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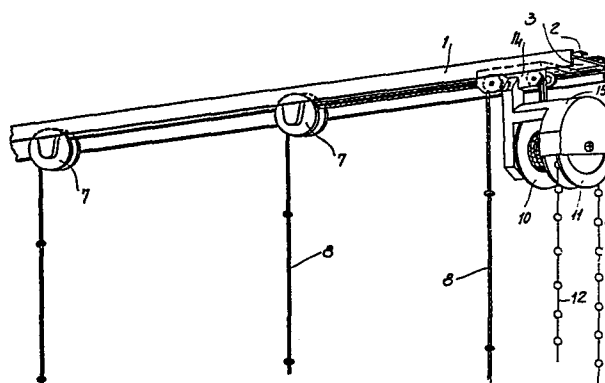
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⑤④ A control mechanism for a roman or panel blind or the like.

⑤⑦ A control mechanism for a Roman or like blind, of the type having a flexible panel (6, 6') which can be raised by means of control cords (8) which pass down the panel (6, 6') and are secured to its lower edge. An upper cross member (1) fixable to a wall or a ceiling carries the panel (6, 6') and the control cords (8) pass over rollers housed in this cross member and are wound onto a reel (10) which is connected rigidly for rotation with a sprocket (11) on which engages a closed loop of chain (12). This sprocket (11) and reel (10) are rotatably supported in a housing (13) fixable to the said upper cross member (1) and provided with means for locking the movement of the chain (12) in the direction of lowering of the blind panel (6, 6').



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"A control mechanism for a roman or panel blind or
the like"

5 The present invention relates to a control mechanism
for a roman or panel blind or the like.

10 As used in this specification the term "roman blind"
will be understood to relate to a flexible panel blind
suspended from its upper edge and having a plurality
of cords or lines running from top to bottom, sometimes
15 attached to a batten, beam or other reinforcing
member at the bottom, by means of which the panel
can be raised or lowered. Such blinds when raised,
may be gathered into loose folds or pleated or other-
wise folded into a small volume. The batten or beam
20 at the bottom provides enough weight to ensure that
the panel is stretched out when the control cords
are slackened.

20 With the currently commercially available types of
blind actuating mechanisms significant difficulties

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are encountered in order to obtain a precise operation of the blind and, above all, to obtain the possibility of locking the blind itself at the desired height. These difficulties are partly due to the fact
5 that there may be a number of individual control cords spaced across the width of the blind which all have to be individually adjusted to set the blind in a selected position. In fact, currently, in order to raise such a blind to a selected position the user
10 must tension the cords individually by successively performing locking operations in suitable hooks to maintain the parts of the blind at the desired height.

15 With such an arrangement, above all in a case in which several control cords are provided for raising the blind, all these cords pass down along one lateral edge of the blind and this creates a hindrance during the actuation of the blind, as well as detracting from
20 the aesthetic appearance of the blind itself.

The present invention seeks to eliminate the above indicated disadvantages by providing a control
mechanism for a Roman blind or the like which will
25 make it possible to have only a single control element disposed laterally of the blind, by means of which raising or lowering of the blind can be effected, regardless of the number of cords provided for the movement of the blind itself.

30

According to the present invention, therefore, there is provided a control mechanism for a Roman or

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like blind comprising a flexible panel suspended from an upper cross member which can be fixed to a wall or a ceiling and within which extend a plurality of control cords connected at one end thereof to the lower end of the blind panel, characterised by the fact that the said control lines are wound on a spool connected for rotation with a sprocket over which passes a chain; this sprocket and spool being rotatably supported by a support body fixable to the said supporting cross member of the blind and provided with locking means engageable by the chain and operable to prevent movement of the chain in the direction of lowering of the blind.

One advantage of the present invention is that an embodiment thereof may be formed as a support and actuation mechanism for a Roman blind or the like, which will give the possibility of effecting, in an extremely rapid and simple manner the locking of the blind at the desired height, without the presence of an inconveniently large number of cords which have to pass down one side of the blind.

Another advantage of the present invention is that an embodiment thereof may be made as a support and control structure for a Roman blind or the like, which will have significant properties of security and reliability in use. Moreover, with only one actuation member to move the user may nevertheless effect a uniform and precise adjustment of all the cords with which a blind is provided.

Various embodiments of the present invention will now be more particularly described, by way of example,

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with reference to the accompanying drawings, in which:

5 Figure 1 is a schematic perspective view of a Roman blind incorporating a control mechanism formed as a first embodiment of the invention;

Figure 2 is a detailed front view of a sprocket/spool unit as fitted to the embodiment of Figure 1;

Figure 3 is an end view of the sprocket/spool unit illustrated in Figure 2;

10 Figure 4 is a perspective view of the same structure fitted to a pleated blind;

Figure 5 is a perspective view of a detail of the pleated blind of Figure 4, showing the control cords which pass through the interior of the upper section;

15 Figure 6 is an exploded perspective view of an alternative embodiment of the sprocket/spool unit;

20 Figure 7 is an exploded perspective view illustrating the manner in which the sprocket/spool unit of Figure 6 is fitted to a support of the blind;

Figure 8 is a perspective view of a housing for the sprocket/spool unit;

25 Figure 9 is a perspective view illustrating the sprocket/spool unit fitted to the upper section of a pleated blind.

With particular reference now to the drawings, the Roman blind control mechanism forming the subject
30 of the present invention comprises an upper support 1 formed as an extruded section in such a way as substantially to define an upper channel 2 and a lower

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channel 3. In the upper channel may be fitted plates 4 or other similar elements for fixing the upper support 1 to a wall or a ceiling. In the lower channel there is housed a guide section 5 which is connected to the upper end of the panel 6 (pleated panel 6' in the embodiment of Figure 4) and, in practice, supports a plurality of control cords 8 by means of pulleys 7. These control cords 8 extend longitudinally down the blind through suitable holes or eyelets provided therein or thereon, and are connected at a lower end to a lower cross bar or batten 9 at the lower end of the blind panel 6 or 6'. At their other end the said control cords 8 are wound on a spool 10 which may be provided with suitable grooves for winding the individual cords in such a way as to keep them all separate from one another.

This spool is connected rigidly for rotation with a sprocket 11 which is provided with seatings for receiving the individual links of a chain 12. In the illustrated embodiment the chain 12 is formed as a closed loop provided with spaced balls. Other types of chain may be employed, however, providing the links suitably interengage with the sprocket teeth to provide a slip-free interengagement.

It is suitable, by the way, to state that the said chain may have regularly spaced balls as in Figures 1, 2 and 3 or balls closely adjacent one another as in Figures 4, 6, 7 and 9. Consequently, the seatings formed by the sprocket teeth, or otherwise formed on the said sprocket may be likewise spaced or close

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together in such a way as to prevent any possibility of relative slip between the chain and the sprocket. Although a closed loop of chain 12 is preferred it is by no means essential and a single length of chain, perhaps suitably weighted at the ends, may
5 be provided instead.

The spool 10 and the sprocket 11 are supported for rotation by a fixed support body generally indicated
10 with the reference numeral 13. This support body 13 is provided with a projection 14 suitably shaped to engage securely into one end of the upper cross member 1 and has, obviously, a suitable series of openings (not shown) for the passage of the
15 control cords for operating the blind. The support body 13 is advantageously made with a symmetrical structure in such a way that it can be used equally well for blinds with the control cords leading to the left or to the right of the blind panel. The
20 support body 13 has a casing 15 enclosing a part of the spool 10 and the sprocket 11 and which, in its lower part, is provided with a bifurcated housing 16 with a downwardly flaring entrance enlargement 17 terminating in a restricted zone 18 to form a
25 forked seating in which the balls or links of the chain 12 can engage.

Alternatively, as shown in Figures 2 and 3 the locking of the chain can be obtained by means of
30 a shaped spring element 19 which in practice defines a groove or throat in which the balls or links of the chain itself can be fixedly lodged. In both

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cases, the user can with a simple movement introduce a link of the control chain into the associated locking seat therefore preventing the chain from moving in a direction corresponding to lowering of the blind. The fact that this forked seating 17, 18 or the corresponding spring element 19, is inclined downwardly ensures that by exercising a tension on the chain 12, in a direction corresponding to raising of the blind, the chain 12 can easily be released from engagement in the forked seating.

Moreover, it can be arranged that the housing of the support body 13 is formed initially with forked seatings on both sides, one of which is removable upon assembly in such a way as to be able to select left or right hand operation from a common component.

In use, the said spool/sprocket unit permits the user to act on a single element, constituted by the chain 12, regardless of the number of control cords provided for the raising and lowering of the blind panel itself, these cords all being wound onto the spool in use as the blind is raised, and unwound from it as the blind is lowered. Rotation, in one sense or other, of the sprocket 11 is achieved by pulling on the chain 12 on one side or the other; this in turn makes the spool 10 rotate with consequent winding in synchronism of all the control cords of the blind, thus causing raising or lowering of the blind.

Claims:

1. A control mechanism for a Roman or like blind comprising a flexible panel (6, 6') suspended from an upper cross member (1) which can be fixed to a wall or a ceiling and within which extend a plurality of control cords (8) connected at one end thereof to the lower end of the blind panel (6, 6'), characterised by the fact that the said control lines (8) are wound on a spool (10) connected for rotation with a sprocket (11) over which passes a chain (12); this sprocket (11) and spool (10) being rotatably supported by a support body (13) fixable to the said supporting cross member (1) of the blind and provided with locking means (16,17,18;19) engageable by the chain to prevent movement of the chain in the direction of lowering of the blind.

2. A control mechanism for a Roman or like blind, according to Claim 1, characterised by the fact that the said upper cross member (1) is formed as a shaped section in such a way as substantially to define an upper channel (2) and a lower channel (3); the said upper channel (2) housing plates or like elements for fixing the said upper cross member (1) to a wall or the ceiling, whilst in the lower channel (3) there is housed a guide section (5) which is connected to the upper end of the blind panel (6, 6') and supports pulleys (7) over which pass the control cords (8) for the blind panel (6,6').

3. A control mechanism for a Roman or like blind, according to Claim 1 or Claim 2, characterised

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by the fact that the free ends of the said control
cords (8) are secured to the said spool (10), which
latter are provided with means for maintaining the
cords (8) separate from one another to avoid inter-
5 twining of the cords; the sprocket (11) connected
to the spool (10) being provided with seats for
receiving and meshing with the links of the said
chain (12).

10 4. A control mechanism for a Roman or like
blind, according to any preceding Claim, character-
ised by the fact that the said chain (72) is formed
as a chain of balls which may be spaced from one an-
other or closely adjacent one another, the seats in
15 the sprocket (11) for receiving these balls being
spaced from one another by the same distance as the
balls of the chain (12).

20 5. A control mechanism for a Roman or like
blind, according to any preceding Claim, characterised
by the fact that the said support body (13) for the
combined spool and sprocket unit (10,11) is provided
with a shaped projection (14) for connection to one
end of the said cross member (1), and has a plurality
25 of openings for the passage of the control cords for
the blind; the support body (13) being formed as a
symmetrical structure in such a way as to be usable
both for blinds operated from the left and those
operated from the right.

20 6. A control mechanism for a Roman or like
blind, according to any preceding Claim, characterised

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by the fact that the said support body (13) includes a housing (15) which at least partly encloses the spool (10) and the sprocket (11) and which, in its lower part, is provided with a downwardly flaring
5 forked seat (16) having an enlarged entrance (17) terminating in a narrow zone (18) in which the links or balls of the said chain (12) can engage to effect locking thereof.

10 7. A control mechanism for a Roman or like blind, according to any of Claims 1 to 5, character-
 ised by the fact that the said support body (13) includes a housing (15) which at least partly encloses the spool (10) and the sprocket (11), and the
15 housing (15) carries a spring element (19) defining a groove or throat in which a link or ball of the chain (12) is engageable to effect locking thereof.

 8. A control mechanism for a Roman or like
20 blind, according to Claim 6 or Claim 7, characterised by the fact that the said forked seats (16) or spring elements (19) are provided on both sides of the support body (13) for the spool and sprocket unit (10, 11), the forked seat (16) or spring (19) not
25 required for use being removable.

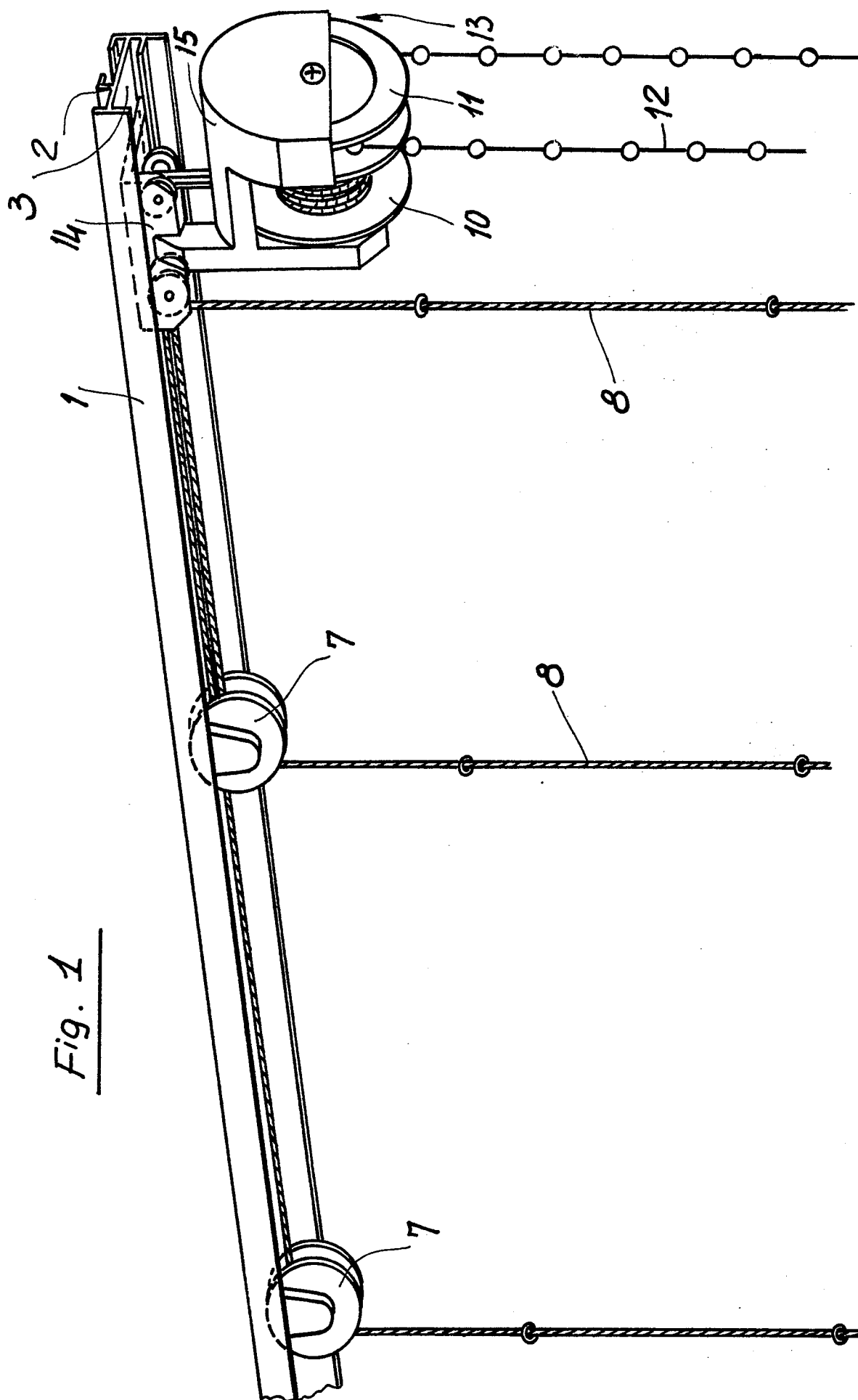


Fig. 1

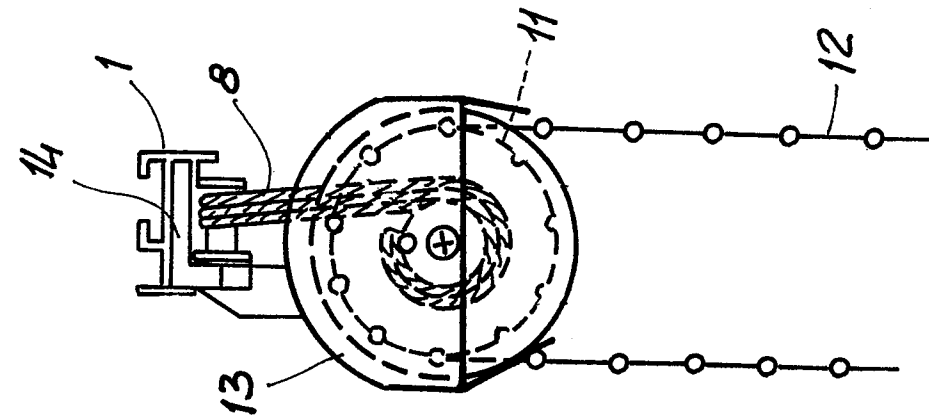


Fig. 3

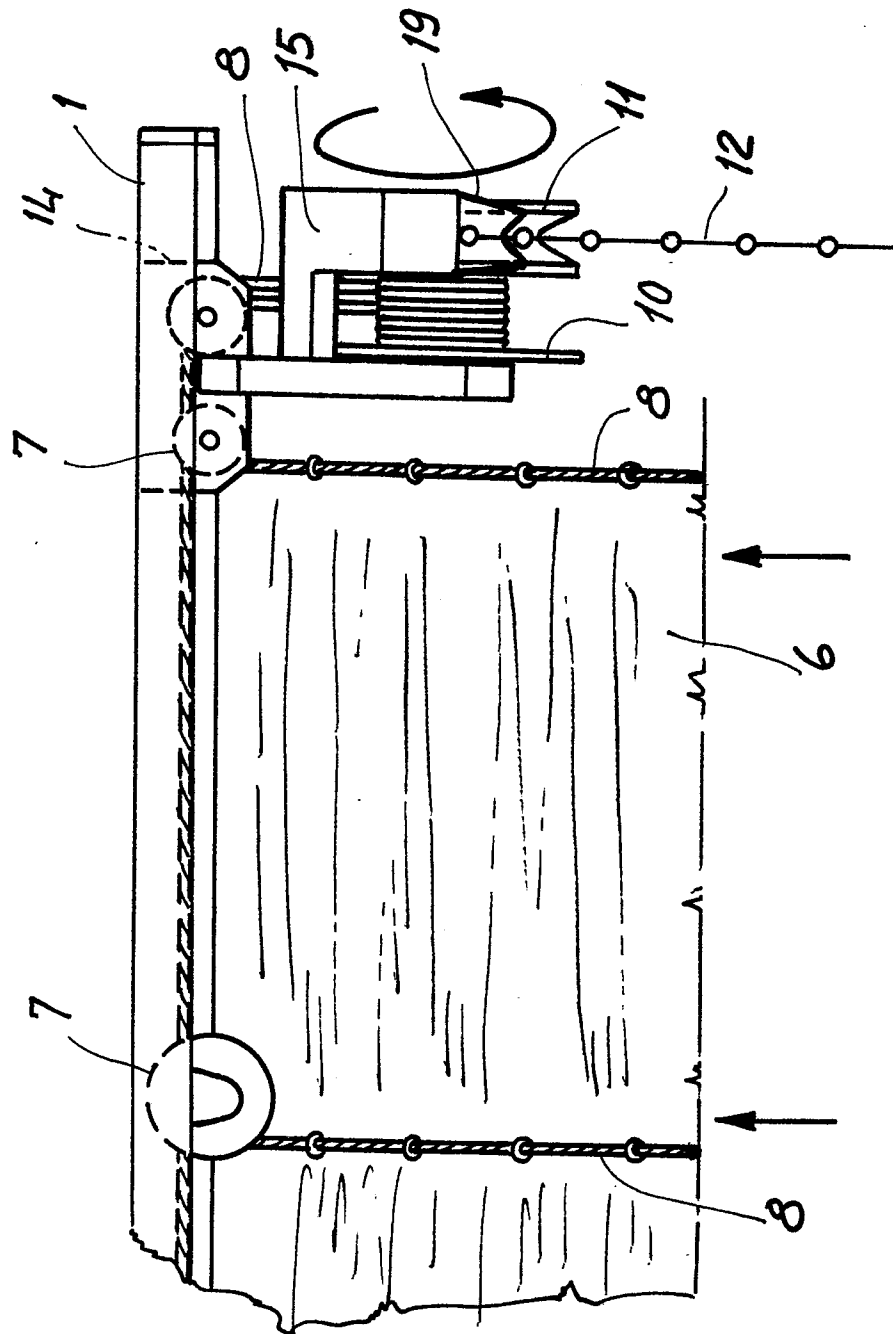


Fig. 2

Fig. 4

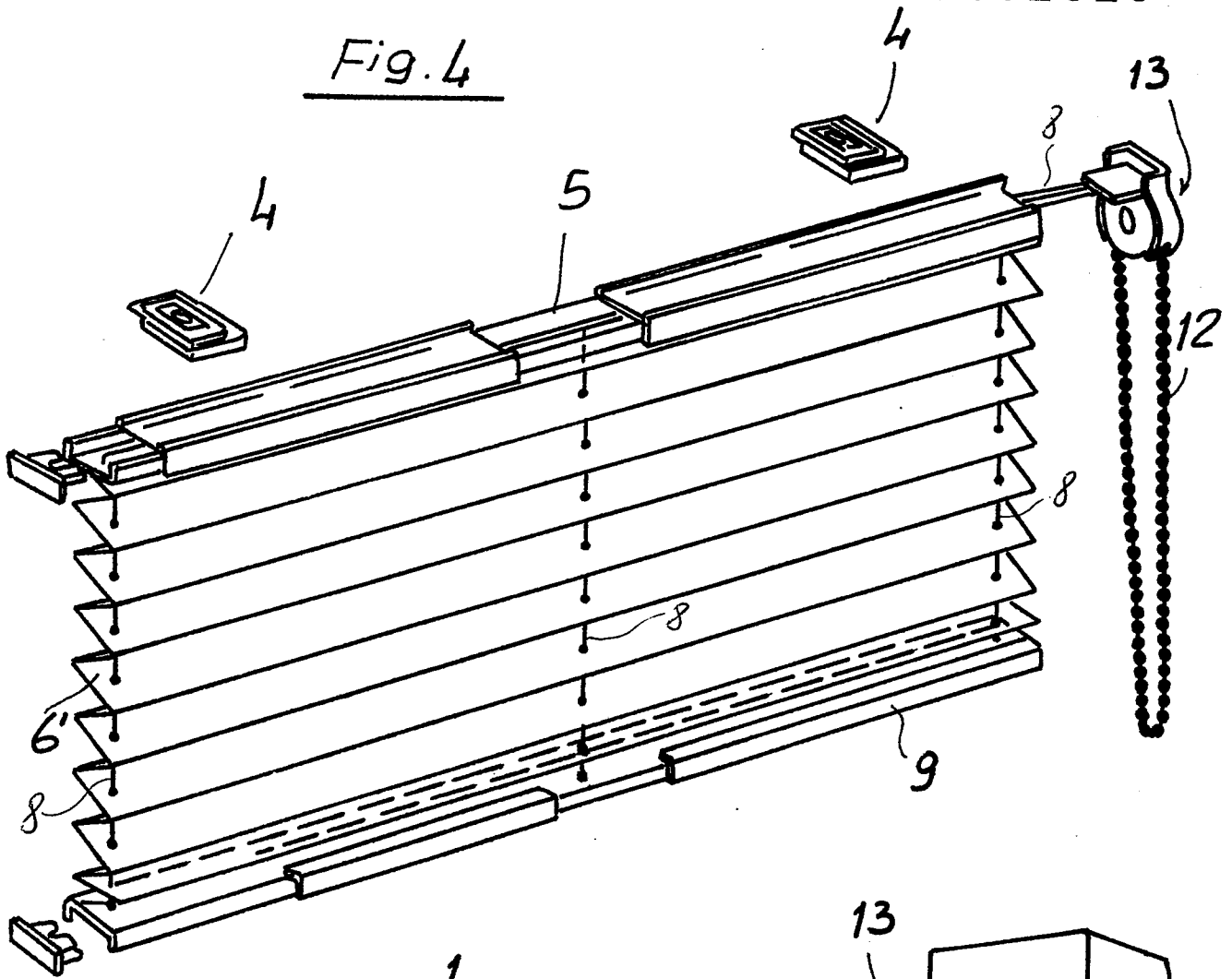


Fig. 7

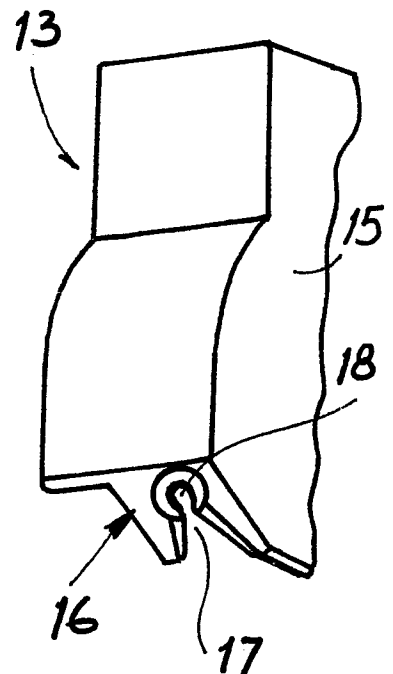
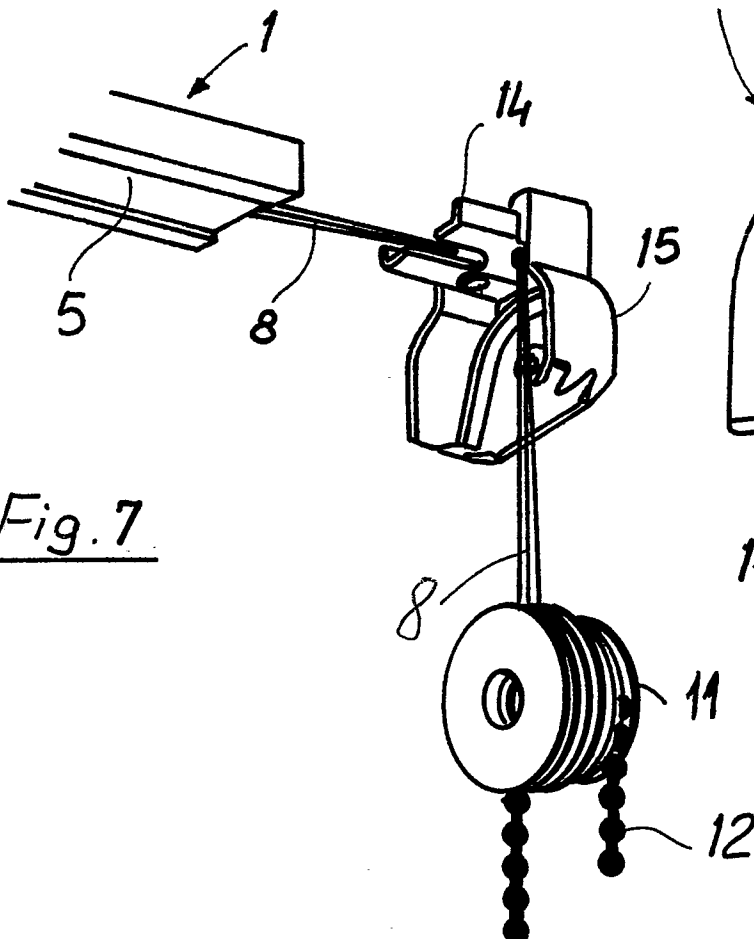


Fig. 8

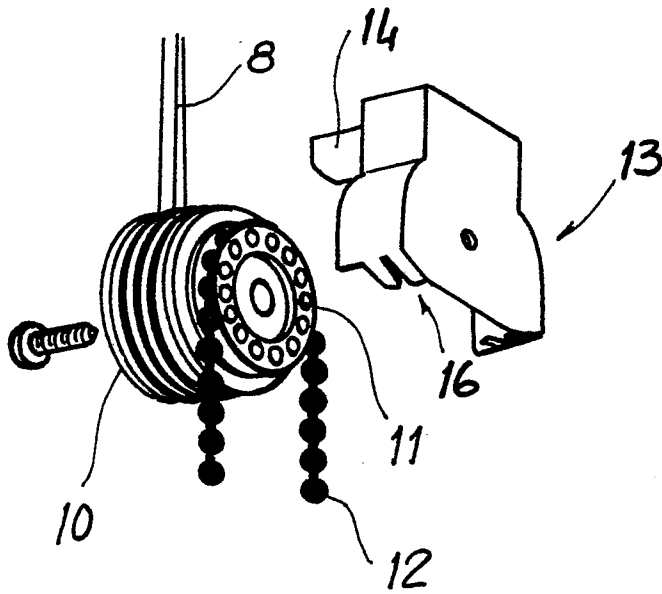


Fig. 6

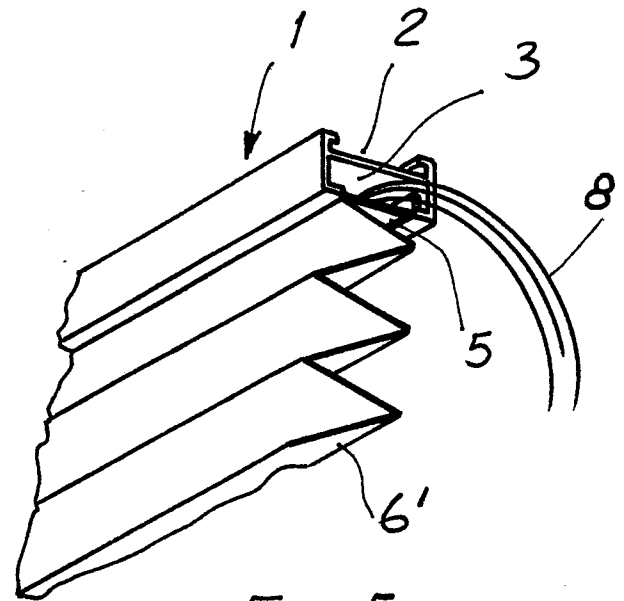


Fig. 5

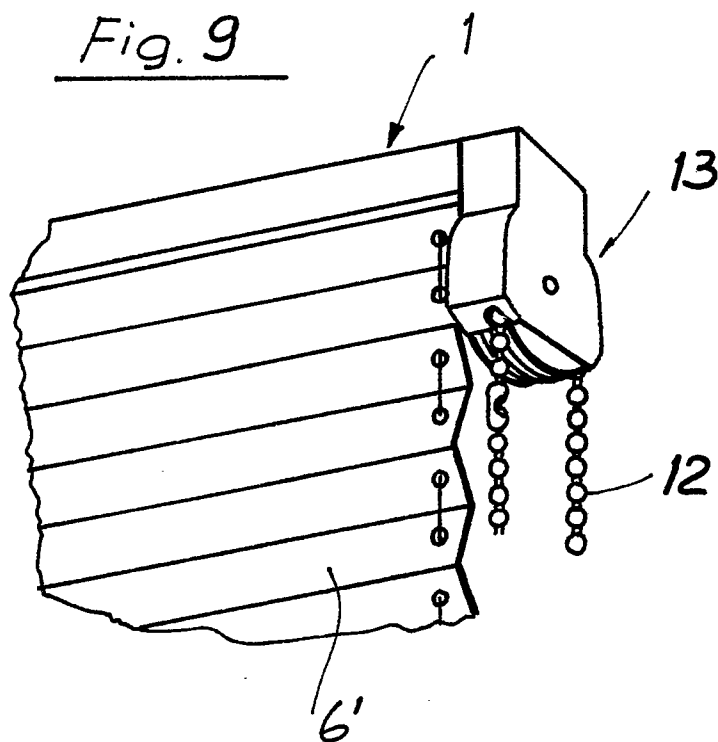


Fig. 9