation. The decoration 10 preferably comprises a plurality of parallelly-disposed, either molded or extruded, rounded fibres 12. Such fibres may conveniently be extruded as a monofilament and cut to the desired lengths, and it will be noted that the filaments are of substantially uniform length and diameter. A plurality of woven lines of yarn 14 are provided holding the filaments in assembled position and completing the all-synthetic plastic material or fabric. The lines 14 of yarn are preferably located at the central portions of the fibres 12 as shown. The line of yarn weaving 14 is preferably comprised of a plurality of individual strands or threads of yarn 16 in order to obtain a strong woven construction. The weave illustrated, as clearly shown in Fig. 2, comprises an over-and-under weave of the yarn with respect to each adjacent filament, but it will be apparent that other weaves could be used with plural threads 16 of yarn in each line of weaving 14.

The fibres 12 as shown are relatively large synthetic filaments which are relatively tough, hard, inextensible and inelastic, but are capable of easy flexing of their longitudinal axis. Applicant prefers to use extruded monofilaments of oriented polystyrene for the fibres 12 which are cut to length after extrusion for weaving into the fabric. Other suitable plastic materials for the fibres would be cellulose acetate and vinyl chloride acetate. The fibres 12 are preferably of relatively large diameter, on the order of 0.050 to 0.125 inch, in order to give a definite stiff, though flexible, character to the completed fabric, so far as flexing is concerned of the longitudinal axis of the fibres. The length of the fibres preferably falls within the range of from 2 to 4 inches.

The yarn 16 is a synthetic thread having good elastic properties, that is, good degree of elongation and satisfactory recovery after stretching. Applicant prefers to use an extruded monofilament of plasticized vinyl chloride, or plasticized vinyl chloride acetate, yarn which is satisfactorily elastic and may be securely woven into the fabric. The diameter of the yarn is preferably relatively small as compared with that of the fibres 12, being on the order of 0.012 to 0.020 inch, so that the fabric is extremely flexible along the length of the yarn, and may be easily folded or rolled, as desired.

The elastic yarn 16 is maintained in a state of tensile stress so that it firmly grips and holds the interwoven fibres 12, preventing endwise displacement thereof which would give an unsightly appearance to the decoration or destroy its usefulness altogether. In weaving the decoration, each polystyrene fibre 12 is inserted between alternate threads 16 of the yarn 14 so that each thread engages alternate sides 20—21 of successive fibres. In the weaving operation, the ends 18 of the threads 16 are held, and the fibres 12 are inserted between subsequent threads 16 and pressure is applied to the fibre to force the fibre tightly between the threads. The threads 16 are thus placed under tensile stress, as indicated in Fig. 2 of the drawings, and the weaving is continued, maintaining stress upon the threads in the completed fabric. The threads are then crossed and the operation is repeated with successive fibres until the desired size of the fabric has been reached, whereupon the ends 18 of the threads are fixedly joined together. The threads 16 contract, thereby

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gripping the fibres 12 tightly and bringing the fibres closely together. Any suitable means may be utilized in joining the ends of the threads together, for example, successive threads could be tied together. The applicant, however, prefers to seal or weld the threads by effecting a heat seal 24, of the threads 16 by means of any suitable device, such as high frequency heat devices, or those utilizing hot air, steam, or any other thermal contact method.

In order to achieve a sturdier construction and to chemically stabilize the decoration, the applicant prefers to use a non-migratory plasticizer in the yarn. Such plasticizers are available under various trademarks and from various sources, and are esters of polybasic alcohols and polybasic acids, especially the dibasic acid esters of glycol including glycol sebacate, the adipic acid ester of glycol and various intermediate compounds which are sometimes referred to as polyesters. Such plasticizers do not attack and soften the polystyrene fibres of the fabric, which is a further advantage to their use in the yarn. The use of an elastic synthetic yarn together with the manner of weaving the fabric also overcomes the problem of longitudinal slippage of the fibres in the yarn. In the applicant's fabric the parallel fibres cannot slip in the yarn. This means that the ends of the fabric will always present a nice, even appearance. The applicant's decoration can be manufactured easily and inexpensively, and is sturdy and long wearing.

The applicant's decoration may be utilized in the form shown in Fig. 1, that is, flat and without any folds, or it may be twisted, shaped or formed into any number of various decorative shapes. In the illustrative shape disclosed in Fig. 2, the decoration has been twisted to form a helical streamer such as is commonly used for decorations for dances and parties, and the like. Although the applicant's construction renders the decoration particularly suitable for this shape because there is no tendency on the part of fibres to return to an untwisted condition, the decoration may also be shaped in a great many different patterns which will readily suggest themselves to those skilled in the art. For instance, the decoration may be easily shaped to form a ruffle because of its foldability. Further decorative effects may be obtained by fashioning the fibres and the yarn out of similar or contrasting colors. An important feature of the decoration of the invention is its capability to be easily twisted about an axis extending generally in the direction of the length of the yarn 16 and to retain such deformed and decorative position as shown in Fig. 2, until purposely returned to its original condition, as shown in Fig. 1, for packing or storing.

As shown in Fig. 5 of the drawings, the fibres used in the ornament may be hollow extruded elements 12' rather than the solid rods shown in Figs. 1-4. This construction gives still further assembled strength to the ornament and further prevents slippage of the fibres, since

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the tubular form of the fibres is slightly compressed by the yarn and thus firmly held where the yarn engages the fibres. It will be apparent that other shapes of fibres may be used than those illustrated, such as flat, oval or of various geometric shapes in cross-section.

The invention in its broader aspects is not limited to the specific steps, processes, compositions shown and described, but departures may be made therefrom within the scope of the accompanying claims without departing from the principles of the invention and without sacrificing its chief advantages.

What is claimed is:

1. An ornamental decoration comprising a plurality of transversely extending, parallelly disposed, individual, relatively stiff, synthetic mono-filament fibres, interwoven with a plurality of strands of elastic, relatively limp, synthetic mono-filament yarn, said yarn being interwoven with said fibres along the central portions of said fibres leaving the ends of said fibres free of interconnection, said yarn gripping said fibres in a state of tensile stress of said yarn, whereby said fibres are firmly gripped and held in assembled relationship by said yarn and the decoration may be twisted into a helix about the interwoven yarn as substantially the axis of the helix.

2. An ornamental decoration as set forth in claim 1 wherein the fibres are on the order of 0.050 to 0.125 inch in diameter, and the yarn is on the order of 0.012 to 0.020 inch in diameter.

3. An ornamental decoration as set forth in claim 1 wherein the fibres are solid members.

4. An ornamental decoration as set forth in claim 1 wherein the fibres are hollow members permitting compression by said yarn under tensile stress, whereby said fibres are more firmly gripped and held in assembled relationship by said yarn.

5. An ornamental decoration as set forth in claim 1 wherein the fibres are made of material selected from the group consisting of polystyrene, cellulose acetate and vinyl chloride acetate, and the yarn is made of material selected from the group consisting of plasticized vinyl chloride and plasticized vinyl chloride acetate.

6. An ornamental decoration as set forth in claim 1 wherein the fibres are made of polystyrene.

7. An ornamental decoration as set forth in claim 1 wherein the yarn is made of plasticized vinyl chloride.

8. An ornamental decoration as set forth in claim 1 wherein the fibres are made of polystyrene and the yarn is made of plasticized vinyl chloride.

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