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(54) **SUNSHADE**

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Description

[0001] The present invention relates to a sunshade for covering a terrace or the like in order to protect it from sunlight and rain.

[0002] More specifically, the invention relates to a sunshade comprising slats which are rotatable about their longitudinal axis between a horizontal position in order to provide maximum shading from the sun and a tilted position in order to allow the maximum amount of sunlight through and the ends of which are displaceably held between two parallel guiding beams in order to move the slats in the tilted position towards one end of the guiding beams in order to provide the largest possible opening between the guiding beams and to allow the maximum amount of light through when this is desired.

[0003] A significant drawback is that such sunshades are relatively complex and as a result relatively expensive and are additionally easily susceptible to wear and obstructions owing to the complexity.

[0004] A further drawback is that the system for rotating and displacing the slats is relatively large and is therefore difficult to integrate into the guiding beams, as a result of which a considerable portion of the system is visible or the guiding beams are unnecessarily large, which mars the aesthetic appearance of the sunshade.

[0005] An additional drawback of the known sunshades comprising slats is that the rotational movement and the sliding movement of the slats are not always independent of one another and that the rotation angle of the slats is relatively limited. A sunshade according to the preamble of claim 1 is disclosed by GB 2 480 141 A.

[0006] It is an object of the present invention to provide a solution to at least one of the aforesaid drawbacks and to other drawbacks.

[0007] To this end the invention relates to a sunshade comprising slats, wherein each slat is rotatably arranged in a sliding element at each of its two ends, which sliding element is displaceable in or on a guiding beam and at least one of the two sliding elements of each slat being provided with a transmission between a drive shaft for the rotation of the slat and the relevant end of the slat and wherein each guiding beam is provided with a drive for displacing at least one of the sliding elements which pushes and/or pulls at least some of the other sliding elements during the displacement, for which purpose a carrier mechanism is provided between each of the sliding elements.

[0008] An advantage of a sunshade according to the invention is that, in addition to the advantage that the opening can be cleared completely or virtually completely, the transmission and the carrier mechanism can be embodied in a simple and compact manner.

[0009] An additional advantage in the case of a sunshade comprising slats is that the drive for displacing the sliding element does not have to be coupled to the transmission for the rotational movement of the slats and the rotational movement may preferably be carried out inde-

pendently of the movement of the sliding elements, which entails a greater flexibility of possible positions and intermediate positions when using the sunshade.

[0010] In a preferred embodiment, the guiding beams are formed by a profile having a chamber in which the sliding elements, the transmission and optionally the carrier mechanism and/or the drive are held or arranged so as to be concealed, possibly with the exclusion of a groove in the wall facing the slats in order to allow the ends of the slats to move.

[0011] This has the advantage that the sunshade can be embodied in an even more compact and less fragile manner, with all of the associated advantages.

[0012] According to a preferred feature of the invention, the ends of the slats at the location of one guiding beam are lower than the other end of the slats in order for rainwater to be able to flow away towards said guiding beam.

[0013] This has the advantage that the rainwater effectively drains away and prevents rainwater from remaining on the surface of the slats when they are in the horizontal position and from undesirably falling through the slats when they are tilted upwards.

[0014] With a view to giving a more detailed description of the features of the invention, a number of preferred embodiments of a sunshade according to the invention are described below by way of non-limiting example with reference to the attached drawings, in which:

Figure 1 diagrammatically shows a perspective view of a sunshade according to the invention;
Figure 2 diagrammatically shows the part indicated by F2 in Figure 1 on a larger scale, with part cut away;
Figure 3 shows a cross section along the line III-III from Figure 2;
Figure 4 diagrammatically shows a cross section along the line IV-IV in Figure 1;
Figure 5 shows the cross section from Figure 4, but where the slats have been rotated into a horizontal position;
Figure 6 shows an alternative position from Figure 4;
Figure 7 shows an alternative embodiment of Figure 2;
Figure 8 shows an alternative embodiment of Figure 2;
Figure 9 shows a cross section such as the one from Figure 6, but for the embodiment of Figure 8;
Figure 10 shows a cross section of Figure 9, but for another position of the slats.
Figure 11 shows another particular embodiment of the present invention in which a tube motor is used.

[0015] The sunshade 1 diagrammatically illustrated in Figures 1 to 4 comprises a construction having a frame 3 which is arranged on posts 2 and comprises two guiding beams 4, 5 which are connected to one another by two transverse beams 6, 7.

[0016] In this case, the sunshade 1 is embodied as a

shelter or awning, with slats 8 being arranged between the guiding beams 4 and 5 for this purpose, which slats extend parallel to one another and at right angles to the guiding beams 4 and 5 and with the slats 8 being rotatable about their longitudinal axis X-X' and displaceable in a direction parallel to the guiding beams 4 and 5, as illustrated by the arrows P and P' in Figure 1.

[0017] The guiding beams 4 and 5 are embodied as a profile having an internal chamber 9 and in this case also having a groove 10 in the side 11 facing the slats 8.

[0018] In the example illustrated in Figure 1, the slats 8 are distributed proportionally over a certain length A of the guiding beams 4, 5, with the slats 8 being rotated so that sunlight can pass between the slats 8.

[0019] One guiding beam 5 is higher than the other guiding beam 4, as a result of which the slats 8 are oriented obliquely downwards and one end 12a of the slats 8 is lower than the other end 12b.

[0020] The guiding beam 4 on the side of the lowest end is provided with a drainage gutter 13 which extends underneath the end 12a of the slats 8.

[0021] Figure 2 illustrates in more detail a part of a guiding beam 4, with part cut away so that the mechanisms for moving and rotating the slats 8 are clearly visible.

[0022] The slats are provided with a shaft 14 at the two ends 12a, 12b thereof by means of which they are arranged in sliding elements 15.

[0023] The sliding elements 15 are situated in the chamber 9 of the guiding beam 4 and are in this example provided with a guide 16 e.g. a wheel or a sliding piece by means of which they are guided in a guiding groove 17 of the guiding beam which extends over the entire length of the guiding beam 4.

[0024] In this case, two successive sliding elements 15 are connected to one another by means of a carrier mechanism 18 or 18a, 18b and 18c respectively which in this case is composed of two rods 19 and 20, or 19a and 20a, 19b and 20b, 19c and 20c respectively, each of which is attached at one end 21 to one of the two sliding elements 15 in such a way that it can rotate freely about a pivot pin 22.

[0025] The two rods 19 and 20, or 19a and 20a, 19b and 20b, 19c and 20c respectively, are rotatably connected to one another at the other end 23 by means of a link 24 which is rotatably connected to each of these ends 23 via a pivot pin 25.

[0026] In this case the rods 19, 20, 19a, 19b, 19c, 20a, 20b, 20c are provided with a toothing at their ends 21, 23, respectively a toothing 26 at one end 21 and a toothing 27 at the other end 23.

[0027] As can be seen in Figure 4, the toothings 27 of, for example, the rods 19b, 20b which are coupled to one another engage with one another, with the toothings 26 at the other end 21 of the rods 19b and 20b, respectively, engaging with the toothing 26 of the rods 20a and 19c, respectively, of the adjacent carrier mechanisms 18a and 18c, respectively. Other carrier mechanisms 18 compris-

ing rods 19 and 20 can be coupled to one another analogously.

[0028] The chamber 9 also contains a belt drive 28 which is composed of a belt 29, preferably a toothed belt, which is connected to one single sliding element 15, for example the first sliding element 15a in Figure 4 which is the furthest away from the transverse beam 7, with the connection being diagrammatically illustrated by cross-es.

[0029] The belt 29 is guided over a drive wheel 30, preferably a toothed drive wheel which can interact with the toothed belt, at one end of the guiding beam 4 and is guided over a reversing wheel 31 at the other end of the guiding beam 4.

[0030] The drive wheel 30 is coupled to a drive mechanism, for example in the form of a motor 32 having a shaft 33 on which the drive wheel 30 is fastened or in the form of a manually driven winding mechanism.

[0031] A transmission 34, which is illustrated in Figures 3 and 4, is provided in each sliding element 15 of the illustrated guiding beam 4, which transmission 34 is driven by means of a common drive shaft 35 for all transmissions 34 and which transmissions are in this case embodied in such a way that they allow the slats 8 to rotate through a large angle, preferably through a complete revolution of 360°.

[0032] The transmissions 34 are composed of a worm mechanism 34 comprising a worm wheel 36 which is displaceable over the abovementioned common drive shaft 35 and which engages with a gear wheel 37 which is mounted in the sliding element 15 and is coupled to an end of a slat 8 to be driven.

[0033] The gear wheel 37 is provided with a non-circular cutout in which the shaft 14 of the end 12a of a slat 8 is held such that it cannot rotate, which shaft 14 is provided with a suitable corresponding cross-section for this purpose.

[0034] According to the embodiment shown in Figure 2, the drive shaft 35 is provided with a longitudinal slot 38 and worm wheel itself is provided with a carrier 39 in the form of a pin which engages with the slot 38. This arrangement allows to transmit the rotational movement of the drive shaft 35 to the wormwheel 36. But other mechanical solutions may be envisaged in which the drive shaft has a non-circular cross-section.

[0035] A motor 40 which is coupled to the drive shaft 35 provides a common drive for the slats 8 or at least some of them.

[0036] The fact that all of the components are arranged in the guiding beam 4 ensures that they are hidden from view and that they are protected from potential damage caused by, for example, the influence of the weather or by vandalism.

[0037] The operation of the sunshade 1 is very simple and is described below and illustrated with reference to Figures 4 and 5, in which Figure 4 illustrates a position similar to that of Figure 1, with the sliding elements 15 being pushed away from one another and the slats 8

being tilted into an open position allowing light to shine between the slats 8.

[0038] Starting from this position in Figure 4, the slats 8 can be rotated in the direction of arrow R illustrated in Figure 5 into a horizontal position by driving the drive shaft 35 in a certain direction of rotation of the arrow Q, more specifically into a position in which the slats come to rest against one another and form, as it were, a closed roof without the displacement of the sliding elements.

[0039] As one end 12a of the slats 8 is lower than the other end 12b, the rainwater which falls on the slats 8 will run off in the direction of the guiding beam 4 and thus into the drainage gutter 13.

[0040] It will be clear that the slats 8 may be tilted upwards again out of the position in Figure 5 into a position illustrated in Figure 4 by activating the motor 40 in the opposite direction of the arrow Q.

[0041] In order to open the space between the guiding beams to the greatest possible extent starting from the situation in Figure 4, the slats 8 can be displaced to one end of the guiding beams 4 and 5 in the direction of arrow P towards the transverse beam 7 by using the belt drive 28.

[0042] For this purpose, the belt 29 is driven in a direction in which the first sliding element 15a is moved in the abovementioned direction of the arrow P towards said transverse beam 7.

[0043] This causes the first sliding element 15a to be displaced towards the second sliding element 15b, as a result of which the rods 19a, 20a of the carrier mechanism 18a between the first and the second sliding element 15a and 15b rotate downwards.

[0044] The rotational movement of the toothing 26 on the end of the rod 20a of this carrier mechanism 18a also causes the carrier mechanism 18b between the second and the third sliding element 15b and 15c to be driven via the toothings 26 of the rods 20a and 19b which are rotatably attached to the second sliding element 15b.

[0045] In this way, each carrier mechanism 18a, 18b, 18c drives the following carrier mechanism 18a, 18b, 18c, which results in all of the sliding elements 15 moving towards one another in a synchronous and proportional manner until the moment when either the slats 8 or the sliding elements 15 come to rest against one another as illustrated in Figure 6, in which the space between the guiding beams 4 and 5 is open to the greatest possible extent in order to let the maximum amount of light through.

[0046] When the belt 29 is driven in the opposite direction the sliding elements 15 are moved apart from one another in an analogous manner, with the slats moving simultaneously and synchronously.

[0047] In each intermediate position, the slats 8 may be rotated into a position in which they are more closed, for example into a position where they rest on one another in the manner of roof tiles, both during the movement of the sliding elements 15 and when the sliding elements 15 are in a stationary position.

[0048] It will be clear that it is not necessary for all slats 8 to be displaced to one single end of the guiding beams 4 and 5 in order to open the blind. It is thus possible, for example, to divide the slats 8 into two series, with one series of slats 8 being displaced to one end and the other series being displaced to the other end of the guiding beams 4 and 5. In this case, it is obviously necessary to provide two belt drives 28, one for each series of slats 8, with in that case the two central sliding elements 15 being attached to the belt 29.

[0049] The two belt drives 28 could then preferably be driven independently of one another, as a result of which the sunshade could be used in two separate parts, as it were.

[0050] In that case, it is preferable to carry out the rotation of the two series of slats 8 separately by means of a common drive shaft 35 for each series of slats 8, although the use of one single drive shaft 35 for both series of slats is not precluded.

[0051] Figure 7 illustrates a cross section of a variant embodiment, wherein in this case the carrier mechanisms 18 are arranged on the other side of the sliding elements 15 and the figure also shows that in this case the illustrated slat 8 is driven in rotation by a transmission 34 in the sliding element on the left, while on the other side the end of the slat 8 is mounted in a sliding element 15 without transmission 34 such that it can freely rotate.

[0052] In this case, all sliding elements 15 in the left-hand guiding beam 4 are provided with a transmission 34 on a common drive shaft 35, whereas the sliding elements 15 in the right-hand beam 5 have no transmission so that a drive shaft is not needed in this beam.

[0053] Each beam 4 and 5 is provided with a belt drive 28 for the sliding movement of the sliding elements 15.

[0054] Figures 8 to 10 illustrate a variant of a sunshade according to the invention which is substantially analogous to the embodiment described above but with the difference that the carrier mechanisms 18 between the sliding elements 15 are composed of a cable 41, the ends 42 of which are fastened between each pair of successive sliding elements 15 and which is long enough to be able to move the sliding elements apart from one another over a distance.

[0055] The operation of this sunshade 1 is analogous to that of the previously described sunshade of Figure 2, with the difference that the slats 8 will not move simultaneously and synchronously when one of the slats 8 is displaced, but that when the first sliding element 15a is displaced in the direction of the arrow P it will push the other sliding elements together in sequence one after the other until all of the sliding elements 15 have been pushed together in the position of Figure 9.

[0056] When the first sliding element 15a is displaced in the opposite direction P', first of all the second sliding element 15b, then the third sliding element 15c and the following sliding element will be pulled along like carriages in a train until the first sliding element 15a reaches the transverse beam 6 at the other end of the guiding beams

4 and 5.

[0057] Figure 11 illustrates another advantageous embodiment of the present invention in which a tube motor 43 is used, which is mounted inside a hollow drive shaft 35. Some other elements of the blind are also indicated on the figure, e.g. the guiding beam 8, the slats 8, etc.

Claims

1. Sunshade comprising slats (8), the ends of which are displaceably held between two parallel guiding beams (4, 5) and which are rotatable about their longitudinal axis (X-X'), **characterized in that** each slat (8) is rotatably arranged in a sliding element (15) at each of its two ends (12a, 12b), which sliding element (15) is displaceable in or on a guiding beam (4, 5) and at least one of the two sliding elements (15) of each slat (8) being provided with a transmission (34) between a drive shaft (35) for the rotation of the slat (8) and the relevant end of the slat (8), wherein each guiding beam (4, 5) is provided with a drive (28) for displacing at least one of the sliding elements (15) which pushes and/or pulls at least some of the other sliding elements (15) during the displacement, for which purpose a carrier mechanism (18) is provided between the concerned sliding elements (15).
2. Sunshade according to Claim 1, **characterized in that** the drive shaft (35) is a rotatable shaft which extends in the longitudinal direction of a guiding beam (4, 5) and **in that** the transmission (34) of a sliding element (15) is composed of a worm mechanism (34) comprising a worm wheel (36) which is displaceable together with the sliding element (15) over the said drive shaft (35) and which engages with a gear wheel (37) which is mounted in the sliding element (15) and is coupled or can be coupled to an end (12a) of a slat (8) to be driven.
3. Sunshade according to Claim 2, **characterized in that** the drive shaft (35) for the rotation of the slats (8) is a common drive shaft for a number of slats (8).
4. Sunshade according to one of the preceding claims, **characterized in that** the rotational movement of the slats (8) is independent of the sliding movement of the slats (8).
5. Sunshade according to one of the preceding claims, **characterized in that** the sliding elements (15) are displaceable between a position in which the sliding elements (15) are divided proportionally over the entire length of the guiding beams (4, 5) and a position in which the sliding elements (15) are pushed away against one another towards one end of the guiding beams (4, 5) or some of the sliding elements (15) are pushed away towards one end of the guiding beams (4, 5) and the rest towards the other end of the guiding beams (4, 5).
6. Sunshade according to one of the preceding claims, **characterized in that** the carrier mechanism (18) is composed of a cable (41), canvas, chain or the like which connects two successive sliding elements (15) to one another and the length of which allows the relevant sliding elements to be able to move away from one another over a distance.
7. Sunshade according to one of Claims 1 to 5, **characterized in that** the carrier mechanism (18) between two sliding elements (15) is composed of two rods (19, 20) which are each rotatably attached at one end (21) to one of the two sliding elements (15) and which are rotatably connected to one another at their other end (23).
8. Sunshade according to Claim 7, **characterized in that** the two rods (19, 20) are rotatably connected to one another at their other end (23) by means of a link (24) which is rotatably connected to each of these ends (23).
9. Sunshade according to Claim 7 or 8, **characterized in that** the rods (19, 20) are provided at their ends (21, 23) with a toothing (26, 27), wherein the toothings (27) of the rods (19, 20) which are coupled to one another engage with one another and the toothing (26) at the end (21) of the rod (19, 20) which is rotatably attached to the sliding element (15) engages with the toothing (26) of the rod (19, 20) of an adjacent carrier mechanism (18) which is rotatably attached to the relevant sliding element (15).
10. Sunshade according to one of the preceding claims, **characterized in that** the drive (28) of the at least one sliding element (15) is composed of a belt or chain drive comprising a belt (29), chain or the like which is guided over a drive wheel (30) at one end of the guiding beam (4) and is guided over a reversing wheel (31) at the other end of the guiding beam (4), wherein the belt (29), chain or the like is fastened to the at least one sliding element (15).
11. Sunshade according to one of the preceding claims, **characterized in that** the guiding beams (4, 5) are formed by a profile having a chamber (9) in which the sliding elements (15), the transmission (34) and optionally the carrier mechanism (18) and/or the drive (28) are held or arranged so as to be concealed.
12. Sunshade according to claim 11, wherein the sliding elements (15) are provided with a guide (16), preferably comprising a wheel or a guiding piece, by means of which they are guided in a guiding groove (17) of the guiding beam (4), said guiding groove

(17) extending over the entire length of the guiding beam (4).

13. Sunshade according to one of the preceding claims, **characterized in that** the ends (12a) of the slats (8) at the location of one guiding beam (4) are lower than the other end (12b) of the slats (8) in order for rainwater to be able to drain away towards said guiding beam (4).
14. Sunshade according to Claim 13, **characterized in that** the guiding beam (4) on the side of the lowest end is provided with a drainage gutter (13) which extends underneath the end (12a) of the slats (8) or the edge of the canvas.
15. Sunshade according to one of the preceding claims, **characterized in that** the transmissions (34) allow the slats (8) to rotate through an angle of greater than 150°, preferably of greater than 160° and more preferably through 360°.

Patentansprüche

1. Sonnenblende, die Lamellen (8) umfasst, deren Enden zwischen zwei parallelen Führungsbalken (4, 5) verschiebbar gehalten werden und die um ihre Längsachse (X-X') drehbar sind, **dadurch gekennzeichnet, dass** jede Lamelle (8) an jedem ihrer beiden Enden (12a, 12b) drehbar in einem Schiebeelement (15) angeordnet ist, wobei das Schiebeelement (15) in oder an einem Führungsbalken (4, 5) verschiebbar ist und mindestens eines der beiden Schiebeelemente (15) jeder Lamelle (8) mit einem Getriebe (34) zwischen einer Antriebswelle (35) für die Drehung der Lamelle (8) und dem entsprechenden Ende der Lamelle (8) versehen ist, wobei jeder Führungsbalken (4, 5) mit einem Antrieb (28) zum Verschieben mindestens eines der Schiebeelemente (15) versehen ist, der mindestens einige der anderen Schiebeelemente (15) während der Verschiebung drückt und/oder zieht, wozu ein Trägermechanismus (18) zwischen den bezüglichen Schiebeelementen (15) vorgesehen ist.
2. Sonnenblende nach Anspruch 1, **dadurch gekennzeichnet, dass** die Antriebswelle (35) eine drehbare Welle ist, die sich in Längsrichtung eines Führungsbalkens (4, 5) erstreckt, und dass das Getriebe (34) eines Schiebeelements (15) aus einem Schneckenmechanismus (34) besteht, der ein Schneckenrad (36) umfasst, das zusammen mit dem Schiebeelement (15) über die Antriebswelle (35) verschiebbar ist und das mit einem Zahnrad (37) in Eingriff steht, welches in dem Schiebeelement (15) angebracht ist und mit einem Ende (12a) einer anzutreibenden Lamelle (8) gekoppelt ist oder gekoppelt werden kann.

3. Sonnenblende nach Anspruch 2, **dadurch gekennzeichnet, dass** die Antriebswelle (35) für die Drehung der Lamellen (8) eine gemeinsame Antriebswelle für mehrere Lamellen (8) ist.
4. Sonnenblende nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Drehbewegung der Lamellen (8) von der Schiebewegung der Lamellen (8) unabhängig ist.
5. Sonnenblende nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Schiebeelemente (15) zwischen einer Position, in der die Schiebeelemente (15) proportional über die gesamte Länge der Führungsbalken (4, 5) verteilt sind, und einer Position, in der die Schiebeelemente (15) zu einem Ende der Führungsbalken (4, 5) gegeneinander weggeschoben werden oder einige der Schiebeelemente (15) zu einem Ende der Führungsbalken (4, 5) weggeschoben werden und der Rest zu dem anderen Ende der Führungsbalken (4, 5) weggeschoben wird, verschiebbar sind.
6. Sonnenblende nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der Trägermechanismus (18) aus einem Kabel (41), einem Tuch, einer Kette oder dergleichen besteht, das bzw. die zwei aufeinanderfolgende Schiebeelemente (15) miteinander verbindet und dessen bzw. deren Länge es den entsprechenden Schiebeelementen gestattet, sich über eine Strecke voneinander weg zu bewegen.
7. Sonnenblende nach einem der Ansprüche 1 bis 5, **dadurch gekennzeichnet, dass** der Trägermechanismus (18) zwischen zwei Schiebeelementen (15) aus zwei Stangen (19, 20) besteht, die jeweils an einem Ende (21) an einem der beiden Schiebeelemente (15) drehbar befestigt sind und die an ihrem anderen Ende (23) drehbar miteinander verbunden sind.
8. Sonnenblende nach Anspruch 7, **dadurch gekennzeichnet, dass** die beiden Stangen (19, 20) an ihrem anderen Ende (23) mittels eines Verbindungsglieds (24), das drehbar mit jedem dieser Enden (23) verbunden ist, drehbar miteinander verbunden sind.
9. Sonnenblende nach Anspruch 7 oder 8, **dadurch gekennzeichnet, dass** die Stangen (19, 20) an ihren Enden (21, 23) mit einer Verzahnung (26, 27) versehen sind, wobei die Verzahnungen (27) der Stangen (19, 20), die miteinander gekoppelt sind, miteinander in Eingriff stehen, und die Verzahnung (26) am Ende (21) der Stange (19, 20), die drehbar an dem Schiebeelement (15) befestigt ist, mit der Verzahnung (26) der Stange (19, 20) eines benachbarten Trägermechanismus (18), die drehbar an

dem entsprechenden Schiebeelement (15) befestigt ist, in Eingriff steht.

10. Sonnenblende nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der Antrieb (28) des mindestens einen Schiebeelements (15) aus einem Riemen- oder Kettenantrieb, der einen Riemen (29), eine Kette oder dergleichen umfasst, besteht, der bzw. die über ein Antriebsrad (30) an einem Ende des Führungsbalkens (4) geführt wird und über ein Umkehrad (31) am anderen Ende des Führungsbalkens (4) geführt wird, wobei der Riemen (29), die Kette oder dergleichen an dem mindestens einen Schiebeelement (15) angebracht ist. 5
11. Sonnenblende nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Führungsbalken (4, 5) durch ein Profil gebildet werden, das eine Kammer (9) aufweist, in der die Schiebeelemente (15), das Getriebe (34) und wahlweise der Trägermechanismus (18) und/oder der Antrieb (28) so gehalten werden oder angeordnet sind, dass sie verdeckt sind. 10
12. Sonnenblende nach Anspruch 11, wobei die Schiebeelemente (15) mit einer Führung (16) versehen sind, die vorzugsweise ein Rad oder ein Führungsstück umfasst, mittels dessen sie in einer Führungsnut (17) des Führungsbalkens (4) geführt werden, wobei die Führungsnut (17) über die gesamte Länge des Führungsbalkens (4) verläuft. 15
13. Sonnenblende nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Enden (12a) der Lamellen (8) an der Stelle eines Führungsbalkens (4) tiefer sind als das andere Ende (12b) der Lamellen (8), damit Regenwasser zu dem Führungsbalken (4) ablaufen kann. 20
14. Sonnenblende nach Anspruch 13, **dadurch gekennzeichnet, dass** der Führungsbalken (4) auf der Seite des tiefsten Endes mit einer Ablaufrinne (13) versehen ist, die unterhalb des Endes (12a) der Lamellen (8) oder des Rands des Tuchs verläuft. 25
15. Sonnenblende nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Getriebe (34) eine Drehung der Lamellen (8) um einen Winkel von über 150°, vorzugsweise über 160° und besonders bevorzugt um 360° gestatten. 30

Revendications

1. Pare-soleil comprenant des lamelles (8) dont les extrémités sont maintenues de façon à pouvoir être déplacées entre deux coulisseaux de guidage parallèles (4, 5) et qui sont rotatives autour de leur axe 35
2. Pare-soleil selon la revendication 1, **caractérisé en ce que** l'arbre d'entraînement (35) est un arbre rotatif qui s'étend dans la direction longitudinale d'un coulisseau de guidage (4, 5) et **en ce que** la transmission (34) d'un élément coulissant (15) est composée d'un mécanisme à vis sans fin (34) comprenant une roue à vis sans fin (36) qui est déplaçable en même temps que l'élément coulissant (15) sur ledit arbre d'entraînement (35) et qui met en prise une roue à engrenage (37) qui est montée dans l'élément coulissant (15) et qui est couplée ou qui peut être couplée à une extrémité (12a) d'une lamelle (8) à entraîner. 40
3. Pare-soleil selon la revendication 2, **caractérisé en ce que** l'arbre d'entraînement (35) pour la rotation des lamelles (8) est un arbre d'entraînement commun pour un certain nombre de lamelles (8). 45
4. Pare-soleil selon l'une des revendications précédentes, **caractérisé en ce que** le mouvement rotatif des lamelles (8) est indépendant du mouvement coulissant des lamelles (8). 50
5. Pare-soleil selon l'une des revendications précédentes, **caractérisé en ce que** les éléments coulissants (15) sont déplaçables entre une position dans laquelle les éléments coulissants (15) sont divisés proportionnellement sur la longueur totale des coulis-seaux de guidage (4, 5) et une position dans laquelle les éléments coulissants (15) sont repoussés l'un contre l'autre vers une extrémité des coulis-seaux de guidage (4, 5) ou certains des éléments coulissants (15) sont repoussés vers une extrémité des coulis-seaux de guidage (4, 5) et le reste vers l'autre extrémité des coulis-seaux de guidage (4, 5).
6. Pare-soleil selon l'une des revendications précédentes, **caractérisé en ce que** le mécanisme de support (18) est composé d'un câble (41), d'une toile, d'une chaîne ou analogue qui relie deux éléments coulis-

sants successifs (15) l'un à l'autre et dont la longueur permet aux éléments coulissants appropriés d'être susceptibles de s'éloigner l'un de l'autre sur une certaine distance.

7. Pare-soleil selon l'une des revendications 1 à 5, **caractérisé en ce que** le mécanisme de support (18) entre deux éléments coulissants (15) est composé de deux tiges (19, 20) qui sont attachées chacune en rotation au niveau d'une extrémité (21) à un des deux éléments coulissants (15) et qui sont reliées en rotation l'une à l'autre au niveau de leur autre extrémité (23).
8. Pare-soleil selon la revendication 7, **caractérisé en ce que** les deux tiges (19, 20) sont reliées en rotation l'une à l'autre au niveau de leur autre extrémité (23) au moyen d'une liaison (24) qui est reliée en rotation à chacune de ces extrémités (23).
9. Pare-soleil selon la revendication 7 ou 8, **caractérisé en ce que** les tiges (19, 20) sont munies au niveau de leurs extrémités (21, 23) d'une denture (26, 27), dans lequel les dentures (27) des tiges (19, 20) qui sont couplées l'une à l'autre se mettent en prise et la denture (26) au niveau de l'extrémité (21) de la tige (19, 20) qui est attachée en rotation à l'élément coulissant (15) met en prise la denture (26) de la tige (19, 20) d'un mécanisme de support adjacent (18) qui est attaché en rotation à l'élément coulissant approprié (15).
10. Pare-soleil selon l'une des revendications précédentes, **caractérisé en ce que** l'entraînement (28) de l'au moins un élément coulissant (15) est composé d'un entraînement par courroie ou chaîne comprenant une courroie (29), une chaîne ou analogue qui est guidée sur une roue d'entraînement (30) au niveau d'une extrémité du coulisseau de guidage (4) et qui est guidée sur une roue de changement de sens (31) au niveau de l'autre extrémité du coulisseau de guidage (4), dans lequel la courroie (29), chaîne ou analogue est attachée à l'au moins un élément coulissant (15).
11. Pare-soleil selon l'une des revendications précédentes, **caractérisé en ce que** les coulisseaux de guidage (4, 5) sont formés par un profilé ayant une chambre (9) dans laquelle les éléments coulissants (15), la transmission (34) et de manière facultative le mécanisme de support (18) et/ou l'entraînement (28) sont maintenus ou agencés afin d'être cachés.
12. Pare-soleil selon la revendication 11, dans lequel les éléments coulissants (15) sont munis d'un guide (16), comprenant de préférence une roue ou une pièce de guidage, au moyen de laquelle ils sont guidés dans une rainure de guidage (17) du coulisseau

de guidage (4), ladite rainure de guidage (17) s'étendant sur la longueur totale du coulisseau de guidage (4).

13. Pare-soleil selon l'une des revendications précédentes, **caractérisé en ce que** les extrémités (12a) des lamelles (8) à l'emplacement d'un coulisseau de guidage particulier (4) sont inférieures à l'autre extrémité (12b) des lamelles (8) afin que l'eau de pluie soit susceptible de s'écouler vers ledit coulisseau de guidage (4).
14. Pare-soleil selon la revendication 13, **caractérisé en ce que** le coulisseau de guidage (4) sur le côté de l'extrémité la plus basse est muni d'une gouttière de drainage (13) qui s'étend au-dessous de l'extrémité (12a) des lamelles (8) ou du bord de la toile.
15. Pare-soleil selon l'une des revendications précédentes, **caractérisé en ce que** les transmissions (34) permettent aux lamelles (8) de tourner d'un angle supérieur à 150°, de préférence supérieur à 160° et plus de préférence de 360°.

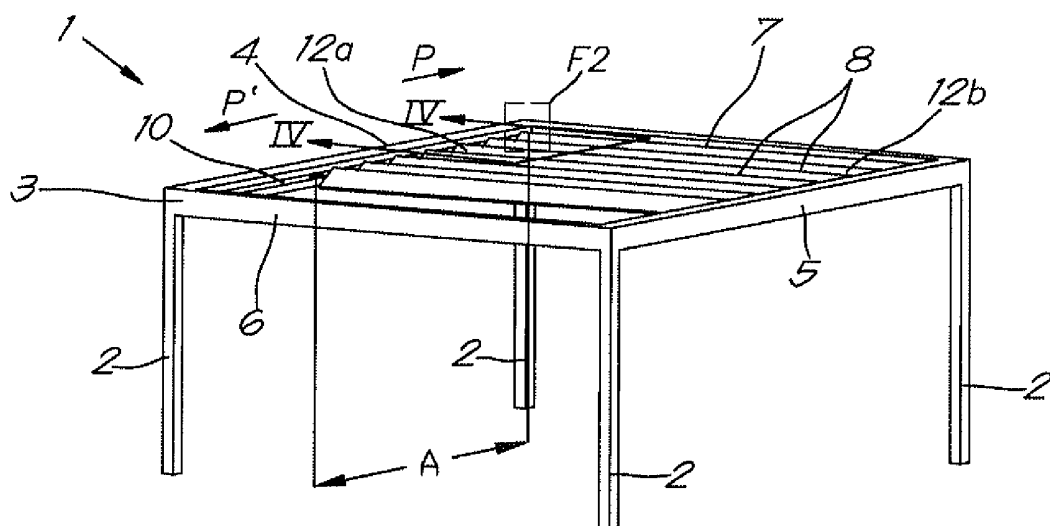


Fig. 1

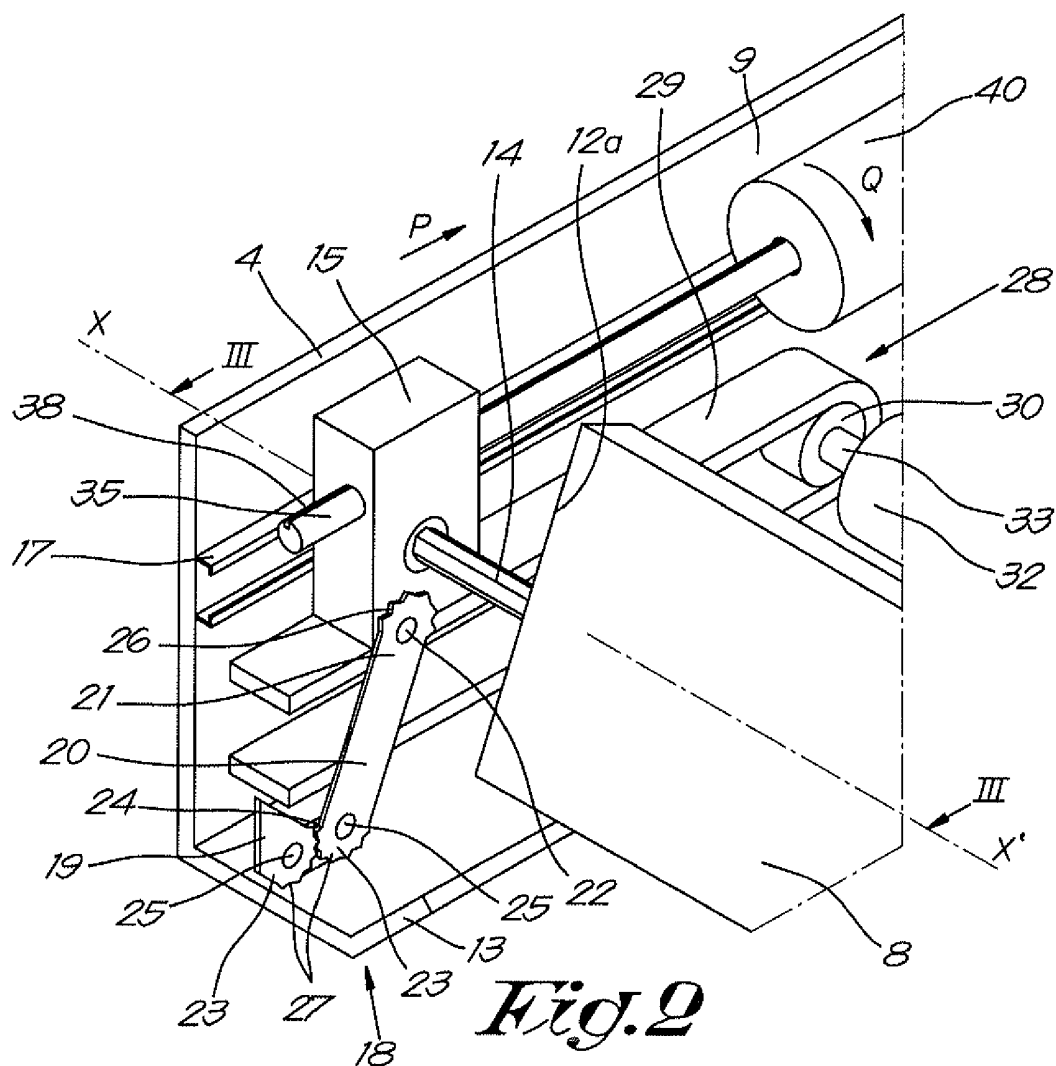


Fig. 2

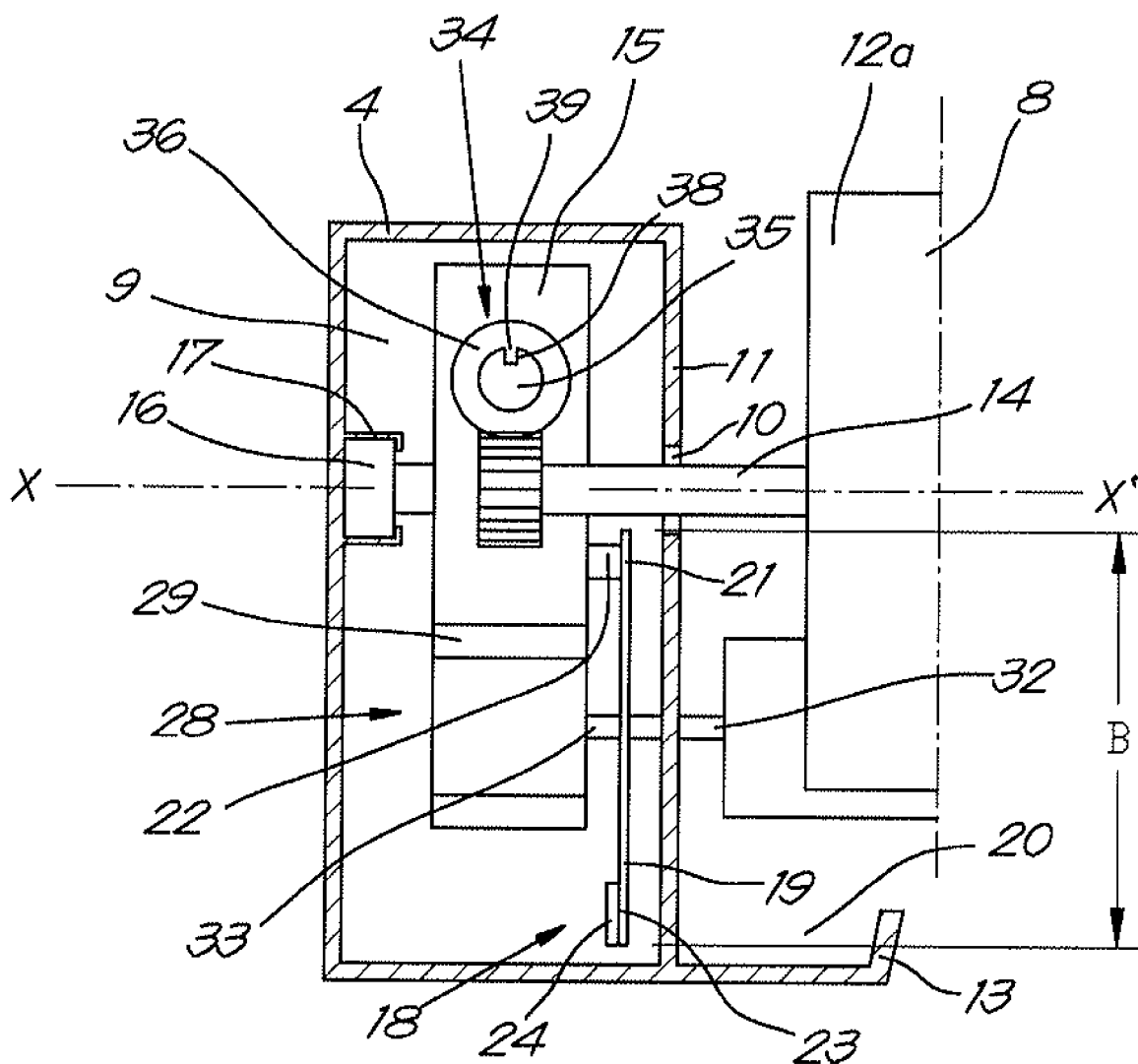
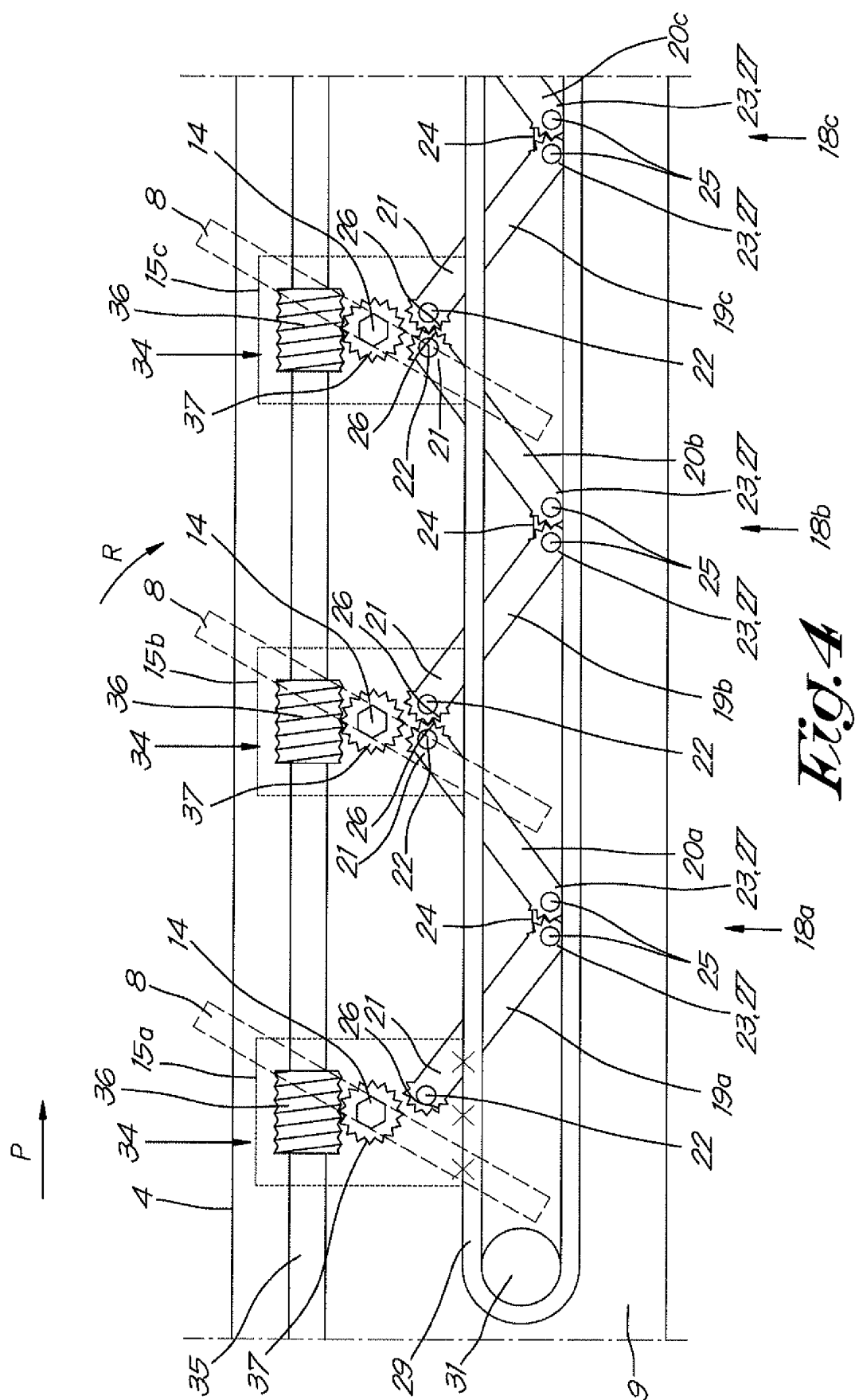
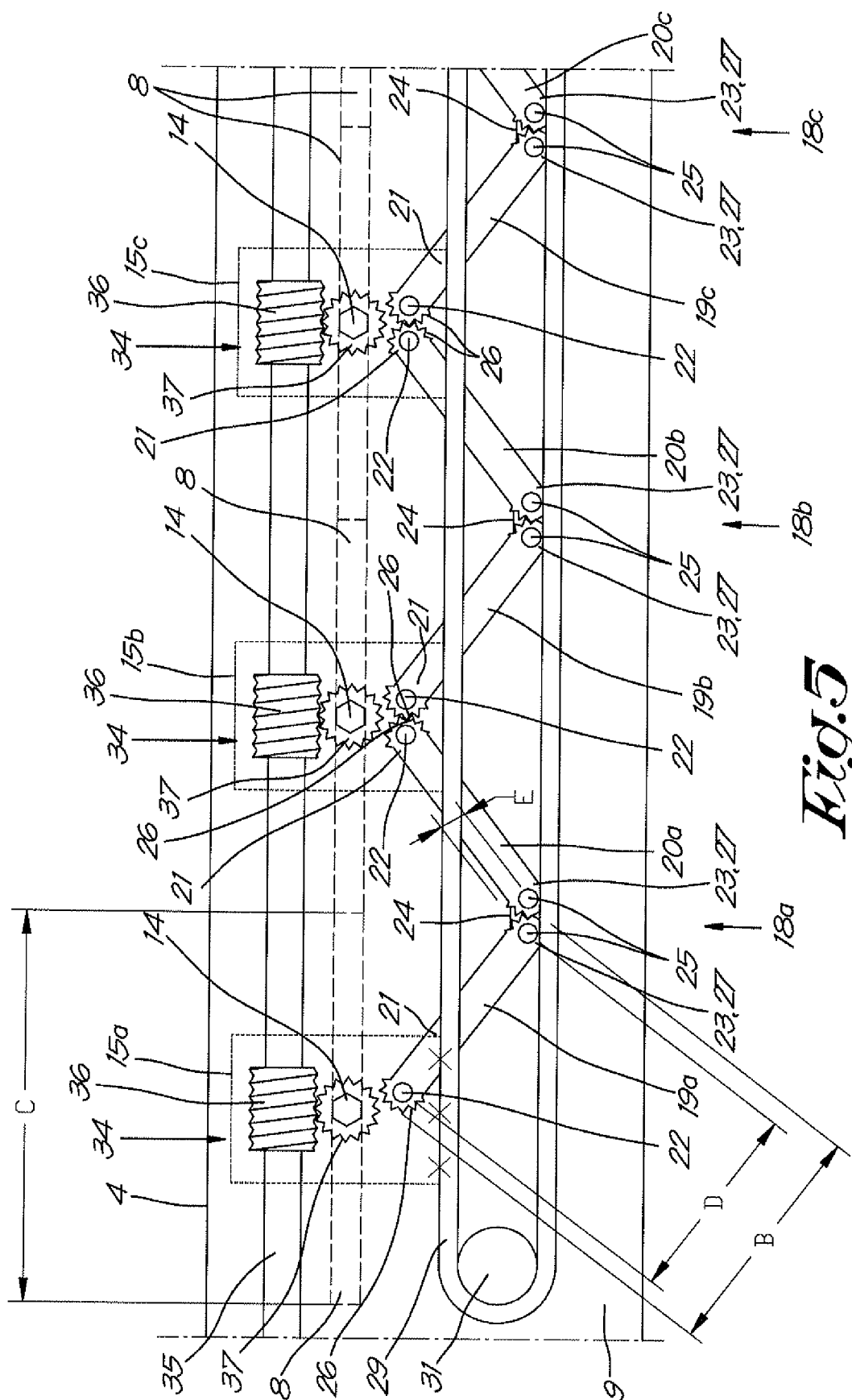
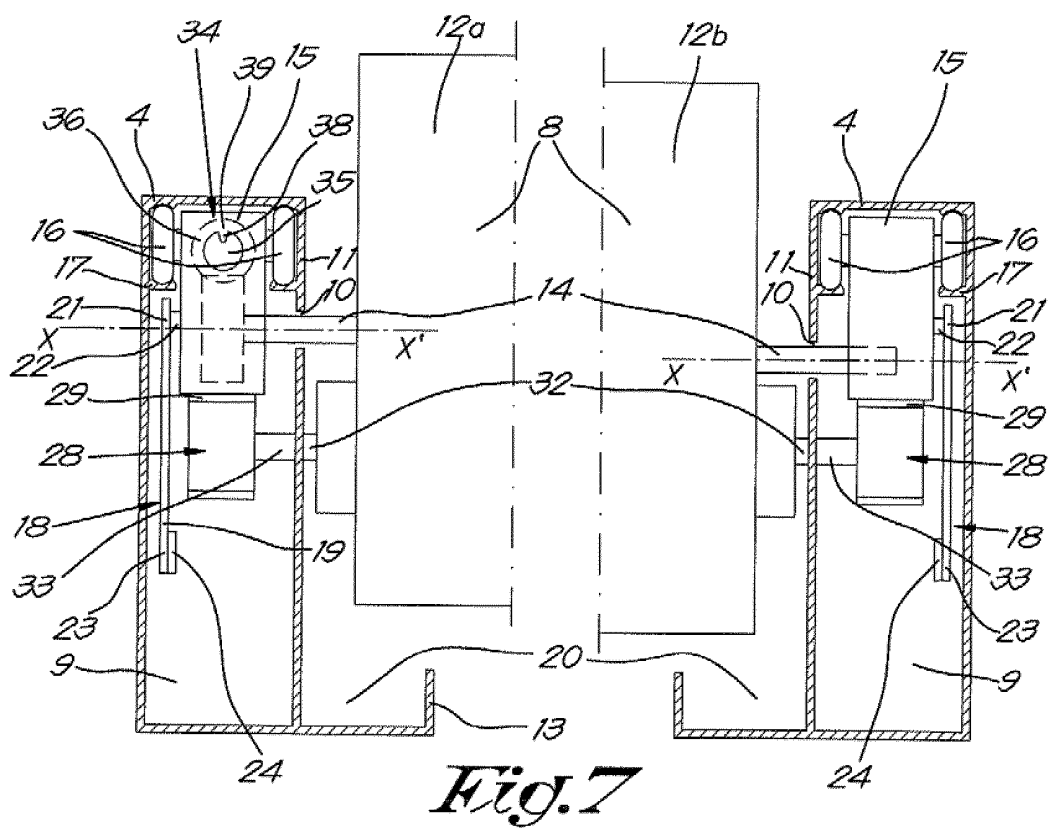
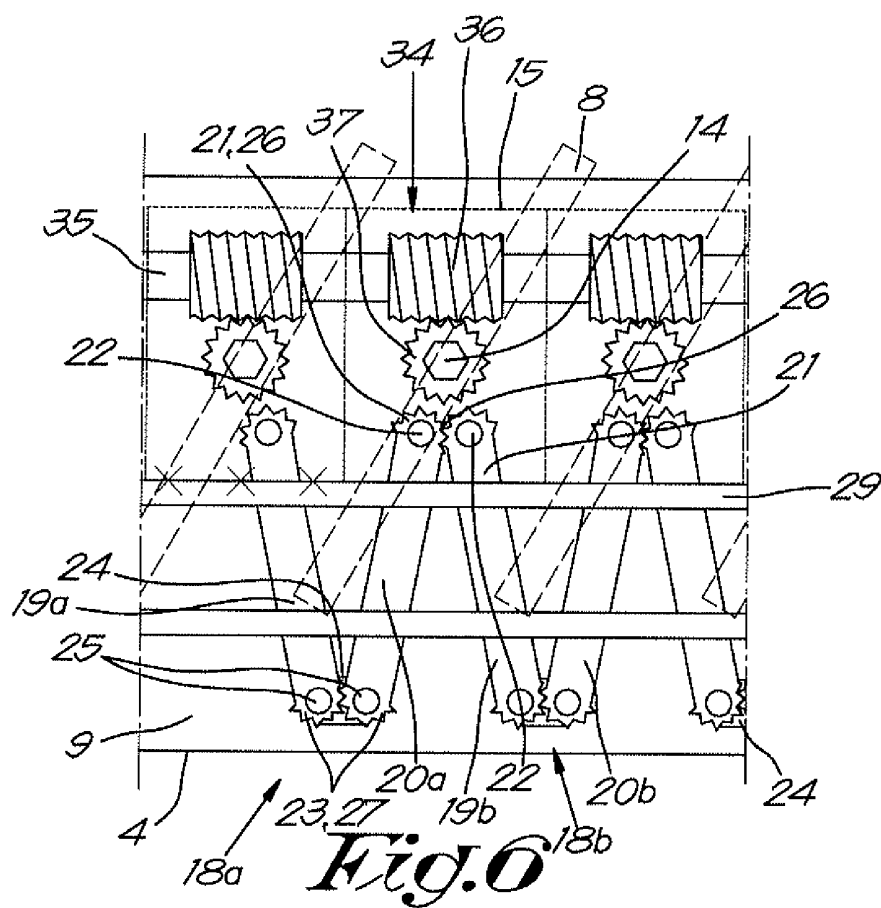
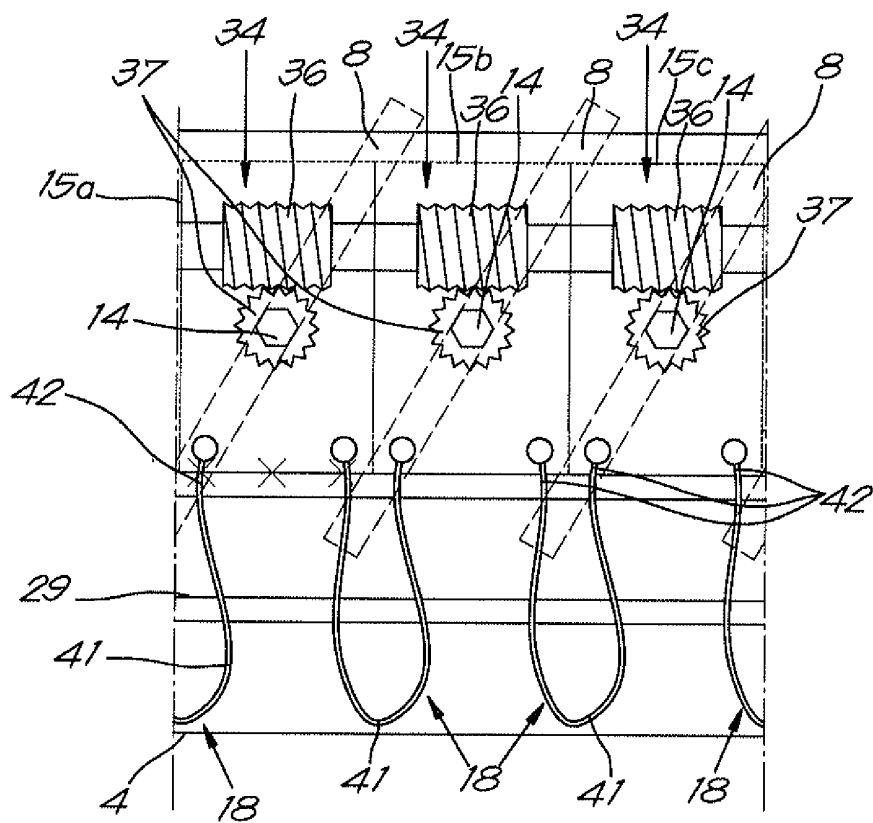
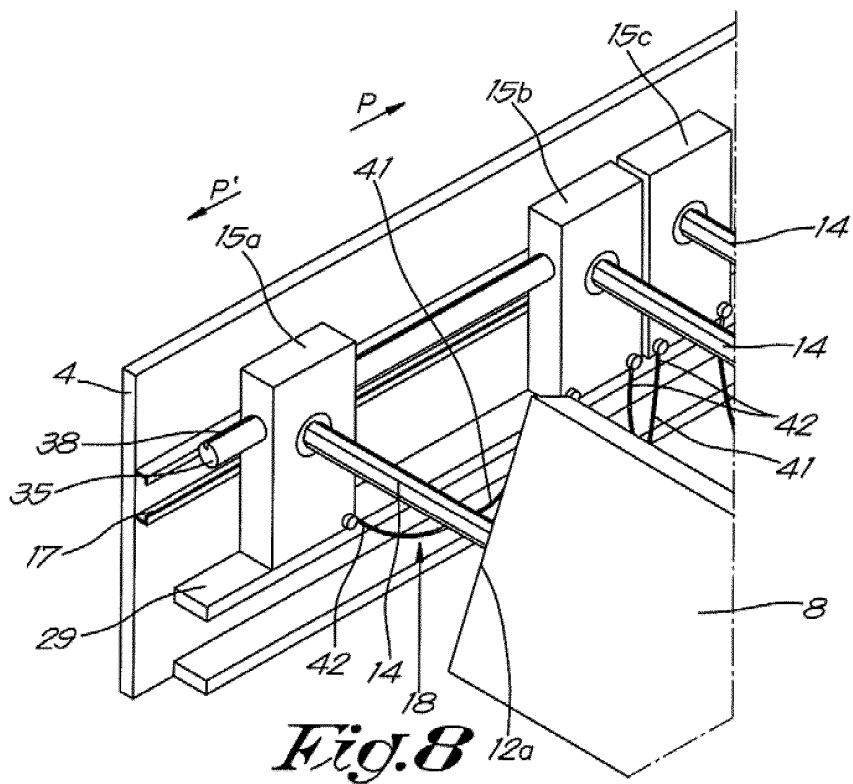


Fig. 3









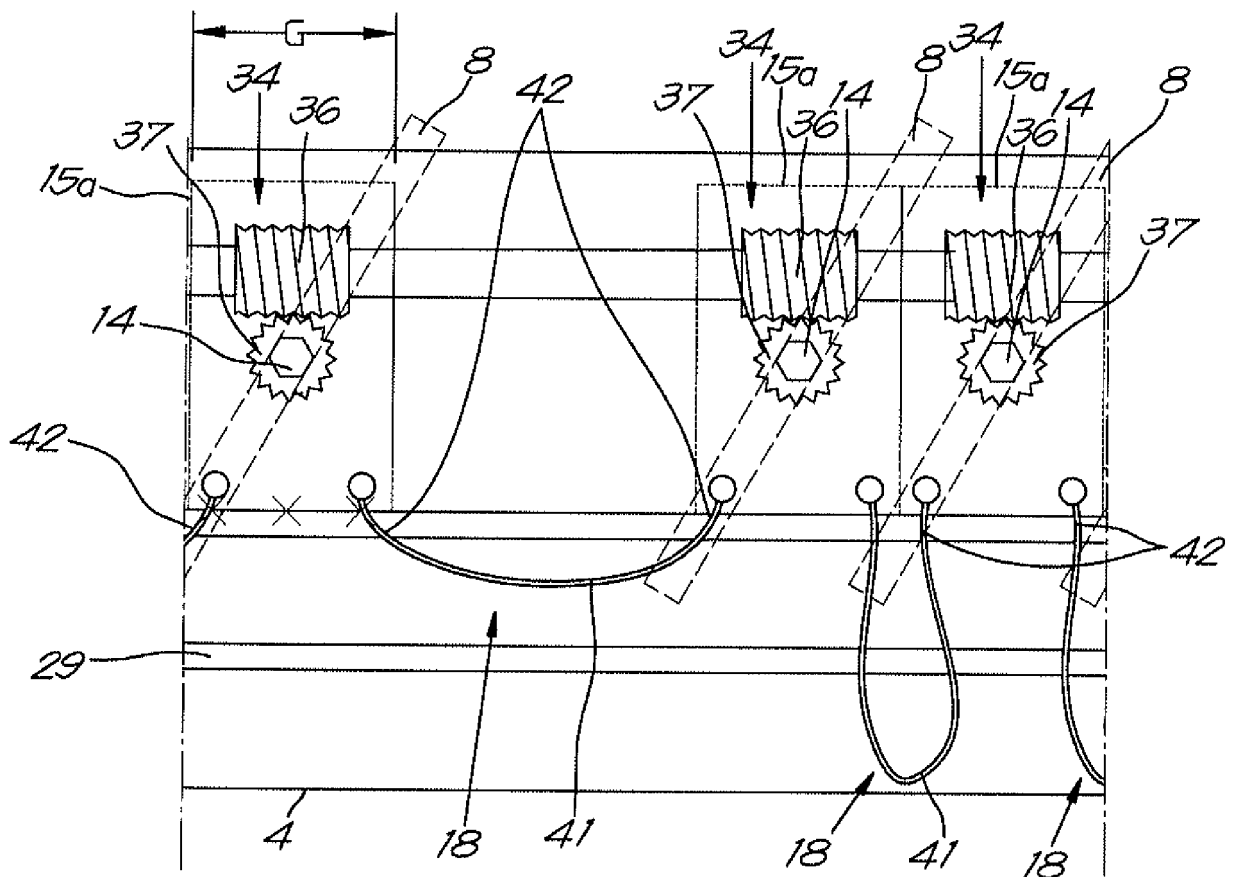


Fig.10

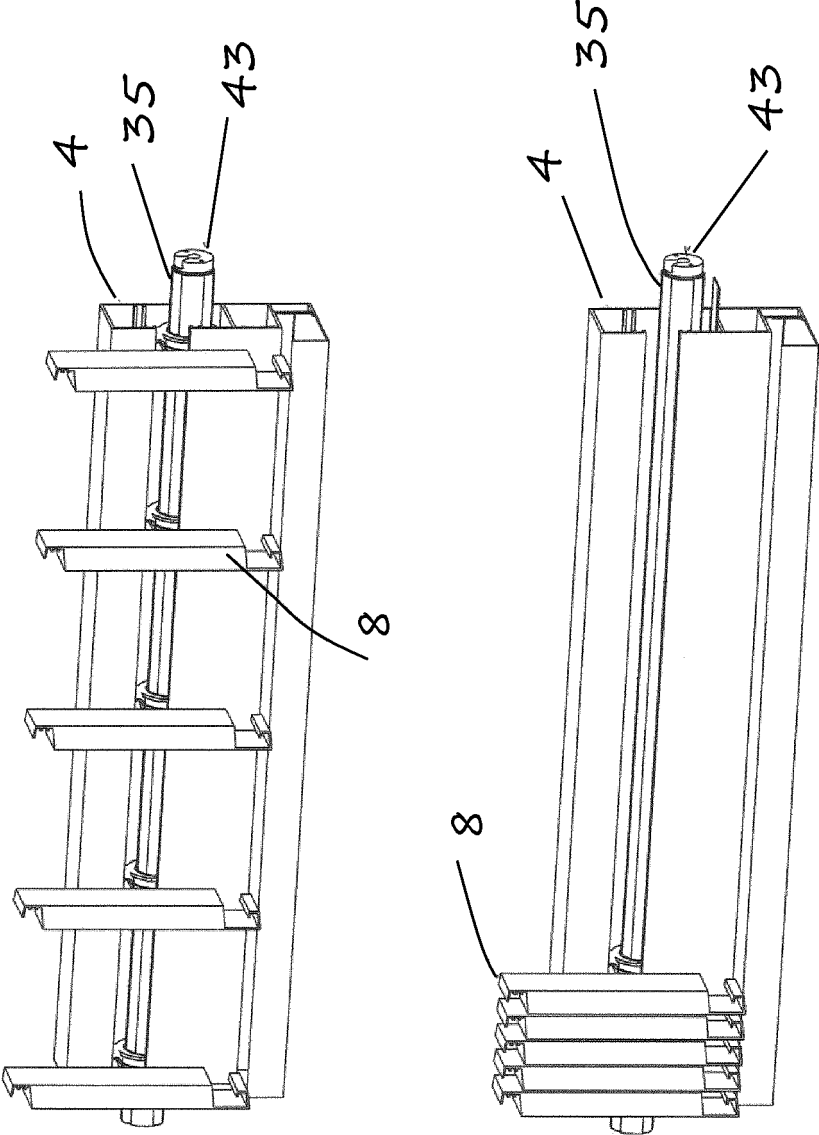


Fig. 11

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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