

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication of patent specification :
22.02.89

(51) Int. Cl.⁴ : **E 06 B 9/36**

(21) Application number : **85301972.7**

(22) Date of filing : **21.03.85**

(54) **A vertical blind headrail end cap and assembly including such an end cap.**

(30) Priority : **16.04.84 GB 8409852**

(43) Date of publication of application :
30.10.85 Bulletin 85/44

(45) Publication of the grant of the patent :
22.02.89 Bulletin 89/08

(84) Designated contracting states :
BE DE FR IT NL

(56) References cited :
DE--A-- 3 213 096
GB--A-- 1 422 729
US--A-- 3 996 988

(73) Proprietor : **HUNTER DOUGLAS INDUSTRIES B.V.**
Piekstraat 2
NL-3071 EL Rotterdam (NL)

(72) Inventor : **Oskam, Herman**
Vlisterdijk 14
Bergambacht (NL)

(74) Representative : **Allen, William Guy Fairfax et al**
J.A. KEMP & CO. 14 South Square Gray's Inn
London WC1R 5EU (GB)

EP 0 159 812 B1

Note : Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid (Art. 99(1) European patent convention).

Description

The present invention relates to a vertical blind headrail end cap assembly and a kit including such an end cap.

A vertical blind headrail can have a variety of different forms of end cap and drive mechanisms for rotating the operating shaft of the headrail. The operating shafts themselves may take the form of a simple tilt rod in which case the travellers of the vertical blind are normally moved by pull cords. In an alternative arrangement the operating shaft is provided with a helical thread on it and this is used to translate the travellers to the desired position and thereafter to tilt them to the desired angle.

The drive mechanism for the operating shaft can also take many different forms. For example, it can be in the form of a pulley which is mounted on the shaft and is operated, for example, by a ball chain or a cord. Such a construction is shown, for example, in US-A-3 996 988. A pulley is illustrated mounted in a housing secured to a body portion of the end cap, the body portion being insertable into the end of the headrail. Alternatively it can be in the form of a wand tilter, that is one involving two bevel gears and an operating wand or rod.

These arrangements require various different types of end cap which requires an elaborate system of stocking of the various parts necessary to fulfill all users requirements.

DE-A-3 213 096 attempts to overcome this problem by providing a very complicated housing which has a portion which is made wide enough to accommodate the pulley and other portions which are designed to accommodate the gear wheels suitable for a wand tilter.

The present invention proposes that a plurality of different shaft drive means are provided, each having a separate housing, an operating shaft drive means rotatable in said housing, said drive means each including a hub, and a recess is formed in the body to accommodate the hub, means being associated with the outer face of the body portion for locating alternatively the housing of anyone of said plurality of shaft drive means.

With such an end cap one can utilize alternatively different types of drive means very readily using the same end cap.

To enable the end cap to be used with separately operable pull cords, the body portion may be provided with accommodation holes for at least two cord guide pins, said holes being spaced apart from one another and arranged with their centre axes parallel to the axis of the operating shaft.

The end cap assembly may further comprise, in the body portion, at least one accommodation space for a pull cord guide pulley, and at least one bearing space for rotatably accommodating a shaft for said pulley, said accommodation holes and said at least one bearing space being dimensioned to receive identical elements which can

each form either a guide pin or a pulley shaft, as appropriate. One can utilize the same elements, usually in the form of simple cylindrical pins, as the guide pins or the pulley shafts which reduces the number of parts which have originally to be stocked.

With such an assembly the shaft drive means may be in the form of a pulley and the housing may closely surround a part of the pulley circumference, the housing being provided with a number of cavities or projections and the housing located on, said cap body being formed with at least projection or cavity cooperating with one of said cavities or projections on the housing with respect to the end cap body portion. With such an arrangement the projection may be mounted on the end of a tongue on said body portion, enabling said projections to spring back and allow repositioning of the cover during or after installation of the assembly.

In an alternative construction, the operating shaft drive means may be in the form of a first gear and the housing rotatably accommodates a second gear for driving engagement with said first gear, the second gear being operable from the outside.

In this arrangement the housing may comprise a bearing for the end of the operating shaft and the second gear may form part of a wand operating construction. Advantageously the housing is fixed to the end cap by screws, and the locating means on the body portion of the end cap are screw holes.

The invention also contemplates a vertical blind headrail cap kit system comprising :

a) at least one end cap mountable in an end of the headrail, said end cap including a body portion insertable into said end of the headrail, means to determine the amount by which the body portion can be inserted into the headrail, a bore through the body for the passage of an operating shaft, a recess formed in the body ;

b) a pulley provided with a hub for engaging an operating shaft of the blind and being mountable in said recess ; and

c) a first housing for said pulley ; characterised in that the assembly further comprises :

d) a first gear provided with a hub for engaging an operating shaft of the blind, said first gear being interchangeable with said operating shaft and insertable in said recess ;

e) a second housing rotatably accommodating a second gear operatively engaging said first gear when said second housing is coupled to the end cap by locating means in the body portion of the end cap, said first and second housings being interchangeable with one another, provided the pulley and the first gear are also interchanged ;

f) at least one accommodation space and bearing space in said body portion ;

g) at least one cord guide pulley mounted in said accommodation space and a bearing for said

guide pulley or pulleys in said bearing space ; and
h) at least two cord guide pins mountable in accommodation holes in the body portion of the end cap.

With such a construction, which essentially forms a kit of parts, a user may have available several different arrangements to suit the particular requirements of the window to be covered by the vertical blind itself.

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

Figure 1 is an exploded perspective view of one embodiment of headrail end cap assembly according to the invention illustrating the end cap at one end ;

Figure 2 is an exploded perspective view of the end cap at the other end ;

Figure 3 is a view similar to Figure 1 of a second type of operating mechanism of the assembly ; and

Figure 4 is a perspective view from the other side of the operating mechanism shown in Figure 3.

Referring first to the construction illustrated in Figures 1 and 2, there is illustrated a headrail 10 provided with conventional internal longitudinal ribs 12. Inserted into this headrail is an end cap 14 (Figure 1), and at the other end an end cap 15 (Figure 2). These end caps are substantially identical but are mirror images of one another.

Each end cap is provided with a longitudinal bore 16 opening into a recess 18 in the body portion 20 of the end cap. Formed at the outer end of each end cap is an end flange 22, which has a substantially flat outer face and is arranged to engage against the end of the headrail 10 to limit the movement of the end cap into the end of the headrail.

Accommodation spaces 24 are formed in the outer face of the end cap and extend right through the end cap and are separated from one another by a partition 26.

Formed on the outer surface of the body portion 20 on one side is an upper bulge 28 and a lower bulge 30. The upper bulge is closed at the end 32.

One or two pulleys 34 can be inserted into the accommodation spaces 24 and a bearing shaft 36 can pass through the pulley or pulleys and also through the gap 38 formed in the partition 26, with the ends being accommodated within the upper bulge 32 and a groove 33. Since the upper bulge 28 is closed at the end 32, this limits the inward movement of the pin 36 and hence of the pulley or pulleys 34.

Three guide pins 40 which are of identical construction to the bearing shaft 36, are inserted into accommodation holes 42 so that pull cords for the travellers of the vertical venetian blind can pass between the pins 40, and be separated from one another, before passing over the pulleys 34.

The end gap is also provided with screwholes 44, 46 the latter extending within the lower bulge 30.

Also formed on the outer face of the end cap is a resilient tongue 48 having an outwardly extending projection 50 which can flex inwardly to a position in which its extremity is flush with the outer face of the flange.

The assembly is provided with a conventional operating drive shaft 52 which may either be a longitudinally grooved shaft, as shown, or can be a shaft provided with helical grooves which are used to move and operate the travellers. The drive shaft 52 passes through the longitudinal bore 16 which is concentric with the recess 18. In Figure 1 there is illustrated a drive pulley 54 provided with the usual means to engage a ball chain and having a hub 56 which passes through a central opening 58 in a cover indicated by the general reference numeral 60, the hub being accommodated within the recess 18. The cover is provided with an arcuate cover portion 62 to cover the bead chain carried on the pulley 54. The pulley 54 and cover 60 are retained in place on the operating shaft 52 by a slip nut 64 and spring 66, thus urging the cover against the outer face of the flange 22. It will be noted that the cover 60 is provided with a plurality of circumferentially spaced cavities 68, illustrated in the form of holes which pass right through the cover. These are positioned to engage selectively on the projection 50, thereby to position the cover portion 62 in one of several different rotational positions.

It will be seen from Figure 2 that a similar slip nut 65 is provided for mounting on the other end of the operating shaft 52 to hold the whole assembly intact.

Figure 3 illustrates another form of operating shaft drive mechanism. Since the headrail and end caps are identical, like parts have been indicated by like reference numerals. In place of the drive pulley 54 there is provided a wand operating gearbox indicated by the general reference numeral 70. This includes a housing 72 having countersunk holes 74 therein to accommodate screws 76 which can be threadedly engaged in the screwholes 44, 46 to hold the housing in place.

Formed essentially within the housing is a longitudinally extending bearing sleeve 78 having a through bore 80 to act as a bearing. The bore 80 is provided with a countersink at 82 to accommodate a slip nut 64 to hold the shaft 52 in position.

The gearbox includes a first bevel gear 84 having a hub 86 splined at 88 to engage in the grooves in the drive shaft 52.

The first bevel gear is in meshing engagement with a second bevel gear 86 having a hub 88 mounted for rotation in a bearing portion 90 formed in the housing, the hub having a ball connection 92 for connection to a wand operator. Rotation of the wand operator will cause rotation of the two bevel gears and thus of the operating drive shaft 52.

This construction also includes a slip nut 65 against a washer 94 and a spring 96 to hold the drive shaft 52 in place.

It will be thus seen that the construction of end

cap of the present invention allows one to use, at will, either a pulley drive arrangement as shown in Figures 1 and 2 or a wand operated gearbox arrangement is illustrated in Figures 3 and 4. The arrangement is such that either of these drives could be mounted at either end of the headrail using perfectly standard end caps. Thus, with the construction of the present invention, using only fourteen parts, one can have, right or lefthand end control for horizontal or sloping installations, a combined chain control for right or lefthand horizontal installations or a cord and wand control for right or lefthand horizontal installations. It will be understood therefore, that the construction of the present invention enables, with the minimum of parts, the maximum of versatility.

Claims

1. A vertical blind headrail end cap assembly comprising an end cap body portion (20), means (22) to determine the amount by which the body portion can be inserted into the headrail (10), a bore (16) through the body for the passage of an operating shaft, means (18) to accommodate the hub (56, 85) of an operating shaft drive means (54, 84) and means to locate the housing of said drive means, characterised in that a plurality of different separate shaft drive means (54-62, 70-92) are provided, each having a separate housing (60, 70), an operating shaft drive means (54, 56, 80-92) rotatable in said housing, said drive means each including a hub (56, 85) and in that a recess (18) is formed in the body to accommodate the hub and in that means (48) are associated with the outer face of the body portion (20) for locating alternatively the housing (60, 70) of any one of said plurality of shaft drive means.

2. An end cap assembly according to claim 1, characterised in that the body portion is provided with accommodation holes (42) for at least two cord guide pins (40), said holes being spaced apart from one another and arranged with their centre axes parallel to the axis of the operating shaft (52).

3. An end cap assembly according to claim 2, characterised in that it further comprises, in the body portion (20), at least one accommodation space (24) for a pull cord guide pulley (34), and at least one bearing space (38) for rotatably accommodating a shaft (36) for said pulley (39), said accommodation holes (42) and said at least one bearing space (38) being dimensioned to receive identical elements which can each form either a guide pin (40) or a pulley shaft (36), as appropriate.

4. An end cap assembly according to any preceding claim, characterised in that the shaft drive means is a pulley (54) and the housing (62) closely surrounds a part of the pulley circumference, said housing being provided with a number of cavities (68) or projections and the housing locating means on the end cap body portion being formed by at least one projection (50) or cavity cooperat-

ing with one of said cavities or projections on the housing to allow selective positioning of the housing with respect to the end cap body portion.

5. An end cap assembly according to claim 4, characterised in that the projection is mounted on the end of a tongue (48) on said body portion, enabling said projection to spring back and thereby allow repositioning of the cover during or after installation of the assembly.

6. An end cap assembly according to any one of claims 1 to 3, characterised in that the operating shaft drive means is a first gear (84), and the housing rotatably accommodates a second gear (87) for driving engagement with said first gear, said second gear being operable from the outside.

7. An end cap assembly according to claim 6, characterised in that the housing comprises a bearing (90) for the end of the operating shaft (92).

8. An end cap assembly according to claim 6 or 7, characterised in that the second gear (97) is part of a wand operating construction.

9. An end cap assembly according to any preceding claim, characterised in that said housing (62, 72) is fixed to the end cap by screws, the locating means at the body portion of the end cap being screw holes (44).

10. A vertical blind headrail kit comprising :

a) at least one end cap (14) mountable in an end of the headrail (10), said end cap including a body portion (20) insertable into said end of the headrail, means (22) to determine the amount by which the body portion can be inserted into the headrail, a bore (16) through the body for the passage of an operating shaft (52), a recess (18) formed in the body ;

b) a pulley (54) provided with a hub (56) for engaging an operating shaft (52) of the blind and being mountable in said recess (18) ; and

c) a first housing (62) for said pulley ; characterised in that the assembly further comprises :

d) a first gear (84) provided with a hub for engaging an operating shaft of the blind, said first gear being interchangeable with said operating shaft (52) and insertable in said recess (18) ;

e) a second housing (70) rotatably accommodating a second gear operatively engaging said first gear when said second housing is coupled to the end cap by locating means in the body portion of the end cap, said first and second housings being interchangeable with one another, provided the pulley and the first gear are also interchanged ;

f) at least one accommodation space (24) and bearing space (38) in said body portion (20) ;

g) at least one cord guide pulley (34) mounted in said accommodation space (24) and a bearing for said guide pulley or pulleys in said bearing space (38) ; and

h) at least two cord guide pins (40) mountable in accommodation holes (42) in the body portion of the end cap.

11. A vertical blind headrail system comprising a channel section headrail and at least one end cap assembly according to any one of claims 1 to

9 mounted in an end of the headrail.

Patentansprüche

1. Endkappeneinheit für die Kopfschiene einer Senkrechtlalousie mit einem Endkappenkörperabschnitt (20), Einrichtungen (22) zur Festlegung des Betrages, um den der Körperabschnitt in die Kopfschiene (10) eingesetzt werden kann, einer Bohrung (16) durch den Körper für den Durchgang einer Betätigungswelle, Einrichtungen (18) zur Aufnahme der Nabe (56, 85) einer Betätigungswellenantriebseinrichtung (54, 84) und Einrichtungen zur Anordnung des Gehäuses der Antriebseinrichtung, dadurch gekennzeichnet, daß eine Vielzahl von unterschiedlichen getrennten Wellenantriebseinrichtungen (54/62, 70/92) vorgesehen ist, die jeweils ein getrenntes Gehäuse (60, 70) besitzen, wobei eine Betätigungswellenantriebseinrichtung (54, 56, 80/92) im Gehäuse drehbar ist und die Antriebseinrichtungen jeweils eine Nabe (56, 85) umfassen, daß eine Ausnehmung (18) im Körper zur Aufnahme der Nabe ausgebildet ist und daß Einrichtungen (48) der Außenfläche des Körperabschnitts (20) zur abwechselnden Lagerung des Gehäuses (60, 70) von einer aus der Vielzahl der Wellenantriebseinrichtungen zugeordnet sind.

2. Endkappeneinheit nach Anspruch 1, dadurch gekennzeichnet, daß der Körperabschnitt mit Aufnahmelöchern (42) für mindestens zwei Schnurführungsstifte (40) versehen ist, die im Abstand voneinander und mit ihren Mittelachsen parallel zur Achse der Betätigungswelle (52) angeordnet sind.

3. Endkappeneinheit nach Anspruch 2, dadurch gekennzeichnet, daß sie des weiteren im Körperabschnitt (20) mindestens einen Aufnahmeraum (24) für eine Zugschnurführungsscheibe (34) und mindestens einen Lagerraum (38) zur drehbaren Aufnahme einer Welle (36) für die Scheibe (39) aufweist, wobei die Aufnahmelöcher (42) und der mindestens eine Lagerraum (38) so bemessen sind, daß sie identische Elemente aufnehmen, die in geeigneter Weise jedes entweder einen Führungsstift (40) oder eine Scheibenwelle (36) bilden können.

4. Endkappeneinheit nach einem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß es sich bei der Wellenantriebseinrichtung um eine Scheibe (54) handelt, daß das Gehäuse (62) einen Teil des Scheibenumfangs eng umgibt und mit einer Reihe von Hohlräumen (68) oder Vorsprüngen versehen ist und daß die Einrichtungen zum Anordnen des Gehäuses am Endkappenkörperabschnitt durch mindestens einen Vorsprung (50) oder Hohlraum gebildet werden, der mit einem der Hohlräume oder Vorsprünge am Gehäuse zusammenwirkt und eine wahlweise Positionierung des Gehäuses relativ zum Endkappenkörperabschnitt ermöglicht.

5. Endkappeneinheit nach Anspruch 4, dadurch gekennzeichnet, daß der Vorsprung am Ende einer Zunge (48) am Körperabschnitt mon-

tiert ist, wodurch der Vorsprung zurückfedern und dadurch eine Repositionierung der Abdeckung während oder nach der Installation der Einheit ermöglichen kann.

6. Endkappeneinheit nach einem der Ansprüche 1 bis 3, dadurch gekennzeichnet, daß die Antriebseinrichtung für die Betätigungswelle ein erstes Zahnrad (84) ist und daß das Gehäuse ein zweites Zahnrad (87) drehbar aufnimmt, das mit dem ersten Zahnrad reibend in Eingriff steht und von außen betätigbar ist.

7. Endkappeneinheit nach Anspruch 6, dadurch gekennzeichnet, daß das Gehäuse ein Lager (90) für das Ende der Betätigungswelle (92) umfaßt.

8. Endkappeneinheit nach Anspruch 6 oder 7, dadurch gekennzeichnet, daß das zweite Zahnrad (97) einen Teil einer Wandbetätigungskonstruktion darstellt.

9. Endkappeneinheit nach einem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß das Gehäuse (62, 72) durch Schrauben an der Endkappe fixiert ist und daß die Positionierungseinrichtungen am Körperabschnitt der Endkappe Schraubenlöcher (44) sind.

10. Kopfschieneneneinheit für eine Senkrechtlalousie mit

a) mindestens einer Endkappe (14), die in einem Ende der Kopfschiene (10) montierbar ist und einen Körperabschnitt (20), der in das Ende der Kopfschiene einsetzbar ist, Einrichtungen (22) zur Festlegung des Betrages, um den der Körperabschnitt in die Kopfschiene eingesetzt werden kann, eine Bohrung (16) durch den Körper zum Durchgang einer Betätigungswelle (52) und eine im Körper ausgebildete Ausnehmung (18) umfaßt ;

b) einer mit einer Nabe (56) versehenen Scheibe (54) für den Eingriff mit einer Betätigungswelle (52) der Jalousie, die in der Ausnehmung (18) montierbar ist ; und

c) einem ersten Gehäuse (62) für die Scheibe ; dadurch gekennzeichnet, daß die Einheit des weiteren umfaßt :

d) ein erstes Zahnrad (84), das mit einer Nabe zum Eingriff mit einer Betätigungswelle der Jalousie versehen und mit der Betätigungswelle (52) austauschbar sowie in die Ausnehmung (18) einsetzbar ist ;

e) ein zweites Gehäuse (70), das drehbar ein zweites Zahnrad aufnimmt, welches mit dem ersten Zahnrad in Eingriff steht, wenn das zweite Gehäuse über Positionierungseinrichtungen im Körperabschnitt der Endkappe mit der Endkappe verbunden ist, wobei das erste und zweite Gehäuse austauschbar sind, wenn auch die Scheibe und das erste Zahnrad ausgetauscht werden ;

f) mindestens einen Aufnahmeraum (24) und Lagerraum (38) im Körperabschnitt (20) ;

g) mindestens eine Schnurführungsscheibe (34), die im Aufnahmeraum (24) montiert ist, und einem Lager für die Führungsscheibe oder Scheiben im Lagerraum (36) ; und

h) mindestens zwei Schnurführungsstifte (40), die in Aufnahmelöchern (42) im Körperab-

schnitt der Endkappe montierbar sind.

11. Kopfschienensystem für eine Senkrechtlousie mit einer kanalförmigen Kopfschiene und mindestens einer Endkappeneinheit gemäß einem der Ansprüche 1 bis 9, die in einem Ende der Kopfschiene montiert ist.

Revendications

1. Capuchon d'extrémité de barre d'un store vertical comprenant un corps (20) de capuchon, un moyen (22) pour déterminer la quantité avec laquelle le corps peut être inséré dans la barre (10), un alésage (16) dans le corps pour le passage d'un arbre de manœuvre, un moyen (18) pour recevoir le moyeu (56, 85) d'un moyen (54, 84) d'entraînement de l'arbre de manœuvre et un moyen pour positionner le logement du moyen d'entraînement, caractérisé en ce qu'une multitude de moyens séparés différents (54-62, 70-92) d'entraînement d'arbre sont prévus, chacun ayant un logement séparé (60, 70), un moyen (54, 56, 80-92) d'entraînement d'arbre de manœuvre pouvant tourner dans le logement, les moyens d'entraînement comprenant chacun un moyeu (56, 85), et en ce qu'un évidement (18) est ménagé dans le corps pour recevoir le moyeu, et en ce que des moyens (48) sont associés à la face extérieure du corps (20) pour positionner alternativement le logement (60, 70) de l'un quelconque de la multitude de moyens d'entraînement d'arbre.

2. Capuchon d'extrémité selon la revendication 1, caractérisé en ce que le corps comporte des trous de réception (42) pour au moins deux axes (40) de guidage de corde, les trous étant espacés l'un de l'autre et disposés avec leurs axes parallèles à l'axe de l'arbre de manœuvre (52).

3. Capuchon d'extrémité selon la revendication 2, caractérisé en ce qu'il comprend en outre, dans le corps (20), au moins un espace de réception (24) pour une poulie (34) de guidage de corde à traction, et au moins un espace d'appui (38) pour recevoir en rotation un arbre (36) pour la poulie (39), les trous de réception (42) et l'espace d'appui (38) étant dimensionnés pour recevoir des éléments identiques qui peuvent former chacun soit un axe de guidage (40) soit un arbre de poulie (36), selon le cas approprié.

4. Capuchon d'extrémité selon l'une quelconque des revendications précédentes, caractérisé en ce que le moyen d'entraînement d'arbre est une poulie (54) et le logement (62) entoure étroitement une partie à la circonférence de la poulie, le logement comportant un certain nombre de cavités (68) ou de saillies et le moyen de positionnement de logement sur le corps du capuchon d'extrémité étant formé par au moins une saillie (50) ou une cavité coopérant avec l'une des cavités ou des saillies du logement pour permettre un positionnement sélectif du logement par rapport au corps du capuchon d'extrémité.

5. Capuchon d'extrémité selon la revendication 4, caractérisé en ce que la saillie est montée sur l'extrémité d'une languette (48) du corps, permet-

tant à la saillie de revenir élastiquement et par conséquent d'autoriser le repositionnement du couvercle pendant ou après l'installation du capuchon.

6. Capuchon d'extrémité selon l'une quelconque des revendications 1 à 3, caractérisé en ce que le moyen d'entraînement de l'arbre de manœuvre est un premier engrenage (84), et le logement reçoit en rotation un second engrenage (87) pour engagement moteur avec le premier engrenage, le second engrenage pouvant être actionné à partir de l'extérieur.

7. Capuchon d'extrémité selon la revendication 6, caractérisé en ce que le logement comprend un palier (90) pour l'extrémité de l'arbre de manœuvre (92).

8. Capuchon d'extrémité selon la revendication 6 ou 7, caractérisé en ce que le second engrenage (97) fait partie d'une construction d'actionnement par baguette.

9. Capuchon d'extrémité selon l'une quelconque des revendications précédentes, caractérisé en ce que le logement (62, 72) est fixé au capuchon par des vis, le moyen de positionnement au corps du capuchon d'extrémité étant des trous filetés (44).

10. Kit de barre de store vertical, comprenant :

a) au moins un capuchon d'extrémité (14) pouvant être monté sur une extrémité de la barre (10), le capuchon d'extrémité comportant un corps (20) pouvant être inséré dans l'extrémité de la barre, un moyen (22) pour déterminer la quantité avec laquelle le corps peut être inséré dans la barre, un alésage (16) dans le corps pour le passage d'un arbre de manœuvre (52), un évidement (18) ménagé dans le corps ;

b) une poulie (54) comportant un moyeu (56) pour l'engagement d'un arbre de manœuvre (52) du store et pouvant être monté dans l'évidement (18) ; et

c) un premier logement (62) pour la poulie ; caractérisé en ce que l'ensemble comprend en outre :

d) un premier engrenage (84) comportant un moyeu pour recevoir un arbre de manœuvre du store, le premier engrenage étant interchangeable avec l'arbre de manœuvre (52) et pouvant être inséré dans l'évidement (18) ;

e) un second logement (70) recevant en rotation un second engrenage fonctionnellement en prise avec le premier engrenage lorsque le second logement est accouplé au capuchon d'extrémité par un moyen de positionnement dans le corps du capuchon d'extrémité, les premier et second logements étant interchangeables l'un avec l'autre, dans la mesure où la poulie et le premier engrenage le sont également ;

f) au moins un espace de réception (24) et un espace d'appui (38) dans le corps (20) ;

g) au moins une poulie (34) de guidage de corde montée dans l'espace de réception (24) et un palier pour la ou les poulies de guidage dans l'espace d'appui (38) ; et

h) au moins deux axes de guidage de corde (40) pouvant être montés dans des trous de

réception (42) du corps du capuchon d'extrémité.

11. Système à barre de store vertical comprenant une barre ayant une section en forme de

canal et au moins un capuchon d'extrémité selon l'une quelconque des revendications 1 à 9, monté dans une extrémité de la barre.

5

10

15

20

25

30

35

40

45

50

55

60

65

7

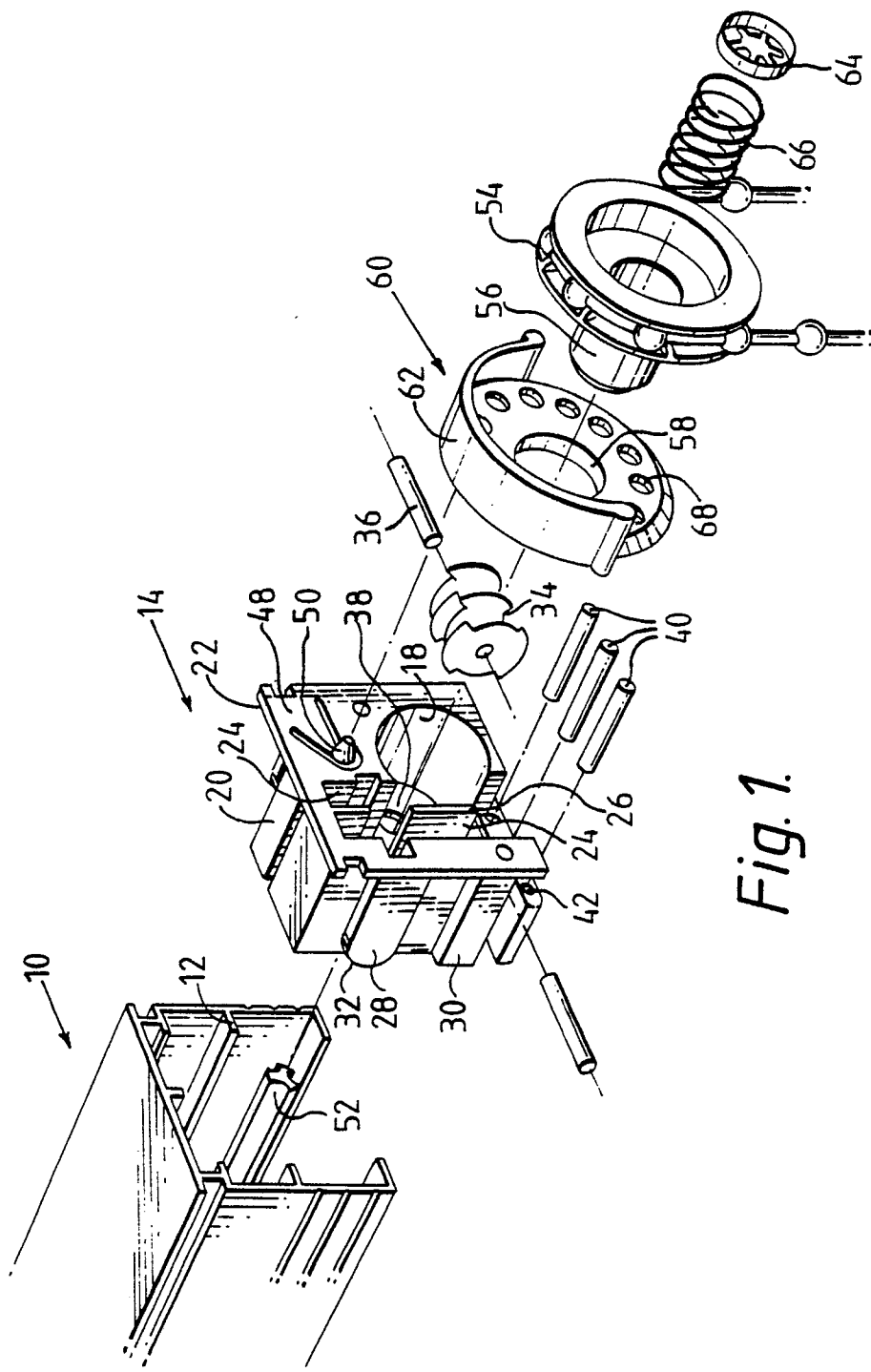


Fig. 1.

