United States Patent

Heldt

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[54] CURTAIN HEADING TAPE

[72] Inventor: **Roger Heldt**, Paris, France

[73] Assignee: **Thomas French & Sons Limited**

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[52] **U.S. Cl.** **139/387**

[51] **Int. Cl.** **D03d 3/02**

[58] **Field of Search** ..... 139/387 A, 387 R, 384, 390, 139/420, 426, 423; 57/144, 160, 140 BY

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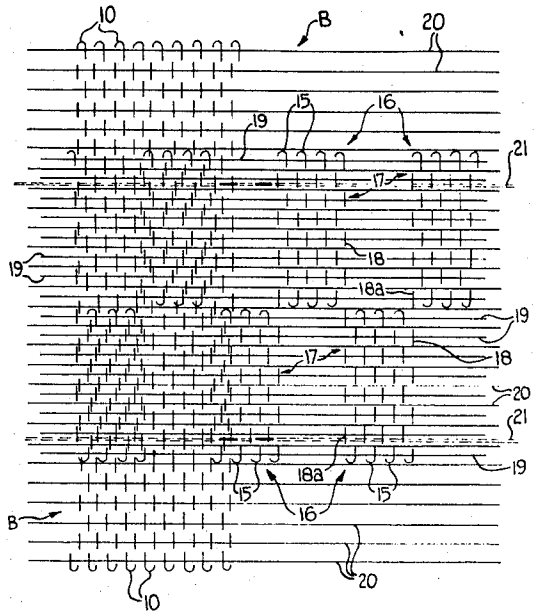
Primary Examiner—James Kee Chi

Attorney—Bierman & Bierman

[57] **ABSTRACT**

A curtain heading tape in which lateral stiffness is provided by using, as a weft in the body of the fabric, a composite yarn consisting of a core of relatively stiff synthetic yarn around which is wrapped at least one other yarn, whereby the composite yarn so formed has a surface characteristic such that any tendency of warp yarns to slip relative to the weft yarns when the fabric is woven is prevented or substantially reduced due to the uneven surface of the composite yarn.

9 Claims, 2 Drawing Figures



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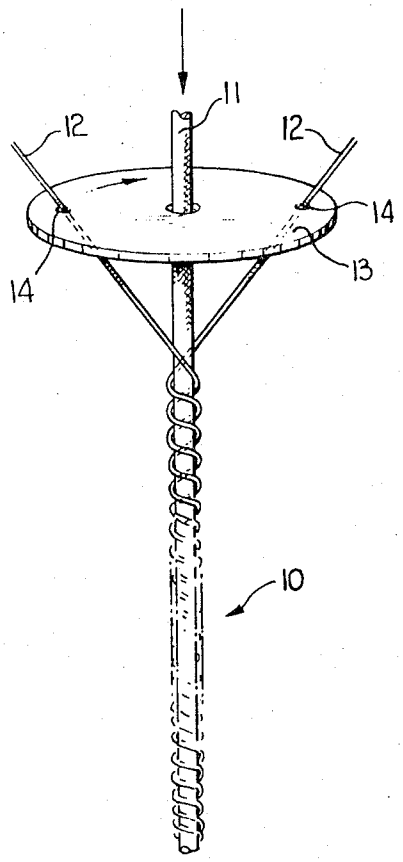

FIG. 1.

INVENTOR:
ROGER HELDT
BY
Brisman & Sherman
ATTORNEYS

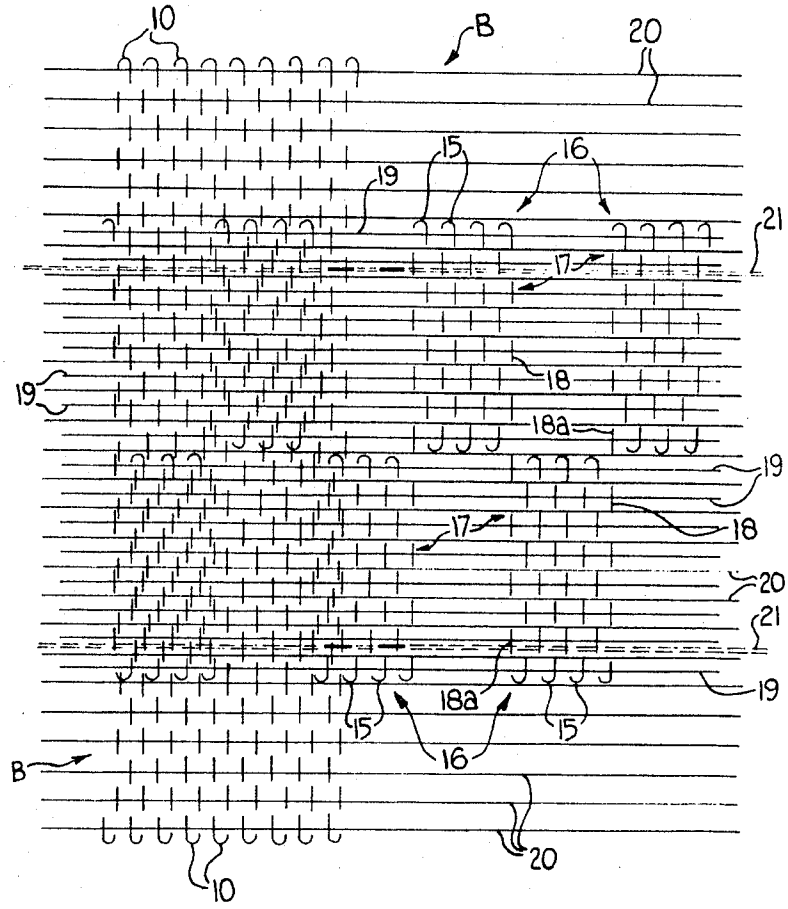

FIG. 2.

INVENTOR:
ROGER HELOT
BY
Berman & Berman
ATTORNEYS

CURTAIN HEADING TAPE

This invention concerns curtain heading tape and in particular though not exclusively curtain heading tape for use with lightweight curtain materials.

One of the present trends in the hanging of curtains is to dispense with pelmets (either fabric or other materials) and to hang curtains in such a way that they extend upwardly from their suspension hooks to have their upper extremity closely adjacent a ceiling or the upper edge of a window or other aperture. Such a method of hanging curtains requires the upper region of the curtain to be self supporting (that is stiff enough to stand up beyond the suspension hooks without folding or bending over to produce an unsightly upper edge).

While there have been many types of suspension hook adapted to hold a curtain edge upright they have the disadvantage that between the hooks the curtain can form unwanted folding, particularly when the curtain is drawn across a window or other aperture and thus these hooks do not enable the desired effect to be achieved to the full extent.

Recently it has been proposed to provide a wide tape which is stiffened in the transverse direction by the use of a stiff monofilament yarn disposed in the weftwise direction. The monofilament yarn used, has, in known tapes, been of relatively large diameter (for example up to eighteen thousandths of an inch) and the tapes have been relatively heavy in appearance. While such tapes are found to be extremely useful for the hanging of heavy curtain materials they are not generally acceptable for lightweight materials such as voiles, and light nylon or other fabrics which, while they obstruct clear vision therethrough allow the passage of light to a large extent.

Fabrics of a lightweight nature are found to be difficult to pleat in an attractive manner when known tapes are used since the fabrics are generally of a relatively slippy nature (particularly if woven from synthetic yarn) and of course are not of sufficient rigidity in themselves to tend to follow the pleats formed in the tape by pulling the draw cords. Additionally of course a heavy tape is visible through the curtain fabric and tends thus to give an unsightly appearance to the upper edge of the curtain.

A further disadvantage of the known tapes woven to give stiffness transversely is that they are expensive to produce either by virtue of the fact that, if the monofilament is not bound in by additional weft of a non slippery nature, they have to be very densely packed with warp yarn to prevent unsightly separation of the warps by slippage on the weft or by virtue of the fact that the additional non-slippery weft yarn is used to bind the warps against slippage on the weft.

It is also found that when using the monofilament weft alone the weaving process is slow due to the need frequently to refill the shuttle since the latter can only carry a small quantity of weft because of its thickness. To overcome this difficulty we have produced a tape having a monofilament yarn disposed weftwise by a method requiring the use of a catch weft which is supplied by a shuttle and is adapted to wrap around a monofilament supplied warpwise to draw it through the warp shed in loops. In addition to this a further weft is supplied by a second shuttle to act as a binder weft to prevent slippage of the warp on the monofilament weft. This enables the warp density to be reduced but at the same time produces a heavy tape which again is not suitable for use with lightweight fabrics.

The primary object of the present invention is to produce a tape which is light in weight yet sufficiently stiff transversely to hold up a relatively lightweight fabric and at the same time to be as unobtrusive as possible and require the minimum number of shuttles to weave it, or in fact to be capable of being woven on a needleloom thus to give a high production rate.

A further object of the present invention is to provide a tape which, when used, and by virtue of the disposition therein of its draw cords will enable light-weight materials to be attractively pleated to give a fullness to the pleats hitherto substantially unobtainable.

According to the present invention a curtain heading tape is characterized in that there is provided at least one row of hook receiving pockets therein, there being a first weft adapted to weave a body fabric and a second weft adapted to weave at least the pockets, said wefts, or at least that adapted to weave the body, being of monofilament form or comprising more than one monofilament yarn laid side by side and having wound thereon at least one additional yarn, the said monofilament component of the weft or wefts serving to provide lateral stiffness in the tape when woven while the yarn wound thereon serves to prevent relative slippage between the warp and the weft.

Preferably there are at least two rows of hook receiving pockets, the pockets of one row being longitudinally displaced relative to the pockets of an adjacent row or rows.

Conveniently, the monofilament component of the weft yarn is enwrapped with two or more yarns.

The invention will now be described further by way of example with reference to the accompanying drawings in which:

FIG. **1** illustrates schematically the production of a yarn comprising a core and the winding of yarn therearound; and

FIG. **2** illustrates schematically a curtain heading tape using the yarn of FIG. **1** as a weft, this illustration being drawn with the warp and weft yarns widely spaced for clarity, and showing only some of the warps used in the production of a curtain heading tape.

To produce a curtain heading tape in accordance with the invention, a composite weft yarn **10** is provided, one component of the weft **10** being of monofilament yarn **11** and the other component being of spun yarn **12**. Alternatively, a continuous filament doubled or twisted yarn **12** can be used. Whatever the form of yarn **12** the latter is used to enwrap the monofilament yarn **11**. The wrapping yarns **12** are conveniently wrapped around the monofilament **11** by passing the monofilament yarn **11** through a revolving head **13** while under tension and providing the wrapping yarns **12** through apertures **14** in the revolving head **13**. In the particular composite weft **10** chosen for the weaving of the tape there are two yarns **12** enwrapping the monofilament **11** to provide a composite weft **10** which, while having a relatively stiff nature due to the presence of the monofilament **11** has a non-slippery surface due to the presence of the yarn windings **12**.

In the tape being described there are two wefts, one the composite weft **10** is used for weaving the body B of the tape and the other **15** for weaving the pockets **16** of which there are two adjacent rows, the pockets **16** of one row being displaced relative to the pockets of the other row and the width and spacing of the pockets **16** being such that the edges **17** of the pockets **16** of one row coincide with the edges **17***a* of the pockets **16** of the other row in order that the weft pick **18** which terminates the pocket **16** of one row serves to provide the first pick **18***a* of the pocket **16** of the adjacent row. The pocket weft **15** therefore does not weave in the body B of the fabric. The warps **19** of the pockets **16** are woven into the body B by the body weft **10** between each pocket **16** of each row so as firmly to bind the pocket warps **19** into the body B between the pockets **16**.

Two shuttles are used one for the weft **10** of the body B of the tape and the other for the weft **15** of the pockets **16**. The weave of both the body B and the pockets **16** is conveniently a one and one plain weave.

In the tape being described the pockets are conveniently woven 12 picks in width (for convenience only eight of the picks are shown).

The pocket warps **19** and body warps **20** are conveniently polyester yarns, if desired, however, the warp yarns **19** and **20** may be produced from other synthetic materials, or may in fact be produced from regenerated or natural fibers.

Between the pockets **16** the warp density is twice that of the pockets **16** and that part of the body B forming the back of the pockets. This is due to the fact that the pocket warps **19** are woven into the body B by the body weft **10**.

Two cords **21** are provided and these are woven into the unpocketed face of the body B (in contra distinction to normal

practice). The draw cords **21** float on the unpocketed face of the tape and are located adjacent the outer ends of the outermost rows of pockets, being attached to the tape by pairs of weft threads which are conveniently spaced apart by two or three picks. The floats of the draw cords **21** in the tape being described extend over two pocket widths.

In use, the tape is sewn to a curtain in the upper end region thereof with the draw cords **21** between the tape and the curtain. When the draw cords **21** are pulled to pleat the tape the cords **21** tend partially to hold the curtain fabric away from the tape to cause it to form more voluminous pleats than has hitherto been the case. The cords **21** are substantially completely invisible from the reverse side of the curtain and of course from the face side.

The width of the tape, the number of rows of pockets and their length from end to end can be varied within relatively broad limits and since the tape has lateral stiffness due to the presence of the monofilament yarn in the composite yarn the warp can be of fine yarn thus the tape itself is of light weight and not easily discernible through the curtain fabric. The form of pleating can be modified by modification of the manner in which the cords are attached to the tape. More than two draw cords may be woven into the tape if desired, for example in wide tapes; for example in tapes of more than say, 3 inches in width there may be three draw cords.

I claim:

1. A curtain heading tape characterized in that there is provided at least one row of hook open ended receiving pockets therein, said pockets being open in the weftwise direction, there being a first weft adapted to weave a body fabric and a second weft adapted to weave at least the pockets, said first weft comprising at least one monofilament yarn having wound thereon at least one additional yarn, the said monofilament component of the weft serving to provide lateral stiffness in the tape when woven whilst the yarn wound thereon serves to prevent relative slippage between the warp and the weft.

2. A curtain heading tape as claimed in claim **1** in which there are at least two rows of hook receiving pockets, the pockets of one row being longitudinally displaced relative to the pockets of an adjacent row or rows.

3. A curtain heading tape as claimed in claim **1** in which the monofilament component of the weft yarn in enwrapped with two or more yarns.

4. A curtain heading tape as claimed in claim **1** in which the monofilament component of the weft yarn is enwrapped with two or more yarns of natural, synthetic or regenerated material.

5. A curtain heading tape as claimed in claim **1** in which the second weft weaves only with the pocket forming warp yarns, said weft passing from one pocket of one row to a pocket of an adjacent row such that the last pick of one pocket is continuous with the first pick of an adjacent pocket of an adjacent row.

6. A curtain heading tape according to claim **1** in which the warp density of that part of the body between adjacent pockets of each row of pockets is twice that of the pockets or that part of the body forming the back of the pockets.

7. A curtain heading tape according to claim **1** in which there are at least two draw cords in the body of the tape, said draw cords floating over the body of the tape on the unpocketed face thereof and being attached to the body of the tape at intervals by being bound thereto by groups of two or three picks of the body weft.

8. A curtain heading tape according to claim **1** wherein said first weft comprises at least two monofilaments laid side by side.

9. A curtain heading tape as claimed in claim **7** in which the draw cords float for a distance equivalent to two pocket widths and are attached to the body by groups of two or three picks of the body weft spaced over one pocket width.

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