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(54) **A RETAINING RING WASHER FOR BURNER SWITCHING MECHANISM OF HEATERS AND COOKERS OPERATING WITH GAS**

(57) The invention is a retaining ring washer (30) which operates depending on the movement of the gas valve shaft (11) and enables the buttons (21) of switches (20) which apply electrical energy to ignition system, to

be pushed, by being mounted to gas valve shaft channel (12) of the gas valves (10) of all the devices which operate with LPG or NG, such as heaters or cookers with electronic or manual control.

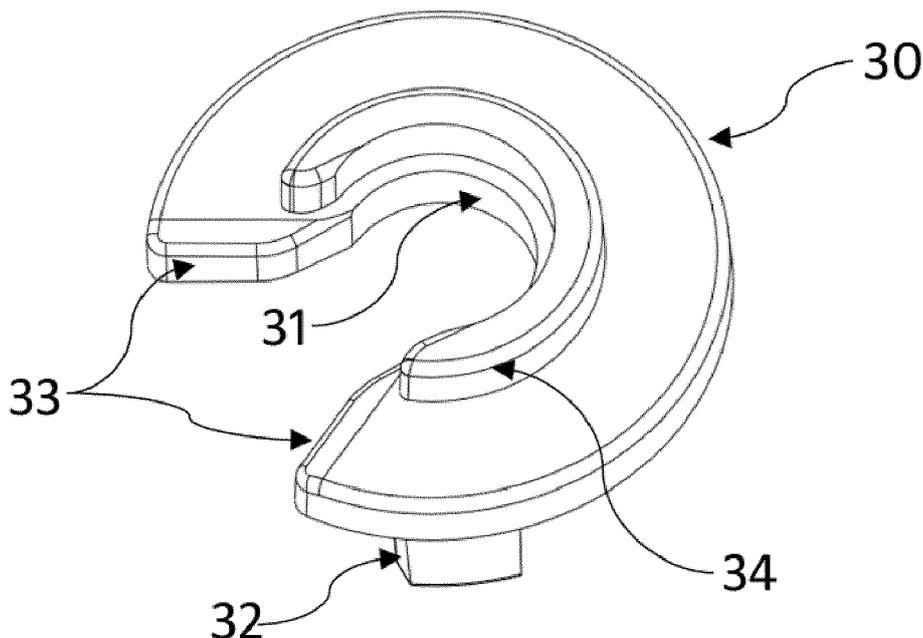


Figure-4

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Description

Technical Field

[0001] The invention is related to retaining ring washers.

[0002] The invention specifically is related to retaining ring washers which operate depending on the movement of the gas valve shaft and enable the buttons of switches which apply electrical energy to ignition system, to be pushed, by being mounted to the gas valves of all of the devices which operate with LPG or NG, such as heaters or cookers with electronic or manual control.

Prior Art

[0003] Today, there are two types of switch (20), push-button and rotary, which provide the electrical energy to the ignition unit that are used for burning the gas, in all of the devices which operate with LPG or NG, such as heaters or cookers with electronic or manual control. Said pushbutton switches generally consist of an ignition mechanism that is located inside a body, a switch button in which the movement of said ignition mechanism is provided and part/parts that are connected to gas valve shaft, which transmit the gas valve shaft vertical movement to the switch button.

[0004] In prior art, the retaining ring washers are as follows; in the patent application numbered TR2007/01793 a washer, which is used for applying pressure to the ignition switch, is fixed to the valve shaft with a retaining ring. This system requires high expenditure and labor.

[0005] In the patent application with number EP 1500881, a very thin channel is opened onto the washer, which is used for applying pressure to the ignition switch, and therefore the washer gained flexibility as well as it is tightly fixed to the gas valve shaft via its sets and also a circular continuous push to the ignition button is achieved. Nonetheless, both mounting and unmounting of this structure is very difficult.

[0006] In the patent application with number WO 2008/135839, a retaining ring washer structure that is very easy to mount and dismount, is provided. However, in said application, slot in the inlet section which enters to the gas valve shaft lie parallel to each other and flatly. In addition, the tabs which are located on the bottom side of invention are parallel to the slot which dilates and is flat. In cases that these tabs are flat, the impact of these tabs to the body of the ignition switch in some ignition switches prevents the operation of both gas valve and ignition switch.

[0007] In the patent application with number EP2290288, a retaining ring washer structure is provided. There are punctures added onto the top surface of the washer in order to facilitate flexibility. The columns/tabs that are located on the back side of the washer are very close to each other. Therefore, a difficulty of

corresponding the ignition switch to this space during the mounting occurs.

[0008] As a result, due to the inconveniencies mentioned above, and the insufficiency of the existing solutions regarding the issue, an improvement in the technical field is needed.

Brief Description of the Invention

[0009] The present invention is related to a retaining ring washer for burners which eliminates all the disadvantages and provides some additional advantages.

[0010] The main purpose of the invention is to provide an easy-to-use and inexpensive retaining ring washer for burner switching mechanism.

[0011] Another aim of the invention is to provide a retaining ring washer for burner switching mechanism which does not require high expenditure and labor.

[0012] Another aim of the invention is to provide a retaining ring washer for burner switching mechanism which is very easy to mount and unmount.

[0013] In order to achieve all the aims that are above-mentioned and can be derived from the detailed description below, the invention is a retaining ring washer which operate depending on the movement of the gas valve shaft and enables the buttons of switches which apply electrical energy to ignition system, to be pushed, by being mounted to the gas valves of all the devices which operate with LPG or NG, such as heaters or cookers with electronic or manual control. Said retaining ring washer comprises;

- An inlet section which enables it to be easily fixed to the gas valve shaft channel after the switch is mounted to the gas valve,
- An internal wall section which is seated on the gas valve shaft channel in the internal section.

[0014] The features of the invention along with all its advantages shall be understood more clearly with the figures provided below and the detailed description that refers to these figures. Therefore, an evaluation shall be made by taking these figures and the detailed description into account.

Brief Description of Drawings

[0015]

Figure 1 is the perspective view of the retaining ring washer, switch and gas valve in mounted manner.

Figure 2 is the perspective view of the retaining ring washer, switch and gas valve in mounted manner from a different angle.

Figure 3 is the perspective view of the gas valve shaft.

Figure 4 is the perspective view of the retaining ring

washer from top.
 Figure 5 is the perspective view of the retaining ring washer from bottom.

Description of the Part References in Figures

[0016]

10	Gas valve
11	Gas valve shaft
12	Gas valve shaft channel
20	Switch
21	Button
30	Retaining ring washer
31	Internal wall
32	Tab
33	Inlet opening
34	Set section

Detailed Description of the Invention

[0017] In this detailed description the invention is related to a retaining ring washers (30) which operate depending on the movement of the gas valve shaft (11) and enables the buttons (21) of the switches (20) which apply electrical energy to the ignition system, to be pushed, by being mounted to the gas valves (10) of all the devices which operate with LPG or NG, such as heaters or cookers with electronic or manual control. Heaters and cookers devices are domestic and industrial type ovens, cooking ranges, combi boilers etc. Preferred structures of the materials used in the invention are described in a non-limiting manner in order for the issue to be better understood.

[0018] The invention is a retaining ring washer (30) which operate depending on the movement of the gas valve shaft (11) and enables the buttons (21) of the switches (20) which apply electrical energy to the ignition system, to be pushed, by being mounted to the gas valve shaft channel (12) of the gas valves (10) of all the devices which operate with LPG or NG, such as heaters or cookers with electronic or manual control. Said retaining ring washer (30) comprises;

- An inlet section (33) which enables it to be easily fixed to the gas valve shaft channel (12) after the switch (20) is mounted to the gas valve (10),
- An internal wall (31) section which is seated on the gas valve shaft channel (12) in the internal section.

[0019] Today, there are two types of switch (20), push-button and rotary, which provide the electrical energy to the ignition unit that is used for burning the gas in all of the devices which operate with LPG or NG, such as heaters or cookers with electronic or manual control. The retaining ring washer (30) of the invention is to be used in the pushbutton switches (20). In Figure 1 and Figure 2,

the perspective view of the retaining ring washer (30), the switch (20) and the gas valve (10) are provided in a mounted manner. Said pushbutton switches (20) generally consist of an ignition mechanism that is located inside a body, a switch button (21) in which the movement of said ignition mechanism is provided, and parts that are connected to the gas valve shaft (11), which transmit the gas valve shaft (11) vertical movement to the switch button (21).

[0020] Referring to Figure 3, there is the gas valve shaft channel (12), on which the retaining ring washer (30) is attached, on the gas valve (10). In Figure 4, the perspective view of the retaining ring washer (30) from top is provided. The outline of the retaining ring washer (30) is in a shape that is similar to a C. The retaining ring washer (30) comprises an inlet section (33) that enables it to be attached to the gas valve shaft channel (12) after the switch (20) is mounted to the gas valve (10). The inlet section (33) is an open section of the retaining ring washer (30). The retaining ring washer (30) is inserted to the gas valve shaft channel (12) from the inlet section (33). There is comprised an internal wall (31) section inside the internal section of the retaining ring washer (30) and it is seated to the gas valve shaft channel (12). By being aligned with the internal wall (31) section of the retaining ring washer (30) that inserts to the shaft channel (12), the retaining ring washer (30) and the gas valve shaft (11) become concentric. A tight junction occurs with the gas valve shaft channel (12) when the retaining ring washer (30) goes through the internal wall (31) section. By this way, the retaining ring washer (30) transmits the pushing movement of the gas valve shaft (11) to the button (21) on the switch (20). There is a set section (34) on the top of the retaining ring washer (30), managing the flexibility amount. Said set section (34) manages the hardness during the mounting and unmounting of the retaining ring washer (30) to and from the gas valve shaft channel (12). The hardness of the mounting for the retaining ring can be managed by changing the sizes of the set section (34).

[0021] In Figure 5, the perspective view of the retaining ring washer (30) from bottom is provided. According to this, there are two tabs (32) on the bottom surface of the retaining ring washer (30). The tabs (32) are in a structure suitable for circular form. In order for the tabs (32) to be suitable for circular form, the end parts are rounded. Therefore, it does not impact to the switch (20) during the pushing movement of the gas valve shaft (11). Retaining ring washer (30) respond partly for the circular movements of the gas valve shaft (11). In other words, the retaining ring washer (30) rotates along with the rotating movement of the gas valve shaft (11). However, when the tabs (32) on the bottom of the retaining ring washer (30) seize to the button (21) of the switch (20), the retaining ring washer (30) cannot rotate. Therefore, the retaining ring washer (30) is not released from the button (21).

[0022] As a result, an easy-to-use and inexpensive re-

taining ring washer (30) is provided with the invention. The application of the invention would not create high expenditure and labor, also the mounting and unmounting of the retaining ring washer (30) would be very practical.

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Claims

1. A retaining ring washer (30) which operates depending on the movement of the gas valve shaft (11) and enables the buttons (21) of the switches (20) which apply electrical energy to the ignition system, to be pushed, by being mounted to the gas valve shaft channel (12) of the gas valves (10) of all the devices which operate with LPG or NG, such as heaters or cookers with electronic or manual control; **wherein it comprises;**
 - An inlet section (33) which enables it to be easily fixed to the gas valve shaft channel (12) after the switch (20) is mounted to the gas valve (10),
 - An internal wall (31) section which is seated on the gas valve shaft channel (12) in the internal section.
2. The retaining ring washer (30) according to Claim 1, wherein; it comprises at least one tab (32) which enables the retaining ring washer (30) to rotate with the rotating movement of the gas valve shaft (11) and prevents the retaining ring washer (30) from rotating when it is attached to the button (21) of the switch (20), which is located under the retaining ring washer (30).
3. The retaining ring washer (30) according to Claim 2, wherein; the tabs (32) have a shape that is suitable for circular form in order to prevent the gas valve shaft (11) from impacting to the switch (20) during the pushing movement.
4. The retaining ring washer (30) according to Claim 1, wherein; it comprises a set section (34) which provides management of the hardness of mounting by its sizes being changed during the mounting and unmounting of the retaining ring washer (30) to the gas valve shaft channel (12).

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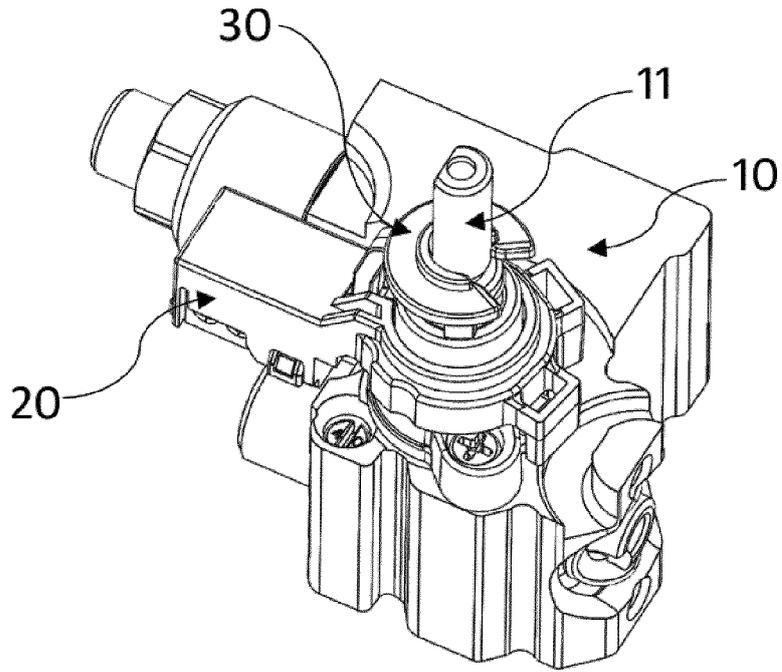


Figure-1

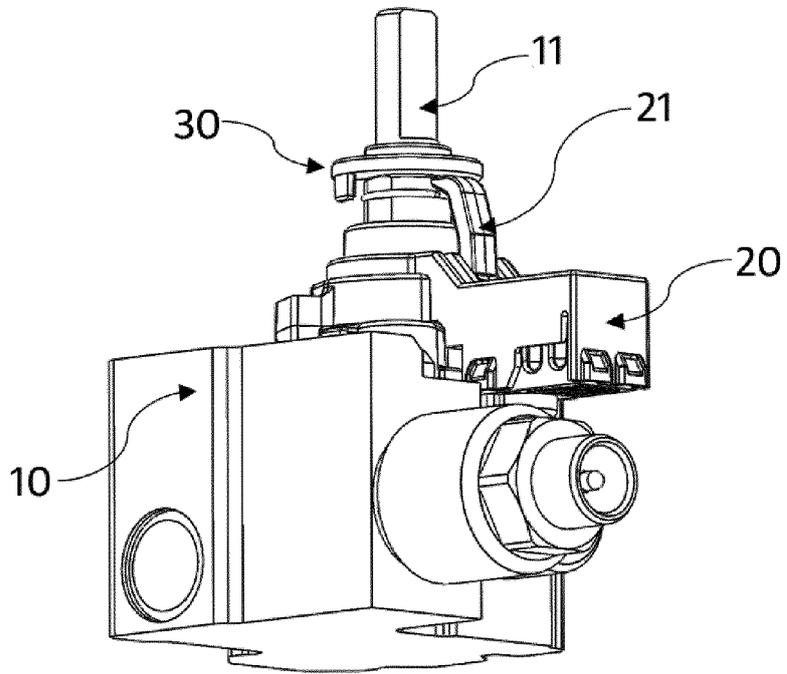


Figure-2

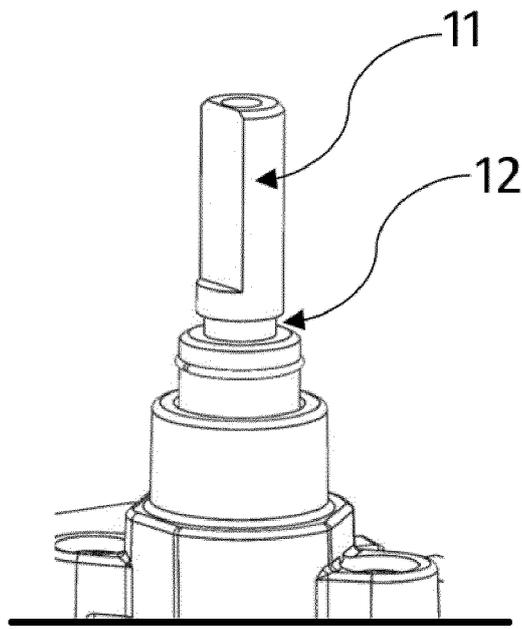


Figure-3

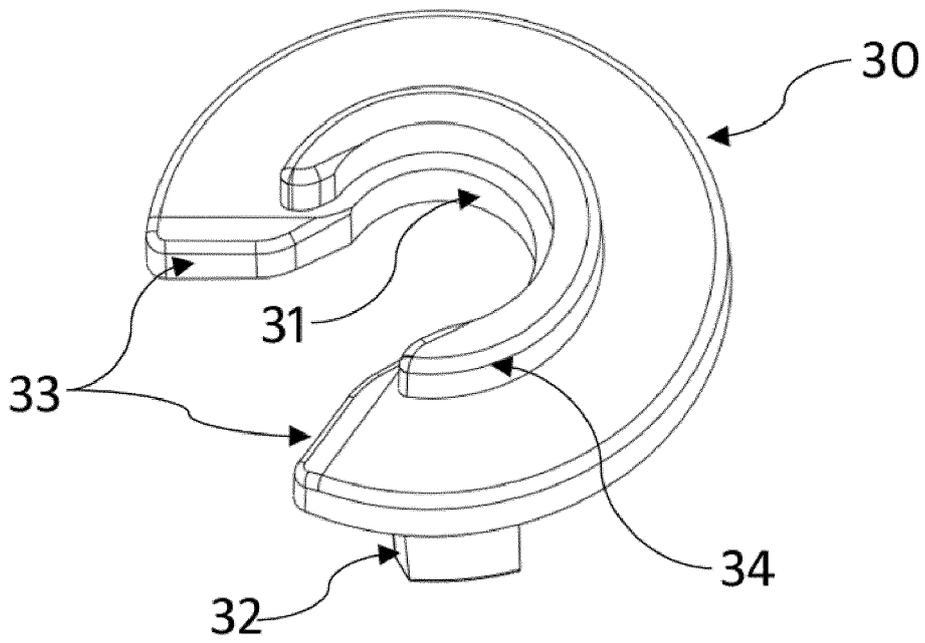


Figure-4

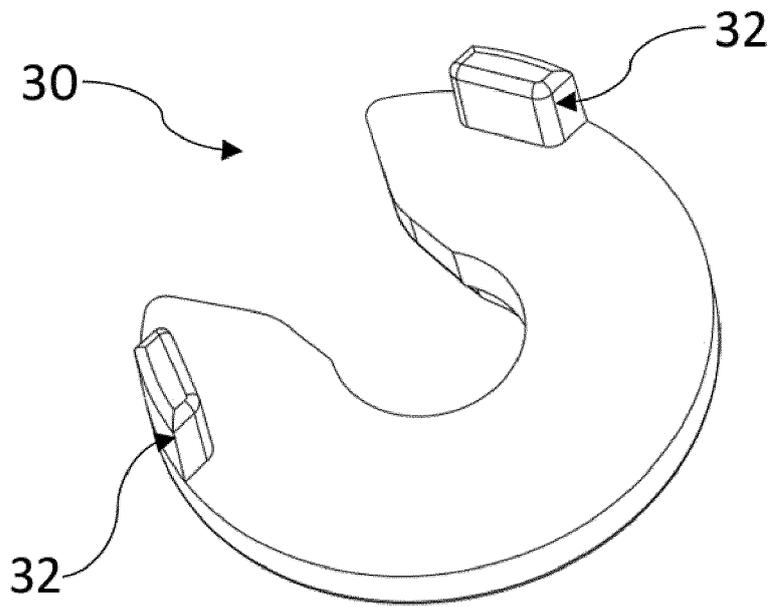


Figure-5



EUROPEAN SEARCH REPORT

Application Number
EP 18 16 4499

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Place of search		Date of completion of the search	Examiner
Munich		12 September 2018	Vogl, Paul
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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