

[54] CURTAIN HEADING TAPE

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[51] Int. Cl. D03d 1/06

[58] Field of Search 139/387 R, 387 H; 160/341, 348

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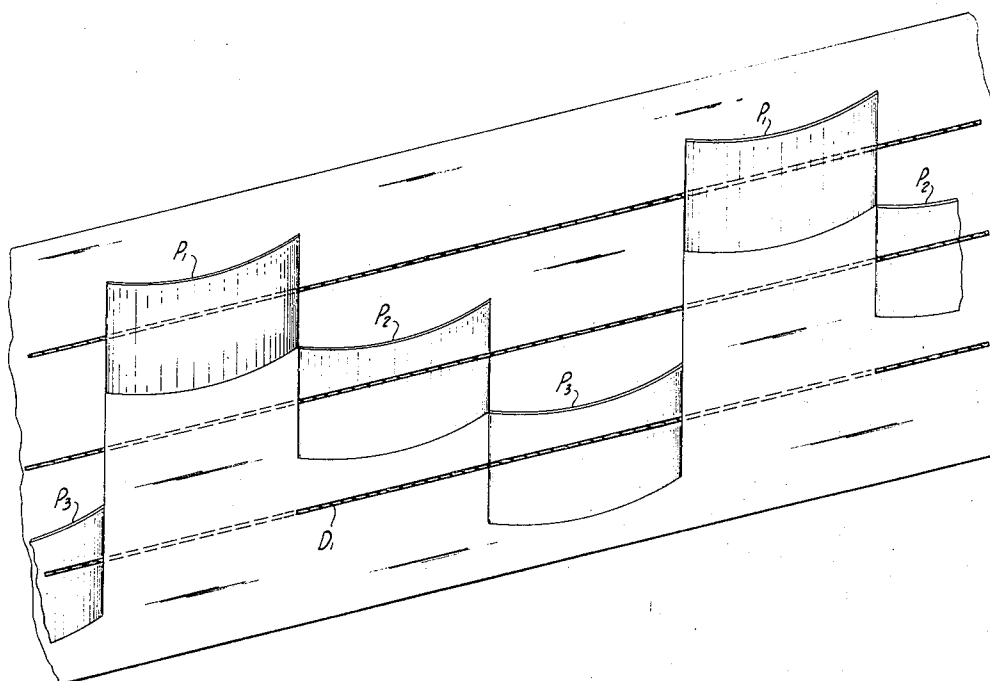
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[57] ABSTRACT

A curtain heading tape for use with draw curtains or the like, the tape having pockets on one face and at least three draw cords in the tape. The pockets are spaced in rows at different transverse distances from the edges of the tape, whereby the tape can be attached to a curtain at different specific heights of the curtain above the level of the suspension hooks.

5 Claims, 12 Drawing Figures



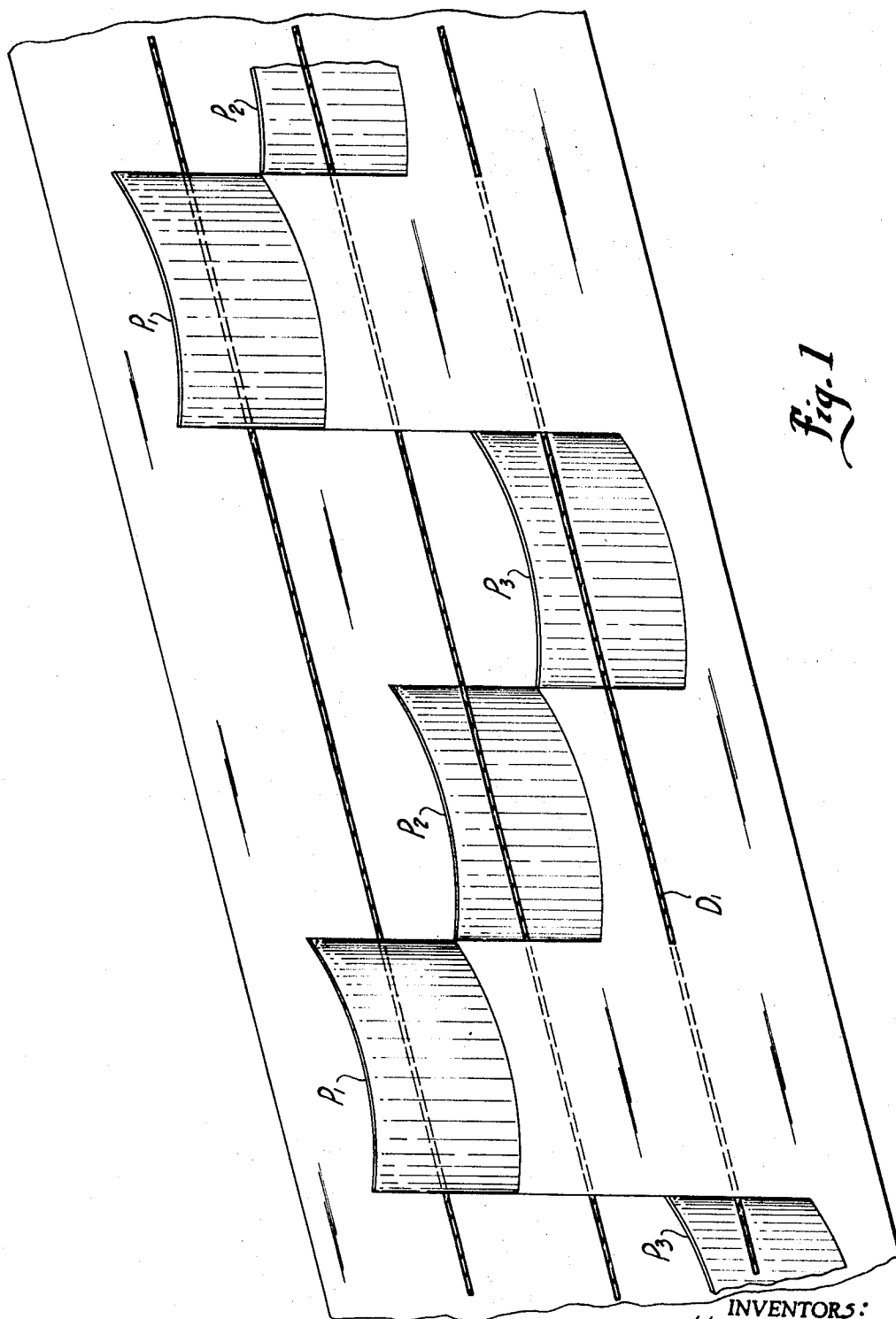


Fig. 1

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FIG. 1A

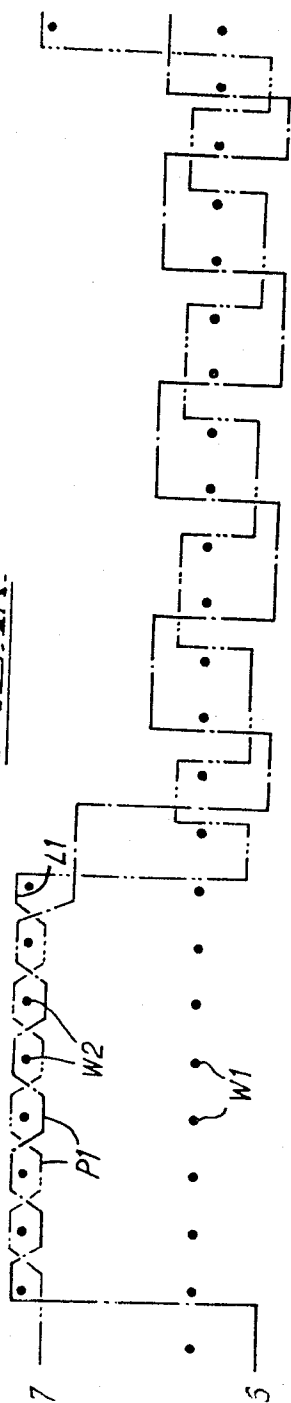
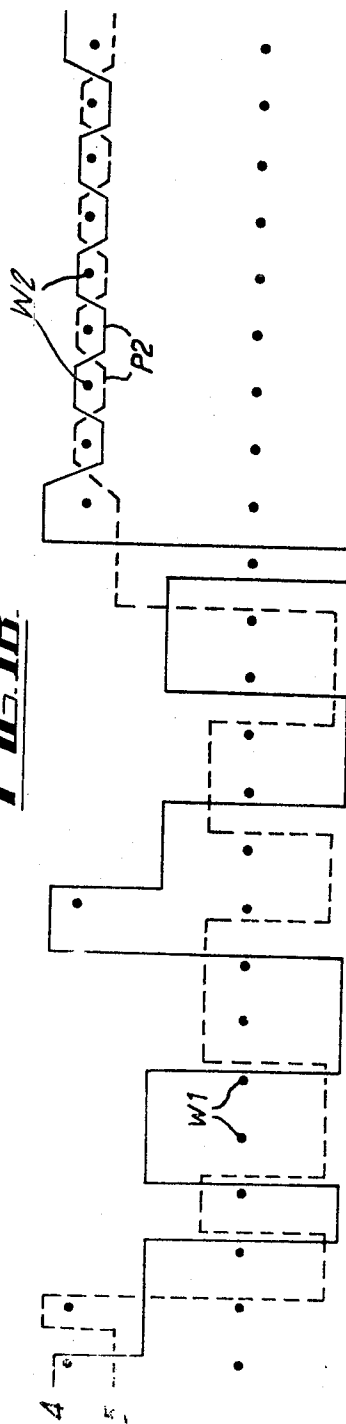


FIG. 1B



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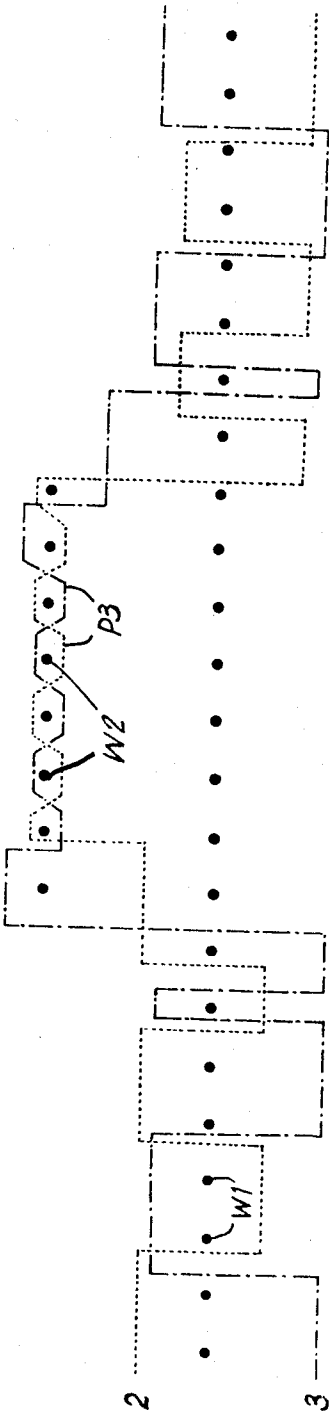
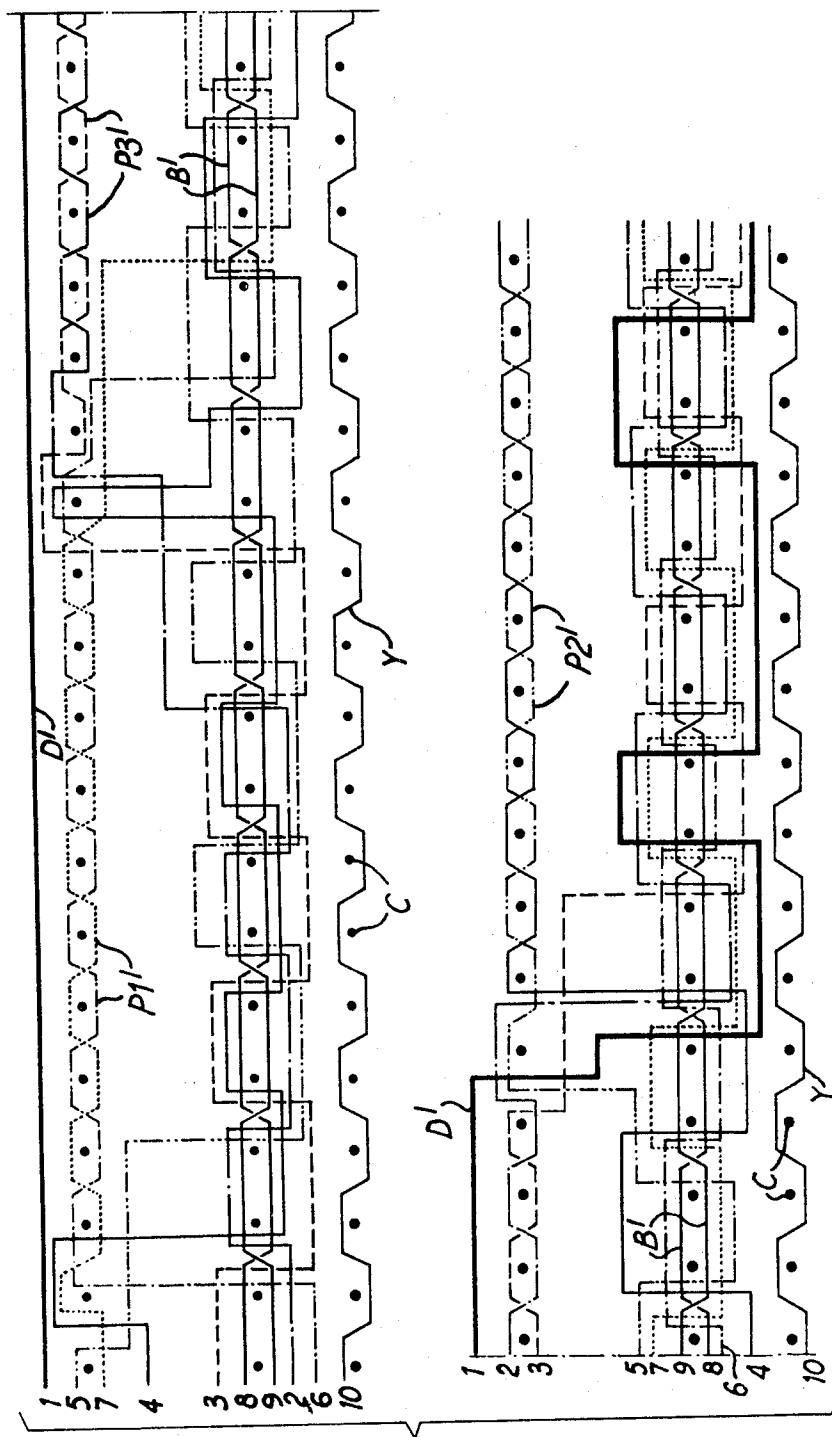


Fig. 1c.

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FIG. 2



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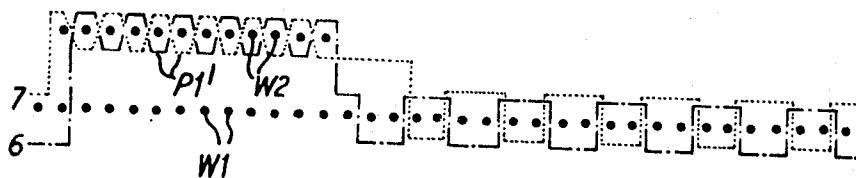


FIG. 2A

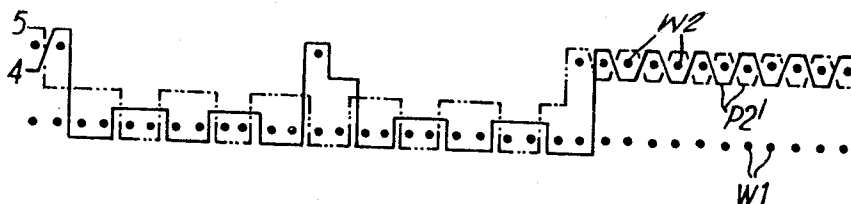


FIG. 2B

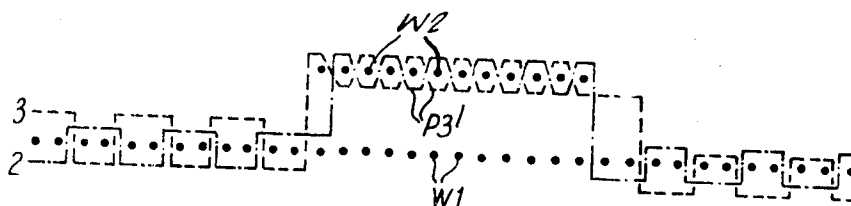
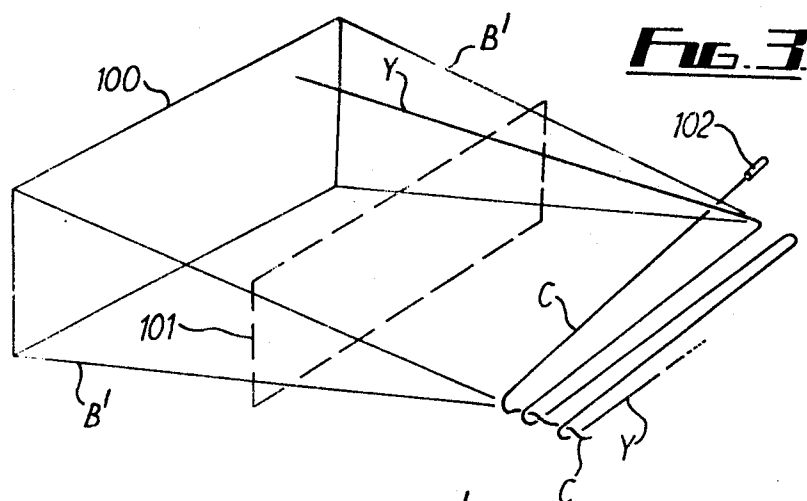
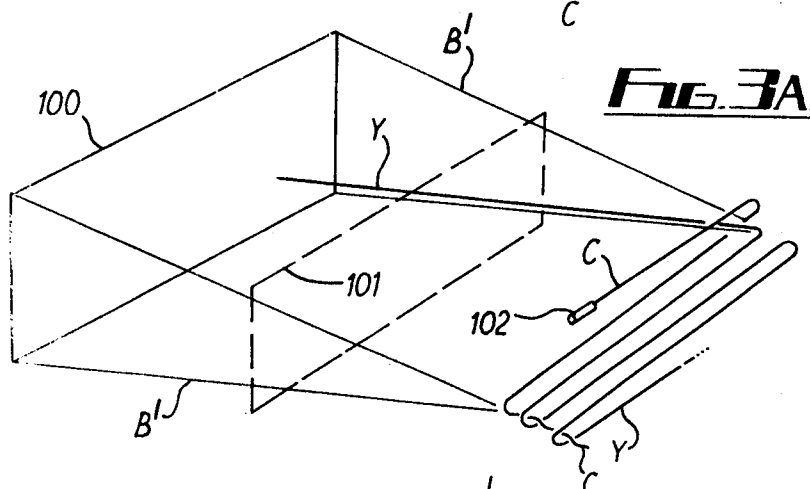
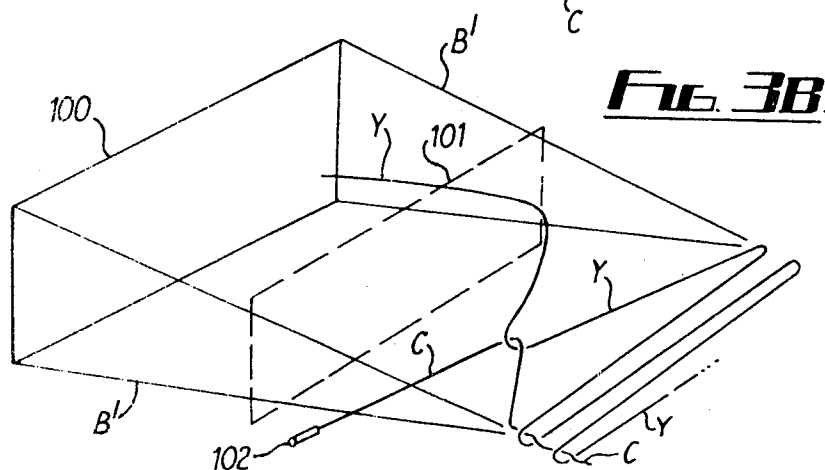


FIG. 2C

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CURTAIN HEADING TAPE

This invention concerns curtain heading tape.

It is known to produce curtain heading tape of various widths, and recently in order to obtain pronounced pleating effects in depth in the curtain it has been proposed to use curtain heading tape of greater widths than was the practice in the past. Such tapes have been provided with pockets on one face or both faces of the tape, and draw cords located adjacent the edges of the tape. In such a construction, it is found difficult to produce even pleating across the width of the tape, in view of the spacing between the cords, and in practice it is found necessary to pleat the tape initially by tightening the cords and then having produced initial pleating to straighten the pleats so that they lie transversely of the tape. The natural tendency is for the tape to pleat extremely unevenly across its width. In view of this disadvantage, wide tapes of the kind which when used can produce very attractive effects have not been used to the extent that it was thought possible.

In order to produce a tape in which the above outlined disadvantages have been overcome the applicants have produced a curtain heading tape with at least three draw cords, such tape being the subject of a U.S. application Ser. No. 762,189, filed Sept. 16, 1968, from which a continuation in part application was filed under Ser. No. 61829.

The tape the subject of the aforesaid application for Letters Patent was woven with pockets extending substantially across the whole width of the tape and this tape requires, for efficient usage, curtain suspension hooks having relatively long prongs which extend through the pockets from end to end thereof. It is therefore in this tape only possible to have for any position of the tape relative to the upper edge of the curtain one specific height of curtain extending above the lower edge of the tape (when the latter is secured to a curtain). The height of the curtain extending above the lower edge of the tape can, within small limits, be altered depending upon the position of the tape relative to the upper edge of the curtain but to ensure that a specific height of curtain extends above the tape the latter has to be carefully positioned on the curtain. Alternatively, a hook with a long or short neck or an adjustable hook may be used to alter the height of the curtain above the tape but such hooks are more expensive and thus less desirable for use than is a standard hook.

With the present increasing tendency to produce ready to hang curtains in workrooms it is desirable to be able to achieve various heights of curtain above the lower edge of the tape and this requirement is not met with the tape of the aforesaid patent application.

It is therefore the object of the present invention to produce a tape having the advantages of the tape of the aforesaid patent application and additionally to so manufacture the tape as to allow the positioning of standard (short prong) curtain hooks at different positions on the tape so as to enable a curtain to be hung and to have any one of a series of specific heights of curtain above the level of the suspension hooks.

Thus according to the present invention there is provided a curtain heading tape having pockets on one face and at least three draw cords in the tape characterized in that there are provided spaced rows of pockets at different transverse distances from the edges of the tape whereby when the tape is attached to a curtain dif-

ferent specific heights of curtain above the level of suspension hooks can be provided.

The invention will now be described further, by way of example, with reference to two practical forms thereof; and the accompanying drawings in which:

FIG. 1 is a perspective view of the curtain heading tape of this invention showing the staggered relation of the pockets,

FIG. 1D is a cross sectional view of one repeat of pattern for the production of a tape having three rows of pockets spaced across its width, such tape being produced using two shuttles only,

FIGS. 1A, 1B and 1C are views similar to that of FIG. 1 but each showing only the warp shedding for the production of one of the three pockets,

FIG. 2 is a view similar to FIG. 1 showing a modification in which the tape is produced using one shuttle for producing the pockets and using a second shuttle for the insertion of a catch thread adapted to draw loops of yarn into the shed, the said loops of yarn being formed from a single yarn which is supplied from a warpwise direction.

FIGS. 2A, 2B, and 2C are views similar to FIGS. 1A, 1B and 1C, and

FIGS. 3, 3A and 3B illustrate diagrammatically the shedding arrangement used for producing a body fabric for a tape made in accordance with one embodiment of the invention and used to produce the tape of FIGS. 2, 2A, 2B and 2C.

A tape woven in accordance with the invention as illustrated in FIG. 1 and FIGS. 1A, 1B and 1C conveniently has a body woven using a cotton warp and a rayon weft. In addition to the warp used for the body of the tape there is a further warp used for weaving, with a second weft, the pockets of the tape. The warp and weft yarns used for the pockets are conveniently both cotton, and if desired the pocket weft, or warp, may be of a color different from that of the body warp and weft so that, in the woven tape the pockets are easily discernable. Additionally three draw cords are woven into the tape. In the tape being described there are to be three transversely spaced rows of pockets along the length of the tape, the pockets of each row being staggered along the length of the tape and the pockets of each row being spaced apart by twice the width of the pockets.

The pocket warp can thus be considered to be split into three groups of warp, there being one group for the production of each row of pockets.

A single, second weft is used for weaving the pockets. To weave the tape generally described above a loom having two weft shuttles and nine heald frames is used.

The nine heald frames are, for the tape being described used as follows:

Frame 1, this is used to carry the three draw cords D. Frames 8 and 9 these are used to carry the warp yarns B for the body of the tape.

Frames 6 and 7, these are used to carry a first group of warp yarns P1 for producing one of the pockets.

Frames 4 and 5 these are used to carry a second group of warp yarns P2 for producing a second pocket.

Frames 2 and 3 these are used to carry a third group of warp yarns P3 for producing a third pocket:

The body of the tape is woven using a first weft W1 and the frames 8 and 9 are raised and lowered alternately to produce a body fabric as a 1 and 1 plain weave.

The shedding of the warp yarns P1, P2 and P3 for the pockets is such that there is produced a pocket shed above the body shed so that during the weaving of a pocket (which is preferably woven as a 1 and 1 plain weave using a second weft W2) the body is also being woven by the body weft W1. Between the pockets the pocket warp P1, P2 or P3 is shed with the body warp B and woven with the body weft W1 so that the warp density between the pockets is twice that of the pockets and the body of the tape behind (or below) the pockets.

The weave for one repeat of the weaving pattern (which repeat produces three pockets, that is one pocket for each row) is such that during the production of the first pocket, say a pocket adjacent one selvage of the body, the first group of pocket warp yarns P1 is shed to weave with the pocket weft W2 whilst the remaining two groups of pocket yarns P2 and P3 are shed with the body warp yarns B.

At the last pick of the pocket which is indicated at L1 on FIG. 1 the shedding is such that the pocket weft W2 is woven with some of the body warps B across the central region of the tape and with the group of warp yarns P2 used to produce the second pocket, which second group of warp yarns P2 is located adjacent the other selvage of the body.

The second pocket is woven using the pocket weft W2 and the second group of pocket warp yarns P2 and at the termination of weaving of this pocket (that is at the last pick indicated at L2) the warp yarns P3 of the third group are shed so that the pocket weft W2 commences the weaving of this pocket. During the weaving of the second pocket the warp yarns P1 and P3 of the other two groups are shed with the body warp yarns B.

At the last pick of the weaving of the third pocket which in fact is the first pick of the next pocket and is the corresponding pick to L1 but displaced along the length of the tape from pick L1 (which lies in the central region of the body) the warp yarns P1 of the first group are shed so that the first pick of the next pocket is produced. This pocket is formed using warp yarns P1 of the first group and the weaving pattern has now been completed and the next cycle of operations has commenced.

It will be appreciated from the description given above that the pocket weft yarn W2 only weaves with the body warp yarns B across the width of the central row of pockets for one pick and that due to the staggering of the pockets of the individual rows of pockets the tape can be produced using two shuttles only.

The pockets may conveniently be about one inch in length from end to end and thus the overall width of the body and selvages may be of the order of four inches.

When the tape is being produced three draw cords D are woven into the fabric and these are conveniently positioned so that the outer cords lie adjacent the outer ends of the outer two rows of pockets whilst the third cord lies centrally of the tape. The draw cords are woven into the body of the tape at transversely aligned positions and they float on the pocketed side of the tape for a distance equal to three pocket widths. It is to be noted that a full repeat of the draw cord weaving pattern is not shown since the frequency with which they are woven into the body of the tape is not restricted by the way in which the pockets are woven. For the sake of completeness of description however, one way in which the draw cords D are woven into the body

of the tape comprises weaving them for three picks with the body weft W1 and then after an interval of three picks, during which a short float D1 of cord lies D on the pocketed side of the body, again weaving them with the body weft W1 for a further three picks.

The invention is not limited to the details given above. For example, the pockets may be of longer or shorter form (in the warpwise direction) than that illustrated in which case the draw cords D may be woven into the body of the fabric in a manner different to that referred to above. For instance if the pocket length is eight picks the cords D may be woven into the body by four picks of the body weft W1. If the pocket is of greater length than that illustrated the short float D1 of cord D may be over more than three picks between the two groups of three picks of the body weft W1.

It is also possible to have more than three rows of pockets in the width of the tape, either by making the pockets narrower (in the weftwise direction) and retaining the same body width, or by increasing the body width and retaining substantially the same width of pocket. In the case in which more than three rows of pockets are woven the single pick during which the pocket weft W2 is woven into the body of the tape would be of greater length than the width of one pocket. In any event the single pick of pocket weft W2 woven with the body would be formed between the outermost rows of pockets. With more than three rows of pockets the floats of cord D may be greater than three pocket lengths if desired. In a wide tape there may be more than three draw cords D but in any event the weaving of the draw cords should preferably be such as to allow of the production of the small reverse pleat as described in our co-pending application aforesaid.

An alternative arrangement for producing a tape according to the invention is shown in FIGS. 2, 2A, 2B, 2C, 3, 3A and 3B.

From FIG. 2 it will be seen that ten heald frames are required, there being two frames 8 and 9 adapted to control the shedding of warps B used for producing the body of the tape, two frames 6 and 7 adapted to control the shedding of a first group P1' of pocket warps, two frames 4 and 5 adapted to control the shedding of a second group P2' of pocket warps, two frames 2 and 3 adapted to control the shedding of a third group P3' of pocket warps, a single frame 1 for controlling the shedding of draw cords D' and a single frame 10 which is used to control the shedding of a single yarn Y which, in the fabric to be produced is arranged to become finally located in the weftwise direction despite the fact that it is supplied in the warpwise direction. This yarn Y is shown separately on FIG. 2 since it eventually becomes the body weft and as can be seen it is shed one up one down for a purpose to be described in relation to FIGS. 3, 3A and 3B.

As in the previously described tape only two shuttles are used, one of these being used to supply the pocket weft W2' and the other to provide, as will be described below in relation to FIGS. 3, 3A and 3B to provide a catch thread C which, whilst being supplied weftwise is, in the finished tape, disposed warpwise.

Turning now to FIGS. 3, 3A and 3B the weaving of the body of the tape will now be described.

The three figures of the drawings 3, 3A and 3B are, as stated above diagrammatic representations and the rectangle 100 represents the heald frame nearest to the fell of the fabric. As can be seen the body warp sheet

is divided to form the shed and the yarns of this warp sheet pass through a reed 101. The yarn Y is shed one up and one down as in fact are the body warp yarns B' and the catch thread C is supplied by a shuttle 102. One cycle of movement of the shuttle 102 serves to carry the catch thread C across the shed, and as shown in FIG. 3 below the yarn Y which is in the upper shed position. Before the shuttle 102 returns across the shed the yarn Y is moved to the lower shed position as shown in FIG. 3A. As can also be seen from FIG. 3A which depicts the shuttle partially returned the catch thread C has become wrapped around the yarn Y due to shedding of the latter, and thus, as can be seen from FIG. 3B as the shuttle 102 returns to its original position the yarn Y is drawn, in loop form, through the shed by the catch thread C to become located in the leftwise direction ready to be beaten-up into the fell of the fabric by the reed 101. As can also be seen from FIGS. 3, 3A and 3B the catch thread C becomes located along the selvedge edge of the fabric thus finally being located warp-wise despite having been supplied weftwise.

Turning now again to FIGS. 2, 2A 2B and 2C, it will be seen that the pattern repeat for the weaving of the tape (excluding the pattern repeat for the draw cords D) consists in weaving the groups of pocket wefts P1' with the second weft W2' whilst the two groups of pocket warp P2' and P3' are woven with the body of the tape so as to form a pocket adjacent one selvedge of the tape. The pocket warp yarns of groups P2' are then woven with the pocket weft W2' after the latter has been woven with the body warp across the central region of the tape thus to form the second pocket which lies adjacent the opposite selvedge of the tape. During the weaving of this pocket the warp yarns P1' and P3' are woven with the body, and finally the warp yarns P3' of the pocket warp are woven with the weft W2' to form the third pocket which lies in the central region of the tape. During the weaving of this pocket the warp yarns P1' and P2' are woven with the body of the tape.

The shedding of the pocket warp yarns during weaving of the pocket is, as can be seen such as to produce a plain 1 and 1 weave whilst the shedding of the body warps and the pocket warps during weaving in the body produces a 2 and 2 plain weave.

One advantage of the manner in which tape is produced in the form just described lies in the fact that, if it is desired to use a relatively stiff monofilament yarn for the body weft this can be supplied from a package and thus obviate the need to stop the loom at relatively short intervals of time to replenish a shuttle. It will be

appreciated that it is possible to provide only a small amount of stiff yarn in a shuttle of the kind used for weaving a narrow fabric but also that correct winding of the spool for such a shuttle is difficult to achieve using a stiff yarn. Thus the weaving method described above obviates two of the disadvantages associated with the use of stiff yarn as weft when producing narrow fabrics.

We claim:

1. A curtain heading tape comprising an elongate body part having edges, three spaced rows of pockets at different transverse distances from said edges of the tape, said pockets being staggered along the length of said body part so that each adjacent pocket in each set of three pockets is disposed in a different row of pockets, said body part being comprised of vertically spaced single and double picks of weft thread and having a warp density between said pockets greater than the warp density of said pockets, a draw cord through each of said rows and a catch thread attached to successive loops of said double picks of warpwise directed yarn, the said catch thread being warpwise oriented along one selvedge of the tape, whereby when the tape is attached to a curtain different specific heights of curtain above the level of suspension hooks can be provided.

2. A curtain heading tape as claimed in claim 1 in which a first weft is provided for said body part and a second weft is provided for said pockets.

3. A curtain heading tape as claimed in claim 1 in which there are three rows of pockets, a group of warp yarns for each row of pockets, each group of yarn being woven successively with a pocket weft yarn and a body forming weft yarn.

4. A curtain heading tape as claimed in claim 3 in which the pockets are woven 1 and 1 plain weave.

5. The method of producing a curtain heading tape comprising shedding a group of warp yarns, inserting a catch thread into the shed wrapping a warpwise directed yarn by said catch thread and drawing said warpwise directed yarn across said shed to become weftwise oriented, said catch thread becoming warpwise oriented along one selvedge of the tape body, inserting weft into shed formations by a plurality of warp yarns to weave a pocket of a first row of pockets and subsequently weaving pockets of at least one row of pockets parallel to said first row of pockets, shedding at least three draw cords with said weft yarns and retaining said draw cords in said tape by weaving them with said yarn that has become weftwise oriented at predetermined positions in said tape body.

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