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(54) **Dual drum lift mechanism for venetian blinds**

Doppeltrommelhebemechanismus für Jalousien

Mécanisme de levage à double tambour pour stores vénitiens

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Description

TECHNICAL FIELD

[0001] The present invention relates generally to lift mechanisms for Venetian blinds and more specifically to such mechanisms designed for Venetian blinds, in which pairs of lift cords are used.

BACKGROUND OF THE INVENTION

[0002] A substantial number of lift mechanisms for Venetian blinds are known within the art. Many of these mechanisms are designed for Venetian blinds, where the raising and lowering of the slats of the Venetian blind are accomplished with a number of single lift cords passed from the mechanism mounted in the head rail of the Venetian blind and through openings in the individual slats to the bottom rail of the Venetian blind.

[0003] Furthermore, a number of Venetian blinds applying pairs of lift cords is known within the art. This solution has among others the advantage that the lift cords do not have to be passed through openings provided in the individual slats, and hence the individual slats can be left without through openings, which is advantageous from the point of view of blocking light passage through the Venetian blind. Another major advantage is obtained with this lift system in that the individual slats can be removed from the Venetian blind without the necessity of dismantling the whole Venetian blind. This is of considerable importance both in case of replacement of individual slats in case of damage to these and when slats have to be cleaned.

[0004] In some known lift mechanisms for pairs of lift cords, the two lift cords of each given pair are both wound helically on a single drum. However, this solution can be problematic as the two separate lift cords of a given pair of lift cords may get entangled, especially when the lift mechanism is used in Venetian blinds comprising very lightweight slats. It is hence desirable to provide an improved and yet simple lift mechanism for a Venetian blind comprising lightweight slats, which mechanism offers a reliable operation without the risk of the lift cords becoming entangled.

US 2007/144686 discloses a threaded lift cord spool system including a pair of cord spools, each associated with a lift cord.

SUMMARY OF THE INVENTION

[0005] The above objective is according to the present invention attained by a lift mechanism as defined in claim 1 including the provision of a separate winding drum (which can be for instance of a a cylindrical or conical shape) for each lift cord of a given pair of lift cords.

[0006] According to a first specific embodiment, the above principle of the invention is implemented as a double cone (or drum) lift mechanism comprising a central portion containing guide means for the lift cords directing the two lift cords of a given pair of lift cords from the circumferential surface of said cone or drum downwards towards the slats and/or bottom rail of the Venetian blind. According to one specific embodiment, a central portion of the mechanism also comprises the tilt mechanism for the Venetian blind.

[0007] According to still another embodiment, one or more tilt mechanisms may alternatively be provided separately from the lift mechanism.

[0008] According to another specific embodiment, the principle of the invention is implemented by separate winding drums placed alongside each other, i.e, with individual longitudinal axes extending substantially in parallel with each other.

[0009] Other arrangements of the separate winding drums may, however, also be provided without departing from the scope of the invention, as defined by the appended claims.

[0010] According to said first embodiment, longitudinally on either side of said central portion the two lifting cone or drum portions are extending, one for each of the lift cords of the given pair of lift cords. When these cone or drum portions are rotated, for instance by a drive shaft extending through and in engagement with the cone or drum portions, the respective lift cords of the pair of lift cords become helically wound on or off the respective cone or drum portions.

[0011] According to a preferred embodiment of the mechanism according to the present invention, at least a part of the outer circumferential surface of the cone or drum portions is covered by a cover part, preferably of such a curvature that a uniform gap is created between the outer circumferential surface of the respective cone or drum portion and the adjacent surface of the cover, such that the lift cord when wound on the cone or drum portion is confined within this gap, thereby preventing entanglement of the helical windings of the lift cord on the surface of the cone or drum portion. The width of this gap can either be somewhat greater than or equal to the diameter of the lift cords. It is, however, also possible to use a width of the gap somewhat less than the cord diameter, which will have the beneficial effect of forcing the lift cord out of the winding mechanism, such that a reliable operation of the winding mechanism can be ascertained for instance when very lightweight slats are used in the Venetian blind.

[0012] According to the invention, there is thus provided a lift mechanism for a Venetian blind, Venetian blind, the lift mechanism comprising two cone or drum portions, upon an outer circumferential surface of one of these portions one lift cord of a given pair of lift cords is wound upon rotation in a first direction of the drum portion and from which the lift cord is unwound upon rotation in an opposite second direction of the drum portion, and upon an outer circumferential surface of the other cone or drum portion, the other lift cord of a given pair of lift cords is wound upon rotation in said first direction of this other

drum portion and from which the lift cord is unwound upon rotation in said opposite second direction of this as defined in claim 1.

[0013] According to a specific embodiment of the invention, the lift cords pass through lift cord guide channels extending substantially tangentially to the corresponding outer circumferential surface of each respective cone or drum portion.

[0014] According to a preferred embodiment, the two cone or drum portions are provided coaxially with each other.

[0015] In addition to the lift mechanism as such, the present invention also relates to the winding drums used for winding the lift cords of the Venetian blind. Such winding drums can comprise either one or more outer circumferential surface portions, upon which the lift cord is wound and the cross sections of these one or more winding portions of the total winding drum can according to various embodiments of the present invention assume different shapes.

[0016] Thus, according to one embodiment of a lift mechanism according to the present invention, cone or drum winding portions of the mechanism comprise a first drum portion upon which the lift cord is wound or from which it is unwound and a second drum portion extending longitudinally from the first drum portion, to which second drum portion the lift cord is attached, wherein the first drum portion is substantially cylindrical or conical and where the cross sectional shape of the second portion is such that the circumference of the cross section of the second portion is less than the circumference of the first drum portion.

[0017] According to one embodiment, the second drum portion has a cross section, whose boundary is piecewise linear.

[0018] According to another embodiment, the boundary of the cross section of the second drum portion comprises curved portions.

[0019] According to a specific embodiment, the cross sectional shape of the second drum portion is hexagonal, triangular, square or formed as an asterisk.

[0020] According to still another specific embodiment, the cross section of the second drum portion is circular over one or more angular sections θ_i and non-circular over one or more other angular sections φ_j.

[0021] The maximum radial extension of the first and second drum portions may be equal to each other, but it would also be possible to provide first and second portions with different maximum radial extension without departing from the scope of the invention.

[0022] Although the present specification focuses on a dual drum mechanism for winding two lift cords in a Venetian blind, it is understood that a single drum according to the invention can be used alone, for instance in Venetian blinds comprising a number of single lift cords passed through apertures in the slats between a head rail containing the winding mechanisms and either the lowermost slat or a bottom rail of the Venetian blind.

BRIEF DESCRIPTION OF THE DRAWINGS

[0023] The present invention will be better understood with reference to the following detailed description of an embodiment of the invention and to the figures, where:

Figure 1 shows a schematic perspective view of an embodiment of the lift mechanism according to the invention;

Figure 2 shows an exploded view of the embodiment of the invention shown in figure 1;

Figure 3(a) shows a plane side view of the embodiment of figure 1;

Figure 3(b) shows a cross sectional view along section A — A as indicated in figure 3(a);

Figure 3(c) shows a plane view of the embodiment of figures 1 and 3(a) seen from one longitudinal end;

Figure 4 shows the embodiment of figures 1 and 3(a) seen from below along section B — B as indicated in figure 3(a);

Figure 5 shows the embodiment of figures 1 and 3(a) seen from above;

Figure 6 shows a cross sectional view through the embodiment of figure 5 along the section C — C as indicated in figure 5;

Figures 7(a) through 7(i) show different embodiments of a winding drum according to the invention; and

Figure 8 shows an alternative embodiment of the invention comprising a pair of winding drums placed parallel to each other and driven by a common drive motor.

DETAILED DESCRIPTION OF THE INVENTION

[0024] With reference to the drawings, figure 1 shows a schematic perspective view of an embodiment of the lift mechanism according to the invention. The mechanism is generally designated by reference numeral 1 and comprises two cylindrical cone or drum portions 2 and 3 longitudinally provided to the right and left (as seen in figure 1) of a central portion that comprises a guide bracket 4 for the cone or drum portions and a track 10 for accommodating the tilt cords 6 of the Venetian blind. The cone or drum portions 2, 3 are provided with end caps 12 at either longitudinal end of the mechanism 1. Extending above (as seen on figure 1) portions of the cone or drum portions 2, 3, a cover 11 is provided, the curvature of which substantially corresponds to that of the cone or

drum portions such that a gap of substantially uniform width in the radial direction is created between the outer circumferential surface of those portions of the cone or drum portions that are covered by the cover 11. The radial width of this gap corresponds substantially to the diameter of the lift cords 5 so that the lift cords, when wound on the cone or drum portions 2, 3, are prevented from being entangled. It is, as mentioned above, also possible to use a radial width of the gap somewhat less than the cord diameter, which will have the beneficial effect of forcing the lift cord out of the winding mechanism, such that a reliable operation of the winding mechanism can be ascertained for instance when very lightweight slats are used in the Venetian blind.

[0025] The lift cords 5 are wound helically on/off the cone or drum portions 2, 3 as indicated by 8 and 9, respectively Towards the end of the cone or drum portions 2, 3 facing the central portion 4, 10, there is provided guide means, for instance formed as channels 15, 16 (see figure 4), leading the lift cords 5 and the tilt cords 6 towards the slats 7 of the Venetian blind. The cone or drum portions 2 and 3 are connected in the central part of the mechanism and are brought to rotate together by suitable drive means (not shown in the figures) that can either be provided separately for each separate mechanism 1 or provided as a common drive means for two or more of such mechanisms.

[0026] The details of the mechanism I are more clearly visible in the exploded view of the embodiment of the invention shown in figure 2. The upper cover part 11 is when the mechanism 1 is assembled, snap-fitted to the guide bracket 4 by engagement of radially resilient tongues 17 on the cover part and mating retainment means 18 on the guide bracket 4.

[0027] With reference to figure 3(a), there is shown a plane side view of the embodiment of figure 1. Figure 3(b) is a cross sectional view along section A — A as indicated in figure 3(a) showing the provision of the tilt cord 6 around the middle section connecting the two cone or drum portions 2, 3 with each other, Figure 3(c) further shows a plane view of the embodiment of figures 1 and 3(a) seen from one longitudinal end hereof

[0028] With reference to figure 4, there is shown the embodiment of figures 1 and 3(a) seen from below, i.e. from the slats of the Venetian blind, along section B — B as indicated in figure 3(a). As indicated in figure 4, the lift cords 5' enter from below through a lift cord guide channel 15 and wind around the cone or drum portion 3, thereby creating a left spiral and the lift cords 5" enter from below through another lift cord guide channel 15 and wind around the cone or drum portion 2, thereby creating a right spiral. The tilting cords 6 enter the central section through tilt cord guide channels 16 and run in a V-shaped track between the two cone or drum portions 2, 3.

[0029] Although the entrances of the two lift cord guide channels 15 in figure 4 are shown longitudinally displaced relative to each other and longitudinally symmetrically on either side of the entrances of the two tilt cord guide channels 16, it is also possible in another embodiment of the invention to form the lift cord guide channels 15 such that their entrances are located at the same longitudinal position and at the same longitudinal position as the entrances of the tilt cord guide channels. Thereby both lift and tilt cords will be located in a common transversal plane relative to the longitudinal axis of the mechanism and lift and tilt cords can thereby run along each other downwards from the head rail of the Venetian blind

[0030] Figure 5 shows the embodiment of figures 1 and 3(a) seen from above.

[0031] With reference to figure 6, there is shown a cross sectional view through the embodiment of figure 5 along the section C — C as indicated in figure 5, As it appears from figure 6, the cone or drum portions 2, 3 can according to a specific embodiment each comprise a first cylindrical section 2, 3 and towards the central portion of the mechanism comprise a second section 2', 3' with increased diameter, upon which the lift cords 5 wind/unwind upon entering/leaving the guide channels 15 provided in the central guide bracket 4, The sections 2', 3' can be conical sections widening towards the central V-track, but the invention is not limited to conical sections 2', 3' and other geometries may also be used without thereby departing from the scope of the invention. A non-limiting number of such winding drum embodiments according to the present invention are shown with reference to figures 7(a) through 7(g).

[0032] Figure 7(a) shows an embodiment of a dual winding drum identical with that of figure 6. In figure 7(a) only the dual winding drum (2, 3) itself is shown and the cord 5 and cover 11 I have been omitted for clarity. Furthermore, figures 7(b) through 7(g) only show one of the two winding drums in the dual winding mechanism. The turns of the lift cord 5 wound upon the winding drum is schematically indicated in figures 7(b) through 7(g).

[0033] Figure 7(b) shows a purely cylindrical winding drum 21 towards the central portion provided with a shoulder 20 that pushes the turns of the lift cord 5 in the positive direction of the longitudinal axis X, i.e. towards the lift cord fixing point 22, when the lift cord is wound upon the drum. A cylindrical winding drum requires that the friction between the circumferential surface of the drum 21 and the lift cord 5 wound upon the drum be low over a certain longitudinal portion of the drum surface extending from the point 22 at which the cord is fixed to the drum and towards the central portion.

[0034] Although the embodiments of winding drums according to the invention shown in figures 7(a) through 7(g) are all provided with the shoulder 20, the effect of pushing the turns of the lift cord towards the fixing point 22 should alternatively have been provided by using the end faces 19 of the retainment means 18 on the guide bracket 4 shown in fig. 2 as abutment means for the lift cord.

[0035] Figure 7(c) shows a purely conical winding drum 23 that does not require the portion of low friction men-

tioned above for the cylindrical winding drum 21. The inclination angle of the cone must, however, be chosen within a proper interval dependent among others on the diameter and surface texture of the lift cord 5. For an inclination angle below this interval, the conical winding drum 23 approaches a cylindrical drum 21 and hence the requirement stated above will apply, whereas for an inclination angle above the said interval, the cord windings will tend to overlap each other upon winding of the cord on the drum, when the cord windings are pushed towards the cord fixing point 22, whereby the wound cord will easily become entangled, thus preventing proper operation of the lift mechanism.

[0036] Although able to function, given the above mentioned requirements are fulfilled, the above two embodiments of winding drums according to the invention may suffer from the problems described above if the requirements relating to surface smoothness and inclination angle as set forth above are not fulfilled. Such potential problems will be solved by the embodiments of winding drums according to the invention illustrated in figures 7(d) through 7(g).

[0037] Figure 7(d) shows an embodiment of a winding drum according to the invention comprising a first substantially cylindrical portion 24 followed by a portion 25 of a hexagonal cross section comprising the surface sections 25_1, 25_2,....25_6, of which only 25_1, 25_2 and 25_3 can be seen on the figure, The lift cord 5 is attached to the end of the hexagonal drum portion at the cord fixing point 22. Although this embodiment specifically comprises a hexagonal portion, this portion could alternatively exhibit other cross sectional shapes such as square, triangular etc The edge portions 26 located at the greatest distance from the longitudinal axis X of the winding drum could extend at a distance from the longitudinal axis X equal to the radius of the cylindrical portion 24, but it would also be possible to deviate from this dimension within certain limits, determined among others by the cord diameter. Furthermore, the said edge portions 26 may for instance be slightly rounded to reduce the risk of wear of the lift cord 5 passing over these edges 26.

[0038] Figure 7(e) shows an alternative embodiment to the one shown in figure 7(d), wherein the hexagonal portion is replaced by a cylindrical portion 27, in the circumferential surface of which there has been provided a planar longitudinally extending region 28, the surface of which is closer to the longitudinal axis X than corresponding to the radius of the first cylindrical portion 24.

[0039] Figures 7(f) and 7(g), respectively, show two embodiments corresponding to those of figures 7(d) and 7(e) but with a conical first drum portion 29 instead of the cylindrical first drum portions 24 shown in figures 7(d) and 7(e).

[0040] Figures 7(h) and (i) show schematically cross sectional views through the non-cylindrical portions of the winding drum in order to more clearly illustrate the cross sectional shape of these embodiments.

[0041] Referring to figure 8, there is schematically indicated an alternative embodiment of the invention (seen from above) comprising a pair of winding drums 30, 31 (here cylindrical drums are chosen, but any other embodiment of winding drums according to the invention could also have been used) placed parallel to each other and driven via meshing gear wheels 32 by a common drive motor 33. Two separate drive motors could also have been used as an alternative. Using this configuration, the two lift cords of a given pair of lift cords can easily be located at the same longitudinal position along the slats.

Claims

1. A lift mechanism for a Venetian blind, where the Venetian blind comprises pairs of lift cords (5) for raising or lowering the slats (7) of the Venetian blind, the lift mechanism comprising two cone or drum portions (2, 3), upon an outer circumferential surface of one (2) of these portions one lift cord of a given pair of lift cords is wound upon rotation in a first direction of the drum portion (2) and from which the lift cord is unwound upon rotation in an opposite second direction of the drum portion (2), and upon an outer circumferential surface of the other (3) cone or drum portion, the other lift cord of a given pair of lift cords is wound upon rotation in said first direction of this other drum portion (3) and from which the lift cord is unwound upon rotation in said opposite second direction of this drum portion (3) wherein said two cone or drum portions (2, 3) are connected through a central connection, such that they rotate with each other, **characterised in that** there is provided a central portion (10), in which tilt cords (6) are operatively coupled to said central connection.

2. A lift mechanism according to claim 1, in which said lift cords (5) pass through lift cord guide channels (15) extending substantially tangentially to the corresponding outer circumferential surface of each respective cone or drum portion (2, 3).

3. A lift mechanism according to claim 1 or 2, in which said two cone or drum portions (2, 3) are provided coaxially with each other.

4. A lift mechanism according to any of the preceding claims, in which at least a portion of the outer circumferential surface of the cone or drum portions (2, 3) is covered by a cover (11), thereby forming a radial gap between the cover and the outer circumferential surface of the cone or drum portions, through which gap the respective lift cord (5) passes.

5. A lift mechanism according to claim 4, wherein the width of said gap is substantially equal to the diameter of said lift cord (5).

6. A lift mechanism according to claim 4, wherein the width of said gap is less than the diameter of said lift cord (5).

7. A lift mechanism according to claim 1, wherein said cone or drum portions are substantially cylindrical.

8. A lift mechanism according to claim 1, wherein said cone or drum portions are conical.

9. A lift mechanism according to claim 1, wherein said cone or drum portions comprise a first drum portion upon which the lift cord is wound or from which it is unwound and a second drum portion extending longitudinally from the first drum portion, to which second drum portion the lift cord is attached, wherein the first drum portion is substantially cylindrical or conical and where the cross sectional shape of the second drum portion is such that the circumference of the cross section is less than the circumference of the cylindrical portion.

10. A lift mechanism according to claim 9, wherein the second drum portion has a cross section, whose boundary is piecewise linear.

11. A lift mechanism according to claim 9, wherein the boundary of the cross section of the second drum portion comprises curved portions.

12. A lift mechanism according to claim 9 or 10, wherein said cross sectional shape is hexagonal, triangular, square or formed as an asterisk.

13. A lift mechanism according to claim 9, wherein the cross section of the second drum portion is circular over one or more angular sections θ_i and non-circular over one or more other angular sections φ_j.

14. A lift mechanism according to any of the preceding claims, wherein said cone or drum portions are provided with a shoulder portion (20) substantially at the longitudinal end of the cone or drum portion where the lift cord is wound on/off the cone or drum portion from the slats (7), by means of which shoulder portion (20) the turns of the lift cord are pushed in the direction away from the shoulder portion (20) when the lift cord is wound upon the cone or drum portion (2,3).

15. A lift mechanism according to any of the preceding claims, wherein an end face (19) of a retainment means (18) on a guide bracket (4) acts as abutment means for pushing the turns of the lift cord in the direction away from the face (19), when the lift cord is wound upon the cone or drum portion (2, 3).

Patentansprüche

1. Hebemechanismus für eine Jalousie, wobei die Jalousie Paare von Hebeschnüren (5) zum Anheben oder Absenken der Lamellen (7) der Jalousie umfasst, der Hebemechanismus zwei Konus- oder Trommelabschnitte (2, 3) umfasst, auf einer äußeren Umfangsfläche von einem (2) dieser Abschnitte ist eine der Hebeschnüre eines gegebenen Paars an Hebeschnüren bei Drehung in eine erste Richtung des Trommelabschnitts (2) gewickelt und die Hebeschnur wird von diesem abgewickelt bei Drehung in eine entgegengesetzte zweite Richtung des Trommelabschnitts (2), und auf einer äußeren Umfangsfläche von dem anderen (3) Konus- oder Trommelabschnitt ist die andere Hebeschnur des gegebenen Paars an Hebeschnüren bei Drehung in die besagte erste Richtung dieses anderen Trommelabschnitts (3) gewickelt und die Hebeschnur wird von diesem abgewickelt bei Drehung in besagte entgegengesetzte zweite Richtung dieses Trommelabschnitts (3), wobei die besagten zwei Konus- oder Trommelabschnitte (2, 3) durch eine Zentralverbindung verbunden sind, so dass sie miteinander rotieren, **dadurch gekennzeichnet, dass** es einen Zentralteil (10) gibt, in dem Neigungsschnüre (6) operativ mit dem Zentralverbindung verbunden sind.

2. Hebemechanismus nach Anspruch 1, bei dem die Hebeschnüre (5) durch Hebeschnurführungskanäle (15) geführt werden, die sich im Wesentlichen tangential zu der entsprechenden äußeren Umfangsfläche jedes entsprechenden Konus- oder Trommelabschnittes (2, 3) erstrecken.

3. Hebemechanismus nach Anspruch 1 oder 2, bei dem besagte zwei Konus- oder Trommelabschnitte (2, 3) zueinander koaxial angeordnet sind.

4. Hebemechanismus nach einem der vorangehenden Ansprüche, bei dem zumindest ein Teil der äußeren Umfangsfläche der Konus- oder Trommelabschnitte (2, 3) durch eine Abdeckung (11) abgedeckt ist, so dass eine radiale Lücke zwischen der Abdeckung und der äußeren Umfangsfläche der Konus- oder Trommelabschnitte gebildet wird durch die die entsprechenden Hebeschnüre (5) laufen.

5. Hebemechanismus nach Anspruch 4, wobei die Breite der besagten Lücke im Wesentlichen dem Durchmesser der besagten Hebeschnur (5) entspricht.

6. Hebemechanismus nach Anspruch 4, wobei die Breite der besagten Lücke geringer als der Durchmesser der besagten Hebeschnur (5) ist.

7. Hebemechanismus nach Anspruch 1, wobei besag-

te Konus- oder Trommelabschnitte im Wesentlichen zylindrisch sind.

8. Hebemechanismus nach Anspruch 1, wobei besagte Konus- oder Trommelabschnitte konisch sind.

9. Hebemechanismus nach Anspruch 1, wobei besagte Konus- oder Trommelabschnitte einen ersten Trommelabschnitt aufweisen, auf den die Hebeschnur gewickelt ist oder von dem sie abgewickelt wird, und einen zweiten Trommelabschnitt aufweisen, der sich in Längsrichtung von dem ersten Trommelabschnitt erstreckt an den die Hebeschnur befestigt ist, wobei der erste Trommelabschnitt im Wesentlichen zylindrisch oder konisch ist und wobei der Querschnitt des zweiten Trommelabschnitts einen Umfang hat der geringer als der Umfang des zylindrischen Teil ist.

10. Hebemechanismus nach Anspruch 9, wobei der zweite Trommelabschnitt einen Querschnitt hat, dessen Begrenzung teilweise linear ist.

11. Hebemechanismus nach Anspruch 9, wobei die Begrenzung des Querschnitts des zweiten Trommelabschnitts gekrümmte Abschnitte umfasst.

12. Hebemechanismus nach Anspruch 9 oder 10, wobei der besagte Querschnitt sechseckig, dreieckig, quadratisch oder sternförmig ist.

13. Hebemechanismus nach Anspruch 9, wobei der Durchmesser des zweiten Trommelabschnitts kreisförmig über einen oder mehrere Winkelabschnitte θ_i und nicht kreisförmig über einen oder mehrere andere Winkelabschnitte φ_j ist.

14. Hebemechanismus nach einem der vorangehenden Ansprüche, wobei besagte Konus- oder Trommelabschnitte einen Schulterabschnitt (20) aufweisen, im Wesentlichen an dem längslaufenden Ende des Konus- oder Trommelabschnitts wo die Hebeschnur auf den Konus- oder Trommelabschnitt von den Lamellen (7) auf/ab-gewickelt wird, wobei mittels des Schulterabschnitts (20) die Drehungen der Hebeschnur in eine Richtung weg vom Schulterabschnitt (20) getrieben werden wenn die Hebeschnur auf den Konus- oder Trommelabschnitt (2,3) gewickelt wird.

15. Hebemechanismus nach einem der vorangehenden Ansprüche, wobei eine Stirnseite (19) eines Stützmittels (18) an einem Führungsbügel (4) als Anschlagmittel zum Vorantreiben der Drehungen der Hebeschnur in Richtung weg von der Stirnseite (19) dient, wenn die Hebeschnur auf den Konus- oder Trommelabschnitt (2, 3) gewickelt wird.

Revendications

1. Mécanisme de levage pour un store vénitien, dans lequel le store vénitien comprend des paires de cordes de levage (5) pour lever ou abaisser les lamelles (7) du store vénitien, le mécanisme de levage comprenant deux parties de tambour ou de cône (2, 3), sur une surface circonférentielle externe de l'une (2) de ces parties, une corde de levage d'une paire donnée de cordes de levage est enroulée suite à la rotation dans une première direction de la partie de tambour (2) et à partir de laquelle la corde de levage est déroulée suite à la rotation dans une seconde direction opposée de la partie de tambour (2), et sur une surface circonférentielle externe de l'autre partie de tambour ou cône (3), l'autre corde de levage d'une paire donnée de cordes de levage est enroulée suite à la rotation dans ladite première direction de cette autre partie de tambour (3) et à partir de laquelle la corde de levage est déroulée suite à la rotation dans ladite seconde direction opposée de cette partie de tambour (3), dans lequel lesdites deux parties de cône ou de tambour (2, 3) sont raccordées par un raccordement central, de sorte qu'elles tournent l'une par rapport à l'autre, **caractérisé en ce que** l'on prévoit une partie centrale (10) dans laquelle des commandes d'inclinaison (6) sont couplées de manière opérationnelle audit raccordement central.

2. Mécanisme de levage selon la revendication 1, dans lequel lesdites cordes de levage (5) passent par des canaux de guidage de corde de levage (15) s'étendant de manière sensiblement tangentielle par rapport à la surface circonférentielle externe correspondante de chaque partie de cône ou de tambour (2, 3) respective.

3. Mécanisme de levage selon la revendication 1 ou 2, dans lequel lesdites deux parties de cône ou de tambour (2, 3) sont prévues de manière coaxiale l'une par rapport à l'autre.

4. Mécanisme de levage selon l'une quelconque des revendications précédentes, dans lequel au moins une partie de la surface circonférentielle externe des parties de cône ou de tambour (2, 3) est recouverte par un couvercle (11), formant ainsi un espace radial entre le couvercle et la surface circonférentielle externe des parties de cône ou de tambour, à travers lequel espace, passe la corde de levage (5) respective.

5. Mécanisme de levage selon la revendication 4, dans lequel la largeur dudit espace est sensiblement égale au diamètre de ladite corde de levage (5).

6. Mécanisme de levage selon la revendication 4, dans lequel la largeur dudit espace est inférieure au dia-

mètre de ladite corde de levage (5).

7. Mécanisme de levage selon la revendication 1, dans lequel lesdites parties de cône ou de tambour sont sensiblement cylindriques.

8. Mécanisme de levage selon la revendication 1, dans lequel lesdites parties de cône ou de tambour sont coniques.

9. Mécanisme de levage selon la revendication 1, dans lequel lesdites parties de cône ou de tambour comprennent une première partie de tambour sur laquelle la corde de levage est enroulée ou à partir de laquelle elle est déroulée et une seconde partie de tambour s'étendant longitudinalement à partir de la première partie de tambour, à laquelle seconde partie de tambour, est fixée la corde de levage, dans lequel la première partie de tambour est sensiblement cylindrique ou conique et où la forme transversale de la seconde partie de tambour est telle que la circonférence de la section transversale est inférieure à la circonférence de la partie cylindrique.

10. Mécanisme de levage selon la revendication 9, dans lequel la seconde partie de tambour a une section transversale, dont la limite est linéaire par partie.

11. Mécanisme de levage selon la revendication 9, dans lequel la limite de la section transversale de la seconde partie de tambour comprend des parties incurvées.

12. Mécanisme de levage selon la revendication 9 ou 10, dans lequel ladite forme transversale est hexagonale, triangulaire, carrée ou formée comme un astérisque.

13. Mécanisme de levage selon la revendication 9, dans lequel la section transversale de la seconde partie de tambour est circulaire sur une ou plusieurs sections angulaires θ_i et non circulaire sur une ou plusieurs autres sections angulaires φ_j.

14. Mécanisme de levage selon l'une quelconque des revendications précédentes, dans lequel lesdites parties de cône ou de tambour sont prévues avec une partie d'épaulement (20) sensiblement au niveau de l'extrémité longitudinale de la partie de cône ou de tambour où la corde de levage s'enroule/ se déroule de la partie de cône ou de tambour à partir des lamelles (7) au moyen de laquelle partie d'épaulement (20), les tours de la corde de levage sont poussés dans la direction à distance de la partie d'épaulement (20) lorsque la corde de levage est enroulée sur la partie de cône ou de tambour (2, 3) .

15. Mécanisme de levage selon l'une quelconque des revendications précédentes, dans lequel une face d'extrémité (19) d'un moyen de retenue (18) sur un support de guidage (4) sert de moyen de butée pour pousser les tours de la corde de levage dans la direction à distance de la face (19), lorsque la corde de levage est enroulée sur la partie de cône ou de tambour (2, 3) .

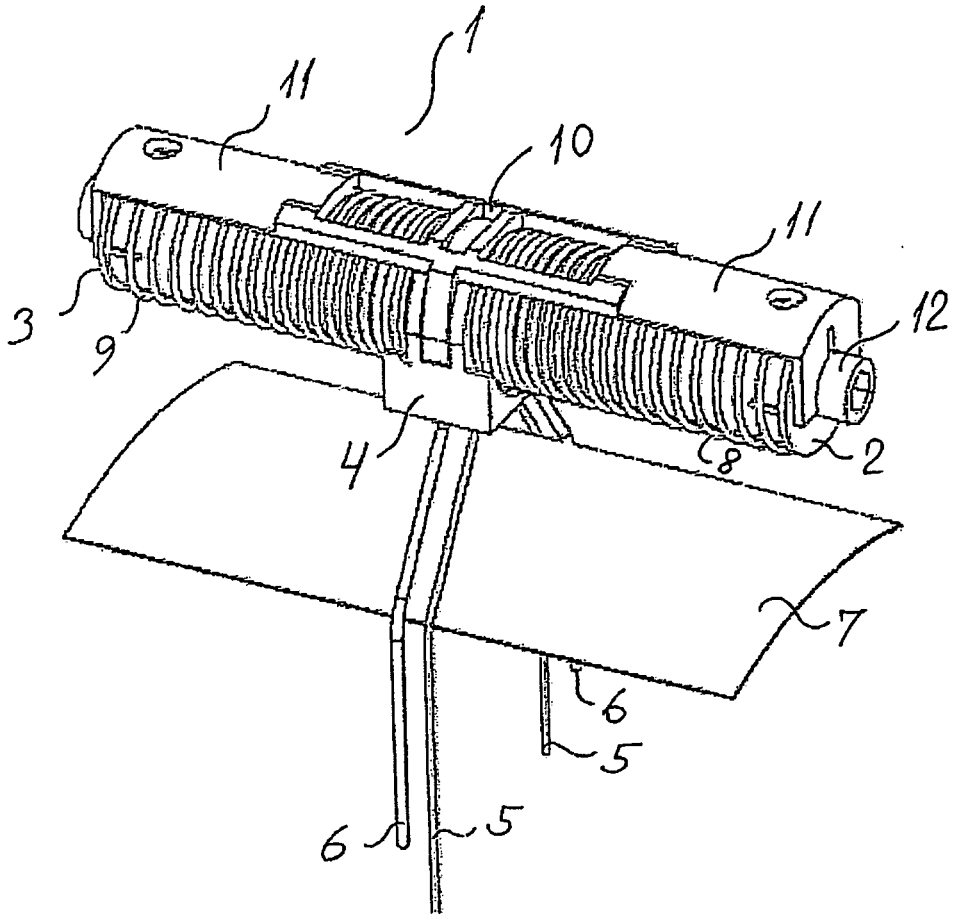


Fig. 1

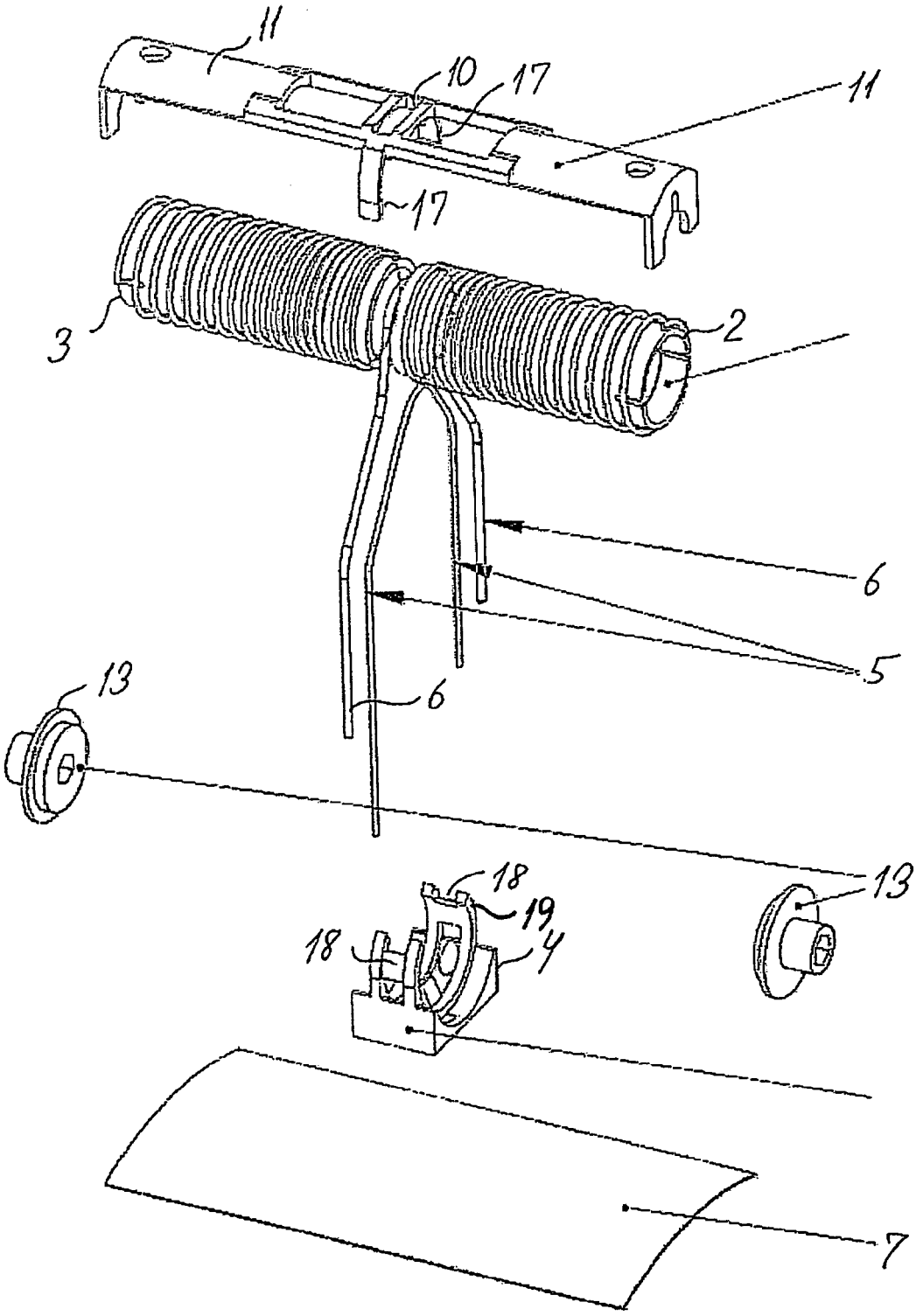
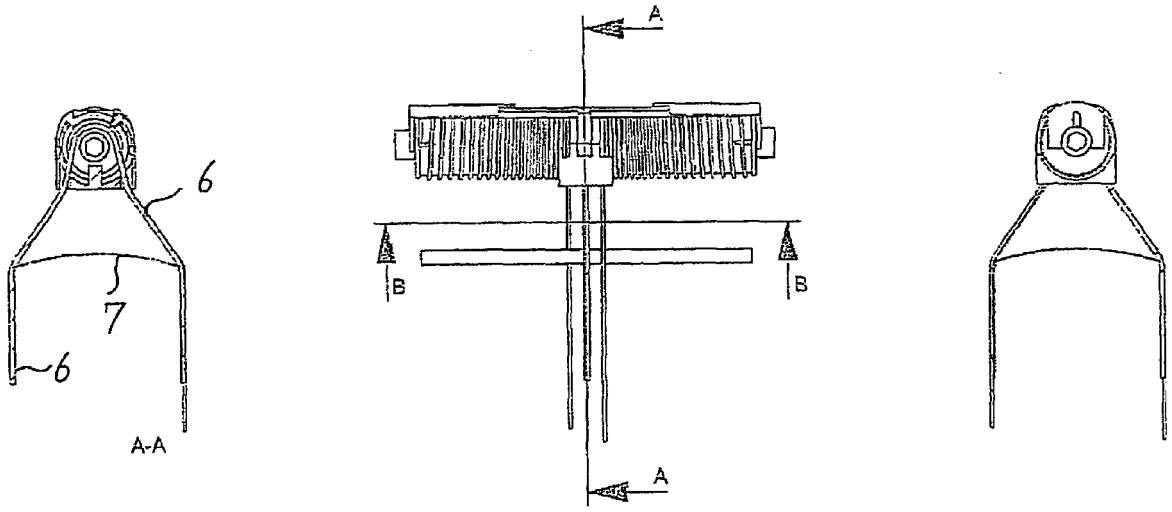
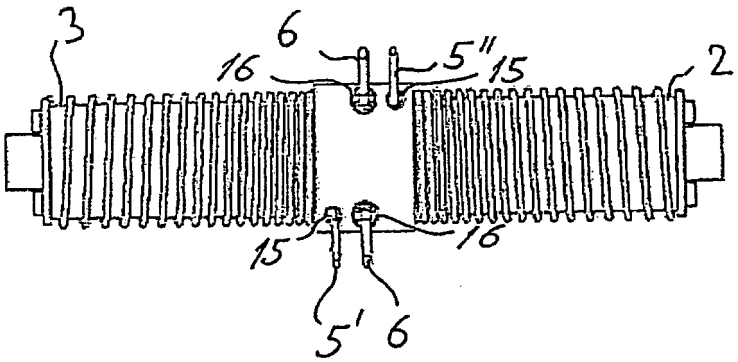


Fig. 2



(b) (a) (c)

Fig. 3



B-B

Fig. 4

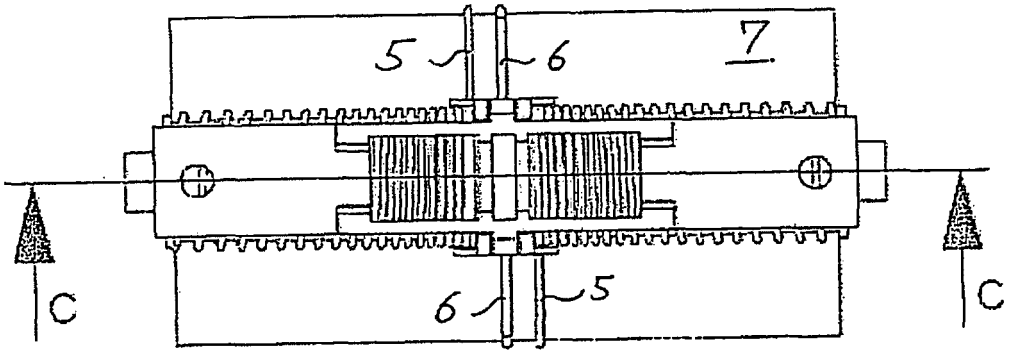


Fig. 5

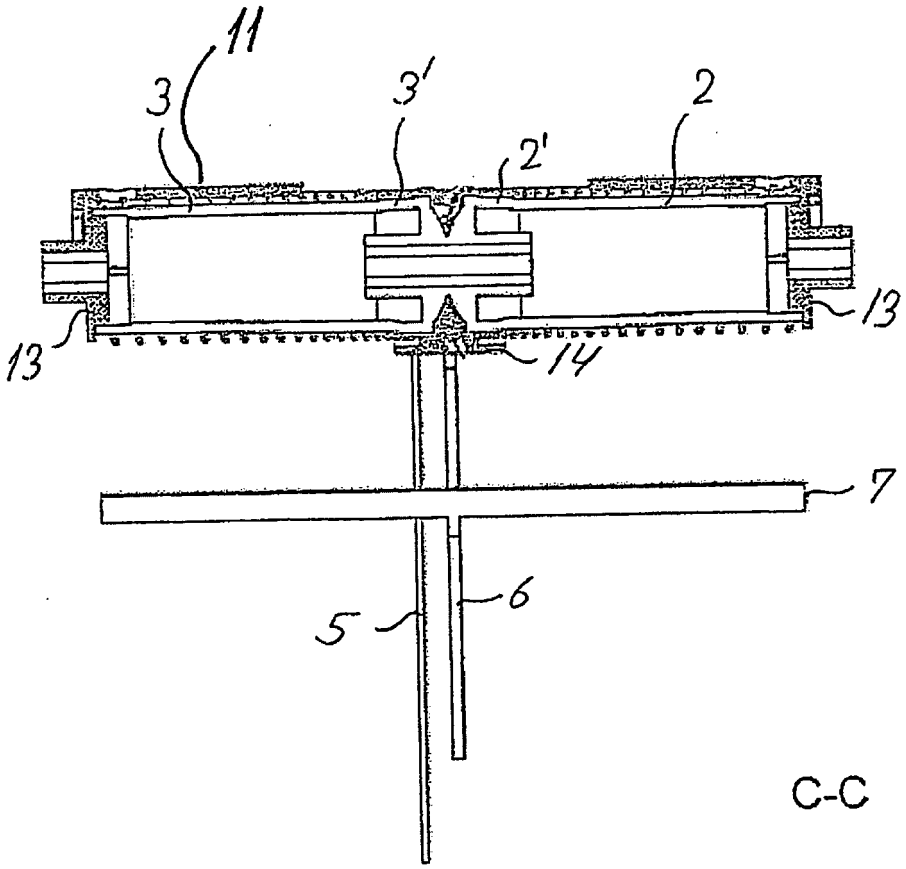
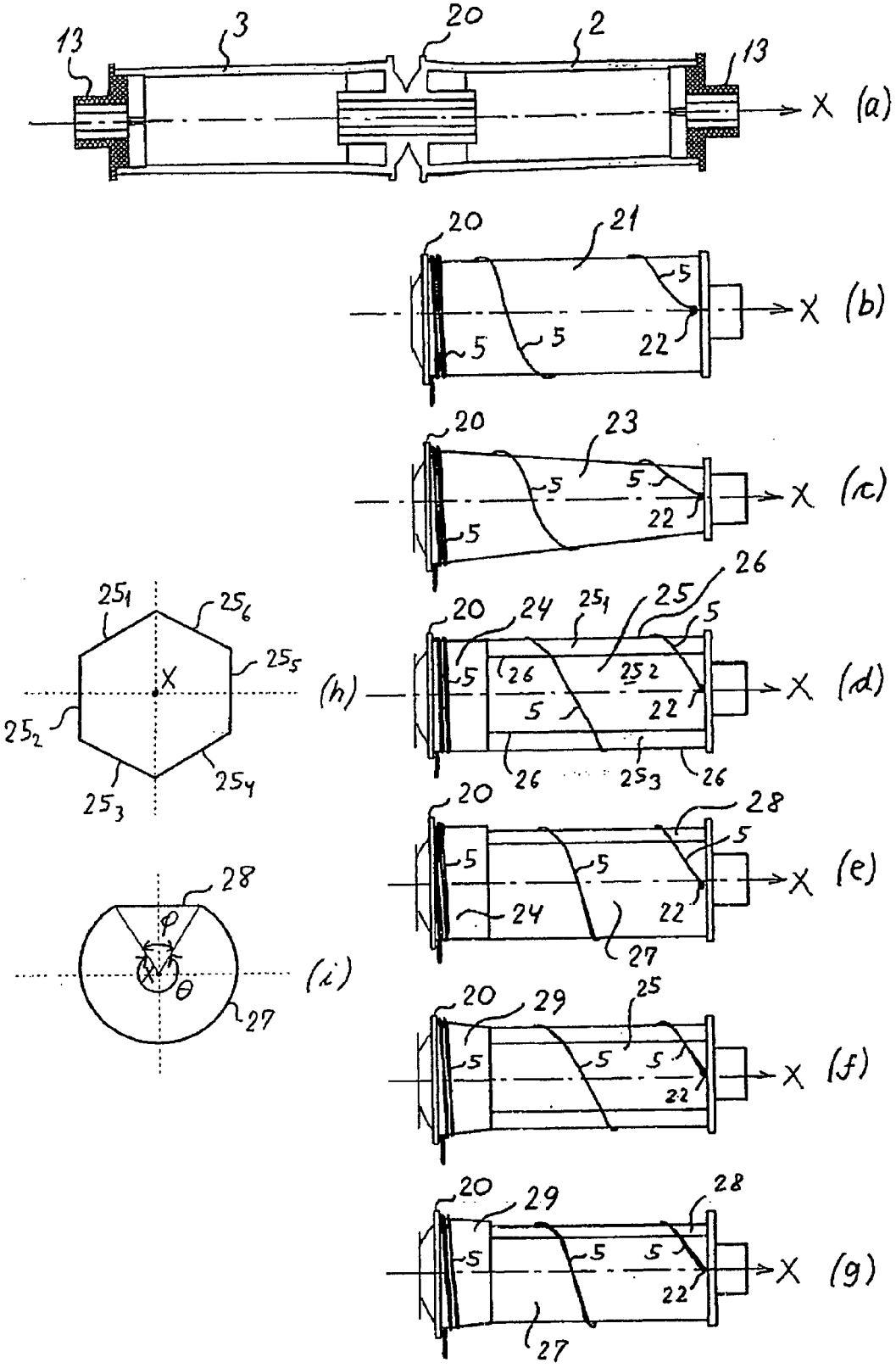


Fig. 6


13
3
20
2
13
X
(a)
20
21
5
5
5
22
X
(b)
20
23
5
5
5
22
X
(c)
25_1
25_6
X
25_5
25_2
25_3
25_4
(h)
20
24
25_1
25
26
5
5
26
25_2
5
22
26
25_3
26
X
(d)
20
28
5
5
5
24
22
27
X
(e)
28
ρ
θ
27
(i)
20
29
25
5
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5
22
X
(f)
20
29
28
5
5
5
22
27
X
(g)

Fig 7

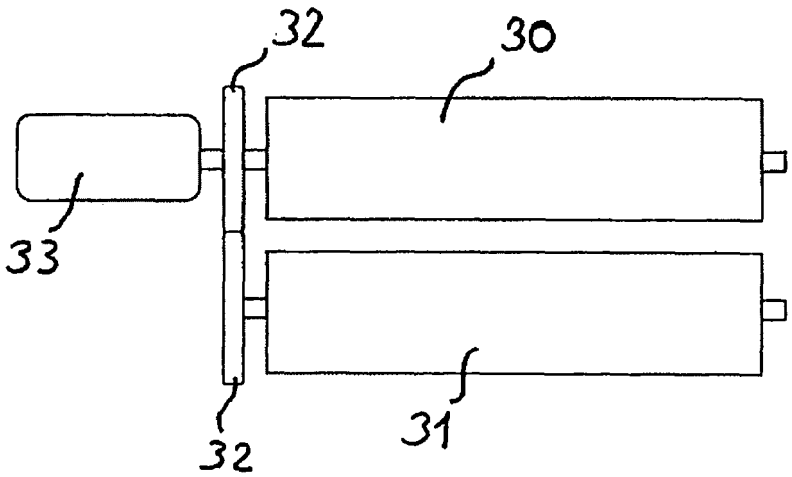

Fig. 8

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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