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

(57) The present invention relates to a home appliance (1) having a rotary control pushbutton (2) connected to a control element (50) and comprising a control sleeve (21), an inner body (22) placed into the control sleeve (21), and a guide element (24) guided to the inner body (22) and having channels (241) thereon. Said rotary con-

trol pushbutton (2) comprises a tab (23) which is one-piece with the inner body (22) and positioned to an inner edge (222) of an opening (221) formed on the inner body (22), said tab providing adjustment of the start and stop positions of the pushbutton by moving axially in the channels (241) provided on the guide element (24).

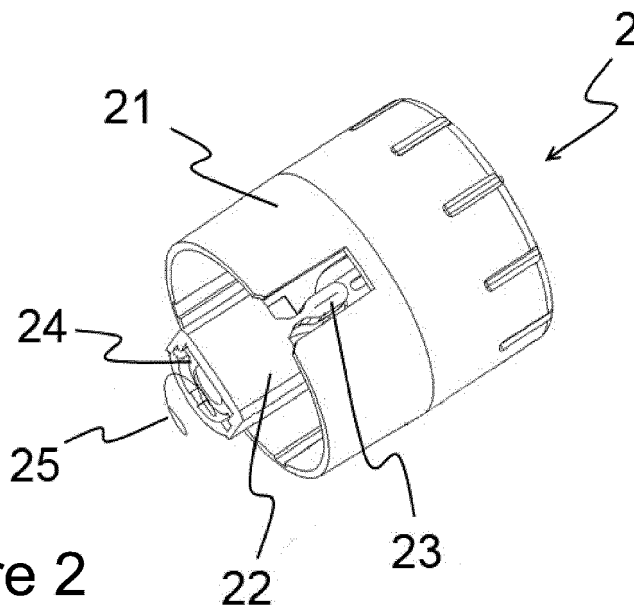


Figure 2

EP 3 125 066 A2

Description

[0001] The present invention relates to a home appliance having a rotary control pushbutton.

[0002] Rotary control pushbuttons are placed into a casing embodied on a panel positioned on a cooking device. During use, a holding section of the pushbutton is released out of the panel by a system embodied in the pushbutton, and when not in use, said holding section is retracted inside the casing, and thus, a flush surface is obtained on the panel. Said releasing and retracting of pushbuttons having unique start and stop positions are realized by means of a simple fingertip pressure exerted onto the outer flat surface of the pushbutton.

[0003] In the present art, there are applications, having different operation principles and comprising pluralities of different sub-components, for the control pushbuttons existing in home appliances.

[0004] One of these is the patent application US 6,410,871 B1. Accordingly, the invention is a simplified retractable knob in which an actuating element can be displaced axially with respect to a bearing element with or counter to the force of a coiled spring. A latching element is integrated into the coil spring, which is guided in a guideway having at least a rest position and an actuating position of the actuating element.

[0005] The object of the present invention is to reduce the number of sub-components in the rotary control pushbuttons used in home appliances and to facilitate production and to provide expedite assembly.

[0006] In order to achieve said object, the present invention comprises a tab which is one-piece with the inner body and positioned to an inner edge of an opening formed on the inner body, said tab providing adjustment of the start and stop positions of the pushbutton by moving axially in the channels provided on the guide element. Since the tab is one-piece with the inner body, the number of sub-components is reduced and rapid assembly is provided in rotary pushbuttons. Moreover, production is facilitated by reducing material variety and complexity of the pushbutton. The tab has an embodiment which can easily function inside indented channels.

[0007] In a possible embodiment of the present invention, a neck section is provided on the tab in the region between the inner edge and the tab end section. Thus, flexibility is provided to the tab which moves inside indented channels, and the risks of crack, break, etc., which may occur as a result of physical stresses, are reduced.

[0008] In a possible embodiment of the present invention, the neck section width is smaller than the tab width. Thus, flexibility is provided to the tab during the movement of the tab inside the indented channels.

[0009] In a possible embodiment of the present invention, at least one of the corners provided on the tab is a rounded corner. Thus, the tightening and stresses, which may occur as a result of catching of the channels by the sharp corners of the tab, are prevented.

[0010] In a possible embodiment of the present inven-

tion, the tab and the inner body are made of the same plastic material. Thus, the material variety and complexity during production are reduced, and production is facilitated.

[0011] In a possible embodiment of the present invention, the present invention is a cooking device with a control element has a gas tap.

Figure 1 is the general perspective view of the subject matter control pushbutton, where the control pushbutton is fixed onto the cooking device.

Figure 2 is the general perspective view of the subject matter control pushbutton.

Figure 3 is the cross sectional view of the subject matter control pushbutton.

Figure 4 is the general exploded view showing the sub-components forming the subject matter control pushbutton.

Figure 5 is the perspective view showing the section where the tab, existing on the subject matter control pushbutton, is provided.

Figure 6 is the top view showing the section where the tab, existing on the subject matter control pushbutton, is provided.

[0012] The present invention relates to a home appliance (1) having rotary control pushbutton (2) where the number of sub-components is reduced and the assembly of the pushbutton is facilitated and the assembly duration is shortened and production is facilitated. The control pushbutton (2) is connected to a control element (50) and it can be used in all home appliances. A cooking device having a control element (50) and a tap functioning by means of gas is illustrated in Figure 1.

[0013] In Figure 2, the general perspective view of the subject matter control pushbutton (2) is given. The rotary control pushbutton (2) comprises a control sleeve (21) having a cylindrical structure, a helical spring (25) placed into the gap formed by the cylindrical periphery of the control sleeve (21), an inner body (22) which is similar to a rectangular prism, and a guide element (24) axially guided to the gap provided in the inner body (22). As can be seen in the cross sectional view given in Figure 3, there are channels (241) on the guide element (24). These channels (241) are formed for providing movement of a tab (23) positioned on the inner body (22). Moreover, there is a connection element (26) in the control pushbutton (2), and said connection element (26) is connected to the shafts of the elements like switch, thermostat, gas tap or electrical stove regulator, and said connection element (26) prevents unintentional and uncontrolled removal of the pushbutton.

[0014] The control pushbutton (2) switches to an op-

eration position by exerting pressure with fingertip in the direction of the movement axis (F) through a push surface (211) provided on a control sleeve (21). Again in the same manner, the pushbutton switches to the stop position by exerting pressure in the direction of the center movement axis (F) through the same push surface (211) provided on said control sleeve (21). Thus, the releasing-retracting of the control pushbutton (2) is realized in the axial direction by means of the exerted pressure. The pushbutton can also be rotated around its own axis.

[0015] In the present invention, the operation-stop positions of the pushbutton, in other words, the axial releasing-retracting actions of the pushbutton are provided with the help of a tab (23) moving inside the channels (241) provided on the guide element (24). In more details, by means of a pressure to be exerted through the push surface (211) of the pushbutton, the tab (23) advances inside the channels (241) having an indented form, and it is fixed to a channel section which has a form suitable for locking, and it provides the pushbutton to stay in this position. Again in the same manner, as a result of the exerted pressure, the tab (23) is released from this mentioned position, and by means of the axial back movement inside the channels (241), the pushbutton returns to its initial position.

[0016] As can be seen in Figure 4, the control pushbutton (2) comprises a control sleeve (21), a helical spring (25), an inner body (22), a guide element (24) and a connection element (26). Again here, a tap operating with gas and having a control element (50) controlled by means of the control pushbutton (2) can be seen. The shaft of the tap operating with gas engages to a connection channel (242) provided on the guide element (24) and illustrated in Figure 3, and it is connected with respect to the center movement axis (F).

[0017] As can be seen in Figure 5, the tab (23) moving in the channels (241) provided on the guide element (24) is positioned to an inner edge (222) provided in an opening (221) existing on the inner body (22). In the subject matter invention, the inner body (22) and said tab (23) are manufactured in a one-piece manner from the same plastic material by means of injection method. Again as seen in Figure 5, there is a neck section (233) on the tab (23). The neck section (233) is positioned on the tab (23) in the region between the inner edge (222) and the tab end section (232). In the top view of the tab (23) given in Figure 6, the tab (23) has a form which is similar to rectangular prism and "U"-like form is created in the regions where the neck section (233) is provided. The width (234) of said neck section is smaller than the tab width (231). Again, at least one of the corners provided on the tab (23) has a rounded corner (235). The rounded corner (235) is provided by forming curve at the corners of the tab (23) by means of breaking chamfer.

REFERENCE NUMBERS

[0018]

1	Home appliance
2	Control pushbutton
21	Control sleeve
5 211	Push surface
22	Inner body
221	Opening
222	Inner edge
23	Tab
10 231	Tab width
232	Tab end section
233	Neck section
234	Neck section width
235	Rounded corner
15 24	Guide element
241	Channels
242	Connection channel
25	Helical spring
26	Connection element
20 50	Control element
F	Center movement axis

Claims

1. A home appliance (1) having a rotary control pushbutton (2) connected to a control element (50) and comprising a control sleeve (21), an inner body (22) placed into the control sleeve (21), and a guide element (24) guided to the inner body (22) and having channels (241) thereon, **characterized in that** said control pushbutton (2) comprises a tab (23) which is one-piece with the inner body (22) and positioned to an inner edge (222) of an opening (221) formed on the inner body (22), said tab providing adjustment of the start and stop positions of the pushbutton by moving axially in the channels (241) provided on the guide element (24).
2. A home appliance (1) according to Claim 1, wherein a neck section (233) is provided on the tab (23) in the region between the inner edge (222) and the tab end section (232).
3. A home appliance (1) according to Claim 2, wherein the neck section (233) width (234) is smaller than the tab width (231).
4. A home appliance (1) according to any one of the preceding claims, wherein at least one of the corners provided on the tab (23) is a rounded corner (235).
5. A home appliance (1) according to any one of the preceding claims, wherein the tab (23) and the inner body (22) are made of the same plastic material.

6. A home appliance (1) according to any one of the preceding claims, wherein the present invention is a cooking device with a control element (50) has a gas tap.

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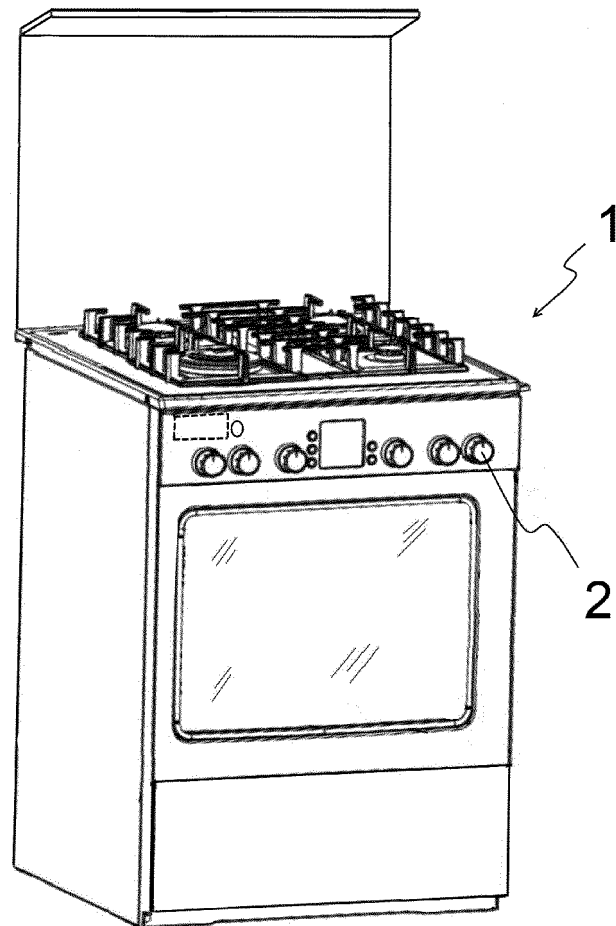


Figure 1

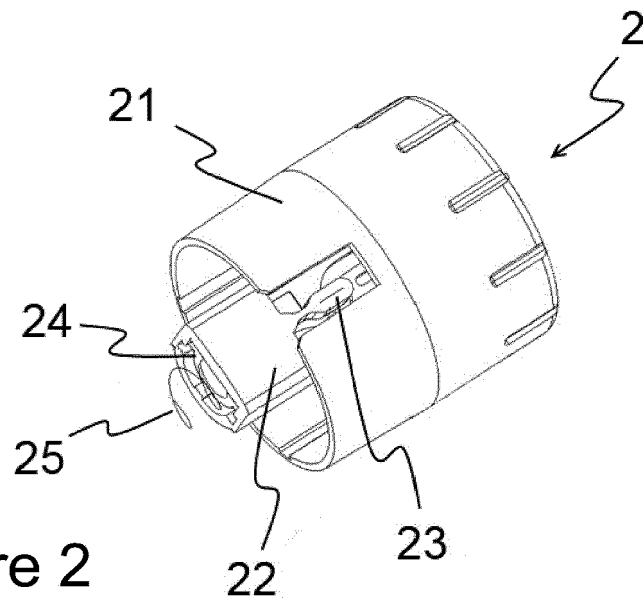


Figure 2

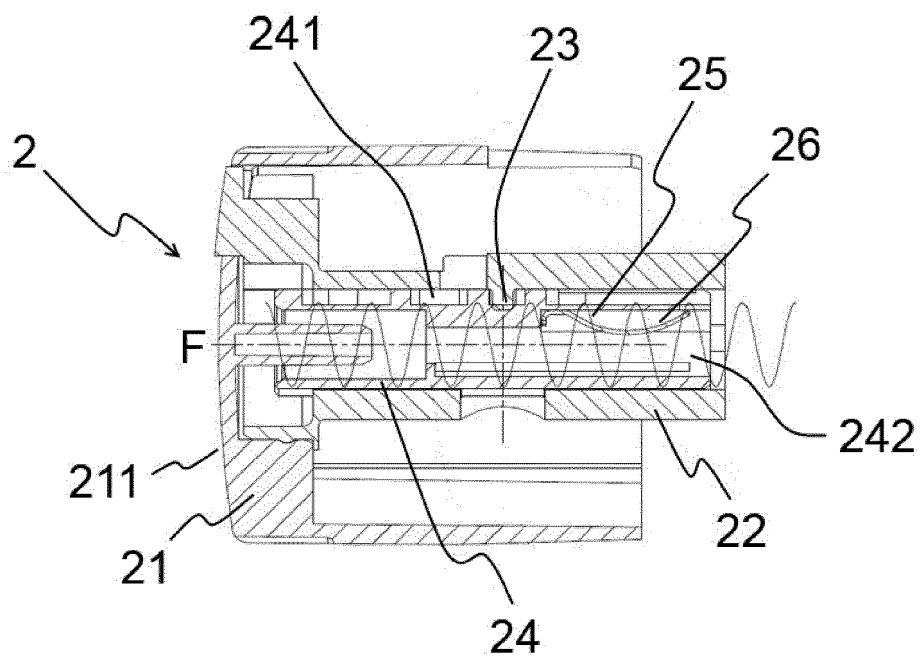


Figure 3

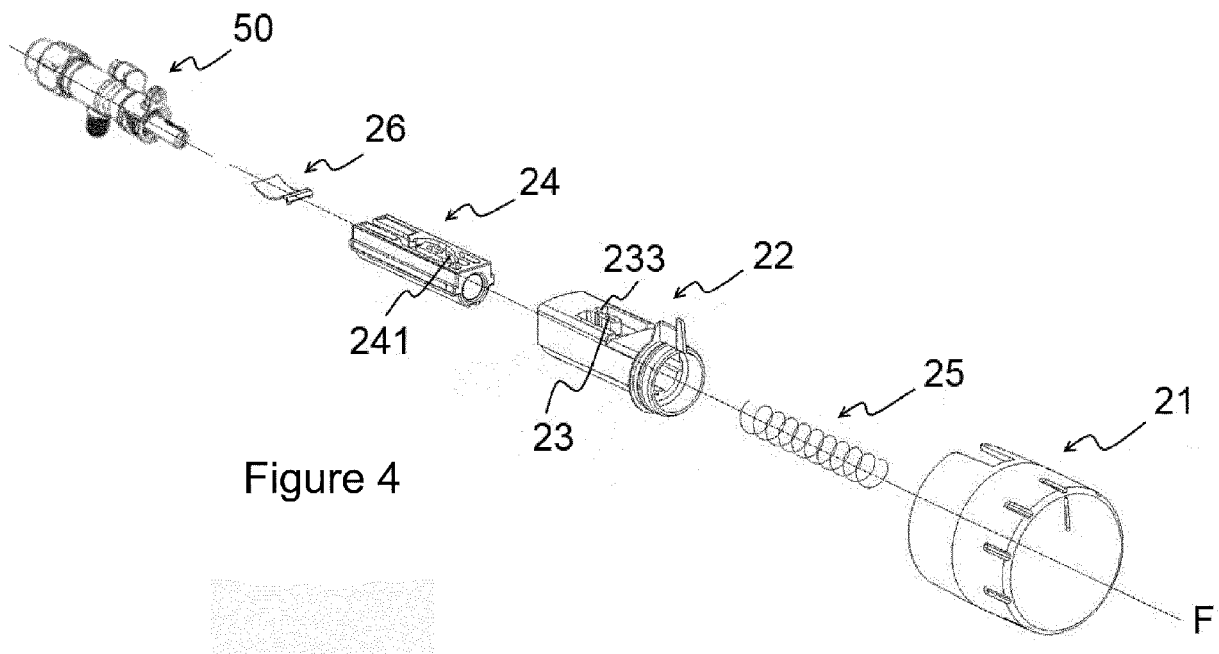


Figure 4

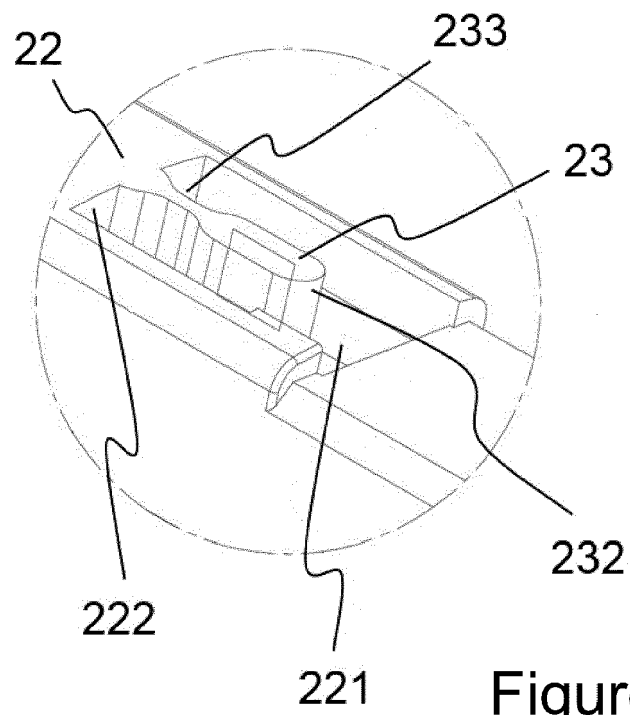


Figure 5

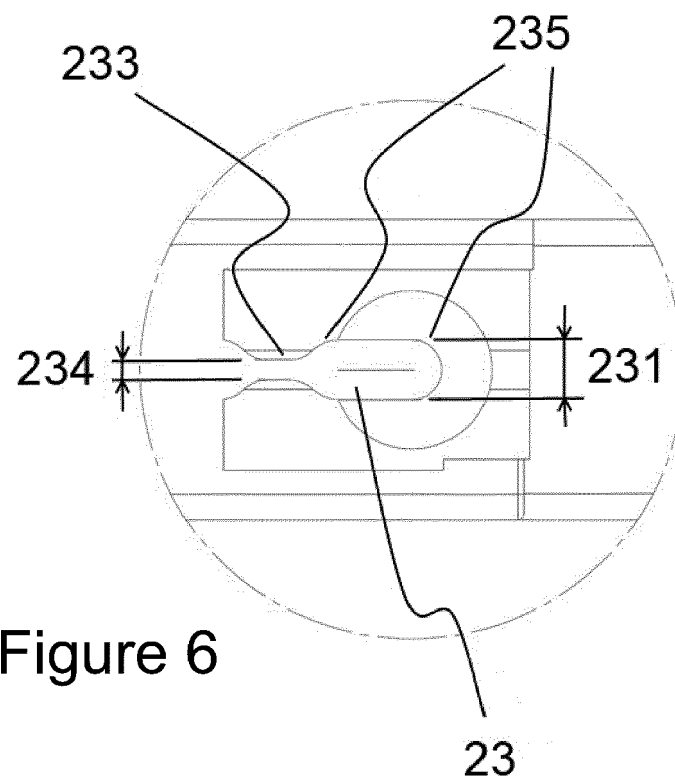


Figure 6

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 6410871 B1 [0004]