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— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *of inventorship (Rule 4.17(iv))*

Published:

— *with international search report (Art. 21(3))*

(54) **Title**: MECHANISM CONTROLLING THE ROTATION OF ROLLER BLINDS WINDING ROLLER WITH A SPRING DRIVE

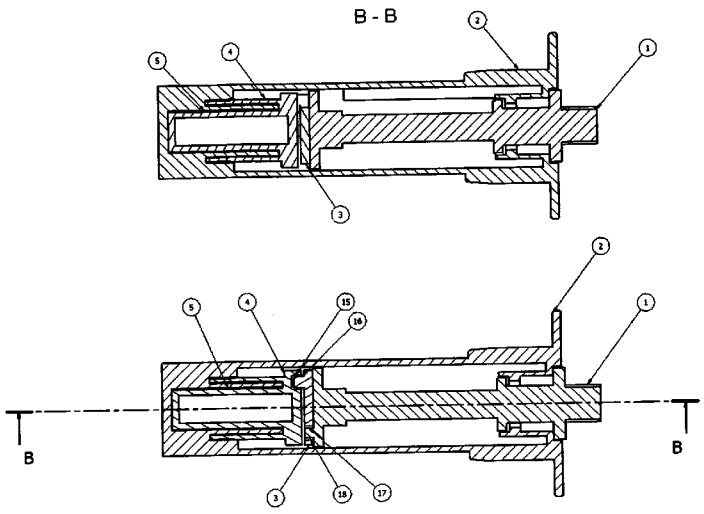


Fig. 6

(57) **Abstract**: The subject of invention is a mechanism controlling the rotation of roller blinds winding roller with a spring drive, immovably fixed to roller blinds holder and its winding roller, made up of roller (1), on which a sleeve (2) is seated, in the sleeve (2) there is rotationally seated a roller (4), and between the sleeve (2) and the roller (4) there is an annular slot filled with a breaking layer (5) formed from high viscosity medium, characterized by the fact that the roller (4) contains a formed driver (6) and in the sleeve (2), between roller (4) and roller (1) there is a break shoe (3) seated with its pin (9) in the roller's (1) opening (7), having a relief (8) where the roller's (4) driver (6) is seated.

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Mechanism controlling the rotation of roller blinds winding roller with a spring drive

The subject of invention is a mechanism controlling the rotation of roller blinds winding roller with a spring drive, especially a window blinds, when rolling or unrolling the sunshade.

There are known restraining devices containing decelerating structure, connected with roller blinds spring drive, described as toothed planetary gear unit with a central wheel, planet wheels and ring gear. A rotor is joint with the central wheel and planet wheels are rotationally seated on unidirectional coupling, while the ring gear is rotationally joint with a roller, hollowed along its entire length of which the two ends are rotationally joint with a couple of bearing pivots. The edge of the sunshade is joint with the roller, and inside the roller there is an immobile middle rod, joint with one of the bearing pivots. A spring, functionally adjusted to impart rotation of the roller in the first direction round its first axis and to pull in the sunshade, is joint with the middle rod and with the roller. In the roller there is located a fluid brake, functionally connected with the roller and middle rod, restraining rotation of the roller in its first direction. A chamber of the liquid brake is rotationally joint with the roller.

Mechanism controlling the rotation of roller blinds winding roller with a spring drive, according to the invention immovably fixed to roller blinds holder and its

winding roller is made up of roller on which a sleeve is seated, in the sleeve there is rotationally seated a roller, and between the roller and the sleeve there is an annular slot filled with a breaking layer formed from high viscosity medium, characterized by the fact that the roller contains a formed driver and in the sleeve, between roller 4 and roller 1 there is a break shoe seated with its pin in the roller's opening, having a relief where the roller's driver is seated.

Advantageously, the roller has a pin, break shoe has an opening while the break shoe is seated with is opening on the roller's pin.

Mechanism controlling the rotation of roller blinds winding roller with a spring drive, immovably fixed to roller blinds holder and its winding roller is made up of roller on which a sleeve is seated, in the sleeve there is rotationally seated a roller, and between the roller and the sleeve there is an annular slot filled with a breaking layer formed from high viscosity medium, characterized by the fact that the roller contains a formed driver and in the sleeve, between roller 4 and roller 1 there is a break shoe seated with its pin in the roller's opening, having a driver which cooperates with the roller's driver.

Advantageously, the roller has a pin, break shoe has an opening while the break shoe is seated with is opening on the roller's pin.

Mechanism controlling the rotation of roller blinds winding roller with a spring drive, immovably fixed to roller blinds holder and its winding roller is made up of roller on which a sleeve is seated, in the sleeve there is rotationally seated a roller, and between the roller and the sleeve there is an annular slot filled with a breaking layer formed from high viscosity medium, characterized by the fact that the roller contains a formed relief and in the sleeve, between roller 4 and roller 1 there is a break shoe seated with its pin in the roller's opening, having a driver which cooperates with the roller's relief.

Advantageously, the roller has a pin, break shoe has an opening while the break shoe is seated with is opening on the roller's pin.

Mechanism controlling the rotation of roller blinds winding roller with a spring drive, immovably fixed to roller blinds holder and its winding roller is made up of roller on which a sleeve is seated, in the sleeve there is rotationally seated a roller, and between the roller and the sleeve there is an annular slot filled with a breaking layer formed from high viscosity medium, characterized by the fact that the roller contains an

opening and in the sleeve, between roller 4 and roller 1 there is a break shoe seated with its pin in the roller's opening, having a pin which cooperates with the roller's opening.

Advantageously, the roller has a pin, break shoe has an opening while the break shoe is seated with is opening on the roller's pin.

The solution as in the invention several times increases endurance of the mechanism comparing to known designs.

The subject of invention is presented as examples of realization in figures, where fig. 1 presents longitudinal section of mechanism, fig. 2 presents longitudinal section of mechanism, fig. 3 presents longitudinal section of assembled mechanism of the roller blinds, fig. 4 presents longitudinal section of assembled mechanism of the roller blinds, fig. 5 presents longitudinal section of assembled mechanism of the roller blinds, fig. 6 presents longitudinal section of assembled mechanism of the roller blinds.

Mechanism controlling the rotation of roller blinds winding roller with a spring drive, according to the invention immovably fixed to roller blinds holder and its winding roller, is made up of roller 1, on which a sleeve 2 is seated, in the sleeve 2 there is rotationally seated a roller 4, and between the sleeve 2 and the roller 4 there is an annular slot filled with a breaking layer 5 formed from high viscosity medium, characterized by the fact that the roller 4 contains a formed driver 6 and in the sleeve 2, between roller 4 and roller 1 there is a break shoe 3 seated with its pin 9 in the roller's 1 opening 7, having a relief 8 where the roller's 4 driver 6 is seated.

Advantageously, the roller 1 has no opening 7 but has a pin 17, break shoe 3 has no pin 9 but has an opening 18 while the break shoe 3 is seated with is opening 18 on the roller's 1 pin 17.

Mechanism controlling the rotation of roller blinds winding roller with a spring drive, immovably fixed to roller blinds holder and its winding roller is made up of roller 1 on which a sleeve 2 is seated, in the sleeve 2 there is rotationally seated a roller 4, and between the sleeve 2 and the roller 4 there is an annular slot filled with a breaking layer 5 formed from high viscosity medium, characterized by the fact that the roller 4 contains a formed driver 6 and in the sleeve 2, between roller 4 and roller 1 there is a break shoe 3 seated with its pin 9 in the roller's 1 opening 7, having a driver 11 which cooperates with the roller's driver 6.

Advantageously, the roller 1 has no opening 7 but has a pin 17, break shoe 3 has no pin 9 but has an opening 18 while the break shoe 3 is seated with is opening 18 on

the roller's 1 pin 17.

Mechanism controlling the rotation of roller blinds winding roller with a spring drive, immovably fixed to roller blinds holder and its winding roller is made up of roller 1 on which a sleeve 2 is seated, in the sleeve 2 there is rotationally seated a roller 4, and between the sleeve 2 and the roller 4 there is an annular slot filled with a breaking layer 5 formed from high viscosity medium, characterized by the fact that the roller 4 contains a formed relief 12 and in the sleeve 2, between roller 4 and roller 1 there is a break shoe 3 seated with its pin 9 in the roller's 1 opening 7, having a driver 11 which cooperates with the roller's 4 relief 12.

Advantageously, the roller 1 has no opening 7 but has a pin 17, break shoe 3 has an opening 18 while the break shoe 3 is seated with is opening 18 on the roller's 1 pin 17.

Mechanism controlling the rotation of roller blinds winding roller with a spring drive, immovably fixed to roller blinds holder and its winding roller is made up of roller 1 on which a sleeve 2 is seated, in the sleeve 2 there is rotationally seated a roller 4, and between the sleeve 2 and the roller 4 there is an annular slot filled with a breaking layer 5 formed from high viscosity medium, characterized by the fact that the roller 4 contains an opening 15 and in the sleeve 2, between roller 4 and roller 1 there is a break shoe 3 seated with its pin 9 in the roller's 1 opening 7, having a pin 16 which cooperates with the roller's 4 opening 15.

Advantageously, the roller 1 has no opening 7 but has a pin 17, break shoe 3 has no pin 9 but has an opening 18 while the break shoe 3 is seated with is opening 18 on the roller's 1 pin 17.

Patent claims

1. Mechanism controlling the rotation of roller blinds winding roller with a spring drive, immovably fixed to roller blinds holder and its winding roller, made up of roller (1), on which a sleeve (2) is seated, in the sleeve (2) there is rotationally seated a roller (4), and between the sleeve (2) and the roller (4) there is an annular slot filled with a breaking layer (5) formed from high viscosity medium, characterized by the fact that the roller (4) contains a formed driver (6) and in the sleeve (2), between roller (4) and roller (1) there is a break shoe (3) seated with its pin (9) in the roller's (1) opening (7), having a relief (8) where the roller's (4) driver (6) is seated.

2. Mechanism controlling the rotation of roller blinds winding roller with a spring drive, according to claim 1, characterized by the fact that the roller (1) has a pin (17), break shoe (3) has an opening (18) while the break shoe (3) is seated with its opening (18) on the roller's (1) pin (17).

3. Mechanism controlling the rotation of roller blinds winding roller with a spring drive, immovably fixed to roller blinds holder and its winding roller, made up of roller (1) on which a sleeve (2) is seated, in the sleeve (2) there is rotationally seated a roller (4), and between the sleeve (2) and the roller (4) there is an annular slot filled with a breaking layer (5) formed from high viscosity medium, characterized by the fact that the roller (4) contains a formed driver (6) and in

the sleeve (2), between roller (4) and roller (1) there is a break shoe (3) seated with its pin (9) in the roller's (1) opening (7), having a driver (1) which cooperates with the roller's (4) driver (6).

4. Mechanism controlling the rotation of roller blinds winding roller with a spring drive, according to claim 3, characterized by the fact that the roller (1) has a pin (17), break shoe (3) has an opening (18) while the break shoe (3) is seated with its opening (18) on the roller's (1) pin (17).

5. Mechanism controlling the rotation of roller blinds winding roller with a spring drive, immovably fixed to roller blinds holder and its winding roller, made up of roller (1) on which a sleeve (2) is seated, in the sleeve (2) there is rotationally seated a roller (4), and between the sleeve (2) and the roller (4) there is an annular slot filled with a breaking layer (5) formed from high viscosity medium, characterized by the fact that the roller (4) contains a formed relief (12) and in the sleeve (2), between roller (4) and roller (1) there is a break shoe (3) seated with its pin (9) in the roller's (1) opening (7), having a driver (11) which cooperates with the roller's (4) relief (12).

6. Mechanism controlling the rotation of roller blinds winding roller with a spring drive, according to claim 5, characterized by the fact that the roller (1) has a pin (17), break shoe (3) has an opening (18) while the break shoe (3) is seated with its opening (18) on the roller's (1) pin (17).

7. Mechanism controlling the rotation of roller blinds winding roller with a spring drive, immovably fixed to roller blinds holder and its winding roller, made up of roller (1) on which a sleeve (2) is seated, in the sleeve (2) there is rotationally seated a roller (4), and between the sleeve (2) and the roller (4) there is an annular slot filled with a breaking layer (5) formed from high viscosity medium, characterized by the fact that the roller (4) has a pin (13) and in the sleeve (2), between roller (4) and roller (1) there is a break shoe (3) seated with its pin (9) in the roller's (1) opening (7), having an opening (14) in which roller's (4) pin (13) is inserted.

8. Mechanism controlling the rotation of roller blinds winding roller with a spring drive, according to claim 7, characterized by the fact that the roller (1) has a pin (17), break shoe (3) has an opening (18) while the break shoe (3) is seated with

its opening (18) on the roller's (1) pin (17).

9. Mechanism controlling the rotation of roller blinds winding roller with a spring drive, immovably fixed to roller blinds holder and its winding roller, made up of roller (1) on which a sleeve (2) is seated, in the sleeve (2) there is rotationally seated a roller (4), and between the sleeve (2) and the roller (4) there is an annular slot filled with a breaking layer (5) formed from high viscosity medium, characterized by the fact that the roller (4) contains an opening (15) and in the sleeve (2), between roller (4) and roller (1) there is a break shoe (3) seated with its pin (9) in the roller's (1) opening (7), having a pin (16) which cooperates with the roller's (4) opening (15).

10. Mechanism controlling the rotation of roller blinds winding roller with a spring drive, according to claim 9, characterized by the fact that the roller (1) has a pin (17), break shoe (3) has an opening (18) while the break shoe (3) is seated with its opening (18) on the roller's (1) pin (17).

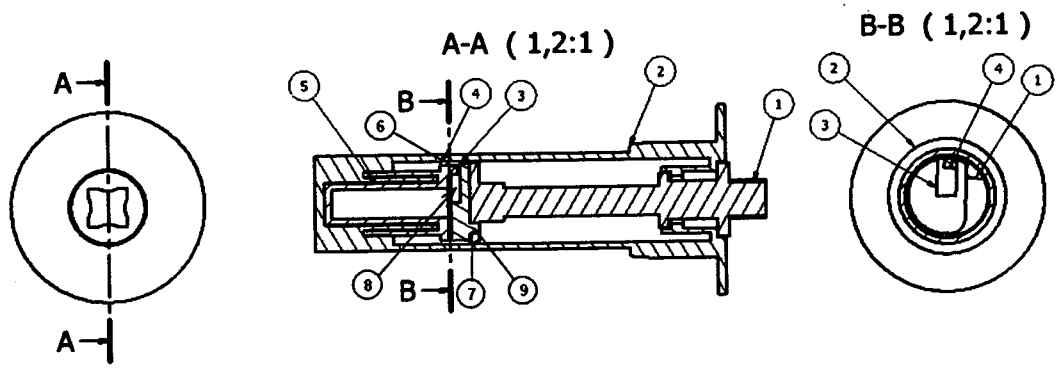


Fig. 1

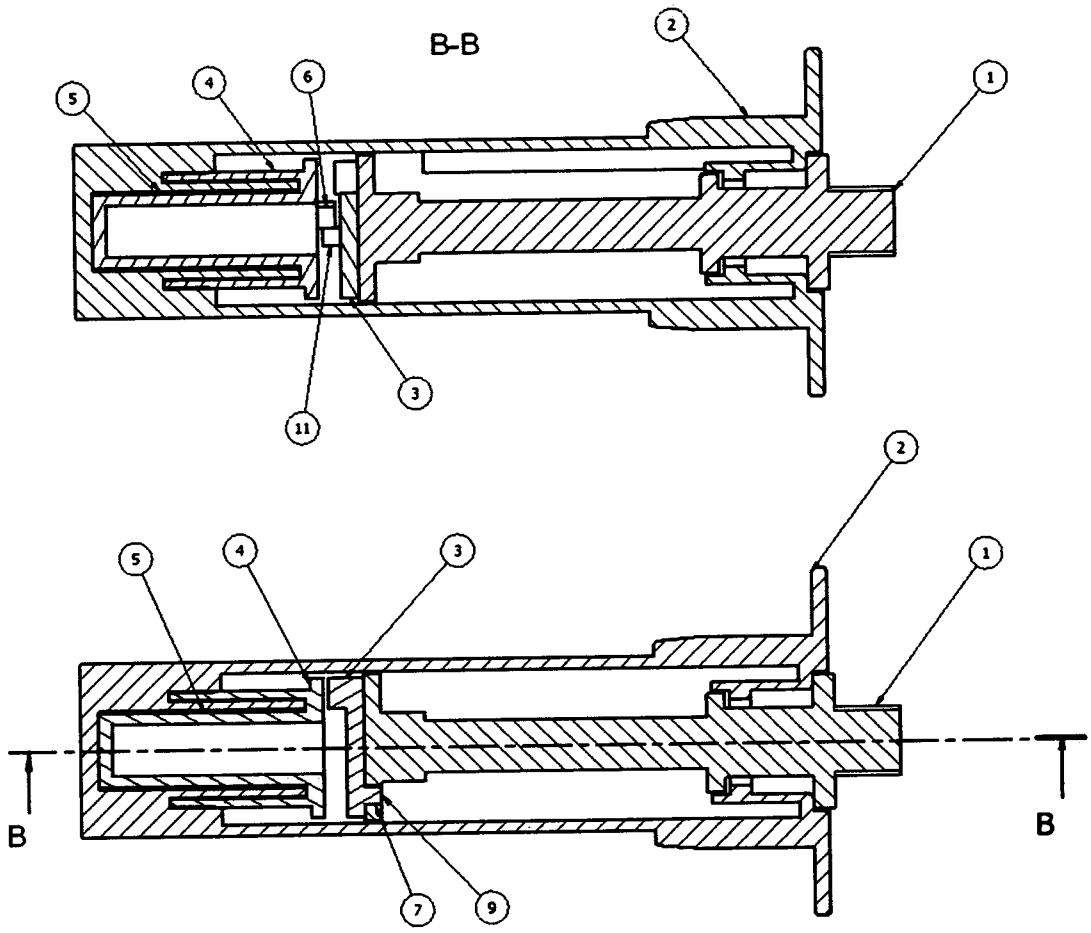


Fig. 2

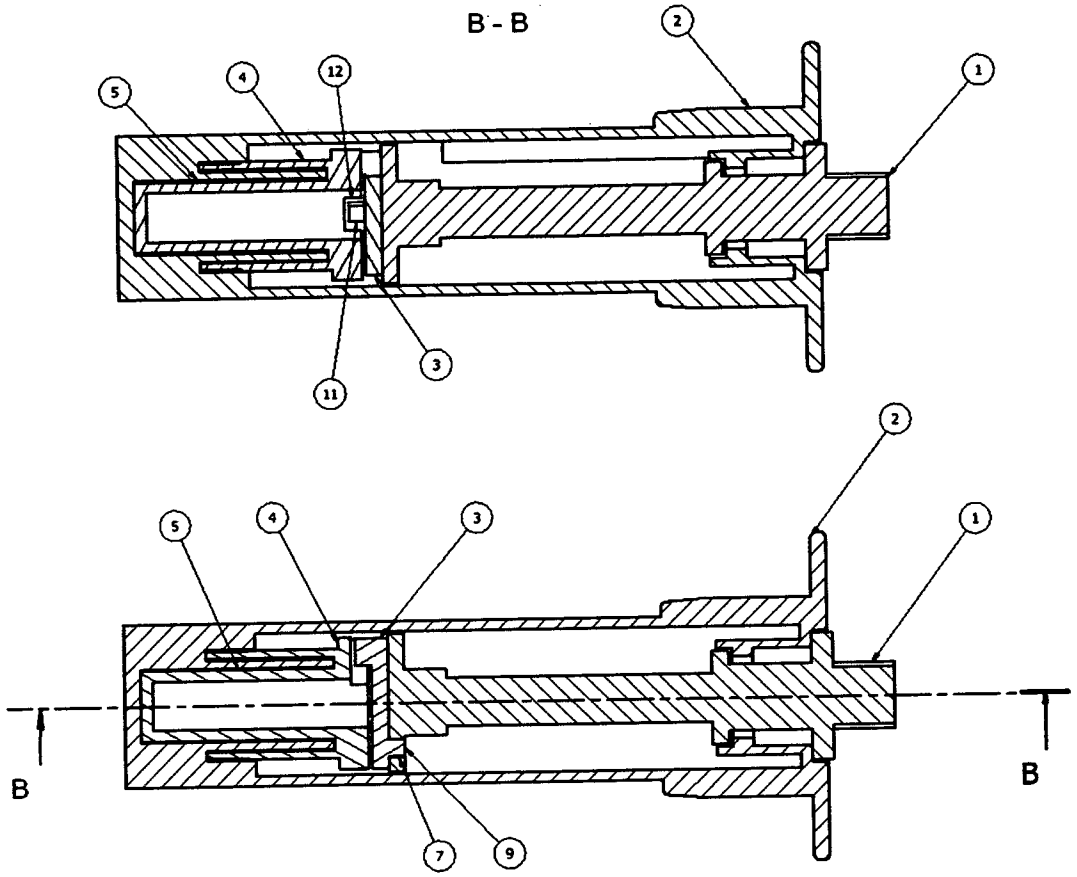


Fig. 3

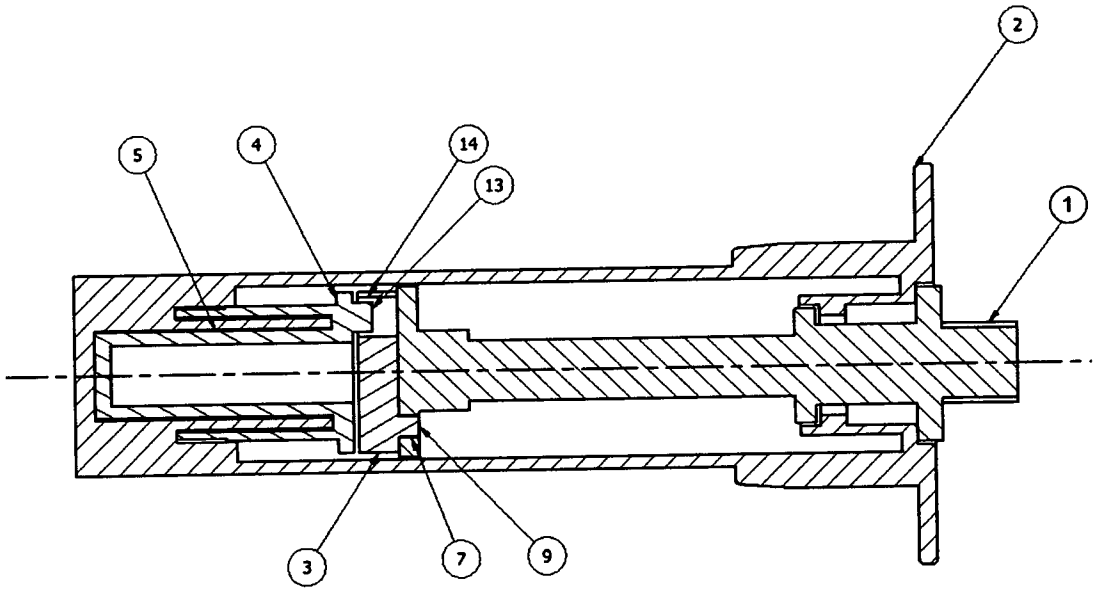


Fig. 4

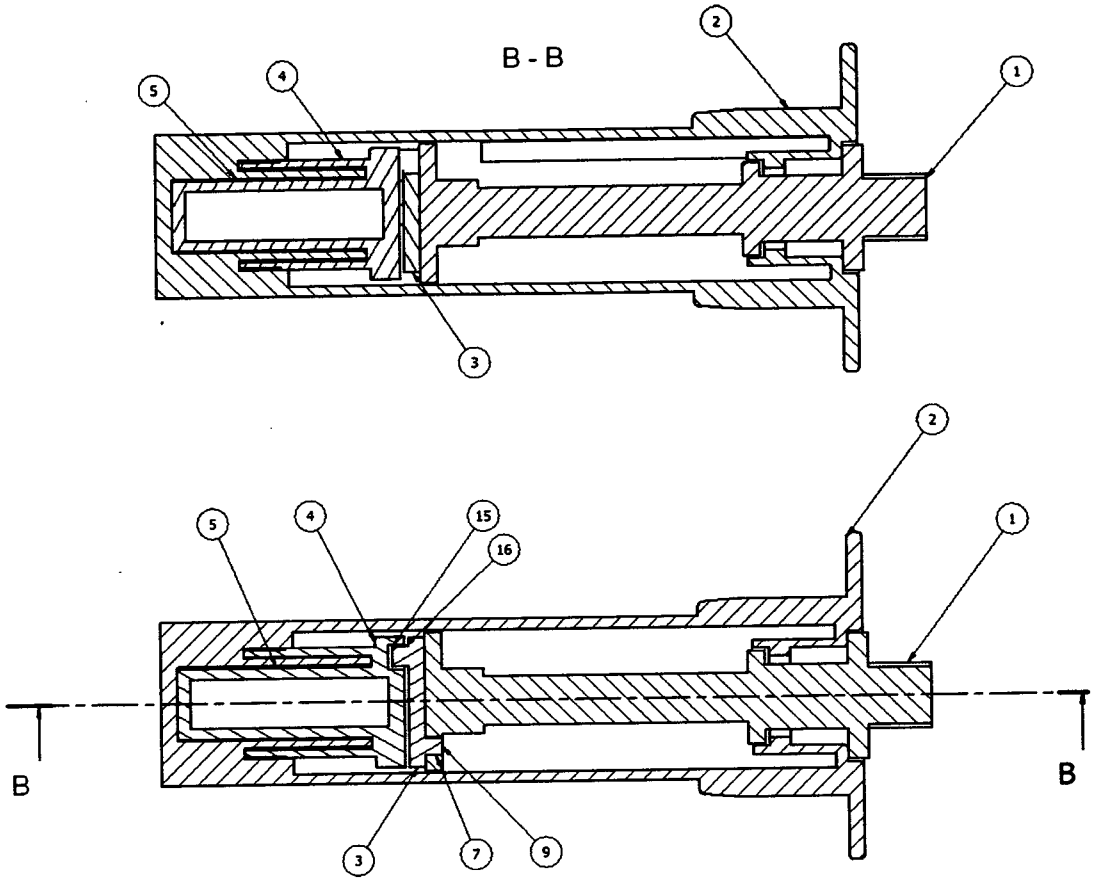


Fig. 5

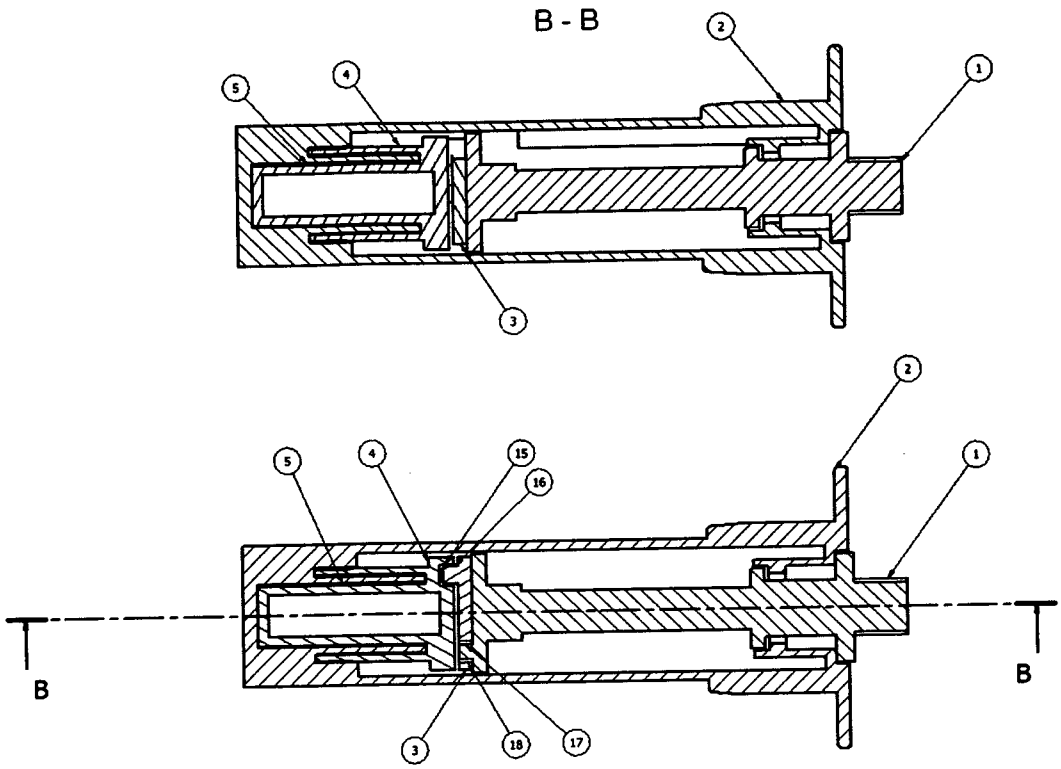


Fig. 6

INTERNATIONAL SEARCH REPORT

International application No
PCT/PL2010/000114

A. CLASSIFICATION OF SUBJECT MATTER
INV. E06B9/80
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
E06B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	DE 102 49 180 A1 (TOK BEARING CO LTD [JP]) 30 April 2003 (2003-04-30) the whole document -----	1-10
Y	EP 0 867 594 A1 (SOMFY [FR]) 30 September 1998 (1998-09-30) figures 2,4 -----	1-10

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
5 May 2011	16/05/2011

Name and mailing address of the ISA/	Authorized officer
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/PL2010/000114

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 10249180 A1	30-04-2003	JP 2003130111 A	08-05-2003
		US 2003075404 A1	24-04-2003
EP 0867594 A1	30-09-1998	ES 2121727 T1	16-12-1998
		FR 2761547 A1	02-10-1998