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(54) **Pressure spring for taps with adjustment screw**

(57) A specifically designed spring (1), which is not fully conic and can be integrated fully into a gas tap system has been designed. In this spring (1) a definite fixed spire (16) and the following spires (17) have conic position that shall not go through each other and shall be of the same linear shape requested. The internal diameter of fixed spears (16) is greater than the largest diameter of the adjustment screw. The fixed spears (7) are smaller than the male internal diameter (22). In this way, it is replaced inside the male. The spears coming after the conic part (23) do not have any conic position and the external diameter is in a manner that can go inside the mile (3). The internal diameter of the spring (24) is in a manner through which screwdriver can pass to adjust the adjustment screw. There is a β angle (15) with spring conic having been determined according to the I-I axis. This conic angle (15) has been designed in such a manner that the spring spires do not go through each other at this point and do not mount on the adjustment screw (2).

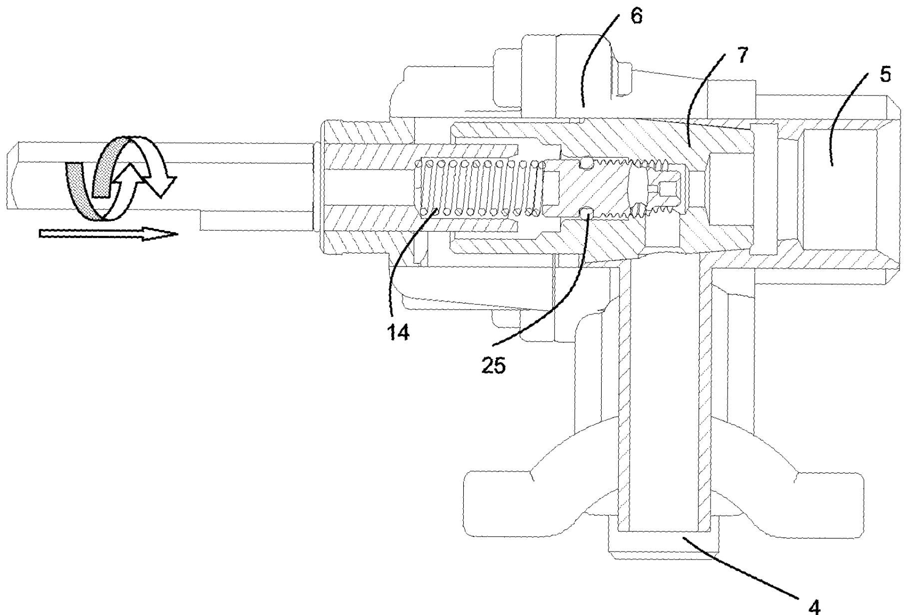

Figure 1

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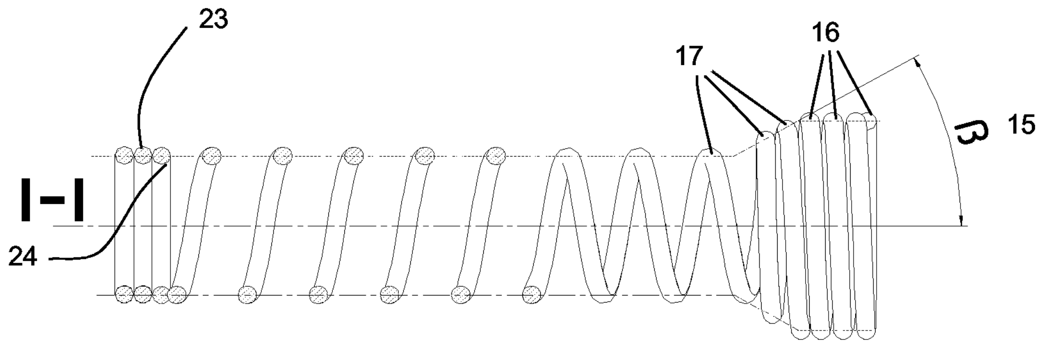

Figure 6

Description

[0001] This invention is about pressure spring (1) for taps working with gas that can also adjust the level of gas. This invention is about lifting an extra force exerted on the adjustment screw (2) during coming out of the gas on the adjustment screw inside the gas tap when gas is opened. This force is lifted completely after the forward pushing movement of the mile (3) through the adjustment screw (2) of the pressure power. In all the taps working in this manner, when the mile is pushed forward (1) as shown in Figure 1, all the force exerted on the spring is to be transmitted through the adjustment screw (2). Half gas passage through the system is on the adjustment screw. For this reason, the speed of flow of the gas (lt/h) displays variations during the passage of gas. This is an unwanted situation for the control fixings. This problem has been completely eliminated with this invention.

[0002] In the furnaces operating in furnaces and ovens, basically there is on gas entry (4) and gas exit (5). These taps may rotate 160°C or more. It is provided that the gas is entered through the entry section (4) and that passage of the gas is provided through a male (7) inside the main body (6). The passage of the gas is provided through two holes on the male gas. One of the holes (8) provides full passage of the gas and the other hole (9) provides half passage. This hole is referred to as (9) pilot hole and provides an opportunity for the furnace to burn with low heat. An opportunity is provided for the furnace to burn under low heat by changing the diameter of this hole (9). The passage position of the gas is provided through the mile (3) on the tap. During the movement of pushing forward and moving backward of the mile, the cam on the mile, passes though the chip (10) on the male and provides that along with the mile, the male rotates as well. There is the segment (13) on the mile, helping to stop the forward movement on the mile from a certain distance. It comes to a position with the first large hole (8) of 90°C along with the male (7) and provides an opportunity for the full flow of the gas. If the mile (3) can be revolved for another 70° the tap shall come into a half open position. In this way the furnace or the oven burn with low flame.

[0003] The taps working with gas are generally divided into two groups. Among first group of taps, the passage of the gas cannot be adjusted inside itself. These types of taps are generally furnace taps. There is no adjustment screw (2) in the furnace tap shown in Figure 2 and the passage of the gas cannot be made. This results with the condition that the tap cannot be transformed into different gas usages. Generally there are two types of gases used in furnaces. The first one of these is LPG and the other one is natural gas (NG). LPG(G30) gas is more intense than NG(G25 and G20) gas. Due to the differences of intensity of the gases, problems come out when taps working with LPG are supplied with NG. The oven would not burn as requested in such case. For this reason, adjustment screws (2) that can make adjustments inside the tap have been invented. Adjustment screws are generally developed for second group taps, hence oven taps. Such taps in which adjustment screws (2) are used are referred to as oven taps.
If we would refer generally to the use of adjustment screw (2), the adjustment screw, the adjustment screw is cylinder shaped, there is a clove in the external part and is general made of brass material. Its dimensions are quite small when compared with taps. The outer part is narrowed with reduction. There is a split for screwdriver (18) in order to make an adjustment on the upper part with a screwdriver. An o-ring hole (19) has been opened in order to place an o-ring on the middle part. On the outer part, there are wholes of 90° to each other. One of the holes is a hole to the breadth and from one side to another (11). Thanks to this hole, entry of gas is provided from gas entry (4) at low position and is sent from the other hole (12) to the gas exit (5). This is generally valid for the LPG gas. The LPG gas adjustment screw (2) is squeezed to the very end (Figure 5). If the tap is to be adjusted according to the NG gas, the adjustment screw is loosened to bring to the ratio of speed of flow requested. In this way, the passage of the gas is as in figure 4 and the speed of flow of gas increases.

[0004] In the systems used in our day, there is a spring (14) having been placed inside the adjustment screw (2) and the mile (3). This spring (14) provides the mile (3) to come back to its previous position after the moment of pushing forward. If NG is to be adjusted for the tap, the adjustment screw is loosened and the adjustment screw is pushed back (Figure 1). The loosening of the adjustment screw is made without detaching the tap, through the help of a small screwdriver from the hole (20) inside the mile from one end to the other. The adjustment screw (2) is loosened with a screw driver A forward and backward movement is given to the mile in order to open the gas. During this pressure, some of the energy on this spring has an effect the adjustment screw. The speed of flow of the gas shows variation during this effect. This is an unwanted situation on the gas taps with adjustment screw. This is shown clearly in Figure 1. What is explained above is related with the known situation of this technique.
The fmding will now be explained in a more detailed manner by referring to the attached diagrams; in these diagrams, which are not restrictive but explanatory;

Figure 1 is a partial cross-sectional appearance of a standard tap. The adjustment tap is loosened. In this tap, the technique is provided in the known manner.
Figure 2 is a partial cross-sectional appearance of a tap without adjustment screw.
Figure 3 is a perspective appearance of the male (7) inside the tap.
Figure 4 is a partial cross-section appearance of the spring invented, assembled on the tap. In this case, the spring (1) is under pressure and the adjustment screw is loosened.

Figure 5, is a partial cross-sectional appearance of the spring invented (1) assembled on the tap. In this way, the spring shall be at free position and the adjustment screw shall be tightened.

Figure 6, is the appearance of the partial conic spring invented in free position.

Design of these systems in this manner is related with the dimensions of the tap. These taps have usually been designed in this manner in order to be able to design the size of the taps sufficiently small and to gain space.

[0005] In the invention mentioned, the problem referred to above has been completely eliminated. For this purpose, a specifically designed spring (1), which is not fully conic and can be integrated fully into the system has been designed. In this spring (1) a definite fixed spire (16) and the following spires (17) have conic position that shall not go through each other and shall be of the same linear shape requested. The internal diameter of fixed spears (16) is greater than the largest diameter of the adjustment screw. The fixed spears (7) are smaller than the male internal diameter (22). In this way, it is replaced inside the male. The spears coming after the conic part (23) do not have any conic position and the external diameter is in a manner that can go inside the mile (3). The internal diameter of the spring (24) is in a manner through which screwdriver can pass to adjust the adjustment screw. There is a β angle (15) with spring conic having been determined according to the I-I axis. This conic angle (15) has been designed in such a manner that the spring spires do not go through each other at this point and do not mount on the adjustment screw (2).

[0006] This spring used inside the tap system (1) does not exert any pressure on the adjustment screw in the event that the adjustment screw is pulled back to the maximum extent. In this position the adjustment screw (2) passes inside the spring (1) and shall be loosened from extreme load.

This spring (1) used in this invention is made of spring steel material and three fixed spears (16) have been used. The number of fixed spears may show differentiation depending on the type of tap to be used. At the same time, the β angle (15) to be used may also be changed.

[0007] This spring invented may be used for the gas control of household devices (1) and it can also be used in industry, for all taps working with internal adjusted screwed gas.

Claims

1. It is a tap with adjustment screw working with gas; in its body (6) it has one male (7) and an adjustment screw (2) having been tied to it mechanically with female screw with a gasket (25) preventing leakage on the adjustment screw. At the same time, in the mile (3) there is a spring (1) providing connection with the male (7). It functions for setting up the spring system. The system has been mechanically mounted to the body with a cover (21) in order for the system to constitute a closed circuit. On the mile, there is a segment (13) helping to stop the movement on the mile from a certain distance.

2. It is the system referred to in 1 above; and it has a certain, fixed spire (16) in the lower section. The internal diameter adjustment screw (2) of the fixed spears (16) is greater than the largest external diameter. Accordingly, the external diameter of fixed spires (16) is smaller than the internal diameter of the male of the external diameter.

3. It is the spring referred to in 1 above; it has a conic position after the fixed spires (16) according to the I-I axis with a certain β angle (15). These spires that are conic are in a manner that they shall not pass through each other.

4. It is the spring referred to in 1 above, and it has flat spires (23) after the conic finishing referred to 3 above. There is no conic position in the spires (23) following after the conic part and the external diameter is in a manner that it shall pass though mile (3). The internal diameter is in a manner that it shall require screwdriver to adjust the adjustment screw (24).

5. It is the spring referred to in 1 above and the diameter of the wire may be changed depending on articles 2,3,4 above.

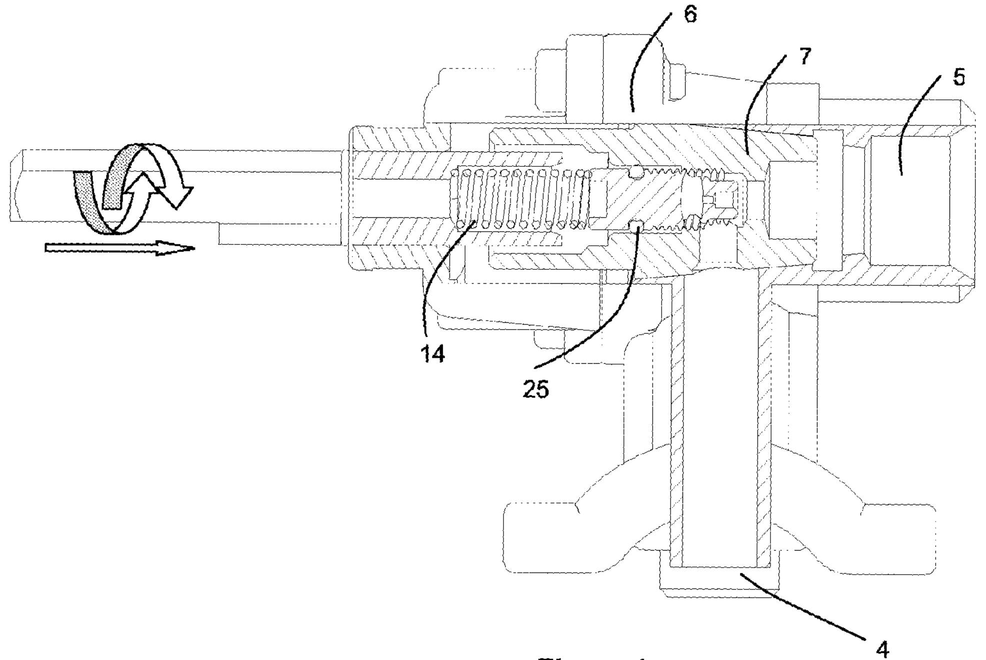

Figure 1

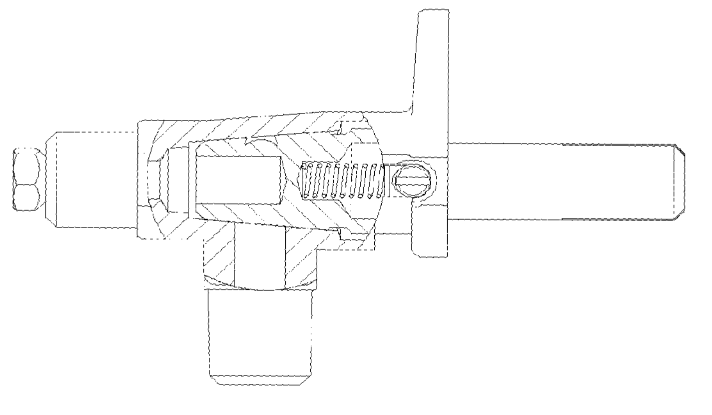

Figure 2

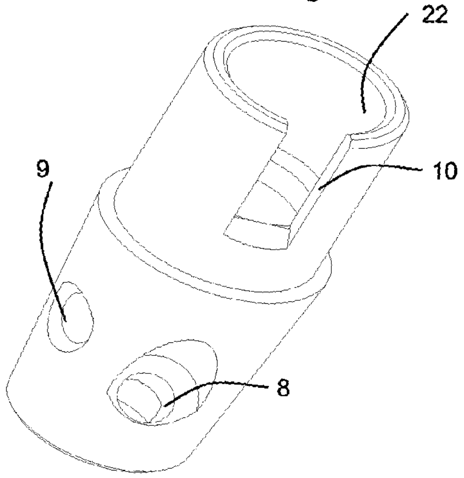

Figure 3

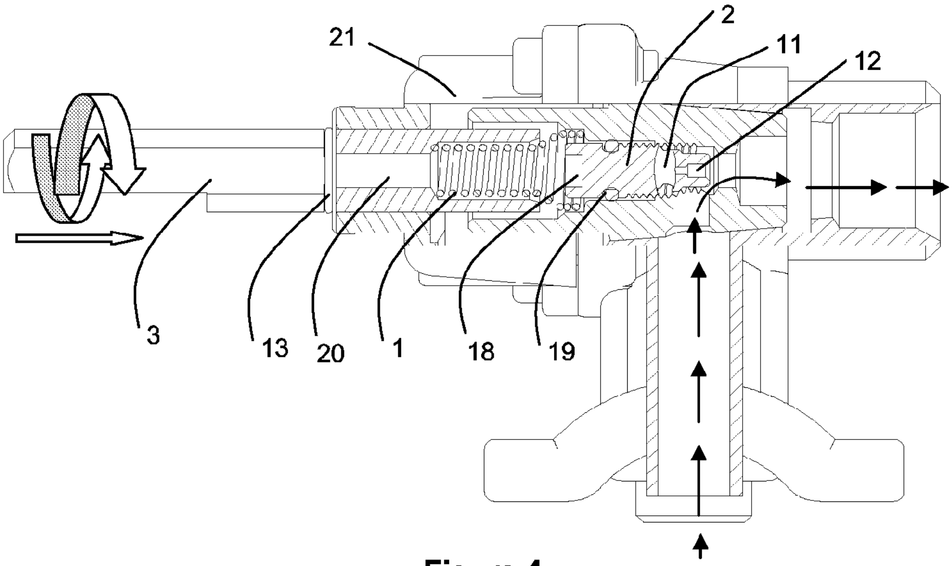

Figure 4

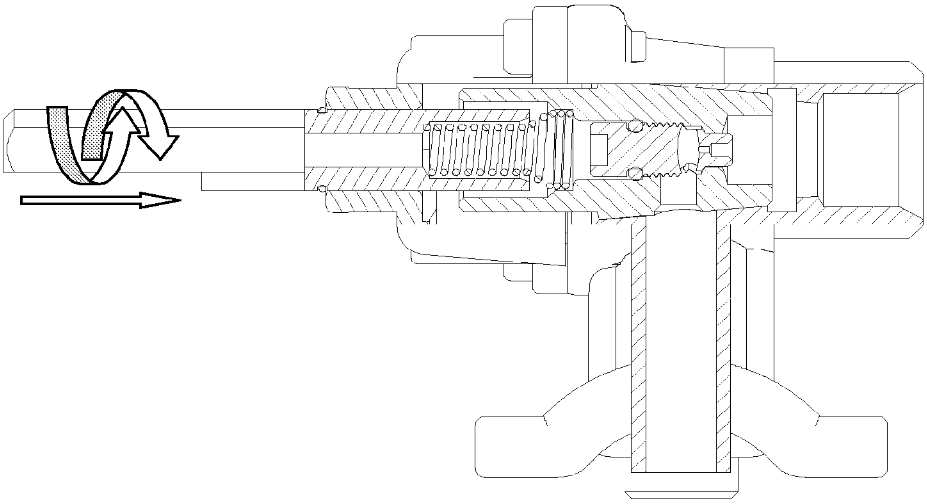

Figure 5

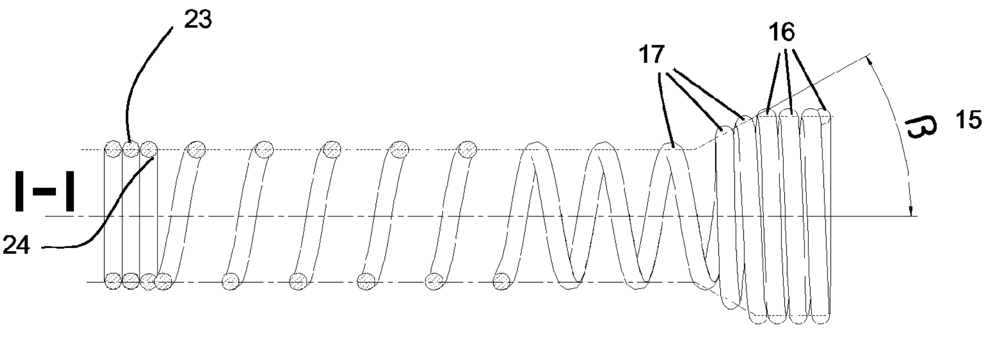

Figure 6