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(54) Hinge with a closer

(57) The subject of the invention is a hinge with a closer for mosquito screen self-closing in which the closing mechanism is placed in the upper and lower part of the hinge.

The hinge with a closer constituting of a lower (**8**) and upper (**4**) hinge part, both equipped with half-open clamps, inside of which a turning and sliding tube (**5**) has been placed for connecting the hinge parts, equipped with a circumferenctial ring and a cylyndric spring (**3**) on the inside. The upper hinge part (**4**) is equipped on the inside with a cylyndrical passage (**11**) with circumferential protrusions (**12**), contacting the circumferential protrusions (**12'**) placed under the collar (**13**) of the tightening element (**1**) with a key socket (**14**) on top, while one end (**2**) of the cylyndric spring (**3**) is mounted in the opening (**15**) and the other (**6**) is mounted in the opening (**16**) of the retainer (**7**) mounted separately with a steady pin (**10**) in the lower hinge part (**8**).

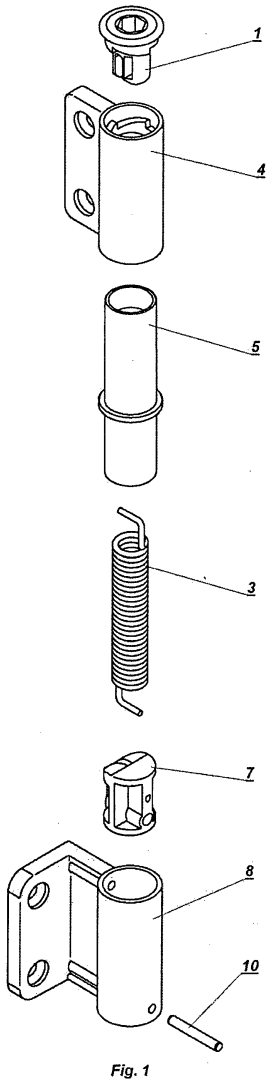

Fig. 1

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Description

[0001] The subject of the invention is a hinge with a closer for mosquito screen self-closing in which the closing mechanism is placed in the upper and lower part of the hinge.

[0002] The door and window closing mechanisms as a separately mounted mechanisms applied for closing door to door and casing or for closing windows to window frame and casing.

[0003] A hinge joint for movable closures of building shell openings with a springing element responsible for the force which restores the primary closed state position and one part of the hinge mounted on the closure while the second is mounted on the opening and the hinge pin on one of the two hinge parts (18), entering a guiding opening to the second hinge part, characterized by the springing element mounted as a tortion spring on the hinge pin on one side and on the first hinge part with the guiding opening on the second side, is known from the German patent claim DE 102008045772A1.

[0004] The hinge with a closer constituting of a lower and upper hinge parts, both equipped with half-open clamps, inside of which a turning and sliding tube has been placed for connecting the hinge parts, equipped with a circumferenctial ring and a cylyndric spring on the inside, with angular deflections at the endings, is, according to the invention, characterised by a cylyndrical passage with circumferential protrusions in the upper hinge part, contacting the circumferential protrusions placed under the collar of the tightening element with a key socket, while one end of the cylyndric spring is mounted in the opening and the other is mounted in the opening of the retainer mounted separately with a retaining ring in the lower hinge part. At the circuit of the cyllindrical passage and at the circuit of the tightening element collar, four circumferential protrusions have been placed. Each and every of the protrusions have a curved top surface, or all the protrusions have a flat top surface. The lower part of the tightening element contains an axial groove inside of which an opening perpendicular to the grove has been placed. The lower part of the retainer contains an axial groove with an opening perpendicular to the grove.

[0005] The advantage of the hinge with a closer in accordance with the invention is the easy adjustment without the necessity to unmount the hinge. The initial tension of the hinge is adjusted in steps, every 90° with an allen key introduced into the tightening element and turned clockwise. The tightening element and the upper hinge part have overlapping sufaces. The hinge is also characterised by the lower part used both for left and right wing applications.

[0006] The example subject of the invention has been presented as an illustration, the fig. 1 of which shows the axonometric front ciew of the hinge and closer elements in the mounting order, fig. 2 shows the axonometric front view of the mounted hinge, fig. 3 shows the side view of the spring, fig. 4 shows the axonometric view of the upper hinge part, fig. 5 shows the top view of the upper hinge part, fig. 6 shows the top view of the tightening element, fig. 7 shows the axonometric bottom view of the tightening element, fig. 8 shows the axonometric front view of the retainer and the fig. 9 shows the front view of the retainer.

[0007] As given in the illustration, the mounting of the hinge with closer consists in the connection of the tightening element **1** with the end **2** of the spring **3,** and, following that, introducing the parts vertically and from top into the sliding tube **5,** which has been earlier introduced from bottom into the upper hinge part **4.** Next, the end **6** of the spring **3** is introduced into the retainer **7** and the whole construction is introduced into the lower hinge part **8,** protected against turning in the cylindrical passage **9** with a steady pin **10.**

[0008] The upper hinge part **4** has a cylyndrical passage **11** inside, equipped with circumferential protrusions **12** from the top, contacting the circumferential protrusions **12'** placed under the collar **13** of the tightening element **1** with a key socket **14** on top, while one end **2** of the cylyndric spring **3** is mounted in the opening **15** and the other **6** is mounted in the opening **16** of the retainer **7** mounted separately with a steady pin**10** in the lower hinge part **8.** At the circuit of the cyllindrical passage **11** and at the circuit of the tightening element **1** collar **13**, four circumferential protrusions **12, 12'** have been placed. Each and every of the protrusions **12, 12'** has a curved top surface **17,** or all the protrusions **12, 12'** have a flat top surface **17.** The lower part of the tightening element **1** contains an axial groove **18** inside of which an opening **15** perpendicular to the grove has been placed while the lower part of the retainer **7** contains an axial groove **19** with an opening **16** perpendicular to the grove.

Claims

1. The hinge with a closer constituting of a lower and upper hinge parts, both equipped with half-open clamps, inside of which a turning and sliding tube has been placed for connecting the hinge parts, equipped with a circumferenctial ring and a cylyndric spring on the inside, with angular deflections at the endings, **is characterised by** the upper hinge part **(4)** having a cylyndrical passage **(11)** inside, equipped with circumferential protrusions **(12)** at the top, contacting the circumferential protrusions **(12')** placed under the collar **(13)** of the tightening element **(1)** with a key socket **(14)** on top, while one end **(2)** of the cylyndric spring **(3)** is mounted in the opening **(15)** and the other **(6)** is mounted in the opening **(16)** of the retainer **(7)** mounted separately with a steady pin **(10)** in the lower hinge part **(8).**

2. The hinge, according to the claim 1, **is characterized by** four circumferential protrusions **(12), (12')** at the circuit of the cyllindrical passage **(11) and** at

the circuit of the tightening element **(1)** collar(**13**).

3. The hinge, according to the claim 1, **is characterized by** the fact that each of the protrusions **(12), (12')** has a curved top surface **(17)**

4. The hinge, according to the claim 1, **is characterized by** the fact that each of the protrusions **(12), (12')** has a flat top surface **(17)**

5. The hinge, according to the claim 1, **is characterized by** the fact that the lower part of the tightening element **(1)** contains an axial groove **(18)** inside of which an opening **(15)** perpendicular to the grove has been placed.

6. The hinge, according to the claim 1, **is characterized by** the fact that the lower part of the retainer (**7**) contains an axial groove (**19**) with an opening (**16**) perpendicular to the grove.

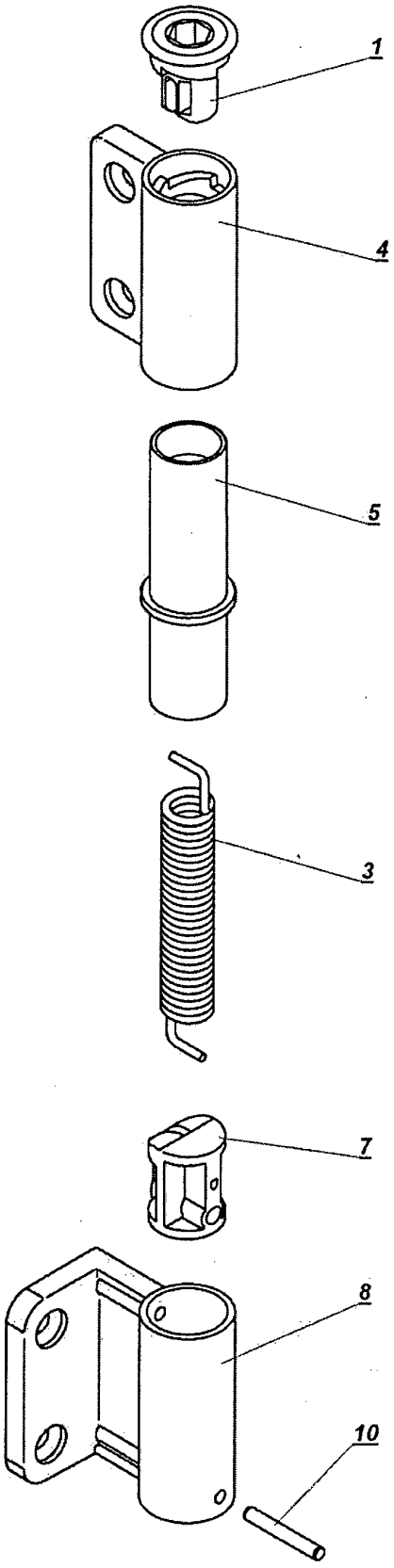

Fig. 1

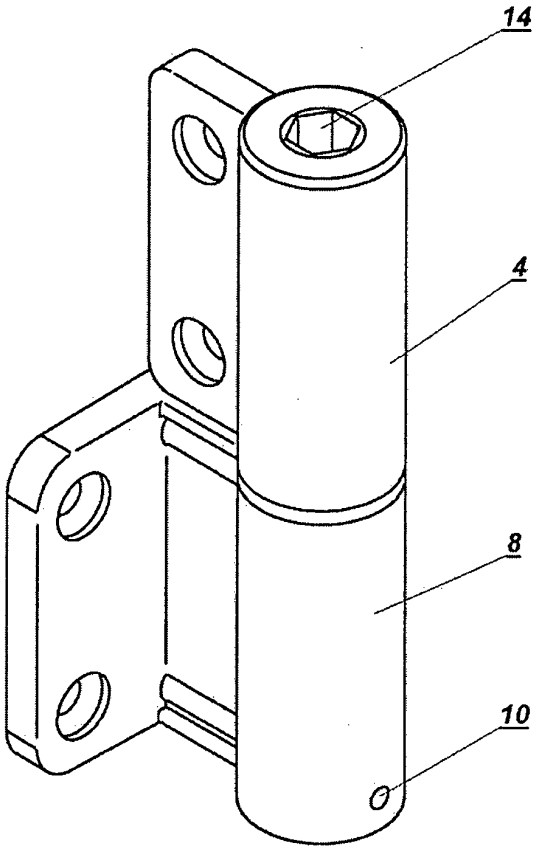

Fig. 2

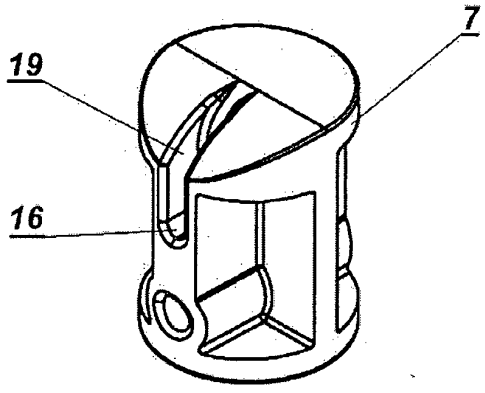

Fig. 8

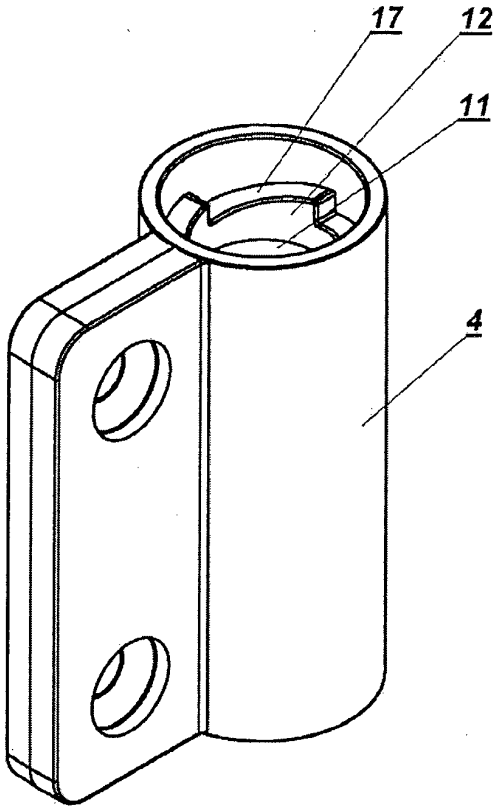

Fig. 4

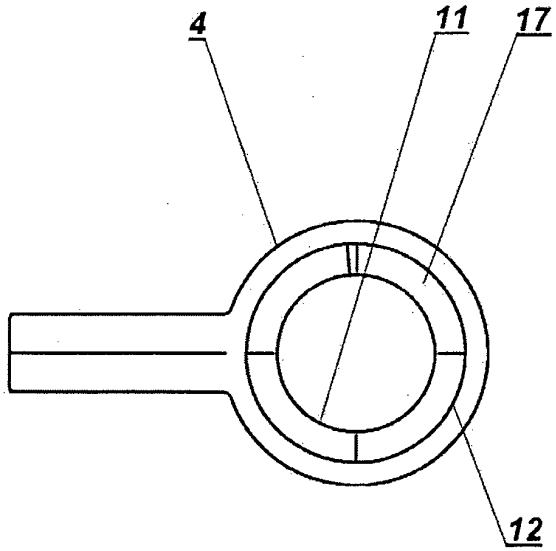

Fig. 5

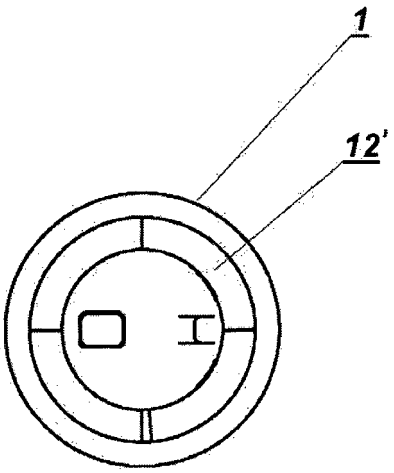

Fig. 6

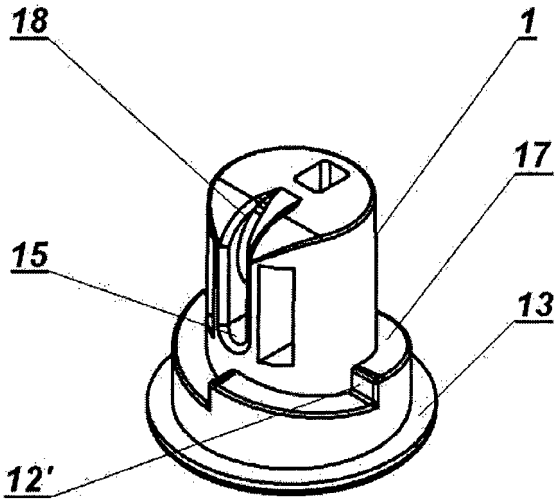

Fig. 7

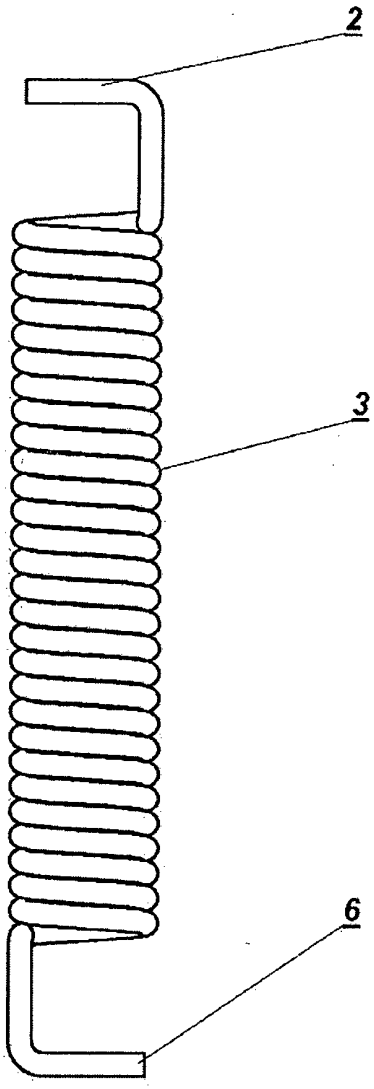

Fig. 3

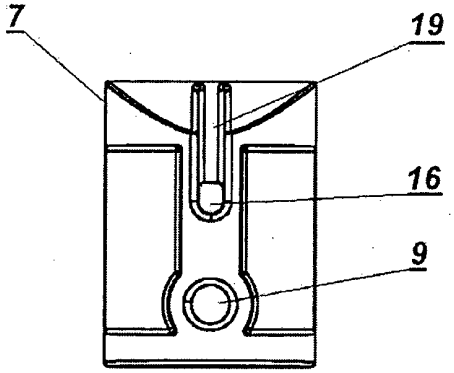

Fig. 9

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- DE 102008045772 A1 **[0003]**