

SPECIFICATION

Louvered venetian blind with vertically arranged louvers

The present invention relates to a louvered venetian blind with vertically arranged louvers.

One type of such blind has several louver carriers which can be moved along a rail and through which passes at least one shaft for turning over the louvers. Each carrier carries a louver rotatable about a vertical axis, and has a worm which is located on the shaft and interacts with a gear wheel effecting the turning of the louver.

In venetian blinds of this type, it must be possible both to move the louvers in the axial direction and to rotate them about their own vertical axis. It is known to drive each louver carrier by itself in the axial direction or to use a so-called pull carrier which alone provides the requisite driving force for moving the louver carriers in the axial direction. In types of venetian blinds, in which the shaft rotates on actuation of the venetian blind independently of the fact whether it is intended to open or close the venetian blind or only to change the turning position of the louvers, a separation between the louver and the turning shaft must take place at the end of the turning range at least to such an extent that the turning shaft can rotate further.

The separation is usually effected by a slip clutch. However, the decoupling from the rotary motion of the shaft has not hitherto been ensured in a satisfactory manner since, unless one resorts to a very highly manufacturing expenditure, there is still relatively extensive wear in the zone of the slip clutch, which wear is, inter alia, caused by the fact that, even if the slip clutch slips, a relatively large proportion of frictional force is still taken from the shaft. This proportion also increases the necessary total power for the drive of the shaft.

It is, however, also a very particular disadvantage that, during the turning of the louvers, the louver carrier is in many cases not sufficiently secured against an undesired movement in the axial direction.

Accordingly to the present invention there is provided a louvered venetian blind with vertically arranged louvers, said blind comprising a rail, several louver carriers which can be shifted on the rail and at least one turning shaft which passes through all of the louver carriers for turning over the louvers, each louver carrier holding a louver rotatable about a vertical axis, and having a worm which is located on the turning shaft and interacts with a worm wheel effecting the turning of the louver, each louver carrier also being provided with a slip clutch which is inserted into the path of forces between the turning shaft and the worm thread, one of the friction surfaces of each slip clutch being formed by the circumferential surface of the turning shaft, whilst a further friction surface which interacts with this friction surface is a constituent of a sleeve which surrounds the turning shaft, is associated with the worm, transmits the force and is formed with a slot over

at least part of its length in a generally axial direction and the force closing the sleeve onto the turning shaft can be suddenly reduced to a fraction of the original friction by means of a declutching element.

With such a construction the force required in each case for turning the louvers can be taken from the shaft with lowest possible manufacturing expenditure and in such a way that the proportion of frictional force, which is still transferred by the slip clutch during the axial transport, and hence the wear and the necessary requirement of driving force are substantially reduced.

When the necessary driving force for the turning of a louver is taken directly off the circumferential surface of the shaft, the reduction of the force closing the sleeve onto the driving shaft, on reaching an end turning position can be achieved in a particularly simple manner. To a correspondingly large extent, the wear can be reduced and easy running in axial movement can be improved. The reduction of the force-transmitting connection between the shaft and the louver precisely by a frictional closure on the circumferential surfaces of the shaft is also advantageous because the turning function and the driving function in the axial direction can thus be separated substantially more effectively than hitherto.

Independently of the fact whether each individual louver carrier is driven directly for axial movement or whether each louver pack is associated with a pull carrier which takes the axial driving force from a drive shaft and transmits this force in another way to the louver carriers, it is possible in every case to obtain reliable securing against an axial movement of the carriers during the turning step. This securing can be effected either with the aid of friction of a correspondingly large magnitude between the pull carrier and the head rail or, in an embodiment in which the pull carrier is directly fixed to the nearest louver carrier, adequate hold of the pull carrier is already provided by this louver carrier.

The driving force for the axial movement is in general effected with the aid of a positive connection which is formed between a helical groove in the drive shaft and a constructional component placed onto the drive shaft. This force transmission has, however, the disadvantage that, on reaching an end position, the drive element which positively engages in the groove at the least easily jams with the drive shaft and causes increased material wear and that in this case an additional detaching momentum of a certain magnitude must also be provided when leaving the end position. By contrast, a louvered venetian blind designed according to the invention results, due to the purely frictional connection to the shaft, in the advantage that these unfavourable effects cannot occur at all in the first place.

In a louvered venetian blind of this type, it is known to arrest a further turning motion of the louvers, after a complete turning step has taken

place, by stops which are located on a worm wheel driven by the worm. For such an embodiment of the louvered venetian blind, it is proposed that the declutching element can be actuated by the arresting of the turning motion at the end of the turning step. This means that the reduction of the frictional force between, on the one hand, the turning shaft which transmits the driving force for the turning step and, on the other hand, the louver takes place automatically at the end of each turning step.

Alternatively, however, it is also possible for the declutching element to be actuated by the start of the movement of the louver carrier in the axial direction.

In the following text, further embodiments of the invention are described, in one of which the sleeve comprises at least one continuous slot in a substantially axial direction and at least one resilient element, preferably a spring, acts on the outside of the sleeve, compressing the latter.

The force transmission in a turning step thus takes place during the compression of the sleeve. For example, a rubber band or the like can be used as the resilient element. Preferably, however, a spring can be used and this can, for example, be in the form of a leaf spring or of a spring wire of circular cross-section and which suitably is of such a size that it surrounds more than half of the circumference of the sleeve but does not overlap the slot itself.

It is further proposed that, at a point approximately diametrically opposite the slot, for the sleeve wall to be thinner than in the remaining wall zone. In this way, soft and yielding behaviour of the sleeve in the circumferential direction is deliberately caused so that the magnitude of the friction on the circumferential surface of the turning shaft is essentially determined by the magnitude of the spring force. This is also an advantage for the reason that the spring force of a steel spring remains constant over a longer period than the elasticity of the plastic which advantageously is to be used for the manufacture of the sleeve.

It is also advantageous for the outer surface of the sleeve wall to have a form which is eccentric relative to the shaft axis and for this eccentricity to be compensated by central external guide surfaces which are formed by projections on the sleeve wall, which protrude outwards.

In this way, on the one hand, central support of the sleeve in one component surrounding the latter becomes possible, whilst, at the same time, the circumferential region gained by the eccentric shape is available as space for arranging the spring. The projections can have the form of guide ribs extending in the axial direction and having correspondingly different heights, and the ribs can extend over only a part of the axial length of the sleeve, whilst the resilient element or elements are located next to the guide ribs.

If a louvered venetian blind is used, in which the turning motion of the louver is arrested by stops formed on the worm wheel, after a complete

turning step has taken place, it is further proposed that on either side of the slot provided in the sleeve, a radially outwardly pointing dog is provided and that the dogs are arranged in such a way that the sleeve is forced apart against the action of the spring when the worm thread strikes the associated stop of the turning worm wheel.

It is advantageous for the sleeve to be a separate component located within the hub of the worm and for the dogs to pass through a recess in the hub of the worm and to be located in the same radial plane as the particular associated end of the worm thread on the particular side of the slot. This results in a particularly advantageous interaction of these parts, when the frictional closure is suddenly reduced at the end of a turning step.

Preferably, the dogs on the sleeve overlap as far as possible in the axial direction, at the location where the slot in the sleeve is offset in the circumferential direction between the two dogs.

Admittedly, the sleeve can also be connected to the worm in another manner. When the sleeve is arranged within the hub of the worm, however, there is no additional requirement for constructional space in the axial direction.

Furthermore, some embodiments of the invention also make possible yet a further function of the worm thread, inasmuch as the latter can also reinforce the frictional connection with the shaft, in addition to transmitting the rotary force to the gear wheel joined to the louver, as a result of which the closing bias of the resilient element or elements can be reduced.

When the slot in the sleeve is offset in the circumferential direction between the two dogs, this has the result that the force transmission to the worm wheel is impaired as little as possible during a revolution of the worm.

If a pull carrier is used for the axial movement of the louvers of one louver pack in each case, which pull carrier pulls or pushes the individual louver carriers, this gives a further advantage of the invention in that only the louver carriers need to have a sleeve interacting with the circumferential surface of the turning shaft.

In addition to a turning shaft only required for the turning step, it is known to provide a second shaft, by means of which the driving force for the movement in the axial direction is transmitted. For this purpose, this shaft is provided with at least one helical groove. With the construction of the invention, it is particularly advantageous for a single shaft provided with at least one helical groove to be used and to serve as the turning shaft and also as the shaft for producing the axial movement.

It is also possible for the declutching element to be actuated by the start of the axial motion of the louver carrier. For this purpose the declutching element may comprise a cam which projects like a wedge, so as to interact with the slot, the cam being actuated by an axial motion of the louver carrier. The cam can force the sleeve apart by engaging in the slot and can thus effect the reduction of the frictional connection. It is

advantageous for the wedge-like cam to extend in the axial direction and to interact with one end of the slot. It is then unnecessary to deflect the driving force into a direction different from the axial direction as compared with an embodiment in which, for example, the cam engages in the slot in the radial direction.

The wedge-like projecting cam of the declutching element can be a constituent of a disc placed onto the turning shaft with play, the disc being located between a transverse wall of the louver carrier and that end of the sleeve which faces the transverse wall. In this way, the transmission of the axial driving force to the sleeve, for this purpose of reducing the frictional connection, is particularly simple.

It is also possible for the sleeve to have two slots extending substantially in an axial direction and for at least one cam of the declutching element to engage in each slot.

According to the invention, the reduction of the frictional connection for each of the two axial transport directions can be effected in a simple manner by providing a declutching element on either side of the sleeve, in each case between a transverse wall of the louver carrier and the associated end of the sleeve. This design is particularly suitable when the worm thread is a constituent of the sleeve.

In order that the present invention will be more fully understood, the following description is given, merely by way of example, reference being made to the accompanying drawings in which:—

Figure 1 is a diagrammatic side view of one embodiment of louvered venetian blind according to the invention;

Figure 2 is an exploded perspective view showing the components of a louver-turning drive according to a first embodiment;

Figure 3 is a side view, partly in section, of the sleeve of the turning drive according to Figure 2;

Figure 4 is a section taken along the line IV—IV in Figure 5 through the same turning drive;

Figure 5 is a diagrammatic plan view of the turning drive of Figures 3 and 4;

Figure 6 is an exploded perspective view showing a second embodiment of the turning drive; and

Figure 7 is a section through this turning drive in the zone of the sleeve.

Initially, the general construction of a louvered venetian blind is to be described by reference to Figure 1. On an upper rail 10, two louver packs are suspended, each of which has a pull carrier 11 and a number of louver carriers 12, one louver 13 being suspended on each carrier 12. A drive shaft 15, of which each part associated with a louver pack is provided with three helical grooves 16 or 17, passes through all the carriers 11, 12 and 14. The three helical grooves 16 are of opposite hand from the three helical grooves 17, so that, on rotating the drive shaft 15, correspondingly different axial directions of movement are given. Instead of using two shafts, the drive shaft 15 here also simultaneously fulfils the function of a

turning shaft.

The drive shaft 15 can here be rotated by means of a chain 18. Support carriers 14 are provided to support the particular part, free from louvers 13, of the drive shaft 15 on the rail 10 and thus to prevent sagging of the drive shaft 15.

The pull carrier 11 is in each case directly connected to the next louver carrier 12 of its louver pack. The driving force required for the axial movement is transmitted from the drive shaft 15 only to the pull carriers 11, whilst the louver carriers 12 only take the particular driving force, required for the turning step, from the drive shaft 15. The axial movement of the louver carriers 12 is effected by straps 19 which are secured at one end to the pull carrier 13 or to the louver carriers 12, and can slide through the adjacent carrier until an abutment on the other end engages a stop on said adjacent carrier, thus providing a lost motion correction.

In the first embodiment of the invention shown in Figures 2 to 5, the louver carrier has a casing 20 through which the drive shaft 15 passes, a sleeve 21 being placed on this drive shaft.

The sleeve has a continuous slot 22 extending generally in the axial direction, but provided with an offset in the circumferential direction between two radially outward-pointing triangular dogs 23 which in turn overlap at least partially, as viewed in the axial direction. The part of the sleeve wall, diametrically opposite the slot 22, is substantially thinner so that the external circumferential surface of the sleeve 21 is eccentric in relation to the central axis 24 of the sleeve 21. One part of the sleeve 21 is provided on the circumferential surfaces with guide strips 25, the height of which is of different magnitude in such a way that the external surfaces of the guide strips 25 reconstitute the outer centricity of the sleeve 21, that is these external surfaces lie on a cylindrical surface concentric with the sleeve axis. The particular guide strip 25 closest to the slot 22 is somewhat longer than the other guide strips 25 in order to limit the motion of a spring 26 which surrounds the sleeve 21 over more than half its circumference, and in order to prevent the spring 26 from overlapping the slot 22. The spring 26 consists of a steel wire and can compress those parts of the sleeve 21 which are located on either side of the weakest wall zone, so that the sleeve 21 is in frictional contact with the external circumferential surface of the drive shaft 15.

The sleeve 21 is surrounded by a worm 27 comprising a worm hub 28 and a worm thread 29. The worm hub 28 is provided with a recess 30 which is open towards one end of the hub and through which can pass the dogs 23 of the sleeve 21 pushed into the worm 27. As can be seen from Figure 3, the dogs 23 are arranged in such a position, in each case relative to one side of the slot 22, that they are located in approximately the same radial plane as the particular associated end of the worm thread 29.

By means of the worm 27, a worm wheel 31 can be driven, the axis of which extends in the

vertical direction and to which the holding pin 32 of a louver holder 33 is joined. A louver 13 is suspended on each louver holder.

The worm wheel 31 has a stop 34 between two adjacent teeth. At the end of a turning step and depending on the particular direction of the latter, either one end or the other end of the worm thread 29 strikes the stop.

In operation, when the drive shaft 15 is rotated with the aid of the chain 18 in one or the other direction, the drive shaft 15 will also rotate the sleeve 21 since the latter is pressed with sufficient firmness by the spring 26 onto the outer circumferential surface of the drive shaft 15. With the aid of the radial dogs 23, passing through the recess 30 in the worm hub 28, the rotary motion is transmitted to the worm 27 which in turn drives the gear wheel 31, so that turning of the louvers 13 into the associated end position takes place first, if they were not yet in this position. Up to this point, the transmission of a driving force, effecting a movement in the axial direction, to the pull carrier 11 does not take place.

The gearing ratio between the worm 27 and the worm wheel 31 is such that the turning end position of a louver 13 is in each case determined by one of the two ends of the worm thread 29 striking the associated side of the stop 34. Since the dogs 23 are each arranged in the axial direction in such a way that they are located in the same radial plane as the particular associated end of the worm thread 29, they do not interfere with the engagement of the worm thread 29 in the teeth of the worm wheel 31. When one end of the worm thread 29 strikes one side of the stop 34, the particular associated dog 23 is located in between. In no case can the worm wheel 31 now be driven further in the same direction, so that the louver 13 is at a standstill.

By means of the abovementioned dog 23, the sleeve 21 is thus prevented on this side from further rotating. For this reason, if the drive shaft 15 rotates further in the same direction, the other half part of the sleeve 21 can be taken further along as a result of the friction existing between the outer circumferential surface of the drive shaft 15 and the sleeve 21, and this tends to open the sleeve 21 against the spring force. The recess 30 is of sufficient width to enable the two dogs 23 to be splayed apart correspondingly.

At the same time, a drive connection between the drive shaft and the pull carrier 11, (which is not described herein because it does not form part of the present invention) begins to become effective, so that the pull carriage 11 begins to move axially of the drive shaft pushing or pulling with it the first louver carrier 12. If the blind is closing, the first carrier shortly abuts its neighbour and pushes it and so on. On the other hand, if the blind is opening, the adjacent carriage is pulled when the abutment on associated strip 19 strikes the stop thereon and so on.

With the sleeve 21 opened slightly, as explained above, the axial movement of the louver carriers 12 can now follow with a considerably

reduced friction on the drive shaft 15. The louver carriers 12 here run on rollers 35 on the rail 10. The reduction of the frictional force, however, is independent of the fact whether any axial movement follows at all, that is to say the turning step is already at an end.

The construction illustrated in Figures 6 and 7, differs from the embodiment described above in the following manner.

A sleeve 36 which is directly provided with a worm thread 37 is not placed onto the drive shaft 15. The sleeve 36 has a continuous slot in the axial direction. On that side of the sleeve 36 which is diametrically opposite this slot, a groove 39 is provided which represents a cross-sectional weakening and facilitates forcing apart of the two halves of the sleeve.

Between each end of the sleeve 36 and the associated transverse wall 40 of the casing 20, a disc 41 is provided, the internal diameter of which is of such magnitude that sufficiently large play remains relative to the drive shaft 15. Thus, the drive shaft 15 cannot transmit any force to the disc 41.

Each of the two discs 41 has, on the side facing the sleeve 36, a wedge-like cam 42, the free end of which then also engages a little in the slot 38 when the sleeve 36 is seated on the drive shaft 15 with its full friction closure. The discs 41 are thus unable to twist even accidentally.

Moreover, the gear wheel 31 has no stop 34 in this embodiment since, in this case, the reduction of the friction closure is not initiated by ending the turning motion.

Figure 7 shows the individual parts in the mounted position. In detail, the turning drive has the following mode of action:

As long as the sleeve 36 is seated on the drive shaft 15 with its full friction closure, it is rotated with the rotation of the drive shaft 15 for as long as this louver carrier is at a standstill. In this embodiment, stopping of the rotary motion of the sleeve, for example, by a stop provided on the gear wheel 31, is not required.

When the movement of the louver carriers 12 in the axial direction is now effected by the pull carrier 11, one or the other transverse wall 40 of the casing 20 can press the particular disc 41 associated therewith in the direction of the sleeve 36. In this way, the wedge-like cam 42 of this disc 41 is moved further in the axial direction into the slot 38. Since the sleeve 36 which is still seated with its full friction closure on the outer circumferential surface of the drive shaft 15 puts up a resistance against this force, the two halves of the sleeve 36 can be forced apart by the cam 42. This means a substantial reduction of the friction closure previously existing between the sleeve 36 and the drive shaft 15. Thus, in this embodiment, the start of a transport motion in the axial direction is a pre-requisite for this purpose.

CLAIMS

1. A louvered venetian blind with vertically arranged louvers, said blind comprising a rail,

vertical direction and to which the holding pin 32 of a louver holder 33 is joined. A louver 13 is suspended on each louver holder.

The worm wheel 31 has a stop 34 between two adjacent teeth. At the end of a turning step and depending on the particular direction of the latter, either one end or the other end of the worm thread 29 strikes the stop.

In operation, when the drive shaft 15 is rotated with the aid of the chain 18 in one or the other direction, the drive shaft 15 will also rotate the sleeve 21 since the latter is pressed with sufficient firmness by the spring 26 onto the outer circumferential surface of the drive shaft 15. With the aid of the radial dogs 23, passing through the recess 30 in the worm hub 28, the rotary motion is transmitted to the worm 27 which in turn drives the gear wheel 31, so that turning of the louvers 13 into the associated end position takes place first, if they were not yet in this position. Up to this point, the transmission of a driving force, effecting a movement in the axial direction, to the pull carrier 11 does not take place.

The gearing ratio between the worm 27 and the worm wheel 31 is such that the turning end position of a louver 13 is in each case determined by one of the two ends of the worm thread 29 striking the associated side of the stop 34. Since the dogs 23 are each arranged in the axial direction in such a way that they are located in the same radial plane as the particular associated end of the worm thread 29, they do not interfere with the engagement of the worm thread 29 in the teeth of the worm wheel 31. When one end of the worm thread 29 strikes one side of the stop 34, the particular associated dog 23 is located in between. In no case can the worm wheel 31 now be driven further in the same direction, so that the louver 13 is at a standstill.

By means of the abovementioned dog 23, the sleeve 21 is thus prevented on this side from further rotating. For this reason, if the drive shaft 15 rotates further in the same direction, the other half part of the sleeve 21 can be taken further along as a result of the friction existing between the outer circumferential surface of the drive shaft 15 and the sleeve 21, and this tends to open the sleeve 21 against the spring force. The recess 30 is of sufficient width to enable the two dogs 23 to be splayed apart correspondingly.

At the same time, a drive connection between the drive shaft and the pull carrier 11, (which is not described herein because it does not form part of the present invention) begins to become effective, so that the pull carriage 11 begins to move axially of the drive shaft pushing or pulling with it the first louver carrier 12. If the blind is closing, the first carrier shortly abuts its neighbour and pushes it and so on. On the other hand, if the blind is opening, the adjacent carriage is pulled when the abutment on associated strip 19 strikes the stop thereon and so on.

With the sleeve 21 opened slightly, as explained above, the axial movement of the louver carriers 12 can now follow with a considerably

reduced friction on the drive shaft 15. The louver carriers 12 here run on rollers 35 on the rail 10. The reduction of the frictional force, however, is independent of the fact whether any axial movement follows at all, that is to say the turning step is already at an end.

The construction illustrated in Figures 6 and 7, differs from the embodiment described above in the following manner.

A sleeve 36 which is directly provided with a worm thread 37 is not placed onto the drive shaft 15. The sleeve 36 has a continuous slot in the axial direction. On that side of the sleeve 36 which is diametrically opposite this slot, a groove 39 is provided which represents a cross-sectional weakening and facilitates forcing apart of the two halves of the sleeve.

Between each end of the sleeve 36 and the associated transverse wall 40 of the casing 20, a disc 41 is provided, the internal diameter of which is of such magnitude that sufficiently large play remains relative to the drive shaft 15. Thus, the drive shaft 15 cannot transmit any force to the disc 41.

Each of the two discs 41 has, on the side facing the sleeve 36, a wedge-like cam 42, the free end of which then also engages a little in the slot 38 when the sleeve 36 is seated on the drive shaft 15 with its full friction closure. The discs 41 are thus unable to twist even accidentally.

Moreover, the gear wheel 31 has no stop 34 in this embodiment since, in this case, the reduction of the friction closure is not initiated by ending the turning motion.

Figure 7 shows the individual parts in the mounted position. In detail, the turning drive has the following mode of action:

As long as the sleeve 36 is seated on the drive shaft 15 with its full friction closure, it is rotated with the rotation of the drive shaft 15 for as long as this louver carrier is at a standstill. In this embodiment, stopping of the rotary motion of the sleeve, for example, by a stop provided on the gear wheel 31, is not required.

When the movement of the louver carriers 12 in the axial direction is now effected by the pull carrier 11, one or the other transverse wall 40 of the casing 20 can press the particular disc 41 associated therewith in the direction of the sleeve 36. In this way, the wedge-like cam 42 of this disc 41 is moved further in the axial direction into the slot 38. Since the sleeve 36 which is still seated with its full friction closure on the outer circumferential surface of the drive shaft 15 puts up a resistance against this force, the two halves of the sleeve 36 can be forced apart by the cam 42. This means a substantial reduction of the friction closure previously existing between the sleeve 36 and the drive shaft 15. Thus, in this embodiment, the start of a transport motion in the axial direction is a pre-requisite for this purpose.

CLAIMS

1. A louvered venetian blind with vertically arranged louvers, said blind comprising a rail,





several louver carriers which can be shifted on the rail and at least one turning shaft which passes through all of the louver carriers for turning over the louvers, each louver carrier holding a louver
5 rotatable about a vertical axis, and having a worm which is located on the turning shaft and interacts with a worm wheel effecting the turning of the louver, each louver carrier also being provided with a slip-clutch which is inserted into the path of
10 forces between the turning shaft and the worm thread, one of the friction surfaces of each slip clutch being formed by the circumferential surface of the turning shaft, whilst a further friction surface which interacts with this friction surface is
15 a constituent of a sleeve which surrounds the turning shaft, is associated with the worm, transmits the force and is formed with a slot over at least part of its length in a generally axial direction and the force closing the sleeve onto the
20 turning shaft can be suddenly reduced to a fraction of the original friction by means of a declutching element.

2. A louvered venetian blind according to Claim 1, wherein the turning motion of the louvers is
25 arrested by stops formed on the worm wheel, after a complete turning of the louvers has taken place and the declutching element can be actuated by the arresting of the turning motion at the end of the turning step.

3. A louvered venetian blind according to Claim 2, wherein, on either side of the slot in the sleeve, a radially outward-pointing dog is provided and serves as a declutching element, the dogs being
30 arranged in such a way that the sleeve is forced apart when the worm thread strikes the associated stop of the turning worm wheel.

4. A louvered venetian blind according to Claim 3, wherein the sleeve is a separate component located within the hub of the worm and the dogs
40 pass through a recess in the hub of the worm and are located in the same radial plane as the particular associated end of the worm thread on the particular side of the slot.

5. A louvered venetian blind according to Claim 4, wherein the dogs on the sleeve largely overlap in the axial direction and the slot in the sleeve is
45 offset in the circumferential direction between the two dogs.

6. A louvered venetian blind according to Claim 1, wherein the declutching element can be
50 actuated by the start of the axial transport motion of the louver carriers.

7. A louvered venetian blind according to Claim 6 wherein the declutching element comprises a cam
55 which projects like a wedge, interacts with the edge of the slot and can be actuated by an axial motion of the lower carrier.

8. A louvered venetian blind according to Claim 7, wherein the wedge-like cam extends in the axial
60 direction and interacts with that region of the sleeve edge which delimits one end of the slot.

9. A louvered venetian blind according to Claim 7 or 8, wherein the wedge-like projecting cam of the declutching element is a constituent of a disc
65 placed onto the turning shaft with radial play, the disc being located between a transverse wall of the louver carrier and that end of the sleeve which faces the transverse wall.

10. A louvered venetian blind according to Claim 7, 8 or 9, wherein the sleeve has two slots
70 extending substantially in the axial direction and at least one cam of the declutching element engages in each slot.

11. A louvered venetian blind according to any one of Claims 7 to 10 wherein a declutching
75 element is provided on either side of the sleeve, in each case between a transverse wall of the louver carrier and the associated end of the sleeve.

12. A louvered venetian blind according to any one of the preceding claims, wherein the sleeve
80 comprises at least one continuous slot in a generally axial direction and at least one resilient element acts on the outside of the sleeve to compress it.

13. A louvered venetian blind according to Claim 12, wherein at a point approximately
85 diametrically opposite the slot the sleeve wall is thinner than in the remaining wall zone.

14. A louvered venetian blind according to any one of the preceding claims, wherein the outer
90 surface of the sleeve wall has a form which is eccentric relative to the shaft axis and the eccentricity is compensated by central external guide surfaces which are formed by outwardly protruding projections on the sleeve wall.

15. A louvered venetian blind according to Claim 12 and Claim 14, wherein the projections
95 have the form of guide ribs extending in the axial direction and having correspondingly different heights, and the guide ribs extend over only a part of the axial length of the sleeve and the resilient element is located next to the guide ribs.

16. A louvered venetian blind according to one of the preceding claims, wherein the worm thread
100 (37) is a constituent of the sleeve (36).

17. A louvered venetian blind according to one of the preceding claims, wherein a pull carrier is
105 used for the axial movement of the louvers, only the louver carrier having a sleeve interacting with the circumferential surface of the turning shaft.

18. A louvered venetian blind according to Claim 17, in which the axial movement is effected
110 by means of the same drive shaft as is used as the turning shaft.

19. A louvered venetian blind, substantially as hereinbefore described with reference to and as
115 illustrated in Figures 1 to 5 of the accompanying drawings.

20. A louvered venetian blind according to Claim 19 modified substantially as hereinbefore
120 described with reference to and as illustrated in Figures 6 and 7 of the accompanying drawings.