

(19)



(11)

EP 2 469 551 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
20.02.2019 Bulletin 2019/08

(51) Int Cl.:
H01H 3/08 (2006.01) F24C 3/12 (2006.01)

(21) Application number: **11194038.3**

(22) Date of filing: **16.12.2011**

(54) **Cooking appliance having pop-out type control knob assembly**

Kochvorrichtung mit einem versenkbaren Drehknebel

Appareil de cuisson doté d'un bouton de commande de type rétractable

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**

(30) Priority: **22.12.2010 TR 201010712**

(43) Date of publication of application:
27.06.2012 Bulletin 2012/26

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Description

Field of the Invention

[0001] The present invention relates to a cooking appliance comprising at least one pop-out control knob assembly, and particularly relates to a gas cooking appliance having at least one push-push pop-out type knob assembly permitting two-step operation of a gas valve mechanism of the cooking appliance.

Background of the Invention

[0002] Pop-out knobs, operated by way of activation and deactivation steps are well known with their unique structure that enables an operation mode when extended, and provides hidden view with passive mode when retracted. Said extension and retraction of the knob is conducted by way of a simple finger tip depression applied onto the external flat surface of the knob. These classical assemblies find application areas in wide variety of household appliances and electronic devices. However, the control knobs of this type, in extended position, are generally not suitable for operation of the conventional gas valves of the cooking appliances. This is because, due to the safety regulations, a control knob needs to be operated by way of sequential bidirectional movement, namely; pushing in a first direction perpendicular to the knob in order to start up the flame, and then rotating said knob axially in order to adjust the gas flow rate through burners.

[0003] The classical pop-out knobs, as disclosed for instance in DE-19801300-A1, comprise a spring in-between a knob housing and a heart shaped guiding body having corresponding channels thereon, wherein a guiding element may move along said channels for selectively locking the knob assembly in a certain position. This position ensures the knob assembly to stay in the retracted position against the spring forces. This effect is achieved by snagging of a guiding element in a detent of the heart shaped guiding body. However, this configuration provides one step locking, namely only for keeping the knob retracted in passive mode. Those skilled in the art will appreciate that the arrangement as alluded above is not suitable for use in the gas cooking appliances which require an additional locking step for starting up the flame. To solve this problem, a control knob assembly for a cooking appliance comprising a number of guiding bodies each having two opposite detents in order to ensure two-step locking is provided in the U.S. Patent No. 5,384,442. According to this arrangement, the guiding elements (i.e. guide followers) are releasably secured in two opposite notches (detents) contained in the tracks enabling two-step operation of the gas valve. Moreover, the assembly as disclosed comprises plurality of tracks (*e.g. four tracks around the periphery of the cylindrical track body; see col. 4 - lines 13-16*) to provide robust knob engagement. The arrangement further needs boss-

es and serrated edges (see col. 5 - lines 9-12) for prohibiting disengagement of guide followers from the detents.

[0004] In the patent application numbered CA 2 112 761 A1, a control knob assembly includes a control knob and a track body disposed in the control knob. A cam arm mounted at one end thereof to the control knob contains on the other end a cam follower which rides in a track disposed within a top surface of the track body. The control knob is slidable over the track body, and is alternatively locatable in extended and retracted positions. When the control knob is located in a retracted position, the cam follower is releasably secured in a notch contained in the track. A pushbutton stop located in the control knob is springloaded to move to a radially extended position when the control knob is extended, thereby aligning the pushbutton stop with an extended portion of the track body, permitting actuation by the user of a two-step gas valve by sequentially depressing and rotating the control knob.

[0005] In the patent application numbered EP 0 173 820 A1, a retractable rotary-knob unit for adjusting the switching or control devices disposed behind a switch panel in domestic appliances such as cookers, washing machines or the like, which comprises a rotary knob, a compression spring acting in the axial direction on the rotary knob, a sleeve-like sliding member formed on the rotary knob, a guide sleeve fitted into the sliding member and having a central socket insert, and a closed channel proved at one wall side of the guide sleeve and having a detent position for a sliding pin, characterised by the following features : the sliding pin is part of a movably mounted separate holder, the holder is provided with a pivot pin, the pivot pin is guided for pivoting in a bearing provided in the rotary knob, associated with the top of the holder is a spring element which is supported against the inner wall of the sliding member and holds the sliding pin in engagement with the channel, the spring element is coupled to the pivot pin of the holder.

[0006] The quality of the engagement of the control knob assembly as elaborated above still needs to be improved while eliminating exhaustive amount of details tailored for better engagement.

[0007] It is therefore an objective of the present invention to provide a cooking appliance having a control knob assembly which eliminates the need for exhaustive list of details (*e.g. plurality of tracks, bosses, serrated edges etc.*). A further object of the present invention is to provide a gas cooking appliance comprising a specially designed frontal notch having a purposive protrusion that eliminates unintentional disengagement of a guiding element by way of a perpendicular obstruction during rotation of the knob assembly. These and other objects that may be apparent to those skilled in the art after reviewing the following description are achieved through a cooking appliance as disclosed in claim 1.

Summary of the Invention

[0008] A cooking appliance comprising at least one gas valve and a pop-out type control knob assembly coupled to said gas valve is disclosed. The knob assembly as referred in the present invention comprises a guiding body residing in a knob, a guiding element adapted to travel on a surface of said guiding body, and a spring (not shown) located in between the guiding body and the knob. Said guiding body comprises a number of track grooves forming a loop for travel of the guiding element, and a central ridge having at least two notches located oppositely to each other. In further aspects of the invention the control knob assembly is adapted to stay in a first locking position by retraction of the knob and engagement of the guiding element into a backward notch, and to stay in a second locking position by extension of the knob and engagement of the guiding element into a frontal notch.

[0009] Therefore, by way of the two-step locking, the pop-out control knob is suitable for operation of the cooking appliances having conventional gas valves. The frontal notch of the ridge advantageously comprises a recession adapted to engage with the guiding element, and further comprises a protrusion bordering side of which is protruding preferably parallel to the longitudinal axis of the guiding body. The groove having said protrusion on one side includes, at its other side, at least one confronting point opposite to the frontal notch. One of the missions of said confronting point is preventing unintentional evasion of the guiding element through the previous recession. There is the predetermined distance of y in between the end point of protrusion of the invention and projection of the confronting point to the perpendicular lateral axis of the control knob assembly. This special arrangement of the notch preferably provides a perpendicular detention when the guiding element abuts to the end point of the bordering side of said protrusion. Therefore, a solution for one of the objectives of the invention is attained by prevention of the unintentional disengagement of the guiding element by the control knob assembly as identified above.

[0010] The cooking appliance of the present invention involves a passive mode when the pop-out type control knob is not used, and an activation mode when said knob is operated. The guiding element is permitted to engage into the rear notch so that the entire knob is kept in retracted position in passive mode. On the other hand, in the activation mode, the guiding element is freed from the rear notch and forced through the first recession under spring forces so that the knob may move outside of the cooking appliance, and thereafter said guiding element which is moved through the control knob assembly track grooves into the first recession is enforced for abutting to the second recession at the utmost opened position outside front panel of the appliance. For ensuring that the guiding element may move from the second recession through the frontal notch in a position where ra-

dial rotation of the knob is not hindered in operation, a continuous pushing in the horizontal axis is applied onto the knob and said guiding element is permitted to engage with the frontal notch such that it may be shifted to activate the gas valve during start up of the flame.

[0011] After providing the flame, the knob in utmost extended position is pushed so that it may return to a mode where flame is interrupted but gas flow is active, and the guiding element is allowed to lean against a third recession under spring forces after hitting the confronting point opposite to the frontal notch of the guiding body. Allowing the gas flow in the position of this recession is ensured by way of pushing the knob again and allowing the guiding element to move through the second track groove into a fourth recession, and subsequently, in the utmost retracted position through rearward side of the front panel, the guiding element is enabled to engage into the rear notch by way of spring forces after removing depression on the knob to provide the retracted position.

Brief Description of the Drawings

[0012] The attached drawings are solely given for illustrating an embodiment of the invention, wherein;

Figure 1 shows a planar view of a knob assembly according to the present invention.

Figure 2a and 2b are frontal and backward perspective views of the knob assembly according to the present invention.

Figure 3 is a partly exploded view of the knob assembly according to the present invention wherein the knob, inner housing and guiding body of the assembly are shown separately.

Figure 4 is a planar view of a guiding body according to an embodiment of the present invention.

Figure 5a and 5b show different perspective views of the guiding body according to Figure 4.

Figure 6 is a planar view of a guiding body according to another embodiment of the present invention.

Figure 7a and 7b show different perspective views of the guiding body according to Figure 6.

Detailed Description of the Invention

[0013] The present invention provides a cooking appliance (not shown) having one or plurality of pop-out type knob assemblies dedicated to solve the aforementioned problems of the prior art. The general structure of the knob assembly (1) in accordance with the present invention is represented in Figures 1, 2a, 2b and 3.

[0014] With reference to these figures, there is provided-

ed a knob assembly (1) comprising a knob (10), an inner body (20) and a guiding body (30) which are sequentially nested in each other. The knob (10), which is preferably of cylindrical nature, comprises a backward flush surface (11) upon which the users may readily apply a perpendicular thrust in order to activate and deactivate the entire knob assembly (1). The knob assembly of the invention is designed to be activated by the first push of the user and then starting up the flame with a second push, and further to be deactivated with a third push of the user. During this loop, the knob carries out two locking steps at locking positions of deactivation (retraction) and gas start up. With the term "deactivation" it is to be construed that the knob (10) is kept in retracted position such that it is projection from the front panel of the appliance (not shown) is reduced.

[0015] The knob (10) as referred above preferably comprises a number of longitudinal grooves (12) along which the corresponding projections (25) of the inner body (20) slidably engage such that said inner body (20) is fixed inside said knob (10). In this preferred form, said projections (25) may be formed on a ring shaped ratchet (21) attached to said inner body (20). The inner body (20) as shown in detail with Figure 3 comprises a central opening (22) having longitudinal channels (23) adapted to receive corresponding projections (44) of the guiding body (30). The assembly (1) of the invention further comprises a guiding element (24), preferably in the form of a pin, adapted to move through the corresponding track grooves on the guiding body (30).

[0016] The guiding body (30) as referred *supra* comprises an opening (31) so as to receive corresponding shaft of a gas valve (not shown) assembled to the cooking appliance. In a preferred embodiment of the present invention, the upper surface of said guiding body (30) comprises a number of track grooves (32, 33) forming a loop, and a central ridge (41) having two notches (37, 42) located oppositely to each other. Referring now to Figures 5a and 7a, the backward notch (42) located in the furthest end of the ridge (41) is adapted to provide a first locking position, and when guiding element (24) resides in this notch (42), entire knob (10) is kept in the retracted position (passive mode). When the user wants the knob (10) to be extended (activated) outside the front panel of the cooking appliance, he/she may simply push the depressible surface (11) of the knob (10) so that the guiding element (24) would be freed from the notch (42) and move through the first recess (43) and first track groove (32) until abutting to the second recess (34) with the help of the spring forces. Thereby, a first move for "activation" of the knob assembly (1) becomes completed. The guiding element (24) continues to remain in said recess (34) until the user makes another push through the knob (10).

[0017] Following activation of the control knob (10) by way of the above manner, it becomes ready for controlling the gas valve associated thereto. For this purpose, a second notch (37) is provided in the front end of the ridge (41) so that, when the user applies a thrust for a second

time, the guiding element (24) may move from the recent recess (34) through the second notch (37). This frontal notch (37) of the ridge (41) advantageously comprises a recess for engaging with the guiding element (24), and also a protrusion (38) one side of which is preferably protruding parallel to the longitudinal axis of the guiding body (30). Said protrusion (38) provides hindrance when the guiding element (24) abuts to its bordering side. In different embodiments of the invention, said protrusion may have the angles intercepting the longitudinal axis of the guiding body with various angles for hindering unintentional movement of the guiding element (24).

[0018] The protrusion (38) is preferably provided at a frontal end of the track groove (32, 33) on the guiding body (30), whereas there exists a confronting point (391) opposite to the frontal notch (37) at the other side of the groove (32, 33) for preventing said guiding element (24) unintentionally to retreat to the previous recession (34). On the other hand, there is provided a distance (a) having a predetermined length between the end point (381) of the protrusion (38) and perpendicular projection of the confronting point (391) to the lateral axis (y_k) of the control knob assembly. Said distance is, at maximum, equal to the width of the groove (32, 33) in lateral axis (y_k), and preferably is less than width of the groove (32, 33) at lateral axis (y_k). This special arrangement of the said notch (37) preferably provides a perpendicular detention when guiding element (24) leans against the end point (381) of the protrusion (38). Thus, unintentional detachment of the guiding element (24) is prevented by way of the control knob assembly (1) as defined above.

[0019] As the user continues to apply the thrust on the knob (10), the guiding element (24) is snagged in the notch (37) causing the guiding body (30) to be pushed along the longitudinal horizontal axis (x_h) which enables activation of the gas valve in starting up the flame. In this position, the knob (10) may also be moved in the radial direction in order to adjust the gas flame as very well known in gas cooking appliances.

[0020] This step, however, involves various problems especially when bidirectional movement is simultaneously applied on the knob assembly (1). As explained in the background art the guiding body (30) is subject to a rotation force which may render the guiding element (24) freed from said notch (37).

[0021] Therefore, it is one of the objects of the present invention to improve this notch (37) and adapting it for prevention of unintentional disengagement of the guiding element (24). This objective is achieved through providing one edge of the frontal notch (37) with a protrusion (38) parallel to the longitudinal axis (x_h) such that, when guiding element (24) abuts to the bordering side of the protrusion (38), said bordering side responds with a perpendicular force against the guiding element (24), thereby its unintentional disengagement is prevented. The notch (37) may further comprise an inclination part (35) opposite to said protrusion (38) in order to facilitate sliding of the guiding element (24) through the notch (37).

[0022] In accordance with a preferred embodiment of the present invention, the frontal notch (37) designed to prevent unintentional disengagement of the guiding element (24) is configured with an angled "U" shaped recess wherein one bordering side of the recess is formed by said protrusion (38) as shown in Figures 6, 7a and 7b.

[0023] In another preferred embodiment of the invention, said notch (37) is configured with an angled "V" shaped recess wherein one bordering side of the recess merges with the perpendicular protrusion (38) as shown in Figures 4, 5a and 5b.

[0024] After carrying out the second locking step as disclosed above and activating the gas flame in the cooking appliance the guiding element (24) moves to a third recess (39) with effect of the spring forces until the user decides to deactivate the gas valve and applies a further push to retract the knob assembly (1) into the original position (passive mode). For this purpose, the guiding body (30) comprises a second track groove (33) by way of which the guiding element (24) moves through a fourth recess (40). Then the user may leave the knob (10) permitting the guiding element (24) to sit on the backward notch (42), thereby return to its first locking position (retraction).

[0025] Said backward notch (42) may be of a classical parabolic nature widely applied in the technical field of the invention. Although not essential for the present invention, its shape may be optimized depending on the shape and position of the details (e.g. ridge, track grooves, recesses etc.) of the guiding body (30).

[0026] The frontal notch (37) which constitutes essence of the present invention may have a shape other than the angled "U" and "V" recesses such as a semi-circular or semi-parabolic recession as long as the protrusion (38) is arranged in parallel to the longitudinal axis (x_h) and perpendicularly confronted with the guiding element (24) so that unintentional disengagement of said guiding element (24) may completely be eliminated.

[0027] Besides these benefits, it is immediately clear from the above description that, with the strong engagement of guiding element (24) and frontal notch (37), most of the additional components of the conventional knob assemblies, such as plurality of tracks, bosses and serrated edges for strengthening the overall structure are substantially eliminated. Further aspects and advantages of the present invention shall be apparent for those skilled in the art with the above explanations and appended drawings.

Claims

1. A cooking appliance comprising at least one gas valve and a pop-out type control knob assembly (1) coupled to said gas valve, said knob assembly (1) comprising a guiding body (30) residing in a knob (10), a guiding element (24) adapted to travel on a surface of said guiding body (30), and a spring lo-

cated in between the guiding body (30) and the knob (10); said guiding body (30) comprising a number of track grooves (32, 33) forming a loop for travel of the guiding element (24), and a central ridge (41) having at least two notches (37, 42) located oppositely to each other; the control knob assembly (1) being adapted to stay in a first locking position by retraction of the knob (10) and engagement of the guiding element (24) into a backward notch (42), and to stay in a second locking position by extension of the knob (10) and engagement of the guiding element (24) into a frontal notch (37),

characterized in that;

said frontal notch (37) comprises a recession adapted to engage with the guiding element (24), and further comprises a protrusion (38) that is adapted to detent the guiding element (24) and wherein said protrusion (38) protrudes parallel to a longitudinal axis (x_h) of the guiding body (30) for applying a perpendicular detention when said guiding element (24) abuts to the bordering side of said protrusion (38).

2. A cooking appliance according to claim 1, wherein the knob assembly (1) comprises at least one confronting point (391) between a second recess (34), which is located at the other side of the groove (32, 33) having the protrusion (38) on one side, and third recess (39) opposite to said point (391).

3. A cooking appliance according to claim 1, wherein the knob assembly (1) comprises an intermediary distance (a) having a predetermined length inbetween the end point (381) of said protrusion (38) and perpendicular projection of the confronting point (391) to the lateral axis of the knob (10).

4. A cooking appliance according to claim 1, wherein the knob assembly (1) further comprises an inner body (20) having an opening (22) for receiving and nesting the guiding body (30).

5. A cooking appliance according to claim 1, wherein the guiding element (24) is configured as a pin.

6. A cooking appliance according to claims claim 1, wherein the knob (10) is configured with a cylindrical body having a depressible surface (11).

7. A cooking appliance according to claim 1, wherein the recession of the frontal notch (37) is formed in an angled "U" shape.

8. A cooking appliance according to claims claim 1, wherein the recession of the frontal notch (37) is formed in an angled "V" shape.

9. A method for operating a pop-out type control knob assembly (1) involving a passive mode when a gas

cooking appliance is not operated, and an activation mode when said appliance is operated, the method comprising the steps of;

- enabling a guiding element (24) to attach to a backward notch (42) for keeping an entire knob in retracted position in passive mode,
- releasing said guiding element (24) from the backward notch (42) and moving the same into a first recession (43) under spring forces for moving the knob (10) outside of the front panel of cooking appliance in activation mode,
- bringing the guiding element (24), which is permitted to get into a groove (32) of the control knob assembly (1) by enforcing it into the first recession (43), into a second recession (34), thereby bringing the same into an utmost extended position,
- continuing to push onto the knob (10) along a longitudinal axis (x_n) so that the guiding element (24) may move from the second recession (34) through the frontal notch (37) at a position where radial rotation of the knob is not hindered,
- bringing the guiding element (24) for engagement with the frontal notch (37) by moving and activating gas valve during start up of flame,
- bringing the guiding element (24) again at the utmost extended position outward of front panel allowing the gas flow by way of hitting it to the confronting point (391) opposite to the frontal notch (37) of the guiding body (30) under influence of the spring and permitting it to lean against a third recession (39) by applying push on the knob (10) for interrupting the flame after the course of flaming,
- bringing the guiding element (24) into a fourth recession (43) through movement in the second groove (33) by pushing the knob (10) for returning the passive mode,
- removing the depression on the knob and engaging the guiding element (24) to the backward notch (42) for providing retracted position towards back side of front panel in utmost retracted form.

Patentansprüche

1. Kochvorrichtung, die wenigstens ein Gasventil und einen mit dem Gasventil gekoppelten versenkbaren Drehknebel (1) umfasst, wobei der Drehknebel (1) einen in einem Knebel (10) sitzenden Führungskörper (30), ein Führungselement (24), das ausgebildet ist, um sich über eine Oberfläche des Führungskörpers (30) zu bewegen, und eine zwischen dem Führungskörper (30) und dem Knebel (10) angeordnete Feder umfasst, wobei der Führungskörper (30) eine Anzahl von Spurrillen (32, 33), die eine Schleife für

die Bewegung des Führungselements (24) bilden, und einen zentralen Steg (41), der wenigstens zwei einander gegenüber angeordnete Kerben (37, 42) hat, umfasst, wobei der Drehknebel (1) ausgebildet ist, um durch Einfahren des Knebels (10) und Eingreifen des Führungselements (24) in eine Rückwärtskerbe (42) in einer ersten Verriegelungsstellung zu bleiben und durch Ausfahren des Knebels (10) und Eingreifen des Führungselements (24) in eine Vorwärtskerbe (37) in einer zweiten Verriegelungsstellung zu bleiben,

dadurch gekennzeichnet, dass

die Vorwärtskerbe (37) eine Aussparung aufweist, die zum Eingreifen in das Führungselement (24) ausgebildet ist, und ferner einen Vorsprung (38) aufweist, der zur Verriegelung des Führungselements (24) ausgebildet ist, und wobei der Vorsprung (38) parallel zu einer Längsachse (x_n) des Führungskörpers (30) hervorsteht, um eine senkrechte Verriegelung anzuwenden, wenn das Führungselement (24) an die Grenzseite des Vorsprungs (38) angrenzt.

2. Kochvorrichtung nach Anspruch 1, wobei der Drehknebel (1) wenigstens einen gegenüberstehenden Punkt (391) zwischen einer zweiten Aussparung (34), die an der anderen Seite der Rille (32, 33), die den Vorsprung (38) an einer Seite hat, angeordnet ist, und einer dritten Aussparung (39) gegenüber dem Punkt (391) umfasst.
3. Kochvorrichtung nach Anspruch 1, wobei der Drehknebel (1) einen dazwischenliegenden Abstand (a) mit einer vorgegebenen Länge zwischen dem Endpunkt (381) des Vorsprungs (38) und der senkrechten Projektion des gegenüberstehenden Punktes (391) zu der Längsachse des Knebels (10) umfasst.
4. Kochvorrichtung nach Anspruch 1, wobei der Drehknebel (1) ferner einen Innenkörper (20) umfasst, der eine Öffnung (22) zum Aufnehmen und Einnisten des Führungskörpers (30) hat.
5. Kochvorrichtung nach Anspruch 1, wobei das Führungselement (24) als ein Zapfen ausgebildet ist.
6. Kochvorrichtung nach Anspruch 1, wobei der Knebel (10) mit einem zylindrischen Körper, der eine eindrückbare Oberfläche (11) hat, ausgebildet ist.
7. Kochvorrichtung nach Anspruch 1, wobei die Aussparung der Vorwärtskerbe (37) in einer abgewinkelten "U"-Form ausgebildet ist.
8. Kochvorrichtung nach Anspruch 1, wobei die Aussparung der Vorwärtskerbe (37) in einer abgewinkelten "V"-Form ausgebildet ist.
9. Verfahren zum Betrieb eines versenkbaren Dreh-

knebels (1) mit einem passiven Modus, wenn eine Gaskochvorrichtung nicht betrieben wird, und einem Aktivierungsmodus, wenn die Vorrichtung betrieben wird, wobei das Verfahren die folgenden Schritte umfasst:

- Ermöglichen des Anbringens eines Führungselement (24) an einer Rückwärtskerbe (42), um einen gesamten Knebel in einer Einfahrstellung zu halten,
- Lösen des Führungselements (24) von der Rückwärtskerbe (42) und Bewegen desselben in eine erste Vertiefung (43) unter Federkräften, um den Knebel (10) im Aktivierungsmodus außerhalb der Frontplatte der Kochvorrichtung zu bewegen,
- Bringen des Führungselements (24), dem gestattet ist, in eine Nut (32) des Drehknebels (1) zu gelangen, indem es in die erste Vertiefung (43) gedrückt wird, in eine zweite Vertiefung (34), wodurch dasselbe in eine äußerste Ausfahrstellung gebracht wird,
- weiteres Drücken auf den Knebel (10) entlang einer Längsachse (x_h), sodass das Führungselement (24) sich von der zweiten Vertiefung (34) durch die Vorwärtskerbe (37) in eine Stellung bewegen kann, in der die radiale Drehung des Knebels nicht behindert wird,
- Bringen des Führungselements (24) zum Eingreifen in die Vorwärtskerbe (37) durch Bewegen und Aktivieren des Gasventils beim Starten der Flamme,
- erneutes Bringen des Führungselements (24) in die äußerste Ausfahrstellung außerhalb der Frontplatte, um den Gasstrom zu ermöglichen, indem es an den gegenüberliegenden Punkt (391) gegenüber der Vorwärtskerbe (37) des Führungskörpers (30) unter Einfluss der Feder angeschlagen wird, und Gestatten, dass es gegen eine dritte Vertiefung (39) lehnt, durch Ausüben eines Stoßes auf den Knebel (10), um die Flamme nach dem Entflammen zu unterbrechen,
- Bringen des Führungselements (24) in eine vierte Vertiefung (43) durch Bewegung in der zweiten Nut (33) durch Drehen des Knebels (10), um in den passiven Modus zurückzukehren,
- Lösen des Niederdrückens des Knebels und Eingreifen des Führungselements (24) in die Rückwärtskerbe (42), um die Einfahrstellung zur Rückseite der Frontplatte in der äußersten eingefahrenen Form bereitzustellen.

Revendications

1. Appareil de cuisson comprenant au moins une sou-

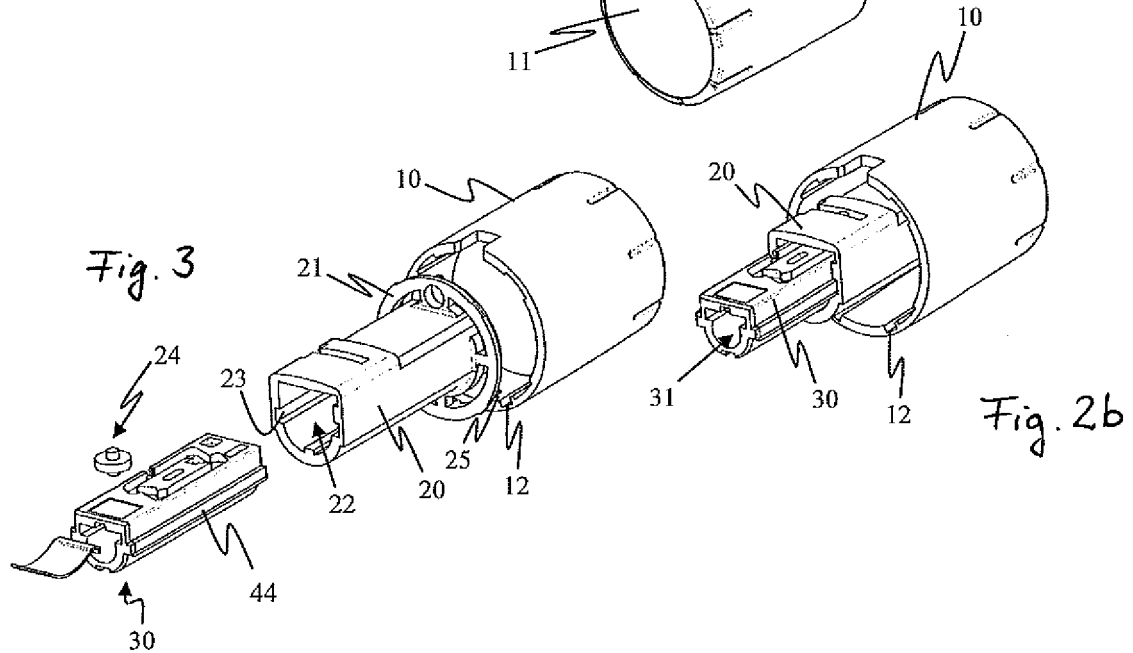
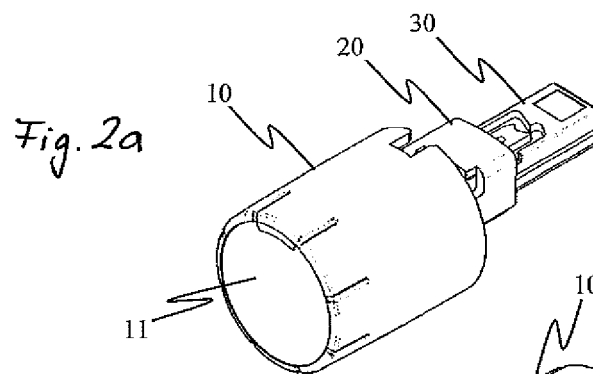
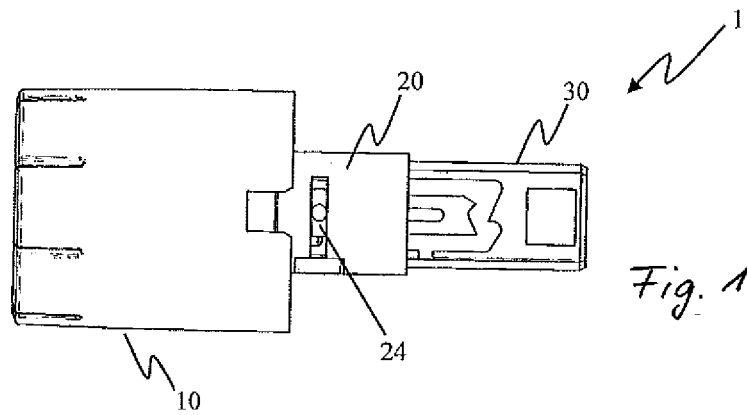
pape à gaz et un assemblage de bouton de commande de type rétractable (1) couplé à ladite soupape à gaz, ledit assemblage de bouton (1) comprenant un corps de guidage (30) résidant dans un bouton (10), un élément de guidage (24) adapté afin de se déplacer sur une surface dudit corps de guidage (30), et un ressort situé entre le corps de guidage (30) et le bouton (10) ; ledit corps de guidage (30) comprenant un nombre de rainures de guidage (32, 33) formant une boucle pour le déplacement de l'élément de guidage (24), et une strie centrale (41) possédant au moins deux encoches (37, 42) situées à l'opposé l'une de l'autre ; l'assemblage de bouton de commande (1) étant adapté afin de demeurer dans une première position de verrouillage par rétractation du bouton (10) et engagement de l'élément de guidage (24) dans une encoche arrière (42), et de demeurer dans une deuxième position de verrouillage par extension du bouton (10) et engagement de l'élément de guidage (24) dans une encoche frontale (37), **caractérisé en ce que** ladite encoche frontale (37) comprend un retrait adapté afin de s'engager avec l'élément de guidage (24), et comprend en outre une protrusion (38) adaptée afin de détendre l'élément de guidage (24) et dans lequel ladite protrusion (38) fait saillie parallèlement à un axe longitudinal (x_h) du corps de guidage (30) pour l'application d'une détente perpendiculaire lorsque ledit élément de guidage (24) est contigu au côté adjacent de ladite protrusion (38).

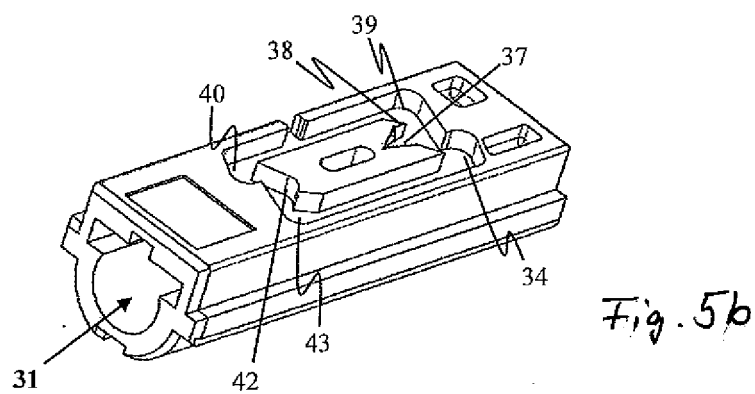
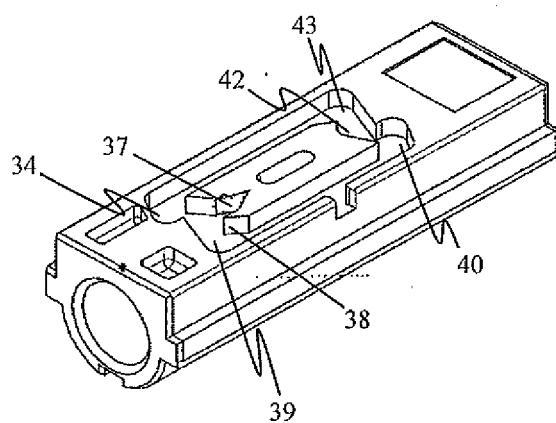
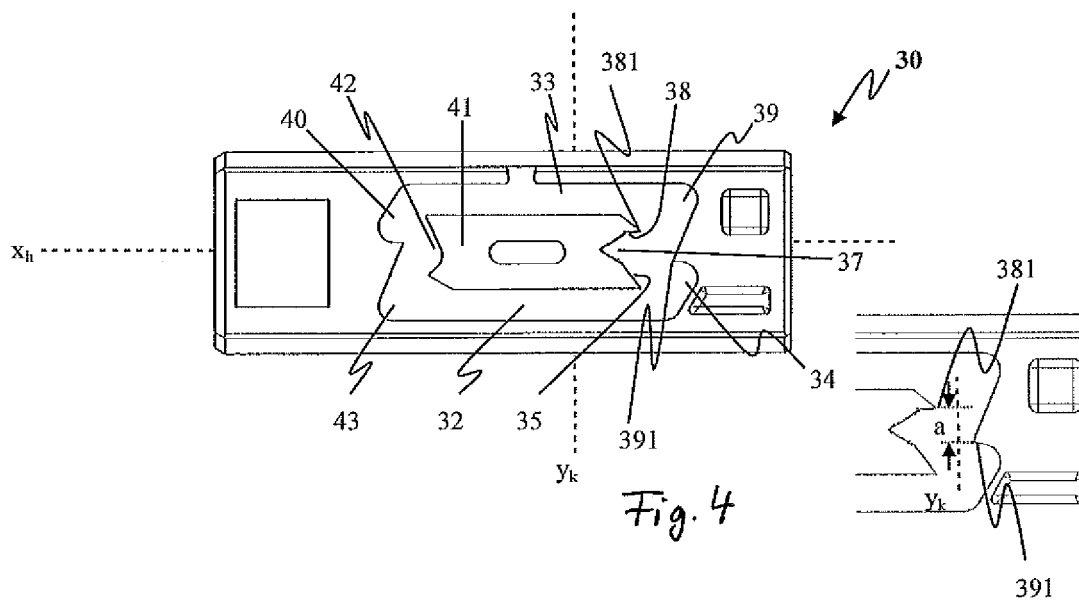
2. Appareil de cuisson selon la revendication 1, dans lequel l'assemblage de bouton (1) comprend au moins un point de confrontation (391) entre un deuxième retrait (34), localisé de l'autre côté de la rainure (32, 33) ayant la protrusion (38) d'un côté, et un troisième retrait (39) opposé audit point (391).
3. Appareil de cuisson selon la revendication 1, dans lequel l'assemblage de bouton (1) comprend une distance intermédiaire (a) ayant une longueur prédéterminée entre le point terminal (381) de ladite protrusion (38) et la projection perpendiculaire du point de confrontation (391) sur l'axe latéral du bouton (10).
4. Appareil de cuisson selon la revendication 1, dans lequel l'assemblage de bouton (1) comprend en outre un corps intérieur (20) possédant une ouverture (22) pour la réception et le logement du corps de guidage (30).
5. Appareil de cuisson selon la revendication 1, dans lequel l'élément de guidage (24) est configuré sous la forme d'une broche.
6. Appareil de cuisson selon la revendication 1, dans lequel le bouton (10) est configuré avec un corps

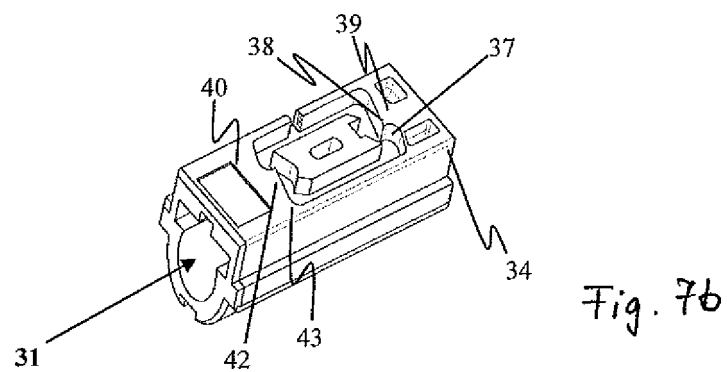
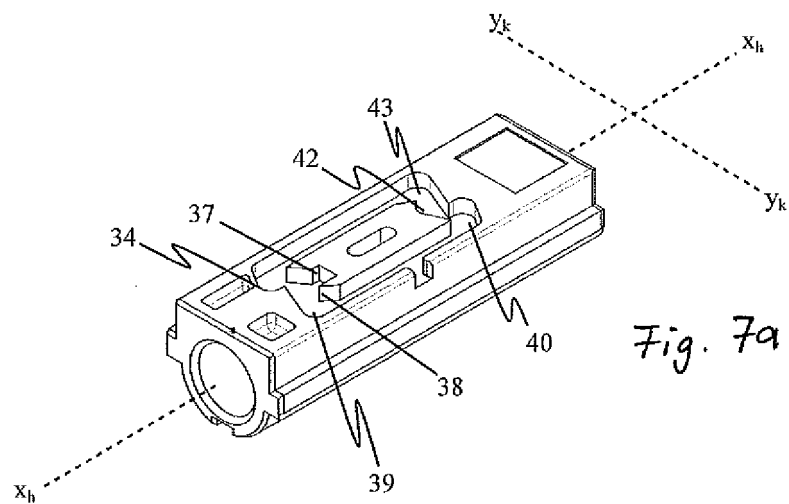
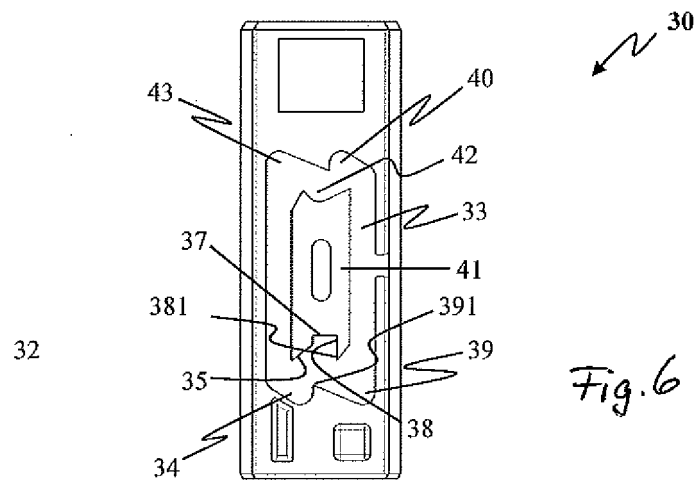
cylindrique ayant une surface pouvant être enfoncée (11).

7. Appareil de cuisson selon la revendication 1, dans lequel le retrait de l'encoche frontale (37) possède la forme d'un "U" angulaire. 5
8. Appareil de cuisson selon la revendication 1, dans lequel le retrait de l'encoche frontale (37) possède la forme d'un "V" angulaire. 10
9. Procédé d'exploitation d'un assemblage de bouton de commande de type rétractable (1) impliquant un mode passif lorsqu'un appareil de cuisson à gaz n'est pas utilisé, et un mode d'activation lorsque ledit appareil est en fonctionnement, le procédé comprenant les étapes suivantes ; 15
 - permettre à un élément de guidage (24) de se fixer à une encoche arrière (42) afin de maintenir un bouton complet en position rétractée en mode passif, 20
 - relâcher ledit élément de guidage (24) de l'encoche arrière (42) et le déplacer dans un premier retrait (43) sous des forces de ressort pour déplacer le bouton (10) à l'extérieur du panneau avant de l'appareil de cuisson dans le mode d'activation, 25
 - porter l'élément de guidage (24), autorisé à accéder à une rainure (32) de l'assemblage de bouton de commande (1) en le forçant à entrer dans le premier retrait (43), dans un deuxième retrait (34), ce qui le place dans une position la plus étendue, 30
 - continuer à pousser sur le bouton (10) le long d'un axe longitudinal (x_n) de sorte que l'élément de guidage (24) puisse se déplacer du deuxième retrait (34) vers l'encoche frontale (37) en une position dans laquelle la rotation radiale du bouton n'est pas entravée, 35 40
 - porter l'élément de guidage (24) afin qu'il s'engage avec l'encoche frontale (37) en déplaçant et en activant la soupape à gaz durant l'allumage de la flamme, 45
 - porter l'élément de guidage (24) à nouveau dans la position la plus étendue à l'extérieur du panneau avant, ce qui permet l'écoulement du gaz par contact avec le point de confrontation (391) à l'opposé de l'encoche frontale (37) du corps de guidage (30) sous l'influence du ressort et lui permettre de s'appuyer contre un troisième retrait (39) en appliquant une poussée sur le bouton (10) pour interrompre la flamme après l'allumage de la flamme, 50
 - porter l'élément de guidage (24) dans un quatrième retrait (43) via un mouvement dans la deuxième rainure (33) en appuyant sur le bouton (10) afin de revenir au mode passif, 55

- supprimer la dépression sur le bouton et faire s'engager l'élément de guidage (24) à l'encoche arrière (42) afin de fournir une position rétractée vers le côté arrière du panneau avant dans la forme la plus rétractée.







REFERENCES CITED IN THE DESCRIPTION

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