

(19)



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(11)

**EP 0 506 203 B1**

(12)

**EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention  
of the grant of the patent:  
**21.02.1996 Bulletin 1996/08**

(51) Int. Cl.<sup>6</sup>: **A47H 15/02**

(21) Application number: **92200883.4**

(22) Date of filing: **27.03.1992**

(54) **Drapery suspension system**

Vorhangaufhängesystem

Système de suspension de rideaux

(84) Designated Contracting States:  
**BE DE ES FR LU NL PT**

(30) Priority: **28.03.1991 NL 9100553**

(43) Date of publication of application:  
**30.09.1992 Bulletin 1992/40**

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## Description

This invention relates to a drapery suspension system, substantially consisting of a rail section of C-shaped cross-section and a series of roller elements slidably mounted in the rail section.

Such a drapery suspension system is disclosed in U.S.-A-3,293,685. This known system, in which the roller elements are mounted between the flanges of the C-shaped section, which have been bent so as to be directed to each other, has the drawback that the roller elements can only be inserted into the rail section at one end or at the other end thereof. When mounting the rail section, it is accordingly required that between an end of the rail section and an adjacent sidewall an interspace is maintained to permit the roller elements to be inserted into the rail. Such an interspace is not desirable from an aesthetic point of view. If in this known system a roller element becomes defective, replacement thereof requires that a number of roller elements be removed from the rail section before the defective roller element can be removed from the rail section and replaced by another roller element, whereafter all the roller elements that have been removed must be inserted laterally into the rail section again from the end thereof.

If it is desired for the rail section to be mounted in such a manner that no space is left between the ends of the rail section and the adjacent sidewalls, it is necessary to insert as many roller elements into the rail section as there are folds in the drapery before mounting the rail section on the ceiling or a wall. When at a later time the drapery is to be replaced by another material with a corresponding, different number of folds, the drapery suspension system must be demounted to enable the newly required number of roller elements to be inserted into the rail section.

It is an object of the present invention to provide a drapery suspension system in which these drawbacks have been overcome. To that end, the drapery suspension system according to the invention is characterized in that each roller element comprises a travelling roller which is capable of running over the bottom of the rail section and is mounted in a chassis of plastics, in which on the side remote from the bearing surface of the travelling roller a hole is provided so as to form a resiliently depressible arcuate wall whereby the roller element (11) is made resilient in a direction perpendicular to the longitudinal axis of the rail section (1) and parallel to the principal plane thereof, enabling said roller element to be clicked into or removed from said rail section at any point thereof.

In this way a drapery suspension system has been obtained which can be so mounted as to abut the adjacent sidewalls in the desired aesthetic manner, while the number of roller elements can easily be adjusted to the drapery to be suspended or the number of folds present therein. Defective roller elements can easily be removed and replaced.

Mounting the travelling roller in a chassis moreover offers the advantage that the travelling rollers cannot jam in the rail section when the draperies attached thereto are being opened.

The amount of spring travel of the travelling roller chassis is selected such that when the arcuate wall has been depressed, the travelling roller can be removed from or clicked into the rail by means of a pivoting motion.

It is observed that DE-C-581,364 discloses a drapery suspension system consisting of a rail section and roller elements which can be moved along this section, which roller elements can be fitted on and removed from the rail section at any point thereof. The rail section is I-shaped in cross-section and each roller element comprises two travelling rollers which are mounted at the end of two legs which are coupled for mutual hinging motion by means of a resilient hinge. The legs of each roller element can be opened in the manner of a clothes-peg or scissors so as to shift the roller elements from below over the lower flange of the I-shaped section. In the closed position, the two travelling rollers run on opposite sides of the principal plane of the section over the lower flange thereof extending in transverse direction.

In addition to the aesthetic drawback that the roller elements in mounted position are not hidden from view, there is the technical drawback that the roller elements each consist of two travelling rollers and legs that can be hinged relative to each other.

Further, U.S.-A-2,848,735 discloses a drapery suspension system in which the carrier elements slidably mounted in the C-shaped rail section are provided with resilient legs which provide the possibility of mounting or dismounting a carrier element at any point of the rail section. The carrier elements, as in the system according to U.S.-A-3,293,685, discussed above, are mounted between the edges of the C-shaped rail section that have been so bent as to be directed to each other, but do not comprise travelling rollers that can be moved substantially without resistance. On the contrary, the carrier elements move in sliding or shifting fashion over the bent edge of the rail section.

Embodiments of the drapery suspension system according to the invention are now further elucidated with reference to the accompanying drawings, in which:

Fig. 1 shows a drapery suspension system according to the invention, mounted on a ceiling;

Fig. 2 is a front view of the roller element according to the invention;

Fig. 3 is a section taken on the line III-III in Fig. 2; and Fig. 4 shows the drapery suspension system according to the invention, in the embodiment suitable for mounting on a wall.

The drapery suspension system according to Fig. 1 comprises a rail section 1 of C-shaped cross-section, closed on three sides and comprising a lower edge 2 and an upper edge 3 which have been bent and directed towards each other. The upper edge 3 comprises an

attaching section 4 formed thereon, which can be mounted between the legs 6 and 7 of a retaining clamp 5 via which the rail section 1 can be screwed to a ceiling 9 by means of screws 8. The number of clamps to be used naturally depends on the weight of the drapery to be suspended. The highest point of the attaching section 4 is disposed lower than the top surface 10 of the rail section 11 by a distance h, so that this top surface 10 in mounted position can abut the ceiling 9 so as to obviate the aesthetically undesirable gap between the ceiling 9 and the top surface 10 of the rail section 1.

Arranged within the rail section 1 are a plurality of roller elements 11 which can be moved in a direction perpendicular to the plane of the paper. The construction of this roller element 11 is shown to an enlarged scale in Figs 2 and 3.

The roller element 11 comprises a travelling roller proper 12 which is bearing-mounted on a rivet pin 13 within a chassis 14 made of plastics. By means of the rivet pin, a vertically depending carrying member 15 is mounted on the chassis 14. The end of the carrying member 15 is bent in such a manner that this end 16 is located in the principal plane P of the travelling roller 12. Provided in the carrying member 15 adjacent the end 16 is an opening 17 for receiving the drapery hooks.

The travelling roller chassis 14 is provided at the top thereof with a sickle-shaped hole 18 so as to form a resiliently depressible arcuate wall 19 which is bounded by the circumferential surface 20. The distance L between the circumferential surface 20 and the travelling surface of roller 12 is only slightly smaller than the internal distance between the top and bottom surfaces 10 of the C-shaped rail section 1, so that the roller element 11 remains locked within the rail section 1, and the surface 20 remains clear of the top surface of the rail section 1 during the rolling motion of the roller elements 11.

Inserting the roller elements 11 into the rail section 1 takes place in the manner as shown schematically in Fig. 1. The roller element is inserted obliquely into the rail section 1 according to the direction F until the circumferential surface 20 abuts against the transitional arc between the horizontal and vertical plane of the rail section 1. Then some pressure is brought to bear on the roller element 11 in the direction F, so that the resiliently depressible arcuate wall 19 can be depressed over the spring travel distance v until the wall 19 abuts the bottom surface of the sickle-shaped hole 18. In that position, the roller element 11 can be pivoted in the direction R, whereby the bottom surface of the travelling roller 12 can pass the upright lower edge 2 of the rail section 1, whereafter the roller element 11 is locked in the rail section in the position shown in Fig. 1. Removal of the roller element is effected in exactly the same manner. The roller element 11 is pushed up and then pivoted in the opposite direction, whereafter the roller element 11 can be removed from the rail section 1 according to the direction F.

Under the weight of a drapery, the roller elements 11 remain in the desired, vertical position owing to the

fact that the point of suspension, i.e., the end 16, is located in the principal plane P of the travelling roller 12 of the roller element 11.

Fig. 4 shows the drapery suspension system according to Fig. 1, but now it is mounted on a wall 25. For that purpose, the retaining clamps 5 are affixed to the horizontal leg of an L-shaped bracket 21, which is screwed to the wall 25 by means of two screws 22. By means of a bolt 23 the clamp 5 is fixed to the horizontal leg 21 provided with a threaded hole 24 for receiving the bolt 23.

#### Claims

1. A drapery suspension system substantially consisting of a rail section (1) of C-shaped cross-section and a series of roller elements (11) slidably mounted in said rail section (1), characterized in that each roller element (11) comprises a travelling roller (12) which is capable of running over the bottom of the rail section (1) and is mounted in a chassis (14) of plastics, in which on the side remote from the bearing surface of the travelling roller (12) a hole (18) is provided so as to form a resiliently depressible arcuate wall (19) whereby the roller element (11) is made resilient in a direction perpendicular to the longitudinal axis of the rail section (1) and parallel to the principal plane thereof, enabling said roller element (11) to be clicked into or removed from said rail section (1) at any point thereof.
2. A drapery suspension system according to claim 1, characterized in that the spring travel (v) of the travelling roller chassis (14) has been chosen such that when the arcuate wall (19) has been depressed, the travelling roller (12) can be clicked into and removed from the rail section (1) by a pivotal motion.
3. A drapery suspension system according to claims 1-2, characterized in that the travelling roller chassis (14) is connected by means of a rivet pin (13) to a carrying member (15) whose lower end (16) is bent back into the principal plane (P) of the travelling roller (12), which travelling roller (12) is bearing mounted on the rivet pin (13).
4. A drapery suspension system according to claims 1-3, characterized in that the C-shaped rail section (1) has formed thereon an attaching section (4) which forms an extension of the upper edge (3) of the C-shaped section (1), the highest point of the attaching section (4) being located below (h) the highest surface of the C-shaped rail section (1).
5. A drapery suspension system according to claims 1-4, characterized in that the C-shaped rail section (1) can be suspended using resilient retaining clamps (5), whose ends (6, 7) grip the attaching section (4).

## Patentansprüche

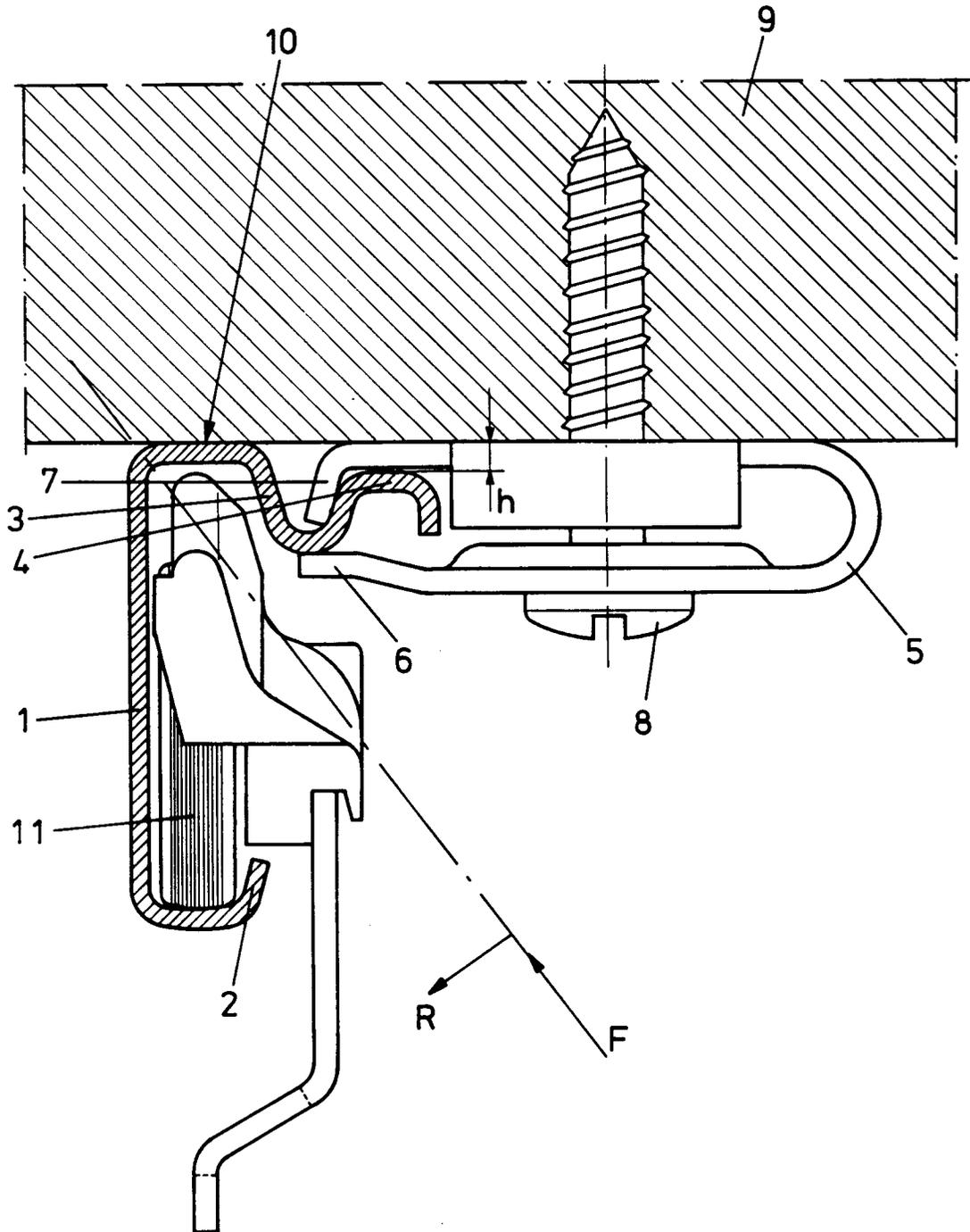
1. Vorhangaufhängesystem, im wesentlichen bestehend aus einem Schienenprofil (1) mit C-förmigem Querschnitt und einer Reihe von in diesem Schienenprofil (1) verschiebbar aufgenommenen Rollenelementen (11), dadurch gekennzeichnet, daß jedes Rollenelement (11) aus einer Laufrolle (12) besteht, die über den Boden des Schienenprofils (1) laufen kann und in einem Rahmen (14) aus Kunststoff aufgenommen ist, in dem auf der von der Tragfläche der Laufrolle (12) abgekehrten Seite eine Aussparung (18) angebracht ist, um einen elastisch eindrückbaren bogenförmigen Damm (19) zu bilden, wobei das Rollenelement (11) in einer Richtung senkrecht zu der Längsachse des Schienenprofils (1) und parallel zu dessen Hauptebene federnd ausgebildet ist, so daß das Rollenelement (11) an jeder beliebigen Stelle in das Schienenprofil (1) eingesetzt oder von diesem abgenommen werden kann. 5 10 15 20
2. Vorhangaufhängesystem nach Anspruch 1, dadurch gekennzeichnet, daß der Federweg (v) des Laufrollenrahmens (14) derart gewählt ist, daß bei eingedrücktem bogenförmigem Damm (19) die Laufrolle (12) durch eine Verschwenkbewegung in das schienenprofil (1) eingesetzt und von diesem abgenommen werden kann. 25
3. Vorhangaufhängesystem nach Ansprüchen 1-2, dadurch gekennzeichnet, daß der Laufrollenrahmen (14) durch eine Niete (13) mit einem Tragorgan (15) verbunden ist, dessen untere Seite (16) bis in die Hauptebene (P) der Laufrolle (12) zurückgebogen ist, welche Laufrolle (12) auf der Niete (13) gelagert ist. 30 35
4. Vorhangaufhängesystem nach Ansprüchen 1-3, dadurch gekennzeichnet, daß das C-förmige Schienenprofil (1) mit einem angeformten Befestigungsprofil (4) versehen ist, das eine Fortsetzung des oberen Randes (3) des C-förmigen Schienenprofils (1) bildet, wobei der höchste Punkt des Befestigungsprofils (4) unter (h) der höchsten Ebene des C-förmigen Schienenprofils (1) liegt. 40 45
5. Vorhangaufhängesystem nach Ansprüchen 1-4, dadurch gekennzeichnet, daß das C-förmige Schienenprofil (1) mittels federnder Klemmbügel (5), deren Enden (6, 7) das Befestigungsprofil (4) umgreifen, aufhängbar ist. 50

chaque élément en roulette (11) se compose d'une roulette de déplacement (12) qui est capable de circuler sur le bas de la section en rail (1) et est fixée dans un châssis (14) en plastique dans lequel est ménagé un orifice (18) sur la face opposée à la surface de support de la roulette de déplacement (12) de manière à former une paroi arquée (19) enfonçable élastiquement, l'élément en roulette (11) étant élastique dans une direction perpendiculaire à l'axe longitudinal de la section en rail (1) et parallèle à son plan principal, permettant audit élément en roulette (11) d'être encliqueté dans ladite section en rail (1) ou d'en être extrait à un quelconque point de celle-ci.

2. Système de suspension de rideaux selon la revendication 1, caractérisé en ce que la course de ressort (v) du châssis de la roulette de déplacement (14) a été choisie de telle sorte que, lorsque la paroi arquée (19) est enfoncée, la roulette de déplacement (12) peut être encliquetée dans la section en rail (1) ou extraite de celle-ci par un mouvement de pivotement.
3. Système de suspension de rideaux selon l'une des revendications 1 à 2, caractérisé en ce que le châssis de roulette de déplacement (14) est raccordé au moyen d'une broche d'assemblage (13) à un élément porteur (15) dont l'extrémité inférieure (16) est repliée dans le plan principal (P) de la roulette de déplacement (12), laquelle roulette de déplacement (12) est montée sur la broche d'assemblage (13).
4. Système de suspension de rideaux selon l'une des revendications 1 à 3, caractérisé en ce que la section du rail en forme de C (1) comporte à sa surface une section de fixation (4) qui forme une extension du bord supérieur (3) de la section en forme de C (1), le point le plus élevé de la section de fixation (4) étant situé sous (h) la surface la plus élevée de la section en rail en forme de C (1).
5. Système de suspension de rideaux selon l'une des revendications 1 à 4, caractérisé en ce que la section de rail en forme de C (1) peut être suspendue en utilisant des attaches de retenue élastiques (5) dont les extrémités (6, 7) saisissent la section de fixation (4).

## Revendications

1. Système de suspension de rideaux composé essentiellement d'une section en rail (1) dont la coupe transversale est en forme de C et une série d'éléments en roulette (11) fixés à coulissement dans ladite section en rail (1), caractérisé en ce que 55





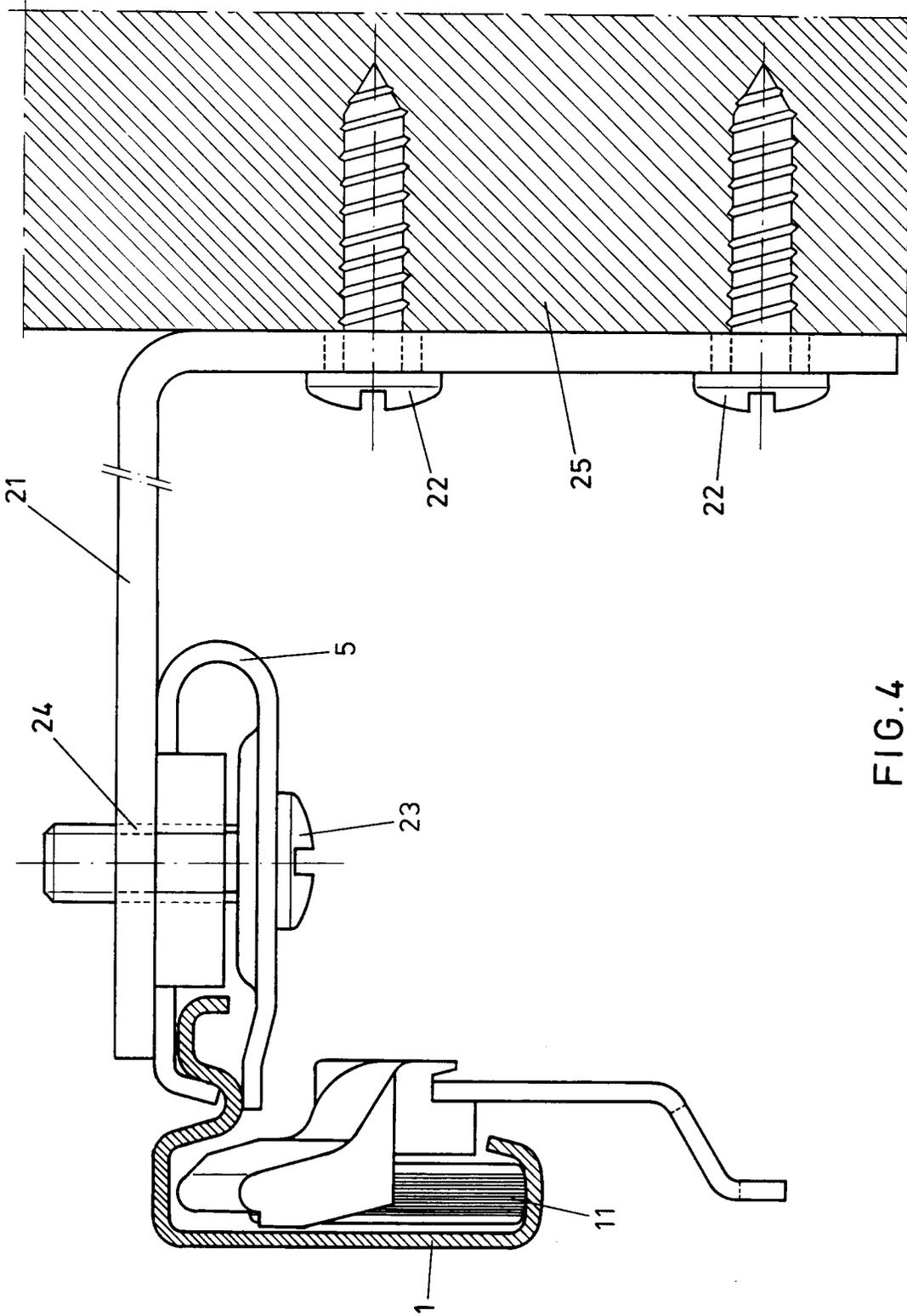


FIG.4