

(12) **UK Patent Application** (19) **GB** (11) **2 310 878** (13) **A**

(43) Date of A Publication **10.09.1997**

(21) Application No **9626729.9**

(22) Date of Filing **23.12.1996**

(30) Priority Data

(31) **9604778** (32) **06.03.1996** (33) **GB**

(71) Applicant(s)

Bernadette Etheldreda Harris
226 St Bernards Road, SOLIHULL, West Midlands,
B92 7BH, United Kingdom

(72) Inventor(s)

Perry Day

(74) Agent and/or Address for Service

Craske & Co
Patent Law Chambers, 15 Queens Terrace, EXETER,
Devon, EX4 4HJ, United Kingdom

(51) INT CL⁶
E06B 9/42

(52) UK CL (Edition O)
E1J JCA

(56) Documents Cited

GB 2218142 A **GB 2182738 A** **GB 1464547 A**
GB 0271489 A **EP 0046948 A2** **US 5275221 A**

(58) Field of Search

UK CL (Edition O) **E1J JCA JDP JEG JFB JGT JM**
INT CL⁶ **A47H 1/13 , B60J 1/20 , E06B 9/40 9/42 9/44**
9/50 9/56 9/58 9/60 9/92

(54) **Idle end support for a roller blind**

(57) A cup-shaped spigot 20 for insertion into the end of a roller blind tube is rotatably mounted on a drum 6 which is non-rotatably supported on a mounting bracket 2. A shaft 10 is non-rotatably keyed to the end wall 24 of the spigot so that the shaft and spigot rotate together. A spring 30 bears between the end wall 24 and a flange 11 on the shaft to urge the spigot along the shaft so that the carrier tube is firmly held. Correct positioning of the mounting brackets is therefore less important. The flange 11 is rotatably snap-engaged within the drum 6, and the end of the shaft 10 bears against a platform 9 within the drum.

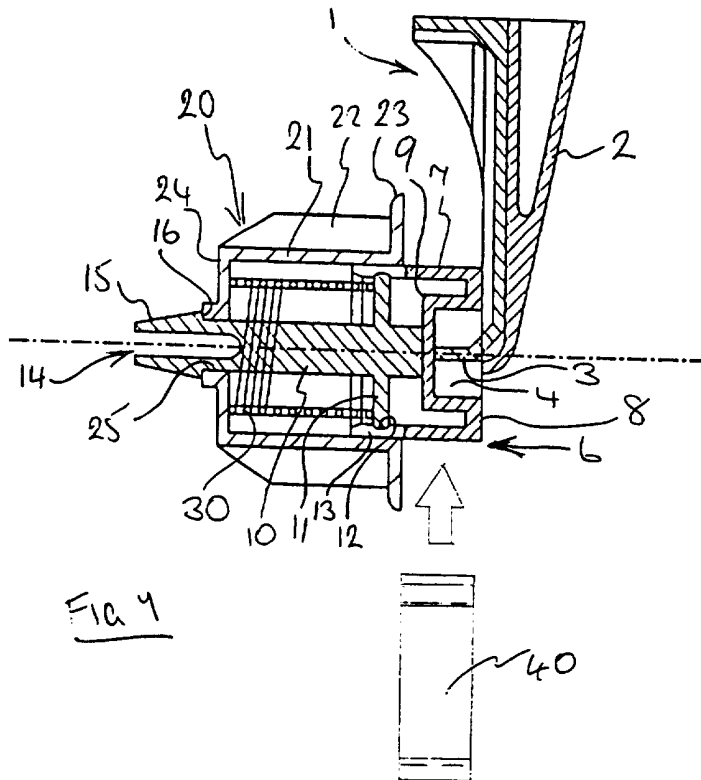


FIG 4

GB 2 310 878 A

1/2

PM48

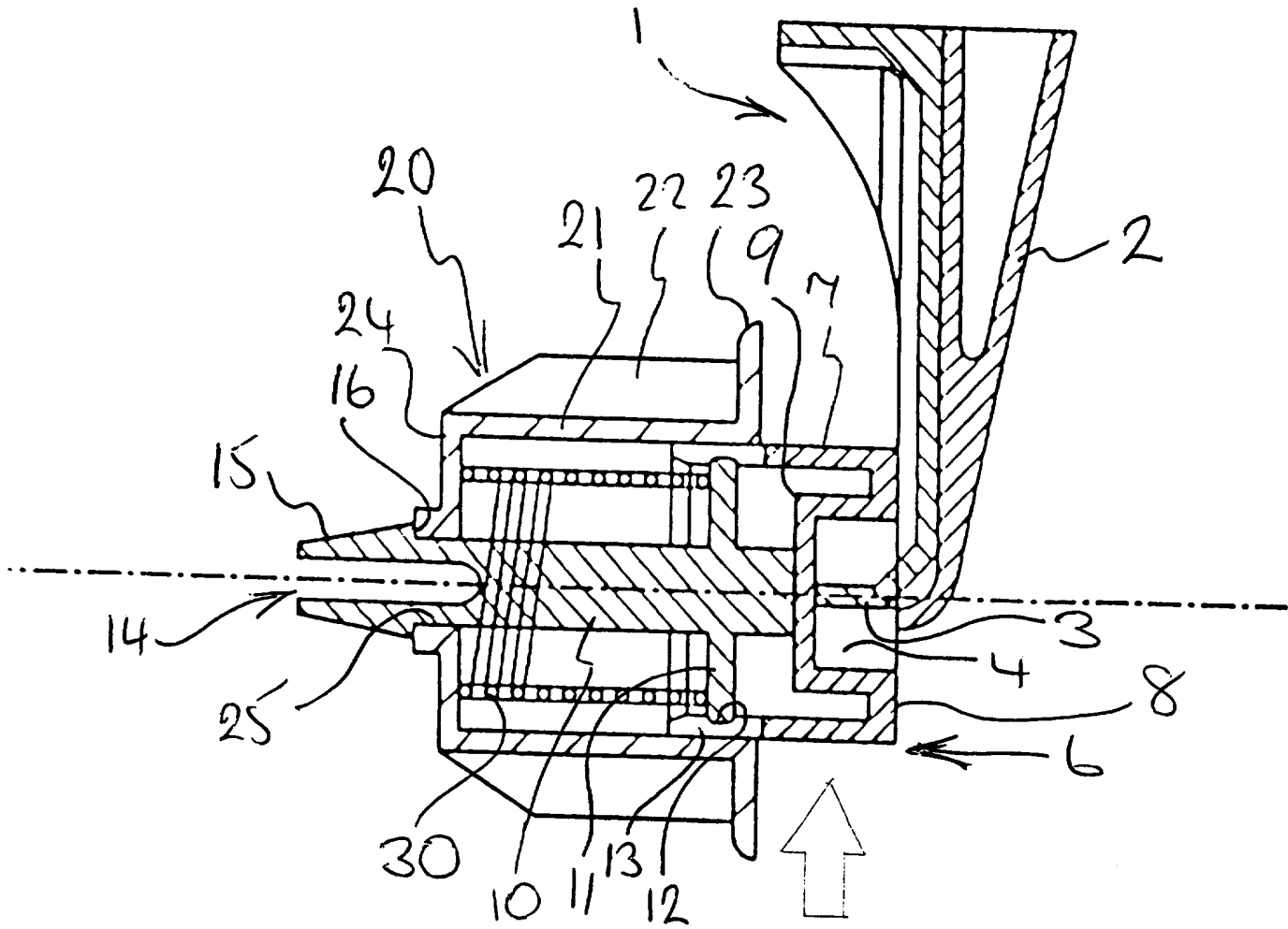
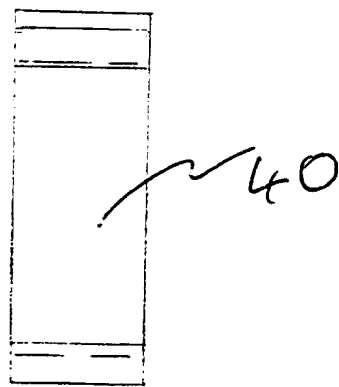


FIG 4



2/2

P748

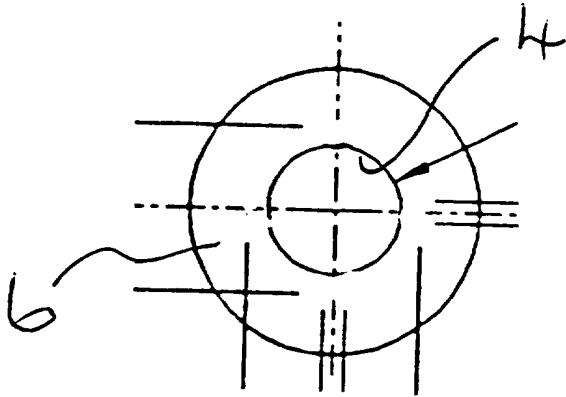


Fig 2

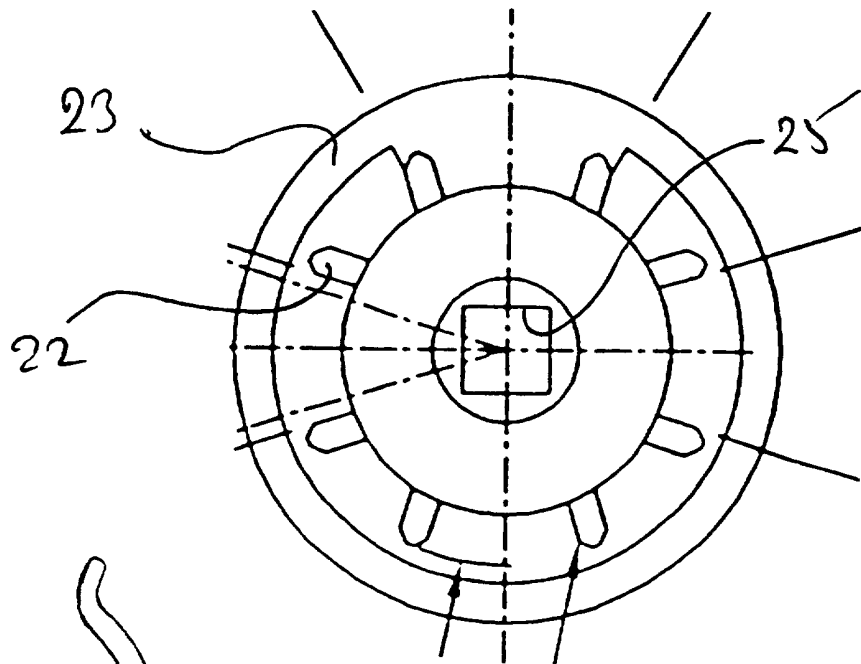


Fig 3

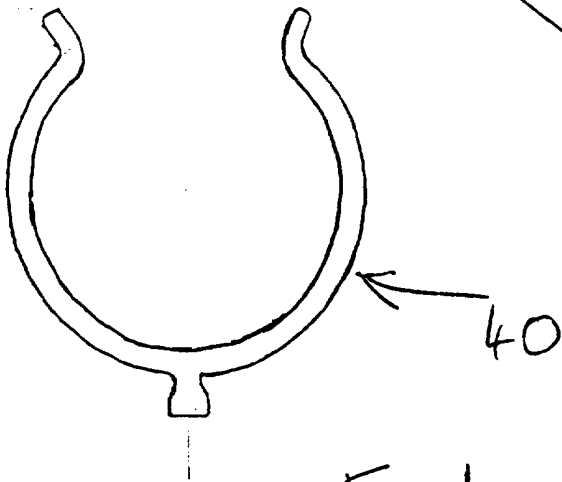


Fig 4

Bernadette Etheldreda Harris

IDLE END SUPPORT FOR A ROLLER BLIND

TECHNICAL FIELD OF THE INVENTION

This invention relates to a support for the non-driven or idle end of a roller blind.

BACKGROUND

Roller blinds include a sheet wound on a tube. The tube is generally supported by brackets at both ends, one end being provided with a pull cord or like means by which the tube can be manually rotated, known as the driven end, and the other end, known as the idle end, being supported by a bearing assembly.

The present invention seeks to provide an idle end support which is patentably different from any existing supports.

SUMMARY OF THE INVENTION

The present invention proposes an idle end support for a roller blind of the

kind comprising a sheet wound on a tube, the support comprising:

- a fixed portion,
- a hollow spigot for insertion into an end of said tube and mounted for rotation relative to the fixed portion, and
- spring means acting to urge the spigot away from the fixed portion.

The incorporation of a spring is advantageous since it assists in holding the roller blind in position in use. Furthermore, there is less requirement for precise positioning of the mounting brackets since the spring takes up any errors.

The spring means preferably acts between the spigot and a component that rotates therewith, so that any tendency of the spring to wind or unwind during rotation of the spigot is avoided.

The said component may comprise a shaft on which the spigot is axially slidable but which is keyed to the spigot for rotation therewith. The spring may thus be located about the shaft.

The shaft is preferably rotatably connected with the fixed portion.

The fixed portion preferably comprises a hollow cylindrical element, with the shaft rotatably mounted in one end thereof. The spigot is preferably closely and slidably received over said cylindrical element.

The invention further proposes an idle end support for a roller blind of the kind comprising a sheet wound on a tube, the support comprising:

- a fixed portion,

- a shaft mounted for rotation relative to said fixed portion,
- a hollow spigot for insertion into an end of said tube and mounted on the shaft, said spigot being keyed to the shaft such that the spigot rotates with the shaft but is moveable axially of the shaft, and
- spring means acting between the shaft and spigot to urge the spigot along the shaft away from the fixed portion.

BRIEF DESCRIPTION OF THE DRAWINGS

The following description and the accompanying drawings referred to therein are included by way of non-limiting example in order to illustrate how the invention may be put into practice. In the drawings:

Figure 1 is an axial section through an idle end support in accordance with the invention,

Figure 2 is an end view of a fixed part of the support, looking from the right in Fig. 1,

Figure 3 is an end view of the spigot included in the support, looking from the left in Fig. 1, and

Figure 4 is an end view of the spring clip included with the support, looking from the left in Fig. 1.

DETAILED DESCRIPTION OF THE DRAWINGS

Referring firstly to Fig. 1, the idle end support assembly comprises a plastics mounting bracket 1 which can be screwed or otherwise fixed to the underside of a horizontal surface or either of two mutually perpendicular vertical surfaces. The bracket could be formed of metal if desired. A snap-on cover 2 could also be provided to enhance the aesthetic appearance of the bracket if desired. The bracket has a horizontally projecting lug 3 which is of any suitable shape to be inserted into an opening 4 in a drum 6. (See Fig. 2 also.)

The drum 6 is generally cup-shaped having a cylindrical side wall 7 with one end wall 8, the opposite end being open. The opening 4 is formed by a recessed central part of the end wall 8 which also forms a platform 9 inside the drum.

A shaft 10 is rotatably mounted in the open end of the drum 6 by means of a circular guide flange 11 which snap-engages in a groove 12 running around the inside of the drum. The drum may be axially slotted at 13 to assist in the insertion of the shaft, if desired. Alternatively, the internal surface of the drum could be formed with a tapered lead-in to assist with insertion of the shaft. The shaft is of square or other non-circular transverse cross-section. The inner end of the shaft bears against the platform 9 whilst the outer end of the shaft has an axial slot 14. On the opposite sides of the slot a pair of divergent ramps 15 lead from the end of the shaft to a pair of external retaining shoulders 16.

A cup-shaped spigot 20 is located on the shaft 10. The spigot has a cylindrical side wall 21 with external ribs or splines 22 (Fig. 3) for frictional engagement in the tube of a roller blind (not shown). One end of the side wall has an external circular flange 23 for locating the end of the tube, which

the other end of the spigot is closed by an end wall 24. The shaft 10 passes through a square aperture 25 in the end wall 24 so that the spigot is non-rotatably keyed onto the shaft 10. The ramps 15 cause the two sides of the shaft 10 to move together as the spigot 20 is pushed onto the shaft, and once in position the spigot is retained on the shaft by the shoulders 15. The spigot could however be easily removed if required, by squeezing the ramps together.

The open end of the spigot 20 is closely but rotatably received over the open end of the drum 6, such that the spigot is able to slide along the shaft towards the mounting bracket 1. However, a coiled compression spring 30 is located about the shaft 10 bearing against the end wall 24 of the spigot 20 and the abutment formed by the flange 11 so as to urge the spigot towards the shoulders 15, as shown.

When mounting the roller blind on its supporting brackets (only one of which is shown) the drum 6 is first engaged with the lug 3. It will be noted in Fig. 2 that the aperture 4 is of circular cross section so that the lug 3 is not keyed to the drum 6 and the drum can therefore be engaged with the lug in any rotational position. This makes the installation of the roller blind particularly simple. In practice, there is generally a frictional engagement between the lug and the wall of the aperture 4 so that the drum 6 is, in effect, non-rotatably mounted on the bracket. After engaging the drum 6 with the lug 3 tube can be pushed towards the bracket 1 so that the spigot 20 moves over the shaft 10 and drum 6 against the action of spring 30, so that the opposite driven end of the tube can be engaged with its respective bracket. The tube is then released so that the spring 30 urges the spigot back towards the shoulders 15, thereby firmly holding the roller blind in position between the

brackets.

When the tube is rotated at the driven end to wind or unwind sheet material on or off the tube, the spigot 20, spring 30 and shaft 10 rotate together relative to the drum 6. There is thus no risk of the spring being wound or unwound during rotation, even though the ends may be frictionally held.

The tube can of course be disengaged from the mounting brackets by a reverse process. If desired, inadvertent dislodgement of the tube can be prevented by placing a spring C-clip 40 over the drum 6, as shown in Figs 1 and 4, although this will usually not be necessary.

It will be appreciated that the shaft 10 could be retained in the drum 6 by other means, such as a screw inserted through the platform 9.

Whilst the above description lays emphasis on those areas which, in combination, are believed to be new, protection is claimed for any inventive combination of the features disclosed herein.

* * * * *

CLAIMS

1. An idle end support for a roller blind of the kind comprising a sheet wound on a tube, the support comprising:
 - a fixed portion,
 - a hollow spigot for insertion into an end of said tube and mounted for rotation relative to the fixed portion, and
 - spring means acting to urge the spigot away from the fixed portion.
2. An idle end support according to Claim 1, the spring means acts between the spigot and a component that rotates therewith.
3. An idle end support according to Claim 2, in which the component that rotates with the spigot comprises a shaft on which the spigot is axially slidable but which is keyed to the spigot for rotation therewith.
4. An idle end support according to Claim 3, in which the shaft projects through a transverse end wall of the spigot.
5. An idle end support according to Claim 4, in which the shaft is slidably but non-rotatably engaged with said end wall.
6. An idle end support according to Claim 4 or 5, in which said spring means acts between said end wall and an outwardly projecting flange formed on said shaft.

7. An idle end support according to any of Claims 3 to 5, in which the spring means is located about the shaft.
8. An idle end support according to any of Claims 3 to 7, in which the shaft is rotatably connected with the fixed portion.
9. An idle end support according to any of Claims 3 to 8, in which the fixed portion comprises a hollow cylindrical portion, with the shaft rotatably mounted in one end thereof.
10. An idle end support according to Claim 9, in which said fixed portion comprises a transverse wall located within said hollow cylindrical portion, and one end of the shaft rotates in contact with said wall.
11. An idle end support according to Claim 9 or 10 as appended to Claim 6, in which said flange is located within the hollow cylindrical portion.
12. An idle end support according to Claim 11, in which the flange is retained within the hollow cylindrical portion by snap-engagement.
13. An idle end support according to any of Claims 3 to 12, in which the spigot is closely and slidably received over said hollow cylindrical portion.
14. An idle end support which is substantially as described with reference to the drawings.

* * * * *



Application No: GB 9626729.9
Claims searched: 1-14

Examiner: John Fulcher
Date of search: 6 May 1997

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): E1J(JCA,JDP,JEG,JFB,JGT,JM)

Int Cl (Ed.6): A47H1/13; B60J 1/20B1; E06B 9/40,9/42,9/44,9/50,9/56,9/58,9/60,9/92

Other:

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	GB 2218142 A (FLEXIFORM) -see spring 27, figs 1 and 3A	1 at least
X	GB 2182738 A (LOUVER-LITE) -see spring 35, figs 1 and 3	1 at least
X	GB 1464547 A (ROTALAC) -see springs 19	1 at least
X	GB 0271489 A (SCHULTES) -see spring r	1 at least
X	EP 0046948 A2 (TOSO) -see spring 9	1 at least
X	US 5275221 A (DOEHLEMANN) -see spring 9	1 at least

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.