(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 333 677**
A2

(12) # EUROPEAN PATENT APPLICATION

(21) Application number: **89830121.3**

(51) Int. Cl.[4]: **E 06 B 9/204**

(22) Date of filing: **17.03.89**

(30) Priority: **18.03.88 IT 4774888**

(43) Date of publication of application:
20.09.89 Bulletin 89/38

(84) Designated Contracting States:
AT BE CH DE ES FR GB GR LI LU NL SE

(71) Applicant: **Silvestri, Nicola**
Via l'Aquila, 37
I-65016 Montesilvano (PE) (IT)

(72) Inventor: **Silvestri, Nicola**
Via l'Aquila, 37
I-65016 Montesilvano (PE) (IT)

(74) Representative: **Massari, Marcello**
Studio M. Massari S.r.l. 23, Via Fontanella Borghese
I-00186 Roma (IT)

(54) **Device for the controlled winding and unwinding of a cloth.**

(57) A device for the driven winding and unwinding of a cloth comprising: a roller for winding up the cloth; a hollow rigid member secured to the free edge of the cloth; a return cable; two spools for winding the return cable; two return rollers for the return cable and two guides for the rigid member supporting the cable return rollers and receiving the rising and lowering lengths of the return cable, wherein the whole system is also maintained in tension by a spring interposed in the return cable and placed within the hollow member.

EP 0 333 677 A2

Description

DEVICE FOR THE CONTROLLED WINDING AND UNWINDING OF A CLOTH

This invention refers to a device intended to be used for the controlled winding and unwinding of a cloth comprising: a roller for winding up the cloth; a hollow rigid member secured to the free edge of the cloth; a return cable; two spools for winding the return cable; two return rollers for the return cable and two guides for the rigid member supporting the cable return rollers and receiving the rising and lowering lengths of the return cable, wherein the whole system is also maintained in tension by a spring interposed in the return cable and placed within the hollow member.

In the field of awnings, window shades, mosquito-nets and the like it is important that the cloth forming the awning, the window shade or the mosquito-net moves smoothly and without blocking.

While a smooth movement can be easily obtained in case of cloths of reduced size or of cloths that are rarely operated, the same is not true in case of cloths of medium or big size or of cloths that are rarely unwound and subsequently rewound.

Various proposals have been made to solve this problem using return springs and complicated driving systems, but they are often complex and costly and their operation is not always satisfying.

This invention is intended to provide a simple and effective device which can be easily used without blocking also with cloths of big size such as awnings for terraces, gardens and the like.

The invention will be now described as an example in an embodiment thereof referring to a window shade.

In the drawings:

Figure 1 is a rather diagrammatic perspective view of the device which parts omited or partially removed, showing the cloth in the lowered position; and,

Figure 2 is a similar view showing the cloth in the rising position.

The device of the invention substantially comprises: a moving cloth 10; a roller 11 for winding up cloth 10; two spools 12 and 13 each integrally formed with one end of roller 11; two side guides 14 and 15; two return rollers 16 and 18; a return cable 19 having a spring 20 placed at the half of its length; and, a hollow member 21 secured to the free edge 22 of cloth 11 having the other edge 23 normally secured to roller 11.

Guide 14 has a longitudinal slot 24 formed on its face 25 and furthermore supports return roller 16 at its base and spool 12 at its top by means of a support 26.

Guide 15 has a slot 27 formed on its face 28 and supports return roller 18 and spool 13 by means of a support 26A.

The ends of cable 19 are secured to spools 12 and 13 and the cable moves about the rollers within side guide 14, hollow member 21 and side guide 15.

Hollow member 21 is provided with two end tabs 29 and 39 which are received within slots 24 and 27 to guide the movements of cloth 10. Tabs 29 and 30 are grooved and receive cable 19.

Spring 20 is interposed in the length of cable 19 received within hollow member 21 maintaining the continuity thereof and keeping the cable in tension in any position of cloth 10.

In use cable 10,which is wound on spools 12 and 13 in the opposite direction with respect to the winding of cloth 10 on roller 11, will automatically wind on the spools when the cloth is lowered, while unwinding of the cable will allow the cloth to rise and consequently wind on roller 11.

In an alternative embodiment spring 20 can be omitted and cable 19 can be made of a suitable elastic material to be maintained in tension.

Furthermore, the cable can be replaced by equivalent members, such as strips, bands, belts and the like.

Claims

1.- A device for the controlled winding and unwinding of a cloth comprising: a roller for winding up said cloth; a hollow rigid member secured to the free edge of said cloth; a return cable; two spools for winding said return cable; two return rollers for said return cable and two guides for said rigid member supporting said return rollers and receiving the rising and lowering lengths of said return cable.

2.- The device for the controlled winding and unwinding of a cloth according to claim 1, wherein a spring is interposed in said return cable within said hollow member to keep the whole system in tension.

3.- The device for the controlled winding and unwinding of a cloth according to claim 2, wherein each guide has a longitudinal slot formed on the side face thereof and supports one of said return rollers at its base and one of said spools at its top by means of a shaped support.

4.- The device for the controlled winding and unwinding of a cloth according to claim 3, wherein the ends of said return cable are secured to said spools, said cable moving about said return rollers within said first side guide, said hollow member and said second side guide.

5.- The device for the controlled winding and unwinding of a cloth according to claim 4, wherein said hollow member is provided with two end tabs intended to be received within said slots of said guides in order to guide the movement of said cloth.

6.- The device for the controlled winding and unwinding of a cloth according to claim 5, wherein said tabs are grooved to receive said cable.

7.- The device for the controlled winding and unwinding of a cloth according to claim 1,

wherein said spring is omitted and said cable is made of a suitable elastic material.

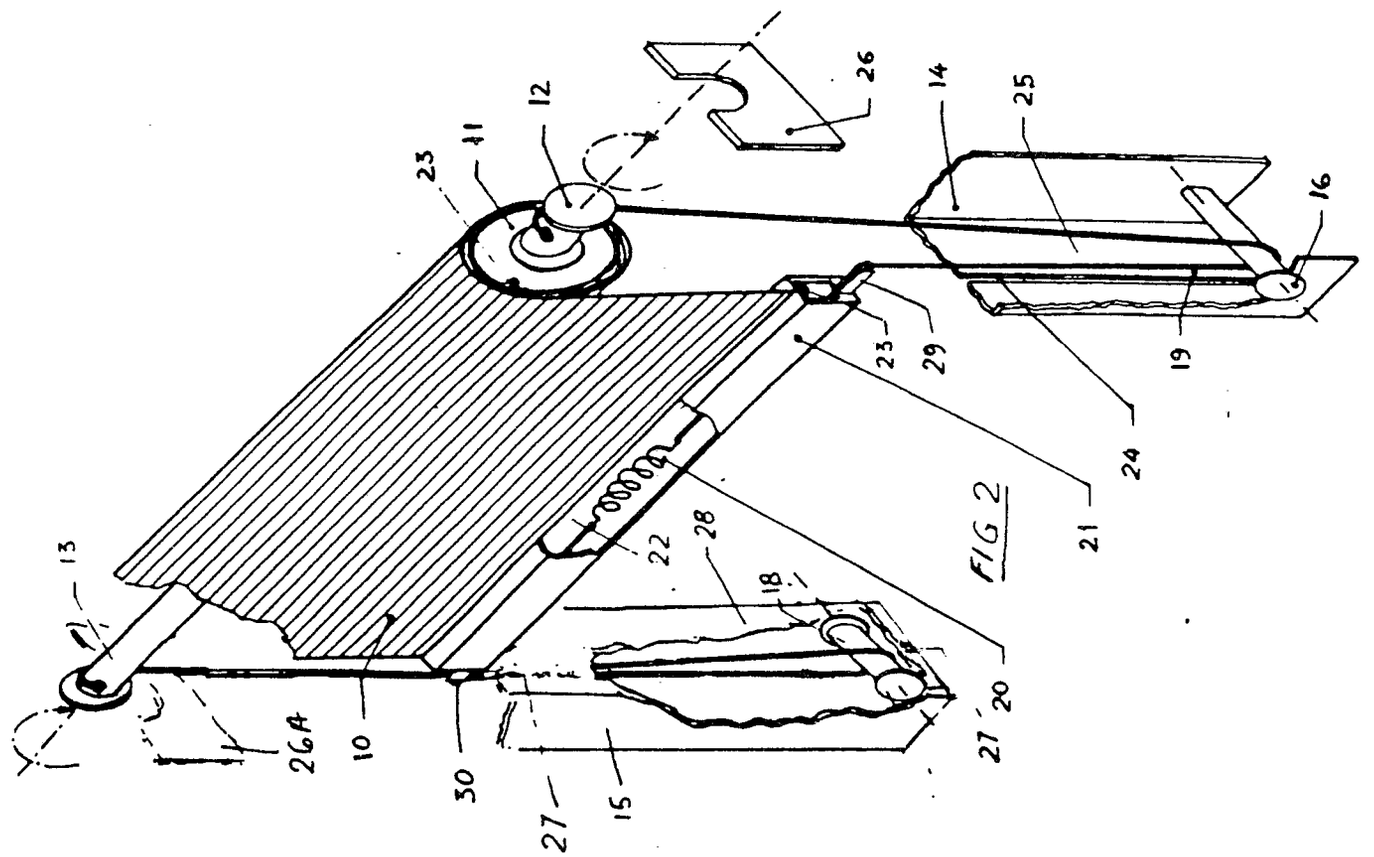
13
26A
10
30
27
15
18
20
27
22
28
21
24
23
29
19
16
25
14
26
12
11
23

FIG 2

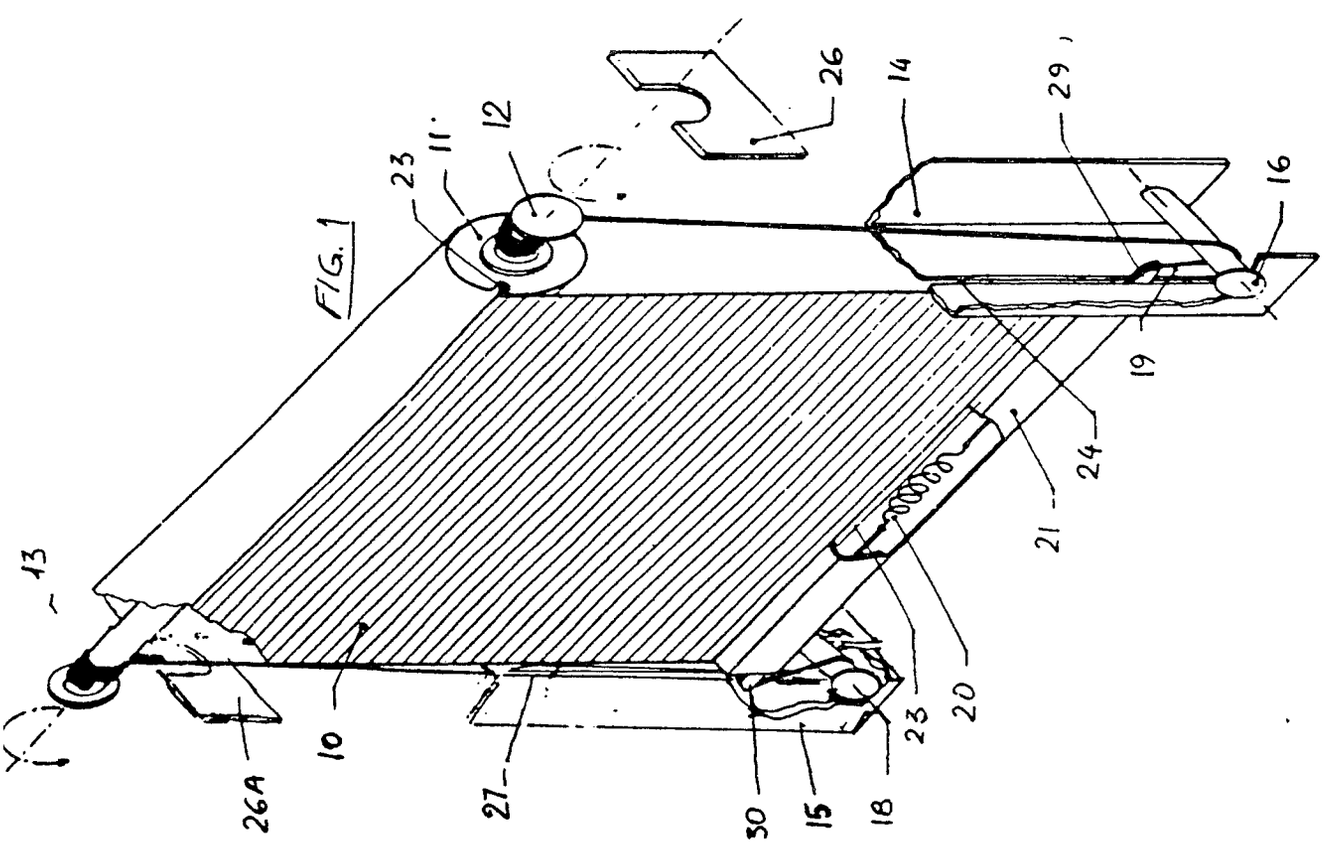
13
26A
10
27
30
15
18
23
20
21
24
19
16
29
14
26
12
11
23

FIG. 1