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(54) **CURTAIN SUPPORT ROD**

(57) Described is an end element (10) for a curtain support rod, comprising a first base (11), a second base (12) and a side surface (13) connecting said first base (11) and said second base (12), said first base (11) and said second base (12) being parallel and coaxial to each other, said first base (11) comprising means for coupling with an end of a curtain support rod and said second base (12) being shaped as a flat surface, said end element (10) being characterised in that it comprises, on the edge of said second base (12), a tooth (14) projecting in an axial direction with respect to said second base (12).

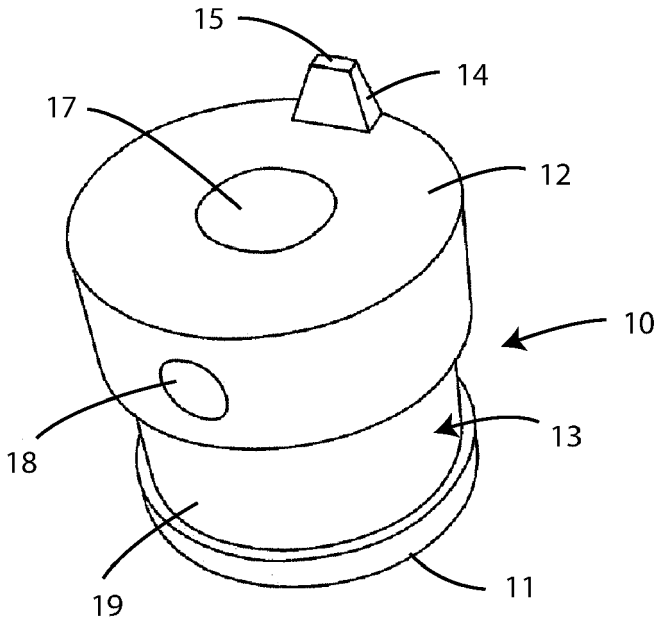

Fig. 1

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Description

[0001] This invention relates to a curtain support rod.

[0002] More specifically, the invention relates to a curtain support rod of the pressure type, that is, designed to fit between the vertical elements of the frame surrounding the glass, and to remain locked in that position by the effect of the pressure exerted on two opposite surfaces of the vertical elements, without it being necessary to drill holes in the vertical elements themselves or other parts of the window frames.

[0003] The problem that the invention aims to resolve concerns the need to hang glass blinds without drilling holes in the window frames or the window. In fact, it may happen that drilling into windows or frames is not possible or desirable, for example in order not to damage new or valuable windows or in the case of someone who uses a rented apartment and cannot alter the condition of the fixtures and fittings contained therein.

[0004] There are several ways to hang glass blinds without the need to drill holes in the window frames. According to a first prior art solution, adhesive hooks can be applied to the window frame elements, to which a rod of varying length is then attached. The limitation of these solutions is that, over time, the adhesive can lose its adherence, causing the curtain to fall down. Moreover, adhesive residues may spoil the surface of the window frames even more than drilling holes in them.

[0005] Alternatively, again according to the prior art, spring-loaded rods can be used. These curtain rods consist of two half-rods, which can be inserted into each other telescopically, and comprise a compression spring or springs, inserted into the larger half-rod, which acts on the smaller half-rod. These rods are applied between two opposite surfaces of the vertical elements of the window frame, choosing the rods in such a way that the sum of the two semi-rods composing them is greater than the distance between the two opposite parts of the vertical elements of the window frame, so that in order to be applied it is necessary to push the semi-rod with a smaller section into the semi-rod with the larger section, by compressing the compression springs, which, as a reaction, pushes the semi-rod with a smaller section in the opposite direction to the semi-rod with a larger section, exerting on the two opposite parts of the vertical elements of the window frame a pressure which allows the rod to support its weight and that of a curtain. These types of rods can be used on PVC, aluminium or wooden frames, but have certain limitations.

[0006] Firstly, the elasticity of the compression springs is bound to reduce over time, with the result that the pressure that these rods exert on the opposing surfaces of the vertical elements of the window frame reduces over time, until it is no longer sufficient to support the weight of the curtain. In order to overcome this problem, telescopic rods consisting of two half-rods of the same type as the push rods have been proposed, in which the half-rod with the smaller cross-section can be screwed together with the spring, determining the position of the half-rod with respect to the spring and consequently determining the lengthening or shortening of the rod.

[0007] This type of solution according to the prior art overcomes the problems caused by the aging of the compression spring typical of the pressure rods, but shares with this type of rod the limitation that, if the opposing surfaces of the vertical elements of the window frame are not parallel to each other, that is, are inclined to each other or have a rounded profile, the ends of the two semi-rods can slip and lose contact with these surfaces, causing the rod to detach and the curtain to fall.

[0008] To solve this problem, suction cups, or at least anti-slip elements, have been proposed, which are applied to the ends of the telescopic pole (with a spring mechanism). However, even this solution may not be sufficient to guarantee the correct and lasting application of the curtain support rod.

[0009] In this context, the solution according to the invention, which provides an end element for a telescopic type curtain support rod, with spring mechanism, said end element comprising two opposite bases, a first base being provided with means for coupling to an end of said support rod and a second base being characterised in that it comprises a flat surface, perpendicular to the axis of symmetry of said support rod, on the edge of said flat surface being arranged a thin projecting tooth, which extends in a direction parallel to the axis of symmetry of said support rod, so as to be inserted by pressure between the glass and the frame of the window, and to prevent the end of said support rod from moving with respect to the vertical element of the frame of the window.

[0010] The solution according to the invention is particularly advantageous because it consists of a device which is easy to make, which can complement prior art solutions currently used to stably attach a curtain support rod.

[0011] The specific object of this invention is therefore an end element for a curtain support rod, comprising a first base, a second base and a side surface connecting said first base and said second base, said first base and said second base being parallel and coaxial to each other, said first base comprising means for coupling with an end of a curtain support rod and said second base being shaped as a flat surface, said end element comprising, on the edge of said second base, a tooth projecting in an axial direction with respect to said second base.

[0012] Preferably, according to the invention, said tooth is tapered towards a tip.

[0013] In particular, according to the invention, said means for coupling to an end of a curtain support rod may comprise a seat, open at said first base, for housing said end of a curtain support rod, and preferably said seat is cylindrical in shape and coaxial to said first base and said second base.

[0014] Further, again according to the invention, said end element may comprise, at said second base, means for coupling with a suction cup, and preferably said

means for coupling with a suction cup comprise a hole, positioned at the centre of said second base.

[0015] Moreover, according to the invention, said end element may comprise, at said side surface, means for coupling with a support hook, which may comprise a hole, arranged in a radial direction, for inserting a portion of said support hook and/or a central portion of said side surface, having a smaller cross-section than the remaining portion of said side surface.

[0016] The invention will now be described, by way of example and without limiting its scope, with reference to the accompanying drawings which illustrate a preferred embodiment of it, in which:

- Figure 1 shows a first perspective view of an end element for a curtain support rod according to the invention, and
- Figure 2 shows a second perspective view of the end element of Figure 1.

[0017] With reference to the drawings, an end element for a curtain support rod is indicated in its entirety by the numerical reference 10 and comprises a first base 11, configured to ensure coupling with an end of an curtain support rod (not shown), and a second base 12, configured as a flat surface designed to adopt an orientation perpendicular to the axis of symmetry of the support rod, and a side surface 13, which in the embodiment shown in the drawings is substantially cylindrical, with the bases 11 and 12 correspondingly circular, but which could also adopt other shapes, according to purely aesthetic requirements without implications on the technical aspects of the invention.

[0018] In particular, the flat surface of the second base 12 is perpendicular with respect to the axis of the curtain support rod to which the end element 10 is applicable, and is free of rounded edges.

[0019] Moreover, on the edge of the second base 12 there is a tooth 14, which extends in a direction parallel to the axis of symmetry of said support rod and which is sufficiently thin and with a tapered shape proceeding towards the tip 15, to be inserted by pressure between the glass and the frame of the window, in a housing space which can be defined by exploiting the fact that, in the case wherein the window frame is made of wood, this material does not offer excessive resistance to the deformation action operated by the tooth 14 in order to define said housing space, and in the case wherein the window frame is made of metal, due to the fact that usually in this case a rubber gasket is placed between the glass and the frame, which is easily deformable in order to define said housing space. In both cases, however, the space for housing the tooth, as well as being very small, is also made in a not very visible position, being hidden from view by the body of the end element 10.

[0020] In both cases, moreover, the positioning of the tooth 14 in the housing space which the tooth 14 is able to define at the time of installation is more than sufficient to prevent the end of the support rod from moving relative to the vertical element of the window frame (not shown).

[0021] The end element 10 shown in the drawings also comprises some further technical features, which are intended to make the end element 10 as flexible as possible in its use. In particular, Figure 2 shows how the coupling between the end element 10 and the curtain support rod is guaranteed by a cylindrical seat 16, made in the body of the end element 10 and open at the first base 11. This feature allows easy application of the end element 10 on a curtain support rod for which the end element is intended.

[0022] Moreover, the end element 10 is perfectly designed for use with support rods in which the two half-rods are made by rolling a thin metal sheet. In fact, in this case, it will be sufficient to arrange the end element 10 in such a way that the tooth 14 is aligned with the joint line of the rolled plate, to easily obtain a dual advantage, resulting from the alignment of the joint lines of the two semi-rods: being sure that the two end elements 10 are aligned with each other, that is, by correctly arranging a tooth 14, the tooth 14 will be equally aligned at the other end of the support rod, and consequently ensuring that both joining lines are arranged on the side facing the window pane, not towards the room. This advantage is all the more important when mounting in low light conditions, that is, by people with poor eyesight.

[0023] In addition, Figure 1 shows a hole 17, at the centre of the second base 12, the function of which is to allow the insertion of a corresponding coupling pin with which the suction cups for curtain support rods commonly found on the market are normally equipped.

[0024] Moreover, Figure 1 also shows a hole 18, made on the side surface 13 of the end element 10, the function of which is to allow the insertion of a hook, of the type commonly marketed for curtain support rods.

[0025] Finally, the side surface 13 of the end element 10 has a central portion 19, with a reduced cross-section compared to that of the remaining part of the side surface 13, to form a housing for a housing and support hook, on which the central portion 19 rests, the greater cross-section of the remaining part of the side surface 13 preventing translation in the axial direction of the end element 10.

[0026] The present invention is described by way of example only, without limiting the scope of application, according to its preferred embodiments, but it shall be understood that the invention may be modified and/or adapted by experts in the field without thereby departing from the scope of the inventive concept, as defined in the claims herein.

Claims

1. End element (10) for a curtain support rod, comprising a first base (11), a second base (12) and a side surface (13) of connection between said first base (11) and said second base (12), said first base (11)

and said second base (12) being parallel and coaxial with each other, said first base (11) comprising coupling means with one end of a curtain support rod and said second base (12) being shaped like a flat surface, said end element (10) being **characterised in that** it comprises, on the lateral edge of said second base (12), a tooth (14) protruding axially with respect to said second base (12).

2. End element (10) according to claim 1, **characterised in that** said tooth (14) is tapered towards an end tip (15).

3. End element (10) according to claims 1 or 2, **characterised in that** said coupling means with one end of a curtain support rod comprise a seat (16), open on the side of said first base (11), for housing said end of a curtain rod.

4. End element (10) according to claim 3, **characterised in that** said seat (16) has a cylindrical shape and is coaxial with said first base (11) and with said second base (12).

5. End element (10) according to any one of the preceding claims, **characterised in that** it comprises, at said second base (12), means for coupling with a suction cup.

6. End element (10) according to claim 5, **characterised in that** said coupling means with a suction cup comprise a hole (17), arranged in the centre of said second base (12).

7. End element (10) according to any one of the preceding claims, **characterised in that** it comprises, at said side surface (13), means for coupling with a support hook.

8. End element (10) according to claim 7, **characterised in that** said coupling means with a support hook comprise a hole (18), arranged in a radial direction, for inserting a portion of said support hook.

9. End element (10) according to claim 7 or 8, **characterised in that** said coupling means with a support hook comprise a central portion (19) of said side surface (13), with a smaller section than the remaining part of said side surface (13).

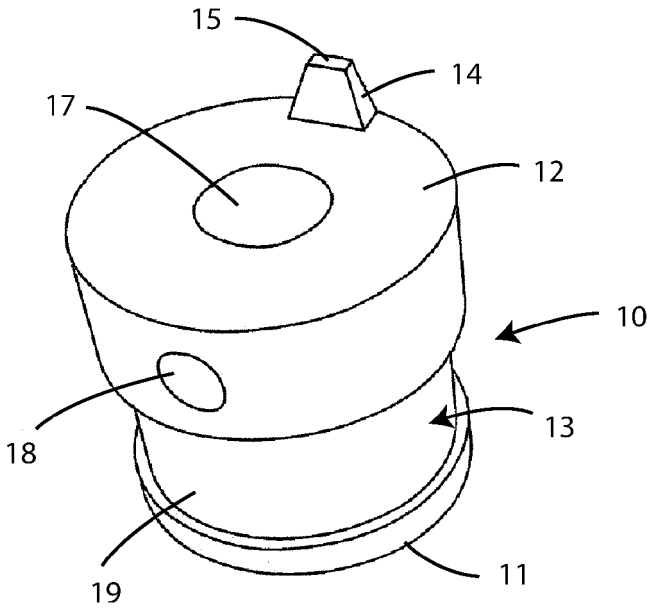

Fig. 1

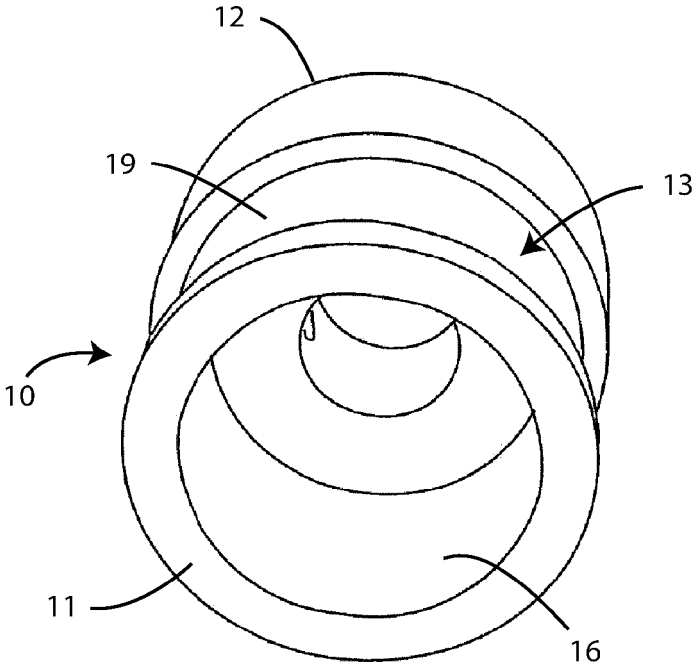

Fig. 2

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EUROPEAN SEARCH REPORT

Application Number
EP 20 21 5298

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 9 107 529 B2 (ZENITH PROD CORP [US]) 18 August 2015 (2015-08-18) * column 9, lines 15-54; figures 1A-1C *	1-9	INV. A47H1/142
A	US 2011/024376 A1 (HENDRICKS JARED [US] ET AL) 3 February 2011 (2011-02-03) * paragraphs [0008], [0035]; figures 1-9 *	1-9	

TECHNICAL FIELDS SEARCHED (IPC)

A47H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	18 May 2021	Altamura, Alessandra

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 20 21 5298

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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18-05-2021

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82