Dec. 6, 1966 E. E. HENSEL 3,289,739

LADDER CORD OR LADDER TAPE CARRIER

Filed Nov. 25, 1964

FIG. 1

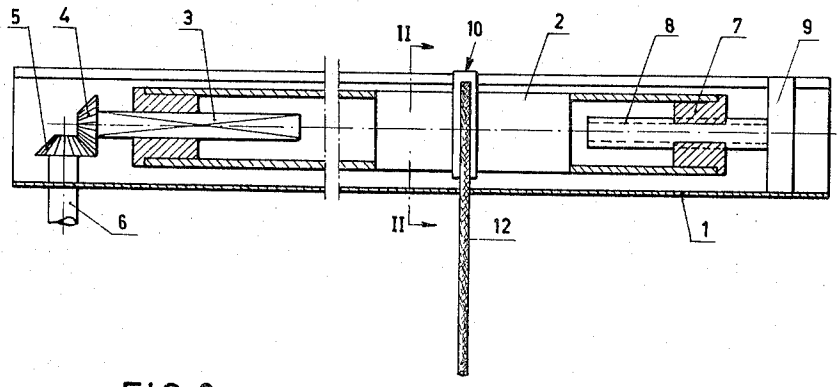


FIG. 2

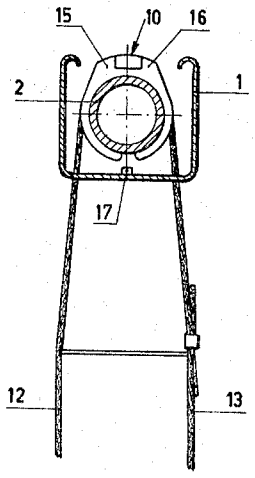


FIG. 4

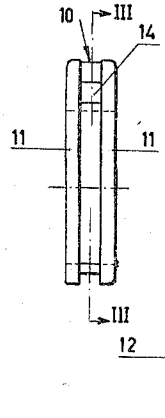
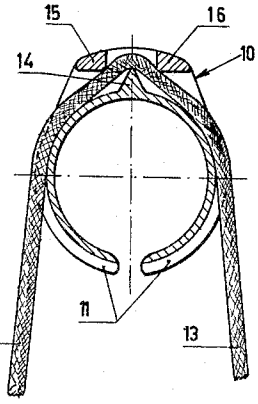


FIG. 3



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LADDER CORD OR LADDER TAPE CARRIER

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3 Claims. (Cl. 160—178)

This invention relates to a ladder cord carrier or ladder tape carrier adapted to be fastened in a slightly clamping manner on the operating shaft of a Venetian blind and also relates to a Venetian blind provided with such a carrier. The invention aims at providing a ladder cord carrier or ladder tape carrier of this kind with which a ladder cord or ladder tape may be easily and rapidly arranged on the operating shaft of a Venetian blind, said opeating shaft being destined for tilting the lamellae as well as for raising or lowering the Venetian blind. An additional object of the invention is the possibility of fastening the ladder cords or ladder tapes easily and non-slidably to the carrier.

The above-mentioned objects are obtained with the ladder cord carrier or ladder tape carrier according to the invention in that it comprises one or more cross-pieces or dams which are non-slidably holding a ladder cord or ladder tape arranged in said carrier. With this construction of the carrier it is only necessary to insert the end of one of the ladder cords or ladder tapes of a ladder in the carrier after which this end is non-slidably held by the clasping action exercised by the projections and cross-pieces. The end inserted in the carrier is then fastened to the end of the other ladder cord or the other ladder tape of the ladder. Obviously also the end of each of the ladder cords or ladder tapes may be non-slidably fastened in the carrier.

A preferred embodiment of the ladder cord carrier or ladder tape carrier according to the invention is characterized in that it comprises an accommodation space for a ladder cord or ladder tape, said accommodation space being limited by side flanges. The cross-pieces or dams or the projections of the carrier are preferably constructed as abutments. In the case of carriers provided with side flanges this may be realized in a simple way by raising said flanges in the area of the cross-pieces or dams, said raised portions forming the abutments for the carrier. These abutments may co-operate for example with an abutment fixedly arranged in a head rail of a Venetian blind and serve to make it possible for the carrier to slip relative to the operating shaft when the lamellae have reached one of their extreme positions into which they may be rotated. It is obvious that the carrier need not be arranged directly on the operating shaft of a Venetian blind but that it may also be indirectly arranged on said operating shaft, for example on a tube or spool mounted on the operating shaft.

In the case of a simple and sturdy embodiment of the carrier according to the invention said carrier comprises two curved legs adapted to grip around an operating shaft of a Venetian blind. In particular when the flanges have been raised in the area of the cross-pieces or dams a firm central portion is obtained to which the legs of the carrier are connected.

The carrier is preferably manufactured from a resilient synthetic material, for example a polyamide.

The invention will be further explained below with reference to the accompanying drawings showing by way of example an embodiment of a carrier according to the invention.

FIG. 1 shows diagrammatically in longitudinal section part of a Venetian blind in which a carrier according to the invention has been mounted.

FIG. 2 is a section according to the line II—II of FIG. 1.

FIG. 3 is a section according to the line III—III of FIG. 4.

FIG. 4 is a side view of the carrier shown in FIG. 3.

The Venetian blind shown in FIG. 1 comprises a head rail 1 in which a tubular operating shaft 2 has been rotatably mounted in bearings in a manner which is not shown. In the left hand end of said tube 2 a non-round 3 has been inserted, said rod being provided with a conical gear wheel 4 engaging with a conical gear wheel 5 arranged on a driving shaft 6.

The right hand end of the tube 2 is provided with a closure member 7 comprising a threaded hole with which a threaded rod 8 is in engagement, said threaded rod being secured to a support 9 provided in the head rail 1.

On the tube 2 a number of ladder cord carriers have been provided, said number corresponding with the number of ladder cords of the Venetian blind. Of these ladder cord carriers only one carrier 10 is shown. This carrier has been made from a resilient synthetic material, for example polyamide, and consists of an open ring which slightly clamps the tube 2. This ring is provided with side flanges 11 forming a limitation for the ladder cord 12, 13. The flanges 11 have been raised on either side of a radial projection 14 and have been interconnected by cross-pieces or dams 15, 16. By means of this projection 14 and the cross-pieces or dams 15, 16 the end of the ladder cord 12 inserted in the carrier 10 in the manner shown in FIG 3 is non-slidably held in said carrier 10. Said end has been fastened to the end of the ladder cord 13. In the head rail 1 an abutment 17 has been provided which co-operates with the cross-pieces or dams 15, 16 serving as abutment for the carrier 10. This abutment 17 may be provided for example on a bearing (not shown) for the tube 2.

The above-described Venetian blind operates as follows:

If the driving shaft 6 is rotated, the tube 2 rotates.

As a consequence thereof the ladder cord carriers mounted on said tube in a slightly clamping manner rotate along with this tube 2 until one of the cross-pieces 15, 16 comes into contact with the abutment 17. The lamellae of the Venetian blind are then closed and cannot be tilted any further. On account of the fact that the carriers 10 are arranged on the tube 2 in a slightly clamping manner, the tube 2 may, however, continue its rotation. During the rotation of the tube 2 the lift cords (not shown) of the Venetian blind are wound on or unwound from said tube 2, according as the Venetian blind is raised or lowered.

It is obvious that the invention is not restricted to the embodiment of the ladder cord carrier according to the invention shown above and that these carriers may also be applied in Venetian blinds of different construction which do not have an axially movable tube. The carrier may also comprise more than one projection and one or more than two cross-pieces or dams.

I claim:

1. A ladder carrier for a Venetian blind having an operating shaft, said ladder carrier comprising an open ring of resilient material having a middle portion and two curved legs adapted to grip around the operating shaft; said middle portion being provided with an accommodation space for part of at least one ladder cord, two cross-pieces leaving an opening between them extending above said accommodation space, and a projection pointing towards the opening between the cross-pieces.

2. A ladder carrier for a Venetian blind having an operating shaft, said ladder carrier consisting of an open ring of resilient synthetic material having a middle portion and two curved legs adapted to grip around the operating shaft and being provided with side flanges; said middle portion being provided with an accommodation space for part of at least one ladder cord, two cross-pieces leaving an opening between them extending above said accommodation space, and a projection pointing towards the opening between the cross-pieces.

3. A Venetian blind provided with an operating shaft operating at least as a tilt shaft, and at least one ladder carrier carried by said shaft and comprising an open ring of resilient material, adapted to lightly clamp around the operating shaft and having a middle portion and two curved legs being provided with side flanges; said middle portion being provided with an accommodation space for part of at least one ladder cord, two cross-pieces leaving an opening between them extending above said accommodation space, and at least one projection pointing towards the opening between the cross-pieces.

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