UNITED STATES PATENT OFFICE

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VENETIAN BLIND LADDER TAPE

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3 Claims. (Cl. 160—178)

This invention pertains to a Venetian blind ladder tape and its application to a Venetian blind.

When plastic ladder tapes are used, as well as when some types of fabric ladder tapes are used with offset cords, as shown in my Patent No. 2,200,549, the side members are often stiff enough so that some difficulty is encountered in the accumulation of the tape when the blinds are tilted next to the offset lift cords, as this requires that the ladder tape fold outwardly between each slat supporting station on the ladder tape rather than being able to fold inwardly between two slats, outwardly around two slats, and inwardly between two slats again which is the conventional construction, as is shown in the Kuyper Patent No. 2,017,541. The folding of the side members of the ladder tape at every slat supporting station requires twice as many folds, and it has been found desirable to provide a ladder tape whose side members are made extra flexible at the point of folding both near the slat supporting station and midway between the slat supporting stations. This making of the ladder tape more flexible at these two points can be accomplished by moulding into the plastic side members a series of holes or partial holes, or by moulding the side members a little bit thinner at these sections where the folds are to take place, or to mould in oblong shape or other shape holes clear through, or partially through, the side member at the point where the folds are to take place in order to make the tape fold more readily at the desired locations. Most plastic ladder tape usually has fiber inserts moulded into the tape to prevent stretch and to increase the strength, and it is desired that the perforations be between these strengthening fibers, or that the thinner sections not interfere with the strengthening fibers that merely reduce the covering over the fibers.

Other objects of the invention will be more clearly pointed out in the accompanying specification and claims.

I have illustrated my invention by way of example in the following figures.

Figure 1 is a side elevation, partly cut away, showing one form of the invention.

Figure 2 is an enlarged sectional view taken at section 2—2 of Figure 1, showing the lower portion of the blind with a portion of the slats accumulated in partially raised position.

Figure 3 is a perspective view of a portion of the ladder tape as used in Figures 1 and 2, showing the moulded or perforated sections where the folds are to take place.

Figure 4 is a perspective view of a short section of another form of tape embodying this invention.

In all figures, like numerals of reference refer to corresponding parts.

Referring now to Figures 1, 2, and 3, I have shown a Venetian blind having a head rail 10, a tilt mechanism 11, and a pivot 12 secured to the head rail 10 in a conventional manner. The end pivot 12 may also support the cord lock 13 which controls the stopping of the lift cords 30 and 31. Tilt rail 15 supports ladder tapes 20 and 21. Lift cords 30 and 31 are preferably located next to the side members of the ladder tapes and at the edge or in a small cutout near the edge of the slats 5, more or less as shown in my Patent No. 2,200,549, and in other subsequently issued patents of mine. Ladder tapes 20 and 21 support the slats 5 in staggered relationship and also support the bottom rail 17 at the bottom of the blind. These ladder tapes have front and rear side members, as shown particularly in Figure 2, where the front side member of ladder tape 21 is shown at 21a and the rear side member of the ladder tape is shown at 21b. Staggered or double ladder rungs, such as 19, are preferably provided to provide even spacing of the slats. The side members of the ladder tape preferably have moulded openings or perforated openings in the side, such as 22a, located adjacent the point where the ladder rungs 19 are fastened to the side members of ladder tape 21. These facilitate the outward folding of the tape at the points where the ladder rungs hold the side members of the ladder tape near the edges of the slat. Another series of the apertures moulded into the ladder tape, either all the way through or as indentations from the front toward the rear or as indentations from the inside of the tape towards the outside but without going through the outside which might provide a preferable appearance, provide easy folding of the ladder tape between the ladder supporting stations so that the ladder tape will readily fold when accumulated, as shown in Figure 2. The blind is tilted by the lift cords 14 in a conventional manner.

In case the appearance of the side members of the ladder tape were improved by having the exterior surface untouched by perforations going partly or all of the way through the side members of the ladder tape, or in order not to have to interfere with the placement of the reinforcing fibers, such as 40, which are often moulded into the side members of plastic tape to increase the strength and to prevent stretch, it may be
3 desirable to merely cast into the side members of the ladder tape recesses part way or all of the way across the ladder tape, as shown in Figure 4, so that the plastic itself is thinner at the points 42a which are near the points where the cross rungs 19 are attached to the side members, and also where the cross section of the ladder tape is thinner at the mid point between the slat supporting stations, such as 42a and 42b. By this construction, it can be seen that the exposed surfaces of the ladder tapes on the room side and the outside of the blind will be unperforated and have a normal appearance, while the blind can be readily raised and the tape will accumulate readily by folding outwardly between every slat supporting station aided by the more flexible sections where the folds are to take place, as provided in Figure 4.

I do not in any way wish to limit myself to the exact details or mode of operation set forth in the specification and drawings, for it will be obvious that departure may be made in the way of details without departing from the spirit and scope of my invention which is set forth in the following claims.

I claim as my invention:

1. In a Venetian blind including vertically disposed and laterally spaced ladder tapes and horizontally disposed and vertically staggered slat supporting rungs disposed between the tapes in uniformly vertical spaced relation and having their opposite ends secured thereto, the improvement comprising tape folding zones in lines uniformly weakened throughout the transverse widths of the tapes and including a line disposed immediately below each rung and a line intermediate each two successive rungs and generally parallel thereto.

2. The structure according to claim 1, wherein said weakened folding zones comprise uniformly spaced relatively small apertures in each of said lines.

3. The structure according to claim 1, wherein said weakened folding zones comprise grooves in corresponding walls of said ladder tapes extending throughout the transverse extents thereof, in said lines.

BROOKS WALKER.

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