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(54) **Head assembly for a motorised screen**

Kopfanordnung für einen motorisierten Vorhang

Ensemble de tête pour un écran motorisé

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Description

[0001] This invention relates to head assembly for a motorised screen, and in particular to a head assembly for a motorised window screen that provides easy access for replacing batteries or servicing the drive assembly and electronic components thereof.

[0002] It is known to provide blinds or screens fitted to a window or door opening, typically fixed to the upper face of the window opening or between the sides of the window opening adjacent the upper face thereof, for selectively obscuring the opening. In the case of a roller blind, such typically have a roller mounted at an upper side of the window or door opening around which a suitable screen is wound. The screen may be lowered and raised by rotating the roller. The lower end of the screen may be provided with a bar such that the screen hangs from the roller under gravity. It is known to provide an electric motor for rotating the roller and/or moving the guide bar to raise and lower the screen, such motor and associated gearbox and power supply, such as a plurality of batteries, being mounted adjacent the roller, typically within a housing of a head assembly of the blind.

[0003] US 2012/031571, DE 20212845 and US 2007/272368 are examples of known head assemblies of roller blinds.

[0004] A problem with such known motorised blinds is that the head assembly of the blind is usually located at the upper side of a window opening at a height that makes access difficult. Therefore changing batteries or servicing the electrical components of head assembly can be time consuming and difficult, often requiring complete demounting of the blind from the window opening or at least removal of the roller to gain access to the motor and electrical components.

[0005] According to a first aspect of the present invention there is provided a head assembly for a motorised screen, said head assembly comprising a roller upon which is wound a screen, a motor being provided for raising or lowering the screen, control means for controlling operation of said motor and a power supply for powering said motor, said roller, motor, control means and power supply being mounted within an elongate housing to be mounted within an upper region of a window or door opening, said housing having a base portion adapted to be fitted within said window opening and a cover portion mounted on the base portion for movement between a closed position and an open position, said roller being mounted in said cover portion of the housing.

[0006] The motor may be arranged to rotatably drive the roller or otherwise cooperate with the screen to raise and lower the screen.

[0007] Preferably said power supply comprises one or more batteries.

[0008] By mounting the roller in the cover portion the roller is able to be moved along with the cover portion to provide access to the motor and/or power supply and/or control means.

[0009] Preferably said cover portion comprises a front face of the housing.

[0010] In a preferred embodiment said cover portion is pivotally mounted on said base portion for pivotal movement between said open and closed positions, preferably about a substantially horizontal pivot axis extending parallel to a longitudinal axis of the housing. Preferably said pivot axis is defined along a lower edge of the cover portion such that the cover portion pivots downwardly from its closed to its open positions.

[0011] Preferably said screen extends from said housing through an elongate gap in a lower portion of the housing. Preferably said elongate gap is defined between a lower side of the cover portion and an adjacent side of the base portion of the housing. Preferably said gap is arranged coaxially with said pivot axis of the cover portion.

[0012] Retaining means may be provided for retaining the cover portion in its closed position. Said retaining means may comprise at least one retaining pin arranged to extend through coaxially aligned apertures in the base portion and housing portion when the cover is in its closed position. Alternatively the retaining means may comprise a resilient tab mounted on the base portion adapted to engage a receiving aperture in the cover portion when the cover is in its closed position.

[0013] Preferably the roller of the blind is rotatably mounted between opposite end walls of said cover portion. Said cover portion may comprise a curved outer wall arranged to enclose at least a portion of the roller.

[0014] According to a further aspect of the present invention there is provided a screen assembly incorporating a head assembly in accordance with the first aspect of the present invention. A pair of mounting brackets may be provided for attachment to the window opening at or adjacent the top face of the window opening, each end of the housing having means for engaging a respective mounting bracket, whereby the mounting brackets may be attached the window opening such that the housing may be engaged onto the mounting brackets to mount the housing in the window opening. Preferably an engaging means on each end of the base portion comprises a recess or slot for receiving a portion of a respective bracket such that the housing may be engaged onto the mounting brackets to retain the housing between the sides of the window opening.

[0015] Preferably the screen is moveable between a pair of spaced guide tracks adapted to be mounted on each side of the window opening, a guide member being mounted on a free end of the screen extending between said guide tracks. Said motor may be arranged to drive the guide member up and down the guide tracks, for example via one or more drive belts. The roller may be tensioned such that the screen is biased towards a raised position.

[0016] Preferably each guide track is provided with a flange defining an extension of a front face of the guide track to extend over an outer face of window opening to

close any gap between the sides of the window opening and the guide tracks. Preferably said flange is substantially contiguous with the front face of the guide track. Preferably the flange is integral with the front face of the guide track.

[0017] An embodiment of the present invention will now be described, by way of example only, with reference to the accompanying drawings, in which :-

Figure 1 is a front view of a screen incorporating a head assembly according to an embodiment of the present invention;

Figure 2 is a front view of the head assembly of Figure 1 in an open configuration;

Figure 3 is a side view of the head assembly of Figure 1 in a closed configuration;

Figure 4 is a side view of the head assembly of Figure 1 in an open configuration;

Figure 5 is a perspective view showing the mounting arrangement of the head assembly of Figure 1;

Figure 6 is a further perspective view of the mounting arrangement of the head assembly of Figure 1;

Figures 7 and 8 illustrate the installation of the head assembly of Figure 1 in a window opening;

Figure 9 is a detailed perspective view of one side of the head assembly of Figure 1 in its closed configuration;

Figure 10 is a detailed perspective view of the head assembly of Figure 1 in its open configuration;

Figure 11 is a detailed perspective view of the head assembly of Figure 1 showing the drive arrangement;

Figure 12 is a detailed perspective view of the guide member of the screen of Figure 1;

Figure 13 is a detailed end view of the guide member;

Figure 14 is an end view of a lower side of the screen of Figure 1 showing the belt tensioning assembly; and

Figure 15 is a partly exploded perspective view of the belt tensioning assembly.

[0018] With reference to Figures 1 to 4, a motorised blind assembly for a window in accordance with an embodiment of the present invention comprises a roller 2 mounted within an elongate housing defining an elongate hollow cassette 4 adapted to be secured in an upper side of the window frame, around which a screen 6 is wound. A free end of the screen 6 is attached to an elongate guide member 8 which is movably engaged, at its longitudinal ends, in side guide tracks 10,12 arranged on opposite lateral sides of the screen 6.

[0019] The cassette 6 comprises an elongate base portion 14 defining a rear side of the cassette, within which is mounted the drive assembly of the bind, comprising an electric motor, control circuitry and a battery pack (not shown). A cover portion 16 is pivotally mounted on a lower side of the base portion 14 to be pivotally moveable between a closed position, shown in Figures 1 and 3, and an open position, shown in Figures 2 and 4.

[0020] The cover portion 16 comprises a curved outer face 18 defining a front face of the cassette, and a pair of end walls 20,22, the roller 2 of the blind assembly being mounted between said end walls 20,22 of the cover portion 16 such that the roller 2 is housed within the cover portion 16 of the cassette 4.

[0021] The screen 6 extends through an elongate gap defined between a lower side of the cover portion 16 and a lower wall of the base portion 14 of the cassette 4.

[0022] In order to retain the cover portion 16 in its closed position, retaining members may be provided on either end of the base portion 14 arranged to project into the cover portion 16 when in its closed position. In one embodiment retaining members may comprise pins insertable through apertures 26 in the end walls of the cover portion to pass into cooperating apertures in retaining tabs 24 (as shown in Figures 3 and 4). Alternatively the retaining members may comprise resilient tabs 24 having an enlarged end adapted to engage respective receiving apertures 26 in the end walls of the cover portion, as shown in Figures 9 and 10.

[0023] By mounting the roller 2 in the cover portion 16 of the cassette 4, access to the drive assembly of the roller is greatly facilitated as the roller 2 is moved out of cassette 4 as the cover portion 16 is pivoted to its open position. This greatly facilitates replacement of the battery pack and servicing or repair of the drive assembly as well as facilitating replacement of the screen, if required.

[0024] As shown in Figures 5 to 8, the cassette may be mounted within an window opening by means of a pair of mounting brackets 40 secured to an upper side of the window opening at either end thereof. A button shaped projection 42 extends from a lower face of each mounting bracket 40 to be received in a receiving slot 44 formed in an upper side of the base portion 14 at either end thereof. The relative dimensions of the receiving slot 44 and projection 42 are such that the some lateral and/or vertical movement of the button shaped projection 42 within the corresponding receiving slot 44 is permitted to allow the cassette 4 to be centred within the window opening and/or to ensure that the screen 6 runs parallel to the sides of the window opening.

[0025] Alternatively, the cassette 4 may be mounted

between the sides of the window opening adjacent the upper face of the window opening by means of a pair of mounting brackets (not shown) attachable to the sides of the window opening. Each end of the cassette 4 may be provided with a recess 80 to be fitted over a respective bracket to locate the cassette 4 between the sides of the window opening.

[0026] The guide tracks 10,12 are provided with laterally extending flanges contiguous with the front faces of the guide tracks 10,12 to overlap the wall adjacent the sides of the window opening to cover any gaps between the sides of the guide tracks 10,12 and the sides of the window opening. The end walls 20,22 of the cassette 4 may be provided with corresponding laterally extending flanges to overlap the adjacent sides of the window opening.

[0027] The motor may be arranged to drive the guide member 8 up and down the guide tracks 10,12, for example via one or more drive belts 30, as best shown in Figure 11, located within one or both of the guide tracks 10,12, the motor being arranged to drive a spindle 32 having sprockets at one or both ends for driving the one or more belts 30. The roller 2 may be tensioned such that the screen 6 is biased towards a raised position.

[0028] As shown in Figures 12 and 13, at least one end, more preferably both ends, of the guide member 8 is coupled to the drive belt 30, preferably by mounting the free ends of the drive belt in a mounting block 34 provided on the guide member 8.

[0029] Preferably a lower guide sprocket 36 is mounted on a lower end of the respective guide track 10,12 via a tensioning assembly so that the belt 30 can be correctly tensioned. As shown in Figures 14 and 15, the tensioning assembly may comprise an first part 38, which may be located within a lower end of the respective guide track 10,12 and upon which the lower guide sprocket 36 is mounted, and a second part 40 defining a lower cap mounted on a lower end of the respective guide track 10,12. The first part 38 is adapted to receive a portion 44 of the second part, teeth 42 being formed on a cooperating surfaces of the first 38 and second parts 40 to define a ratchet arrangement, whereby the first part 38 can be moved downwardly with respect to the second part 40 to tension the belt 30, the cooperating teeth 42 retaining the position of the first part 38 with respect to the second part 40 to maintain the required belt tension.

[0030] Alternatively the motor may be arranged to rotatably drive the roller 2 to raise and lower the screen 6.

[0031] The invention is not limited to the embodiment(s) described herein but can be amended or modified without departing from the scope of the present invention.

Claims

1. A head assembly for a motorised screen, said head assembly comprising a roller (2) upon which is wound a screen (6), a motor being provided for raising or lowering the screen, control means for controlling operation of said motor and a power supply for powering said motor, said roller (2), motor, control means and power supply being mounted within an elongate housing (4) to be mounted within an upper region of a window or door opening, said housing (4) having a base portion (14) adapted to be fitted within said window opening and a cover portion (16) mounted on the base portion for movement between a closed position and an open position, **characterised in that** said roller (2) is mounted in said cover portion (16) of the housing.

2. A head assembly as claimed in claim 1, wherein the motor is arranged to rotatably drive the roller (2) or otherwise cooperate with the screen (6) to raise and lower the screen (6).

3. A head assembly as claimed in any preceding claim, wherein said cover portion (16) comprises a front face of the housing (4).

4. A head assembly as claimed in claim 3, wherein said cover portion (16) is pivotally mounted on said base portion (14) for pivotal movement between said open and closed positions about a substantially horizontal pivot axis extending parallel to a longitudinal axis of the housing.

5. A head assembly as claimed in claim 4, wherein said pivot axis is defined along a lower edge of the cover portion (16) such that the cover portion (16) pivots downwardly from its closed to its open positions.

6. A head assembly as claimed in any preceding claim, wherein said screen (6) extends from said housing through an elongate gap in a lower portion of the housing defined between a lower side of the cover portion (16) and an adjacent side of the base portion (14) of the housing (4).

7. A head assembly as claimed in any preceding claim, wherein retaining means are provided for retaining the cover portion in its closed position, said retaining means comprising at least one retaining pin arranged to extend through coaxially aligned apertures in the base portion and housing portion when the cover is in its closed position or one or more resilient tabs (24) mounted on the base portion adapted to engage a respective receiving aperture (26) in the cover portion (16) when the cover portion (16) is in its closed position.

8. A head assembly as claimed in any preceding claim, wherein the roller (2) is rotatably mounted between opposite end walls (20,22) of said cover portion (16).

9. A head assembly as claimed in any preceding claim, wherein said cover portion (16) comprises a curved outer wall (18) arranged to enclose at least a portion of the roller (2).

10. A head assembly as claimed in any preceding claim, wherein a pair of mounting brackets (40) may be provided for attachment to the window opening at or adjacent the top face of the window opening, each end of the housing (4) having means for engaging a respective mounting bracket (40), whereby the mounting brackets (40) may be attached the window opening such that the housing (4) may be engaged onto the mounting brackets (40) to mount the housing (4) in the window opening.

11. A head assembly as claimed in claim 10, wherein an engaging means on each end of the base portion comprises a recess or slot (80, 44) for receiving a portion (42) of a respective bracket (40) such that the housing (4) may be engaged onto the mounting brackets (40) to retain the housing (4) in the window opening.

12. A motorised screen incorporating a head assembly as claimed in any of claims 1 to 11, wherein the screen (6) is moveable between a pair of spaced guide tracks (10,12) adapted to be mounted on each side of the window opening, a guide member (8) being mounted on a free end of the screen (6) extending between said guide tracks (10,12).

13. A screen as claimed in claim 12, wherein said motor is arranged to drive the guide member (8) up and down the guide tracks via one or more drive belts (30).

14. A screen as claimed in claim 13, wherein the roller (2) is tensioned such that the screen (6) is biased towards a raised position.

15. A screen as claimed in any of claims 12 to 14, wherein each guide track (10,12) is provided with a flange defining an extension of a front face of the guide track to extend over an outer face of window opening to close any gap between the sides of the window opening and the guide tracks (10,12).

Patentansprüche

1. Kopfanordnung für eine motorisierte Abschirmung, wobei die Kopfanordnung Folgendes umfasst: eine Rolle (2), auf die eine Abschirmung (6) gewickelt ist, wobei ein Motor zum Anheben oder Absenken der Abschirmung vorgesehen ist, ein Steuermittel zum Steuern des Betriebs des Motors und eine Leistungsversorgung zum Versorgen des Motors mit Leistung, wobei die Rolle (2), der Motor, das Steuermittel und die Leistungsversorgung in einem langgestreckten Gehäuse (4) zum Montieren in einer oberen Region einer Fenster-oder Türöffnung montiert sind, wobei das Gehäuse (4) einen Basisabschnitt (14), der dazu angepasst ist, in der Fensteröffnung eingebaut zu werden, und einen zur Bewegung zwischen einer geschlossenen Stellung und einer offenen Stellung an dem Basisabschnitt montierten Abdeckungsabschnitt (16) aufweist, **dadurch gekennzeichnet, dass** die Rolle (2) in dem Abdeckungsabschnitt (16) des Gehäuses montiert ist.

2. Kopfanordnung nach Anspruch 1, wobei der Motor dazu angeordnet ist, die Rolle (2) drehbar anzutreiben oder anderweitig mit der Abschirmung (6) zusammenzuwirken, um die Abschirmung (6) anzuheben und abzusenken.

3. Kopfanordnung nach einem der vorangehenden Ansprüche, wobei der Abdeckungsabschnitt (16) eine vordere Fläche des Gehäuses (4) umfasst.

4. Kopfanordnung nach Anspruch 3, wobei der Abdeckungsabschnitt (16) zur Schwenkbewegung zwischen der offenen und der geschlossenen Stellung um eine im Wesentlichen horizontale Schwenkachse, die sich parallel zu einer Längsachse des Gehäuses erstreckt, schwenkbar an dem Basisabschnitt (14) montiert ist.

5. Kopfanordnung nach Anspruch 4, wobei die Schwenkachse entlang einem unteren Rand des Abdeckungsabschnitts (16) definiert ist, so dass der Abdeckungsabschnitt (16) nach unten aus seiner geschlossenen in seine offene Stellung schwenkt.

6. Kopfanordnung nach einem der vorangehenden Ansprüche, wobei sich die Abschirmung (6) von dem Gehäuse durch einen langgestreckten Spalt in einem unteren Abschnitt des Gehäuses erstreckt, der zwischen einer unteren Seite des Abdeckungsabschnitts (16) und einer benachbarten Seite des Basisabschnitts (14) des Gehäuses (4) definiert ist.

7. Kopfanordnung nach einem der vorangehenden Ansprüche, wobei Arretiermittel vorgesehen sind, um den Abdeckungsabschnitt in seiner geschlossenen Stellung zu arretieren, wobei die Arretiermittel mindestens einen Arretierstift umfassen, der dazu angeordnet ist, sich durch koaxial ausgerichtete Öffnungen in dem Basisabschnitt und dem Gehäuseabschnitt zu erstrecken, wenn sich die Abdeckung in ihrer geschlossenen Stellung befindet, oder eine oder mehrere elastische Laschen (24) umfassen, die an dem Basisabschnitt montiert sind und dazu angepasst sind, mit einer jeweiligen Aufualuneöffnung (26) in dem Abdeckungsabschnitt (16) in Eingriffzu

treten, wenn sich der Abdeckungsabschnitt (16) in seiner geschlossenen Stellung befindet.

8. Kopfanordnung nach einem der vorangehenden Ansprüche, wobei die Rolle (2) drehbar zwischen gegenüberliegenden Stirnwänden (20, 22) des Abdeckungsabschnitts (16) montiert ist.

9. Kopfanordnung nach einem der vorangehenden Ansprüche, wobei der Abdeckungsabschnitt (16) eine gekrümmte äußere Wand (18) umfasst, die dazu angeordnet ist, mindestens einen Abschnitt der Rolle (2) zu umschließen.

10. Kopfanordnung nach einem der vorangehenden Ansprüche, wobei ein Paar Halterungen (40) zum Anbringen an der Fensteröffnung an oder benachbart der oberen Fläche der Fensteröffnung vorgesehen sein kann, wobei jedes Ende des Gehäuses (4) Mittel aufweist, um mit einer jeweiligen Halterung (40) in Eingriff zu treten, wodurch die Halterungen (40) an der Fensteröffnung angebracht werden können, so dass das Gehäuse (4) auf den Haltezungen (40) in Eingriff gebracht werden kann, um das Gehäuse (4) in der Fensteröffnung zu montieren.

11. Kopfanordnung nach Anspruch 10, wobei ein Eingriffsmittel an jedem Ende des Basisabschnitts eine Aussparung oder einen Schlitz (80, 44) zum Aufnehmen eines Abschnitts (42) einer jeweiligen Halterung (40) umfasst, so dass das Gehäuse (4) auf den Halterungen (40) in Eingriff gebracht werden kann, um das Gehäuse (4) in der Fensteröffnung zu arretieren.

12. Motorisierte Abschirmung, die eine Kopfanordnung nach einem der Ansprüche 1 bis 11 enthält, wobei die Abschirmung (6) zwischen einem Paar beabstandeter Führungsschienen (10, 12) bewegbar ist, die dazu angepasst sind, an jeder Seite der Fensteröffnung montiert zu werden, wobei sich ein am einem freien Ende der Abschirmung (6) montiertes Führungselement (8) zwischen den Führungsschienen (10, 12) erstreckt.

13. Abschirmung nach Anspruch 12, wobei der Motor dazu angeordnet ist, das Führungselement (8) über eine oder mehrere Antriebsriemen (30) die Führungsschienen hoch und herunter anzutreiben.

14. Abschirmung nach Anspruch 13, wobei die Rolle (2) gespannt ist, so dass die Abschirmung (6) zu einer angehobenen Stellung hin vorgespannt ist.

15. Abschirmung nach einem der Ansprüche 12 bis 14, wobei die Führungsschienen (10, 12) jeweils mit einem Flansch versehen sind, der eine Verlängerung einer vorderen Fläche der Führungsschiene definiert, um sich über eine äußere Fläche der Fensteröffnung zu erstrecken, um einen etwaigen Spalt zwischen den Seiten der Fensteröffnung und den Führungsschienen (10, 12) zu verschließen.

Revendications

1. Ensemble supérieur pour un écran motorisé, ledit ensemble supérieur comportant un cylindre (2) sur lequel est enroulé un écran (6), un moteur étant mis en oeuvre pour faire monter ou descendre l'écran, un moyen de commande permettant de commander le fonctionnement dudit moteur et d'un bloc d'alimentation pour alimenter ledit moteur, lesdits cylindre (2), moteur, moyen de commande et bloc d'alimentation étant montés dans un logement allongé (4) devant être monté à l'intérieur d'une région supérieure d'une ouverture de fenêtre ou de porte, ledit logement (4) ayant une partie base (14) adaptée pour être installée à l'intérieur de ladite ouverture de fenêtre et une partie capot (16) montée sur la partie base à des fins de mouvement entre une position fermée et une position ouverte, **caractérisé en ce que** ledit cylindre (2) est monté dans ladite partie capot (16) du logement.

2. Ensemble supérieur selon la revendication 1, dans lequel le moteur est agencé pour entraîner par rotation le cylindre (2) ou autrement coopérer avec l'écran (6) pour faire monter et descendre l'écran (6).

3. Ensemble supérieur selon l'une quelconque des revendications précédentes, dans lequel ladite partie capot (16) comporte une face avant du logement (4).

4. Ensemble supérieur selon la revendication 3, dans lequel ladite partie capot (16) est montée de manière pivotante sur ladite partie base (14) à des fins de mouvement pivotant entre lesdites positions ouverte et fermée autour d'un axe de pivotement sensiblement horizontal s'étendant de manière parallèle par rapport à un axe longitudinal du logement.

5. Ensemble supérieur selon la revendication 4, dans lequel ledit axe de pivotement est défini le long d'un bord inférieur de la partie capot (16) de telle sorte que la partie capot (16) pivote vers le bas depuis sa position fermée jusqu'à sa position ouverte.

6. Ensemble supérieur selon l'une quelconque des revendications précédentes, dans lequel ledit écran (6) s'étend depuis ledit logement au travers d'un espace allongé dans une partie inférieure du logement définie entre un côté inférieur de la partie capot (16) et un côté adjacent de la partie base (14) du logement (4).

7. Ensemble supérieur selon l'une quelconque des re-

vendications précédentes, dans lequel des moyens de retenue sont mis en oeuvre à des fins de retenue de la partie capot dans sa position fermée, lesdits moyens de retenue comportant au moins une broche de retenue agencée pour s'étendre au travers d'ouvertures alignées de manière coaxiale dans la partie base et la partie logement quand le capot est dans sa position fermée ou une ou plusieurs languettes élastiques (24) montées sur la partie base adaptées à des fins de mise en prise avec une ouverture de réception respective (26) dans la partie capot (16) quand la partie capot (16) est dans sa position fermée.

8. Ensemble supérieur selon l'une quelconque des revendications précédentes, dans lequel le cylindre (2) est monté de manière rotative entre des parois d'extrémité opposées (20, 22) de ladite partie capot (16).

9. Ensemble supérieur selon l'une quelconque des revendications précédentes, dans lequel ladite partie capot (16) comporte une paroi extérieure courbe (18) agencée pour renfermer au moins une partie de cylindre (2).

10. Ensemble supérieur selon l'une quelconque des revendications précédentes, dans lequel une paire de supports de montage (40) peuvent être mis en oeuvre à des fins de fixation sur l'ouverture de fenêtre au niveau de, ou de manière adjacente par rapport à, la face supérieure de l'ouverture de fenêtre, chaque extrémité du logement (4) ayant des moyens à des fins de mise en prise d'un support de montage respectif (40), ce par quoi les supports de montage (40) peuvent être attachés à l'ouverture de fenêtre de telle sorte que le logement (4) peut être mis en prise sur les supports de montage (40) à des fins de montage du logement (4) dans l'ouverture de fenêtre.

11. Ensemble supérieur selon la revendication 10, dans lequel un moyen de mise en prise sur chaque extrémité de la partie base comporte un évidement, ou fente, (80, 44) à des fins de réception d'une partie (42) d'un support respectif (40) de telle sorte que le logement (4) peut être mis en prise sur les supports de montage (40) à des fins de retenue du logement (4) dans l'ouverture de fenêtre.

12. Écran motorisé incorporant un ensemble supérieur selon l'une quelconque des revendications 1 à 11, dans lequel l'écran (6) est mobile entre une paire de rails de guidage espacés (10, 12) adaptés à des fins de montage de chaque côté de l'ouverture de fenêtre, un élément de guidage (8) étant monté sur une extrémité libre de l'écran (6) s'étendant entre lesdits rails de guidage (10, 12).

13. Écran selon la revendication 12, dans lequel ledit moteur est agencé à des fins d'entraînement de l'élément de guidage (8) de manière ascendante et descendante le long des rails de guidage par le biais d'une ou de plusieurs courroies d'entraînement (30).

14. Écran selon la revendication 13, dans lequel le cylindre (2) est tendu de telle sorte que l'écran (6) est sollicité vers une position relevée.

15. Écran selon l'une quelconque des revendications 12 à 14, dans lequel chaque rail de guidage (10, 12) comporte une bride définissant une extension sur une face avant du rail de guidage à des fins d'extension sur une face extérieure de l'ouverture de fenêtre pour fermer tout espace entre les côtés de l'ouverture de fenêtre et les rails de guidage (10, 12).

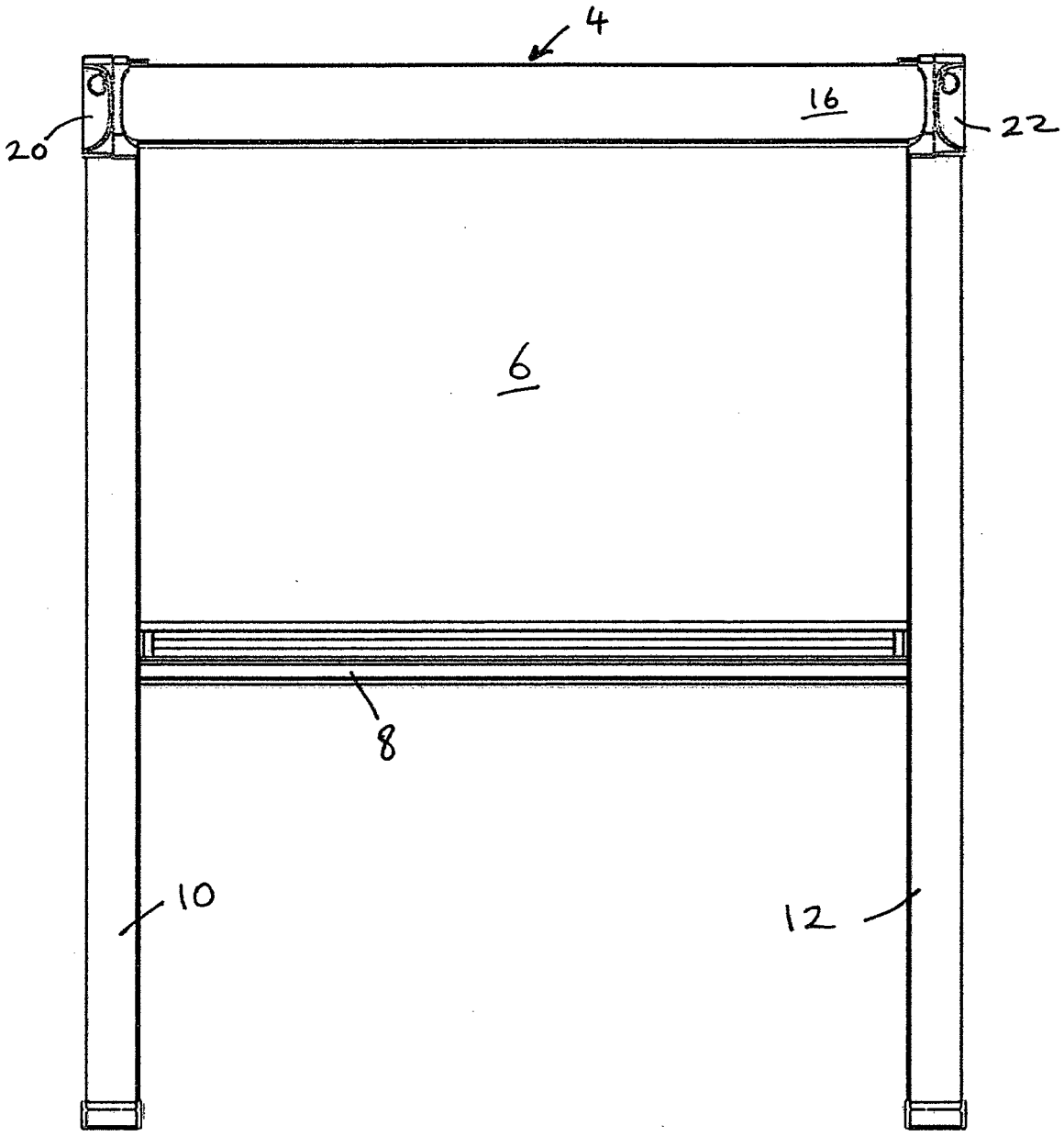


Figure 1

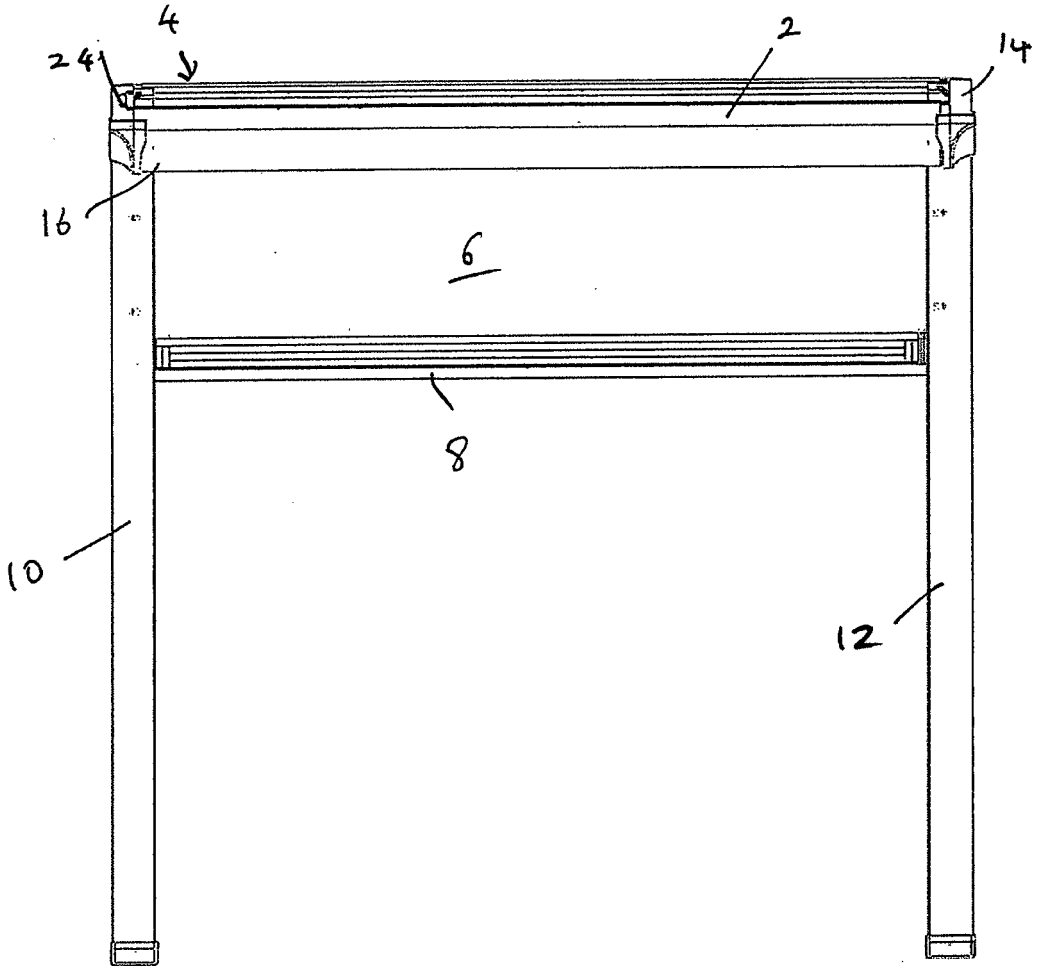


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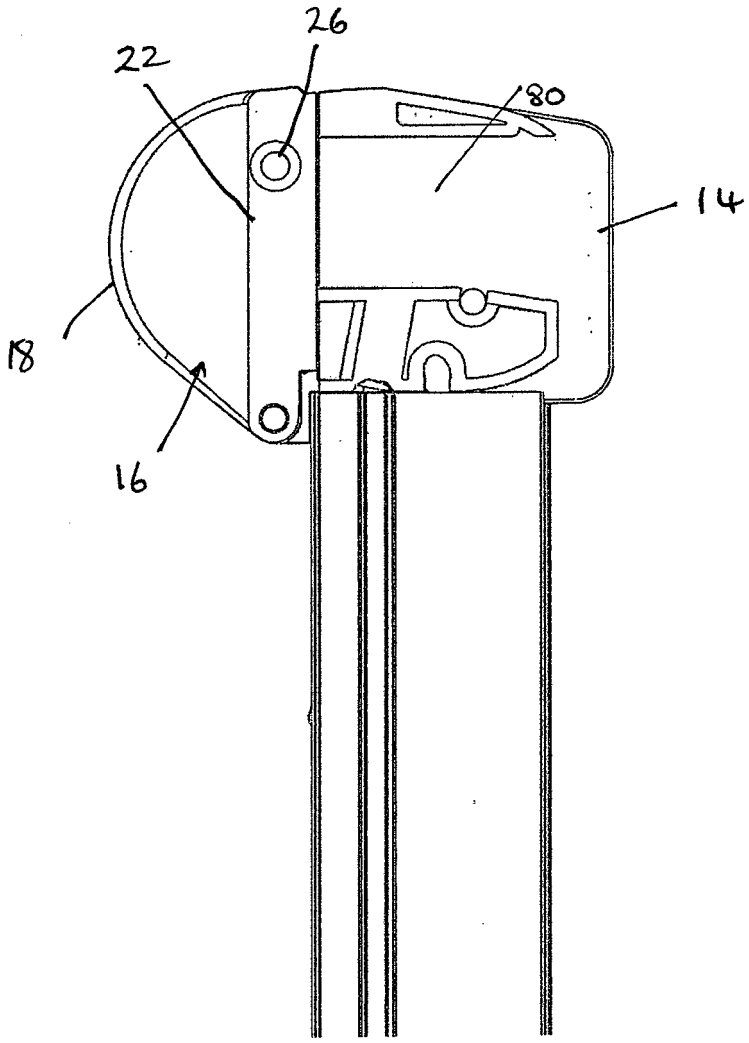


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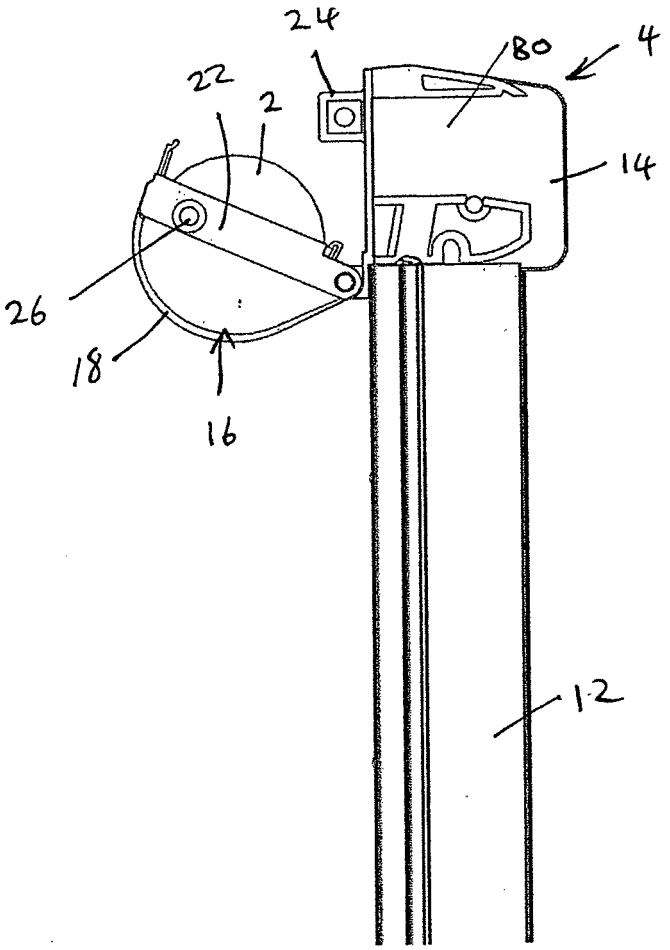


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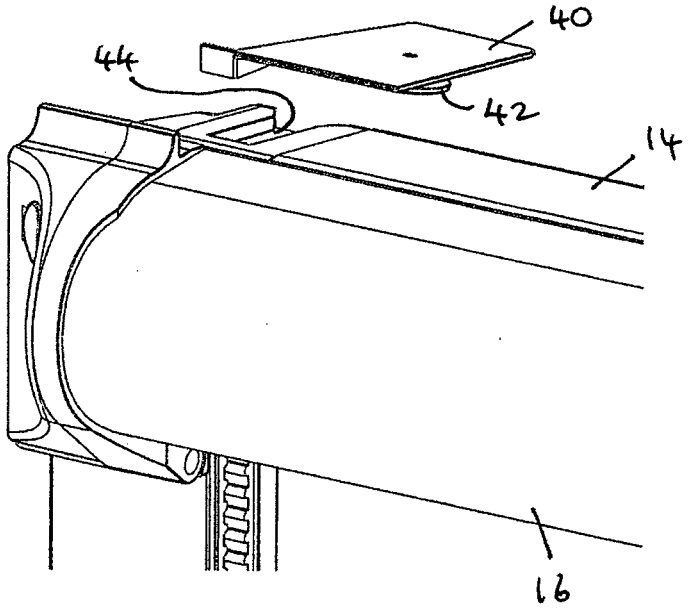


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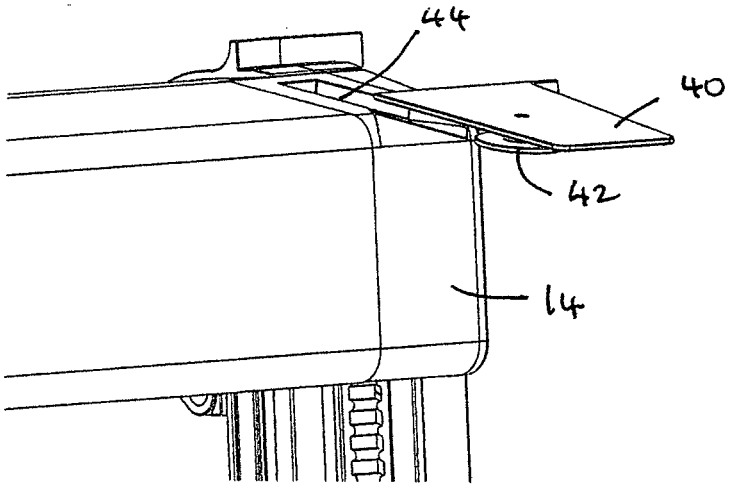


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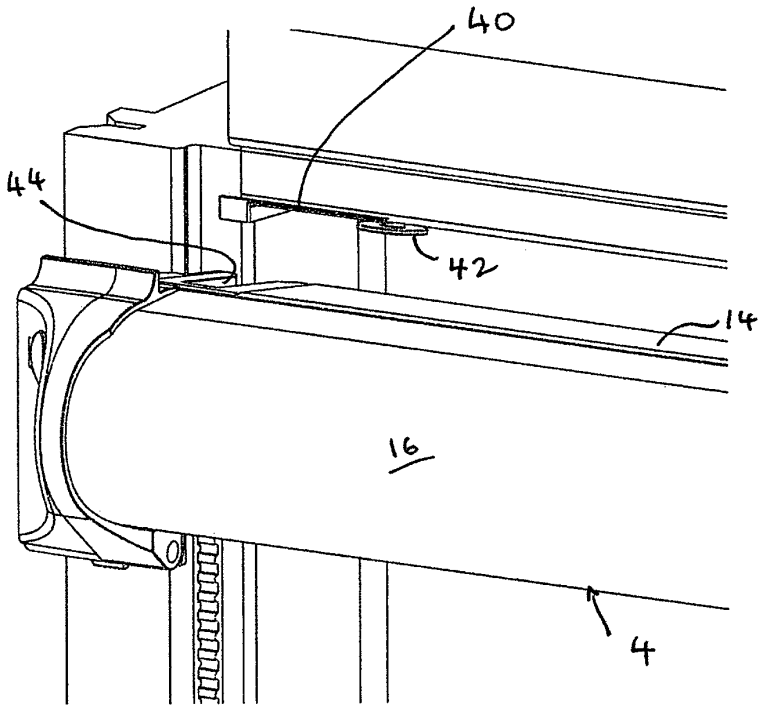


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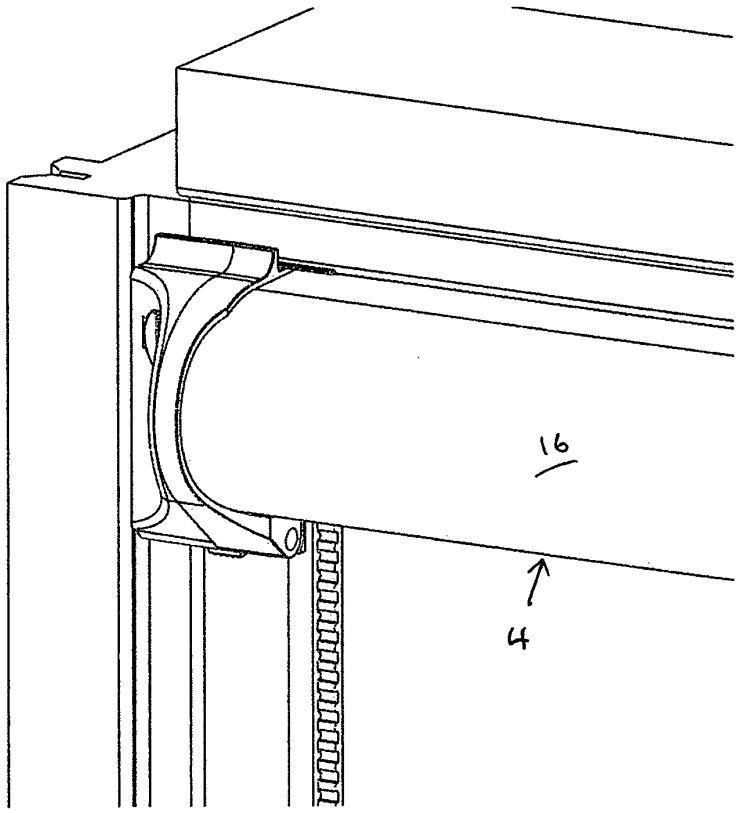


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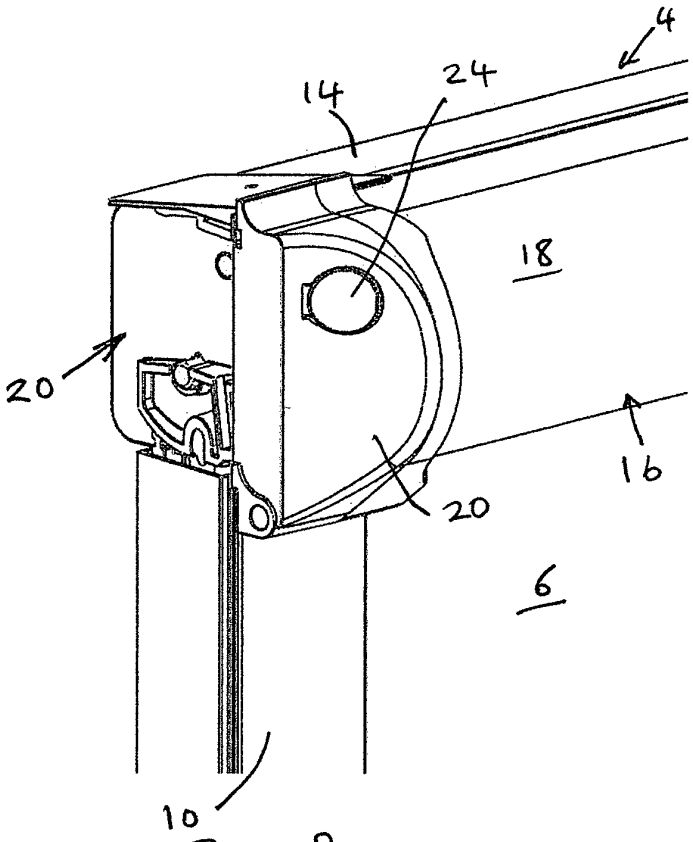


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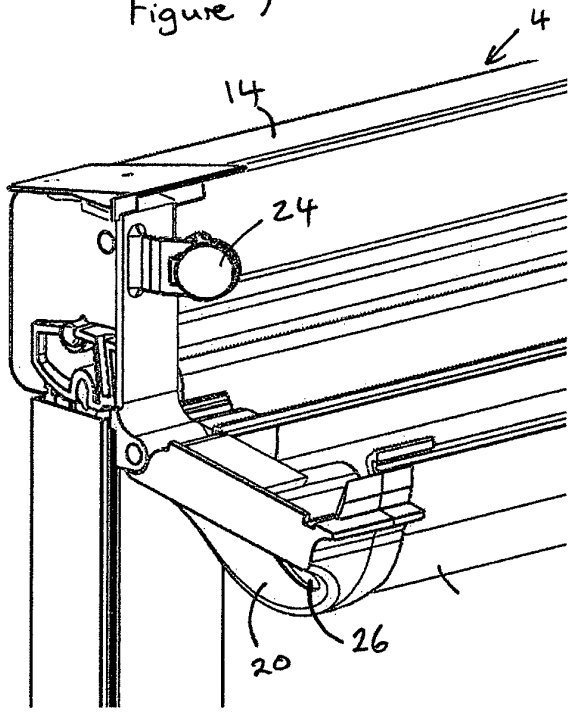


Figure 10

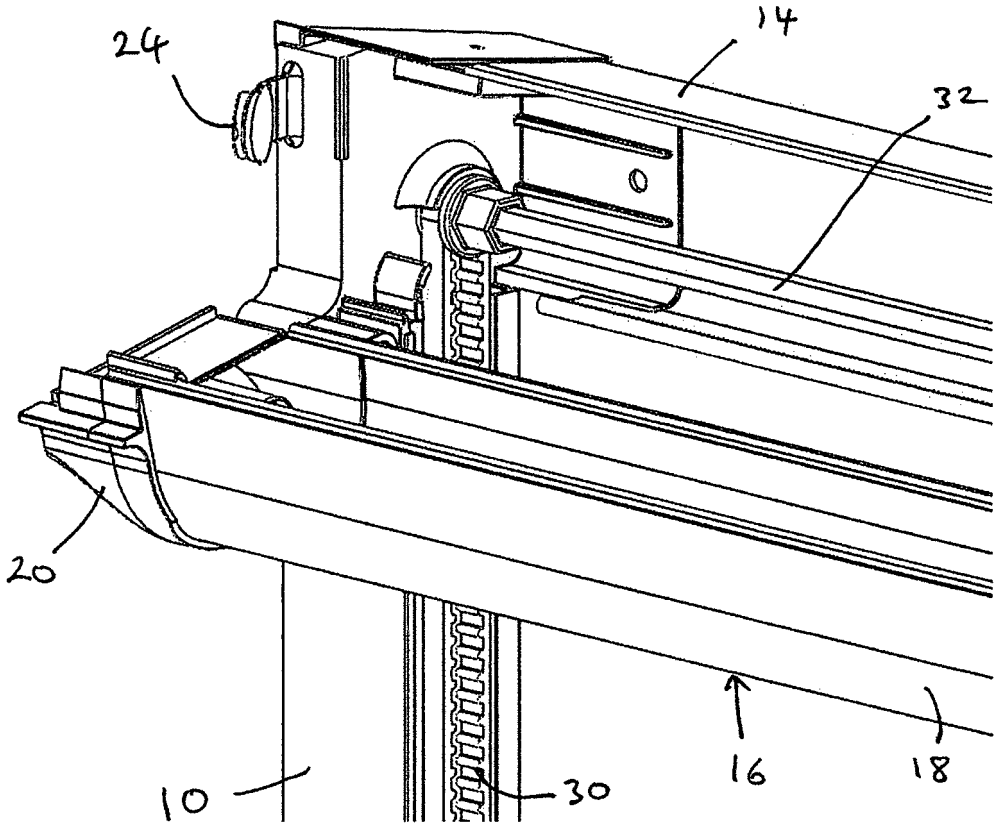


Figure 11

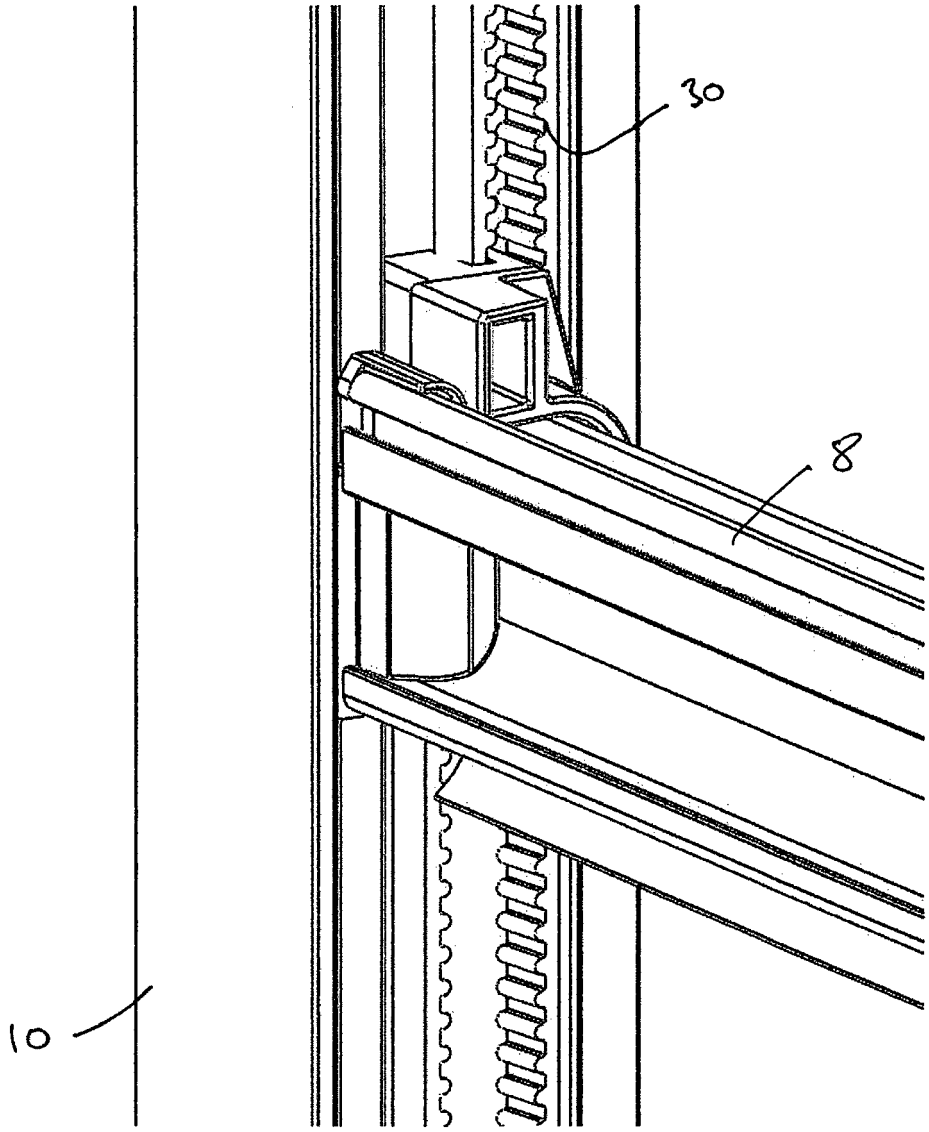


Figure 12

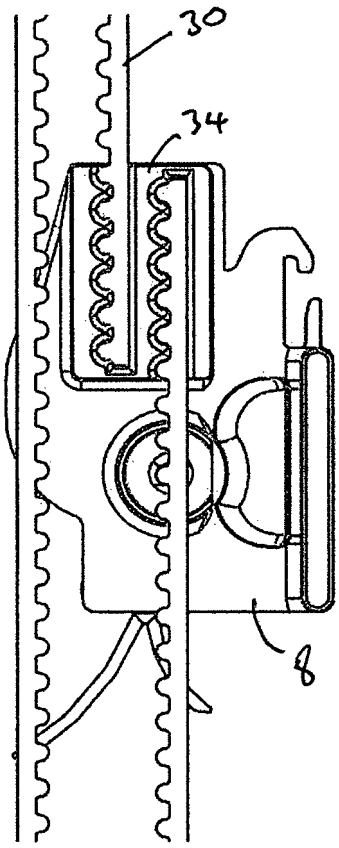


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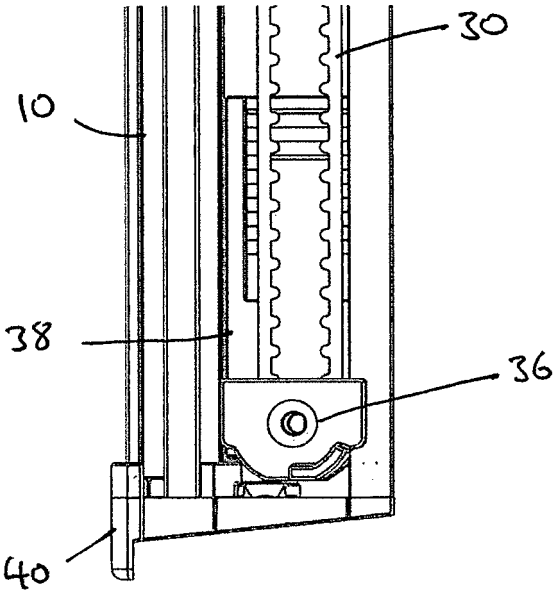


Figure 14

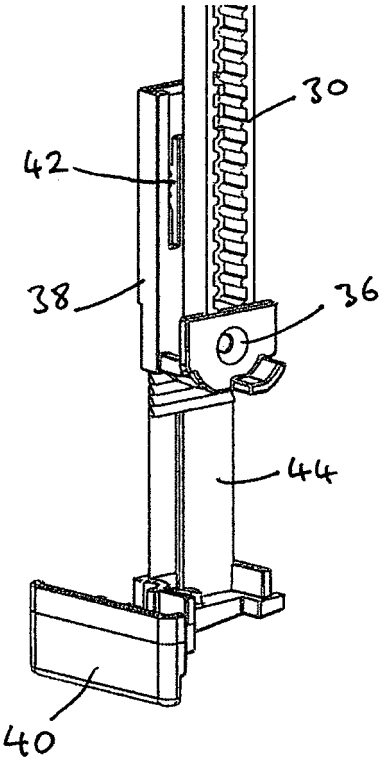


Figure 15

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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