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(54) **A COOKING DEVICE HAVING A CONTROL KNOB**

(57) The present invention relates to a cooking device (1) comprising a body (10), a control panel (11) provided on the body (10), a control element (12) for adjusting a power level of a heat source, the control element (12) comprising a shaft (13) extending through the control panel (11) and a control knob (20) connected to the shaft (13) for rotating the shaft. As an improvement, the control knob (20) of the subject matter cooking device (1) comprises at least one outer body (70) movable relative to the shaft (13) in an axial direction of the shaft (13), at least one inner body (60) connected to the shaft (13) in a manner not movable relative to the shaft (13) wherein the inner body (60) is located at least partly in an opening (72) of the outer body (70) and the inner body (60) is exposed to be gripped by a user when the outer body (70) is moved in a direction towards the control panel (11).

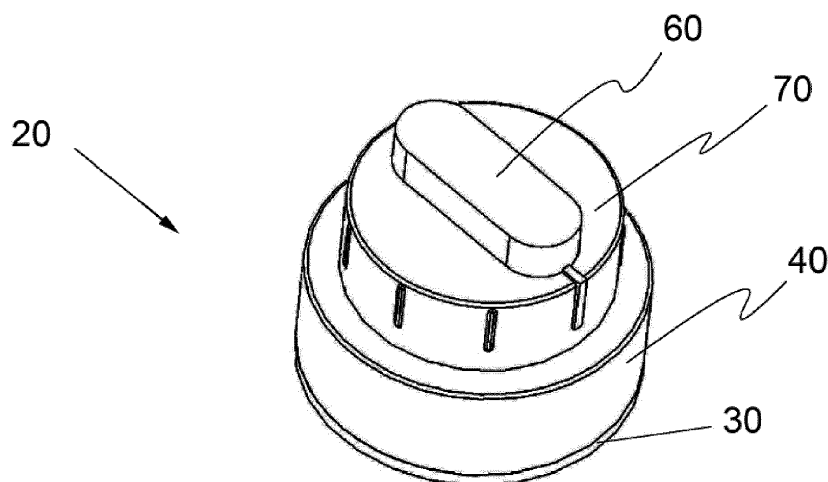


Fig.4

Description

TECHNICAL FIELD

[0001] The invention relates to cooking devices having a control knob connected to a shaft extending in a direction away from a control panel.

KNOWN STATE OF THE ART

[0002] There are control panels provided on the bodies of cooking devices. In gas cooking devices, there are shafts extending in the direction away from the control panel. The control knobs, provided on the shafts, are rotated and the power level of the heat source of the cooking device can be controlled. The heat, emitted during operation of the cooking device, may lead to heating of the control knobs. This leads to a risk for the user.

[0003] The device, disclosed in the application DE102005032509, has a grip part connected with a servo-spindle in a movably transferable manner. The grip part is pivotable around a rotation axis in and from a position locked by a locking device. An integrated pressable-rotary mechanism loosens the locking device by an actuating movement of the grip part. The locking device has two resting units that are movable relative to each other with the grip part.

BRIEF DESCRIPTION OF THE INVENTION

[0004] The object of the invention is to provide a cooking device which eliminates the risks occurring as a result of heating of the control knobs in cooking devices.

[0005] The present invention is a cooking device comprising a body, a control panel provided on the body, a control element for adjusting a power level of a heat source, the control element comprising a shaft extending through the control panel and a control knob connected to the shaft for rotating the shaft. Accordingly, the control knob comprises at least one outer body movable relative to the shaft in an axial direction of the shaft, at least one inner body connected to the shaft in a manner not movable relative to the shaft wherein the inner body is located at least partly in an opening of the outer body and the inner body is exposed to be gripped by a user when the outer body is moved in a direction towards the control panel. Thus, even if the outer wall of the control knob heated during usage of the cooking device, the control knob is controlled through the inner body hidden inside the outer body by the user. Thus, burning of the hand of the user is prevented.

[0006] In a probable embodiment of the invention, at least one spring element is provided for pushing the outer body in a direction away from the control panel. Thus, as long as no pressure is exerted to the outer body by the user, the inner body is hidden inside the outer body.

[0007] In a probable embodiment of the invention, a ring body is positioned on the control panel in a manner

not movable relative to the control panel for guiding a movement of the outer body. Thus, guiding of the movement of the outer body is provided.

[0008] In a probable embodiment of the invention, at least one tooth part is provided inside the ring body and a blocking part is provided on the outer body in a manner engaging to the tooth part for blocking a rotational movement of the outer body, when the outer body is pushed by the spring element to an end position in the direction away from the control panel. Thus, when the inner body is hidden inside the outer body, the rotation of the outer body is prevented.

[0009] In a probable embodiment of the invention, the control knob is configured in a manner providing an interruption of the contact between the blocking part and the tooth part, when the outer body is pushed towards the control panel. Thus, when the user pushes the outer body, the outer body has rotation freedom.

[0010] In a probable embodiment of the invention, at least one closing part is connected to the control panel, and at least one assembly tab and at least one tab housing are provided mutually between the closing part and the ring body. Thus, the assembly of the ring body to the control panel is provided.

[0011] In a probable embodiment of the invention, the inner body comprises at least one grabbing wall. Thus, handling of the inner body by the user is facilitated.

[0012] In a probable embodiment of the invention, two grabbing walls are provided essentially parallel to each other such that there is a predetermined distance in between. Thus, handling of the inner body from the two sides by the user is facilitated.

[0013] In a probable embodiment of the invention, the inner body is provided in a form which is similar to a feather key. Thus, formation of sharp edges at the section where the user handles the inner body is prevented.

[0014] In a probable embodiment of the invention, the inner body comprises at least one shaft connection extension connected to the shaft. Thus, the assembly of the inner body to the shaft can be realized, and the shaft is rotated as the inner body is rotated.

[0015] In a probable embodiment of the invention, at least one stopper tab is provided on the outer wall of the inner body. Thus, the inner body is prevented from protruding through the opening provided on the outer body.

[0016] In a probable embodiment of the invention, the control element is a gas tap. Thus, a gas tap is provided for controlling the power level of the heat source of the cooking device.

[0017] In a probable embodiment of the invention, the control element is a switch. Thus, a switch is provided for controlling an ignition and the power level of the heat source of the cooking device.

BRIEF DESCRIPTION OF THE FIGURES

[0018]

Fig. 1 is a representative view of the subject matter cooking device.

Fig. 2 is an exploded view of the control panel of the subject matter cooking device.

Fig. 3 and 4 are the representative isometric views of the control knob of the subject matter cooking device.

Fig. 5 and 6 are the exploded views of the control knob of the subject matter cooking device.

Fig. 7 and 8 are the representative cross sectional views of the control knob of the subject matter cooking device during use and when not in use.

Fig. 9 is the representative isometric views of the inner body of the control knob of the subject matter cooking device.

Fig. 10 is the representative isometric views of the outer body of the control knob of the subject matter cooking device.

DETAILED DESCRIPTION OF THE INVENTION

[0019] In this detailed description, the subject matter cooking device (1) is explained with references to examples without forming any restrictive effect only in order to make the subject more understandable.

[0020] With reference to Fig. 1, 2 and 3, the subject matter cooking device (1) has a body (10) and at least one control knob (20) provided on a control panel (11). Said control knob (20) is connected to a control element (12) coming from a rear side of the control panel (11). Said control element (12) comprising a shaft (13) extending through the control panel (11) and the control knob (20) connected to the shaft (13) of the control element (12) for rotating the shaft. Thus, the shaft (13) can be rotated as the control knob (20) is rotated. In a possible embodiment, said control element (12) can be a gas tap or a switch.

[0021] As will be seen in Fig. 4, 5 and 6, the control knob (20) has at least one closing part (30) connected to the control panel (11), at least one ring body (40) connected to said closing part (30), and an inner body (60) inserted partially into said ring body (40), and an outer body (70). Said outer body (70) is movable relative to the shaft (13) in an axial direction of the shaft (13) and the inner body (60) is connected to the shaft (13) in a manner not movable relative to the shaft (13).

[0022] In more details, the closing part (30) is provided in a cylindrical form, and it is connected to the control panel (11) from one face thereof. The control element (12) is passed through a hole (31) provided on the closing part (30). Moreover, there is at least one step (32) provided on the outer wall of the closing part (30), and there

is at least one assembly tab (33) provided on said step (32). The ring body (40) is essentially provided in a cylindrical form. There is at least one knob housing (41) provided in an opening form on the ring body (40). There is at least one tab housing (43) provided on an inner wall (42) of the knob housing (41). The inner wall (42) may encircle the step (32) provided on the closing part (30). Thus, when the ring body (40) is placed on the closing part (30), the ring body (40) is seated onto the step (32) and the assembly tab (33) is placed to the tab housing (43) and fixation is provided.

[0023] As will be seen in Fig. 10, the outer body (70) is provided in a cylindrical form. The outer body (70) has a hollow structure. Moreover, an opening (72) is provided on the outer body (70). The opening (72) is essentially provided in a compliant form to the inner body (60). In other words, the inner body (60) may partially pass through the opening (72). There is at least one blocking part (71) provided on the outer wall of the outer body (70). There is at least one tooth part (44) provided on the inner wall (42) of the ring body (40) in a compliant manner to said blocking part (71). There is at least one support plate (73) supporting the outer body (70) from inside. A spring element (50), provided inside the control knob (20), contacts the closing part (30) from one end and it contacts the outer body (70) from the other end, and it begins pushing the outer body (70). Thus, the blocking part (71), provided at the outer body (70), and the tooth part (44), provided inside the ring body (40), are engaged to each other. By means of this, the rotation of the outer body (70) is prevented. Moreover, pluralities of scales (75) are provided on the outer body (70). At least one of said scales (75) extends from the side surface of the outer body (70) towards an outer body front face (74). Thus, the closed position where no gas passage occurs can be determined. The gas level can be shown also by the other scales (75).

[0024] As will be seen in Fig. 9, the inner body (60) has a shaft connection extension (61). Said shaft connection extension (61) is fixed onto the shaft (13) of the control element (12). Thus, when the inner body (60) is rotated, the shaft (13) is also rotated. Moreover, there is at least one leaf spring (65) provided inside the shaft connection extension (61). When the shaft (13) is placed into the shaft connection extension (61), the leaf spring (65) provides the inner body (60) to be fixed onto the shaft (13). In other words, uncontrolled separation of the inner body (60) from the shaft (13) is prevented. The inner body (60) has at least one grabbing wall (62). Two grabbing walls (62) are essentially provided in a parallel manner such that there is a predetermined distance in between. Accordingly, the opening (72) provided on the inner body (60) and the outer body (70), is in a form similar to a feather key.

[0025] When the spring element (50) pushes the outer body (70), an inner body front face (64) of the inner body (60) and the outer body front face (74) of the outer body (70) are aligned. As long as a force which is in opposite

direction to the spring force is not exerted, the outer body (70) stays in said condition.

During the assembly of the control knob (20), first of all, the outer body (70) is placed into the ring body (40), and afterwards, the inner body (60) and the spring element (50) are positioned inside the outer body (70) and all of them are fixed to the closing part (30) provided on the control panel (11). Meanwhile, the shaft connection extension (61) is fixed to the control element (12). In an alternative assembly manner, first of all, the inner body (60) is fixed to the shaft (13), and afterwards, the ring body (40) and the outer body (70) wherein the spring element (50) is positioned are passed through the inner body (60) and they are fixed to the closing part (30).

[0026] As will be seen in Fig.7 and 8, during the usage of the control knob (20), first of all, the user pushes the outer body (70) towards the control panel (11) in the axis of the shaft (13) by a force (F). Thus, the inner body (60) partially passes through the opening (72), and the grabbing walls (62) protrudes from the outer body (70). Afterwards, the user can hold the inner body (60) through the grabbing walls (62) and he/she can rotate the shaft (13). In more details, the inner body (60) is exposed to be gripped by a user when the outer body (70) is moved in a direction towards the control panel (11). During pushing of the outer body (70) by the user, the spring force is overcome, and the blocking part (71) is removed from the tooth part (44). Thus, the outer body (70) has rotation freedom together with the inner body (60). When the user removes the pushing force exerted to the outer body (70), the outer body (70) is pushed outwardly as a result of the effect of the spring force, and the inner body (60) is hidden inside the outer body (70). Meanwhile, the blocking part (71) is fixed to the tooth part (44). In more details, the blocking part (71) is provided on the outer body (70) in a manner engaging to the tooth part (44) for blocking a rotational movement of the outer body (70), when the outer body (70) is pushed by the spring element (50) to an end position in the direction away from the control panel (11). By means of this, the rotation freedom of the outer body (70) is eliminated.

[0027] There is at least one stopper tab (63) provided on the outer wall of the inner body (60). Said stopper tab (63) is stopped onto the inner part of the outer body (70) when the outer body (70) is pushed towards the control panel (11), and said stopper tab (63) prevents the inner body (60) from protruding through the opening (72).

[0028] In a possible embodiment of the present invention, after the user makes the inner body (60) visible, he/she pushes the inner body (60) more, and he/she can activate an ignition function.

REFERENCE NUMERALS

[0029]

1 Cooking device
10 Body

11 Control panel
12 Control element
13 Shaft
20 Control knob
30 Closing part

31 Hole
32 Step
33 Assembly tab

40 Ring body

41 Knob housing
42 Inner wall
43 Tab housing
44 Tooth part

50 Spring element
60 Inner body

61 Shaft connection extension
62 Grabbing wall
63 Stopper tab
64 Inner body front face
65 Leaf spring

70 Outer body

71 Blocking part
72 Opening
73 Support plate
74 Outer body front face
75 Scale

F Force

Claims

1. A cooking device (1) comprising a body (10), a control panel (11) provided on the body (10), a control element (12) for adjusting a power level of a heat source, the control element (12) comprising a shaft (13) extending through the control panel (11) and a control knob (20) connected to the shaft (13) for rotating the shaft, **characterized in that** the control knob (20) comprises at least one outer body (70) movable relative to the shaft (13) in an axial direction of the shaft (13), at least one inner body (60) connected to the shaft (13) in a manner not movable relative to the shaft (13) wherein the inner body (60) is located at least partly in an opening (72) of the outer body (70) and the inner body (60) is exposed to be gripped by a user when the outer body (70) is moved in a direction towards the control panel (11).
2. The cooking device (1) according to Claim 1, wherein at least one spring element (50) is provided for push-

ing the outer body (70) in a direction away from the control panel (11).

the control element (12) is a switch.

3. The cooking device (1) according to Claim 1 or 2, wherein a ring body (40) is positioned on the control panel (11) in a manner not movable relative to the control panel (11) for guiding a movement of the outer body (70). 5
4. The cooking device (1) according to Claim 3, wherein at least one tooth part (44) is provided inside the ring body (40) and a blocking part (71) is provided on the outer body (70) in a manner engaging to the tooth part (44) for blocking a rotational movement of the outer body (70), when the outer body (70) is pushed by the spring element (50) to an end position in the direction away from the control panel (11). 10 15
5. The cooking device (1) according to Claim 4, wherein the control knob (20) is configured in a manner providing an interruption of the contact between the blocking part (71) and the tooth part (44), when the outer body (70) is pushed towards the control panel (11). 20 25
6. The cooking device (1) according to any one of the claims 3 to 5, wherein at least one closing part (30) is connected to the control panel (11), and at least one assembly tab (33) and at least one tab housing (43) are provided mutually between the closing part (30) and the ring body (40). 30
7. The cooking device (1) according to any one of the preceding claims, wherein the inner body (60) comprises at least one grabbing wall (62). 35
8. The cooking device (1) according to Claim 7, wherein two grabbing walls (62) are provided essentially parallel to each other such that there is a predetermined distance in between. 40
9. The cooking device (1) according to Claim 8, wherein the inner body (60) is provided in a form which is similar to a feather key. 45
10. The cooking device (1) according to Claim 1, wherein the inner body (60) comprises at least one shaft connection extension (61) connected to the shaft (13). 50
11. The cooking device (1) according to any one of the preceding claims, wherein at least one stopper tab (63) is provided on the outer wall of the inner body (60). 55
12. The cooking device (1) according to Claim 1, wherein the control element (12) is a gas tap.
13. The cooking device (1) according to Claim 1, wherein

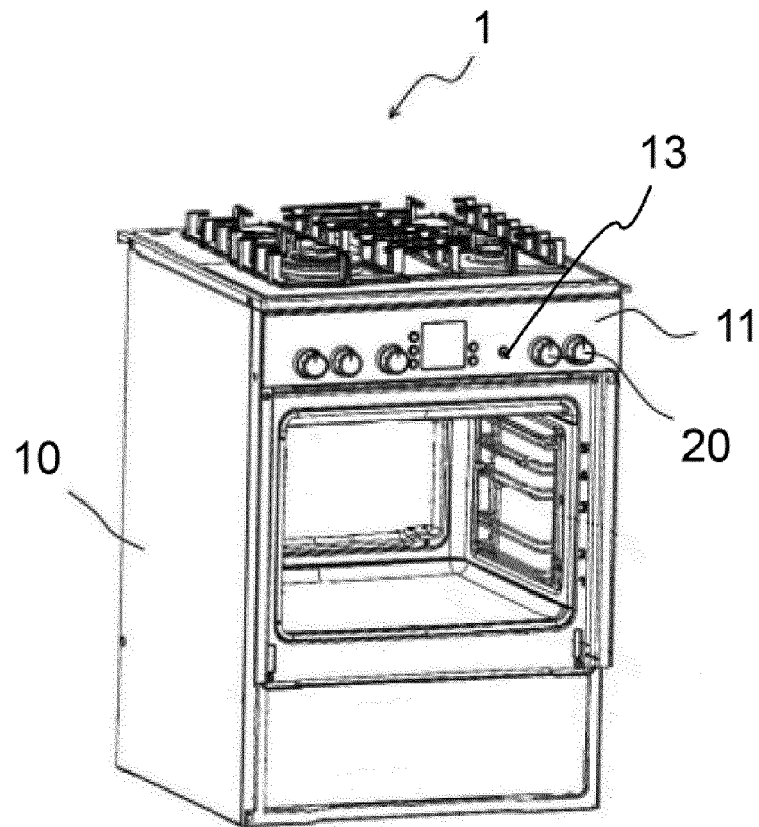


Fig.1

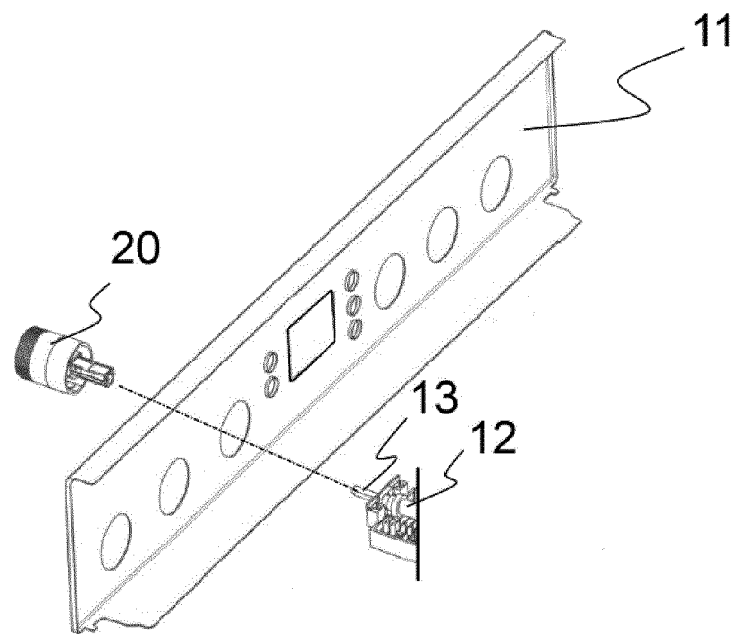


Fig.2

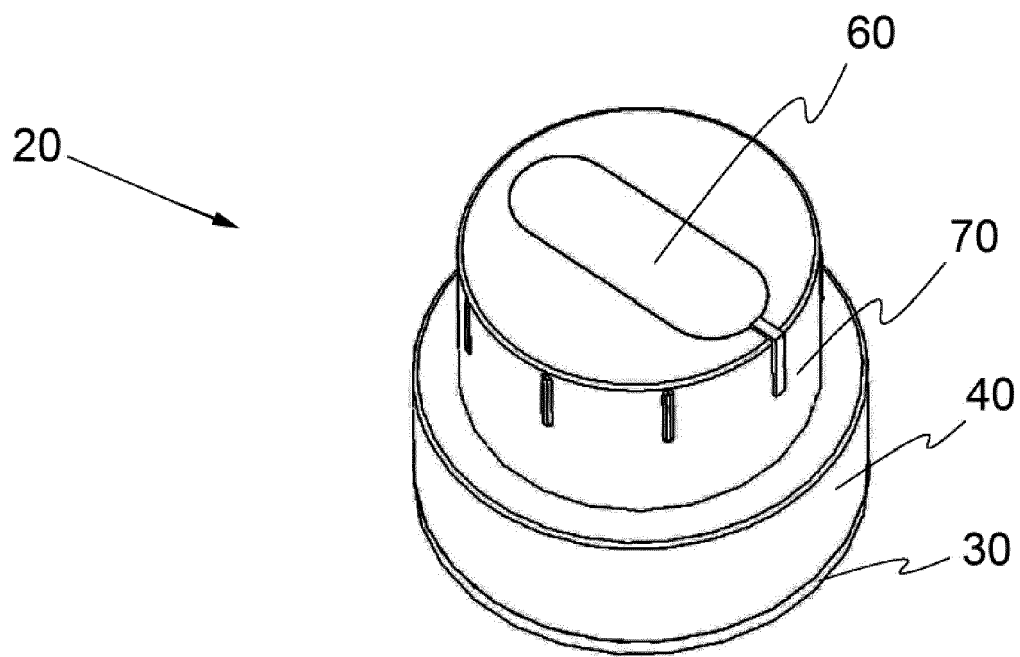


Fig.3

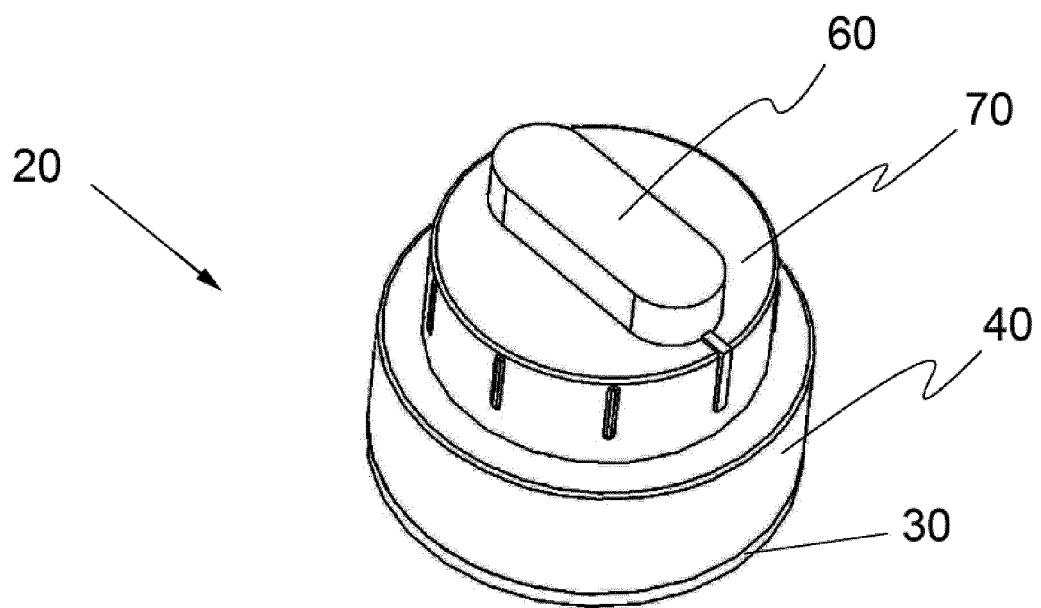


Fig.4

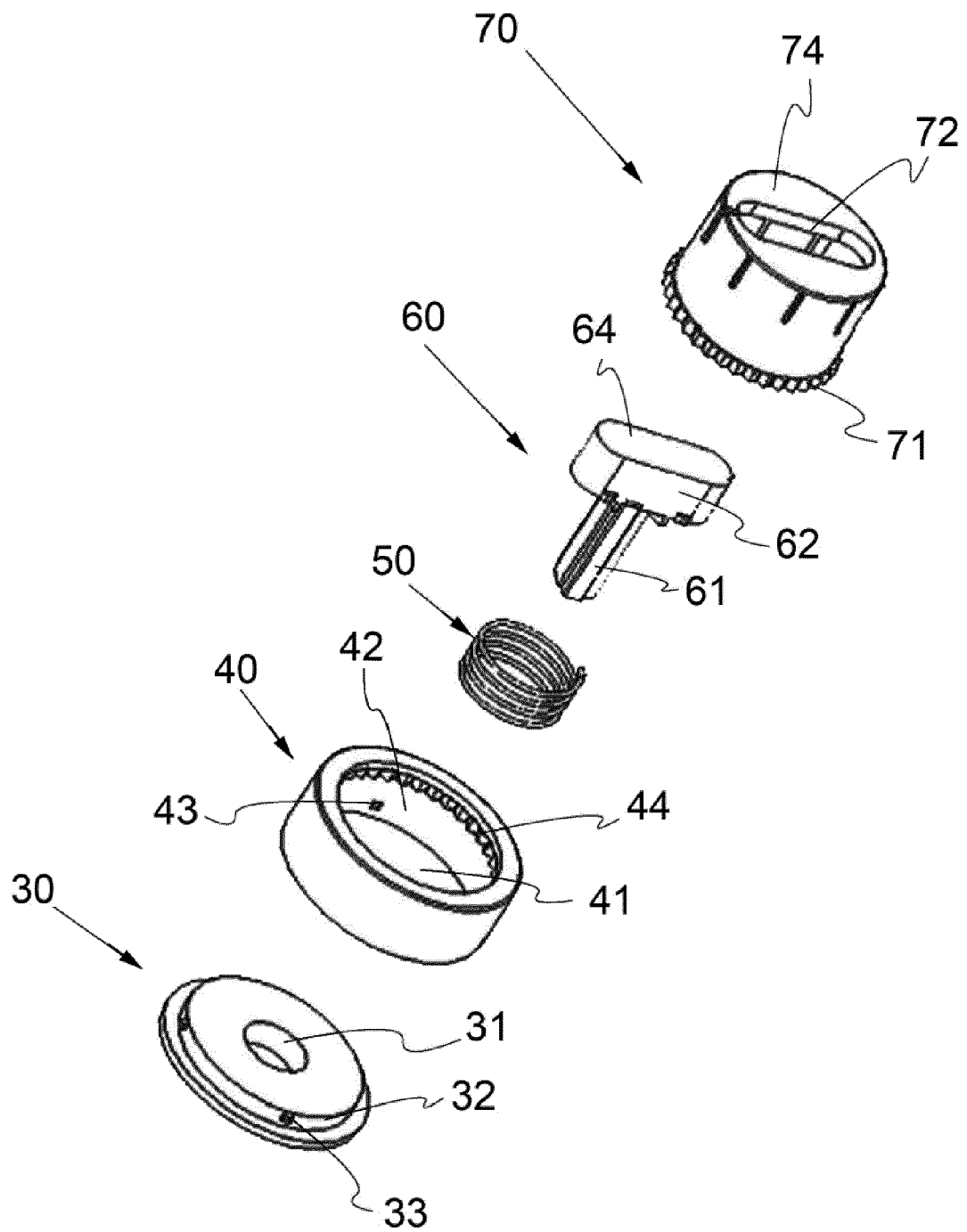


Fig.5

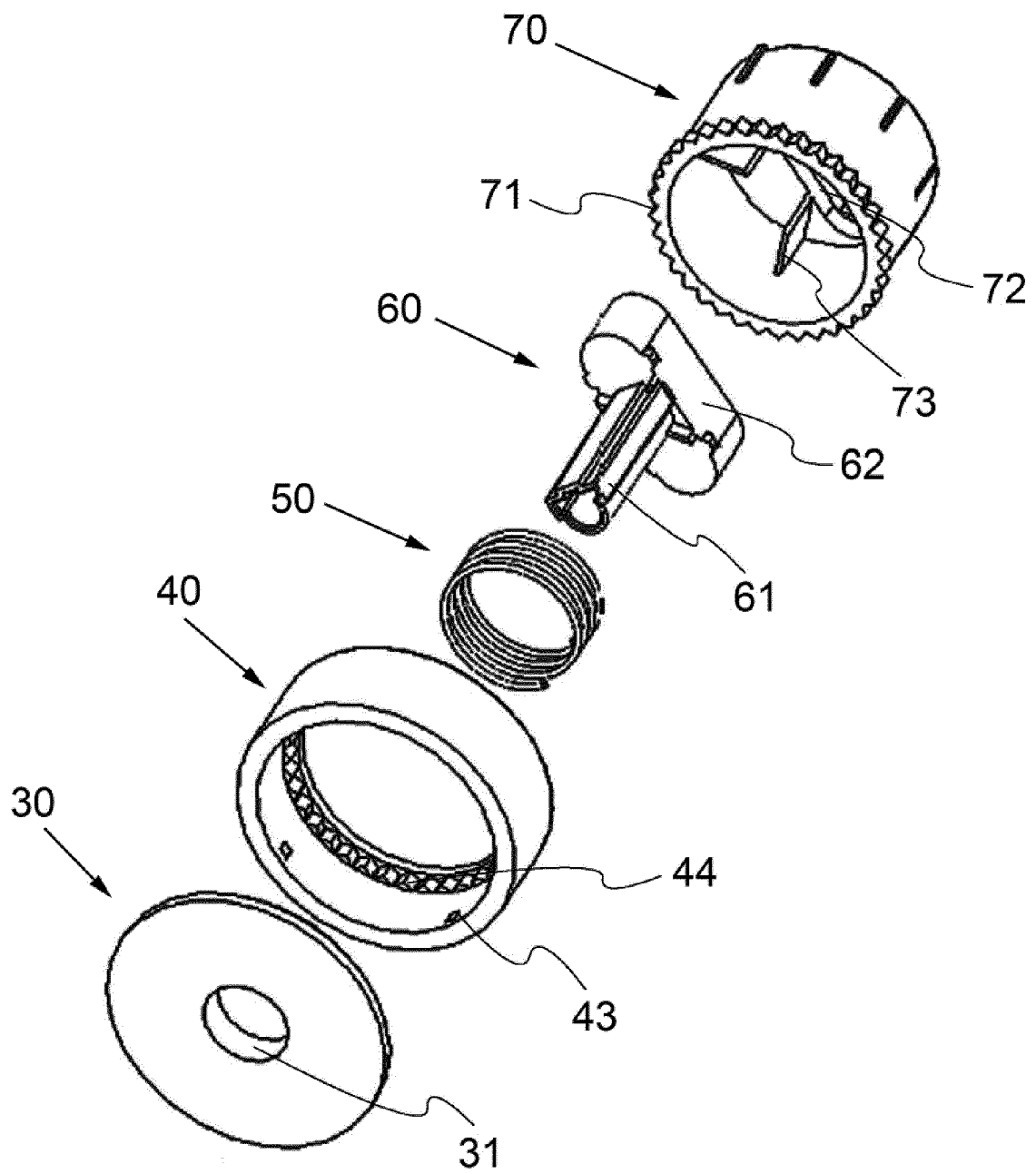


Fig.6

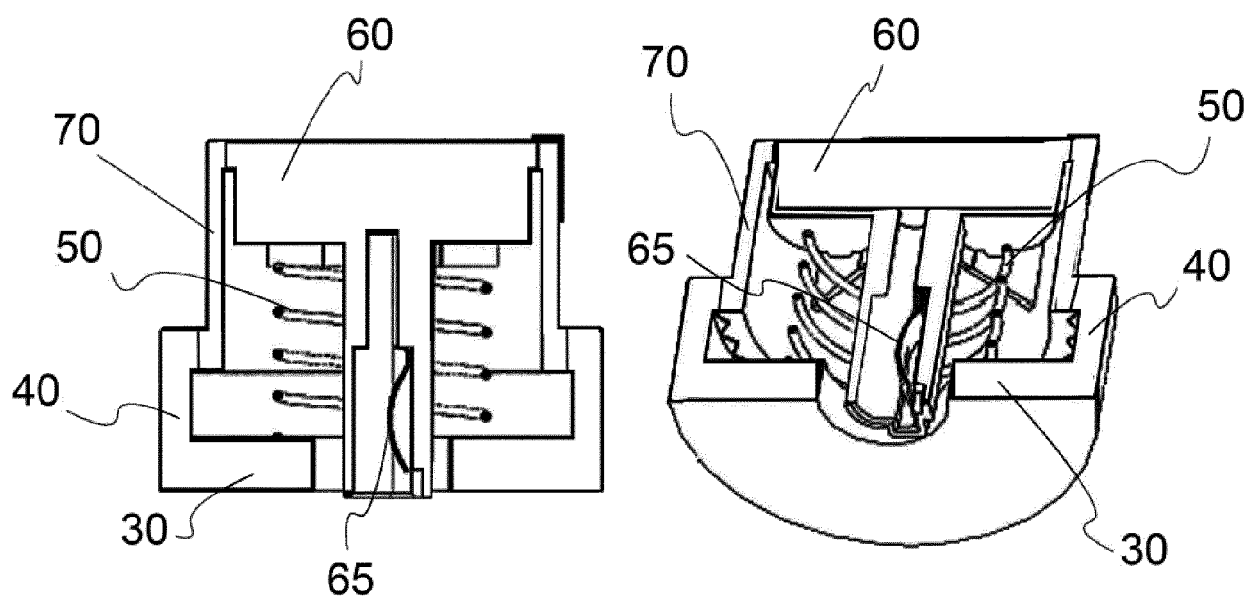


Fig.7

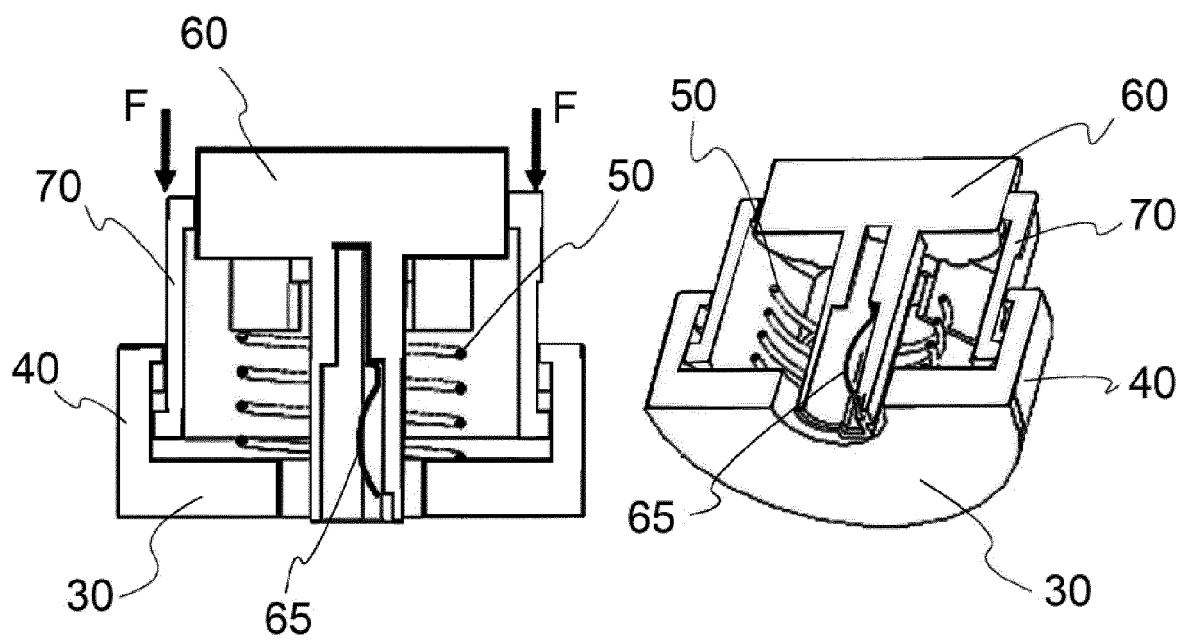


Fig.8

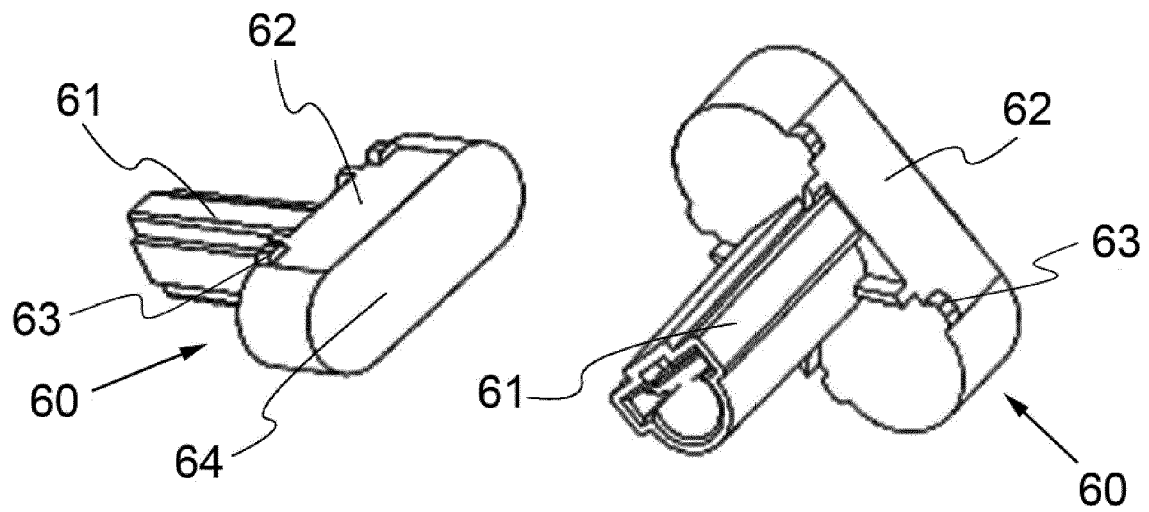


Fig.9

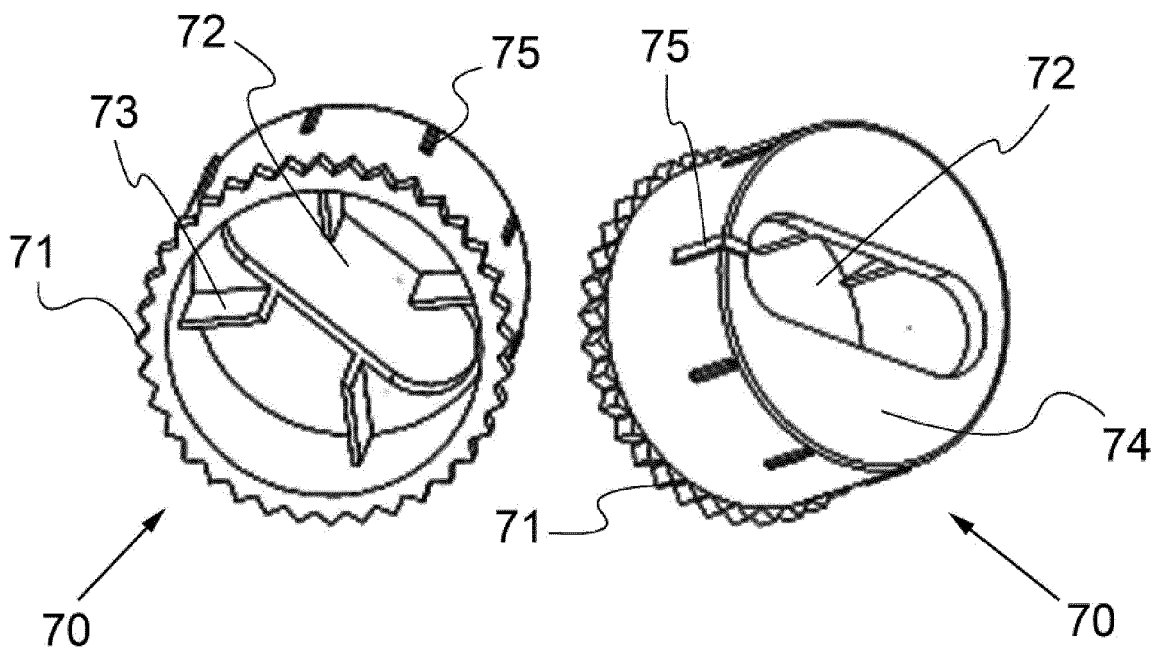


Fig.10



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Application Number
EP 18 18 9169

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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