

ABSTRACT

An auto stop cooking gas regulator comprises of a top cover is folded to the bottom cover for preventing gas leakage and to avoid impurities from the gas. The regulator will operates in accordance with the variation of different gas pressure level inside, once pressing the Push button downward to release the gas from the cylinder to pass through the regulator to the stove burner. Once switched off, the gas inside the Valve will be stopped and the existing gas inside the Valve will passes through a 0.2 slit like cut provided in the Valve pin and the gas moves upwards and in that upward gas pressure pull the gas control lock ejector to release the lock to attain the initial off position and makes this gas regulator to stop the gas flow to the stove simultaneously.

I claim :-

1. The auto stop cooking gas regulator, comprising a body comprising
 - a valve comprising a valve pin through which the gas passes through the opening, and a valve lock which locks the valve downwards and during auto stop it allows the valve to move upwards,
 - a gas control lock ejector in which one leg(13B) locks the valve, the other leg(13C) works as lock ejector, and the center leg(13A) moves up & down, and
 - a nozzle bush, which is for the safety of the valve and for easy movement,
 - a push pin which is threaded to the gas control lock ejector ,moves up and down vertically ,
 - a push button for the downward movement of push pin ,to switch on the gas ,
 - a pressure rubber diaphragm which is placed between the top cover and bottom cover to avoid leakage,
 - a rubber 'o' ring , to prevent leakage through the side of the valve which is folded to the bottom side of the bottom cover ,
 - a valve rubber stopper which controls the gas flow ,
 - a ball press bush , which is used to lock and unlock the balls from the cylinder ,
 - a spring level plate washer which is used to reduce the wear and tear of the bottom cover and also supports the ball lock spring ,
 - a diaphragm safety plate which is placed on top of the rubber diaphragm for safety and for the correct seating of load spring ,
 - a stainless ball for to and fro motion of the ball press bush ,
 - a load spring ,which is placed inside the center of the top cover, for controlling the pressure inside the regulator ,
 - a ball lock spring ,placed at the bottom side of the bottom cover ,for the spring action of the ball press bush ,
 - a rubber coated washer , which is folded to the valve,
 - a valve pin spring which gives an upward and downward movement for the valve pin , and
 - a top cover which is folded to the bottom cover .
2. **The gas regulator as claimed in 1**,where in the nozzle bush is inserted from the bottom side of the bottom cover for the valve to move freely within the bush.
3. **The gas regulator as claimed in 2**, where in the rubber 'o' ring is placed on the nozzle bush from the bottom side and is folded for correct seating.
4. **The gas regulator as claimed in 3**, where in the valve lock and the lock spring will be placed inside the lock pin and is riveted to the vertical leg in the bottom cover, and the lock spring is engaged for spring action.

5. **The gas regulator as claimed in 4**, where in the valve pin will be kept inside the valve with the valve pin spring on the lower side, and the rubber coated washer on the upper side, and will be folded within the valve, and the valve assembly will be placed inside the nozzle bush by lifting the valve lock slightly upwards.

6. **The gas regulator as claimed in 5**, where in the (13A) leg of the gas control lock and ejector has a square cross section inserted into a square hole in the bottom cover, so that one leg (13B) moves the valve downwards and the other leg (13C) works as lock ejector.

7. **The gas regulator as claimed in 6**, where in the pressure rubber diaphragm will be placed on bottom cover, and the diaphragm safety plate will be placed above, and the push pin will be threaded to the gas control lock and ejector so that the rubber diaphragm and safety plate will be tightly seated.

8. **The gas regulator as claimed in 7**, where in the load spring will be placed on top of the diaphragm safety plate, and the top cover will be placed above the spring and will be folded to the bottom cover.

9. **The gas regulator as claimed in 8**, where in the push button will be mounted to the pushpin.

Dated this 14th day of Dec 2005



Signature

Sanku Sivadasn

Patent Application No.1828/CHE/2005

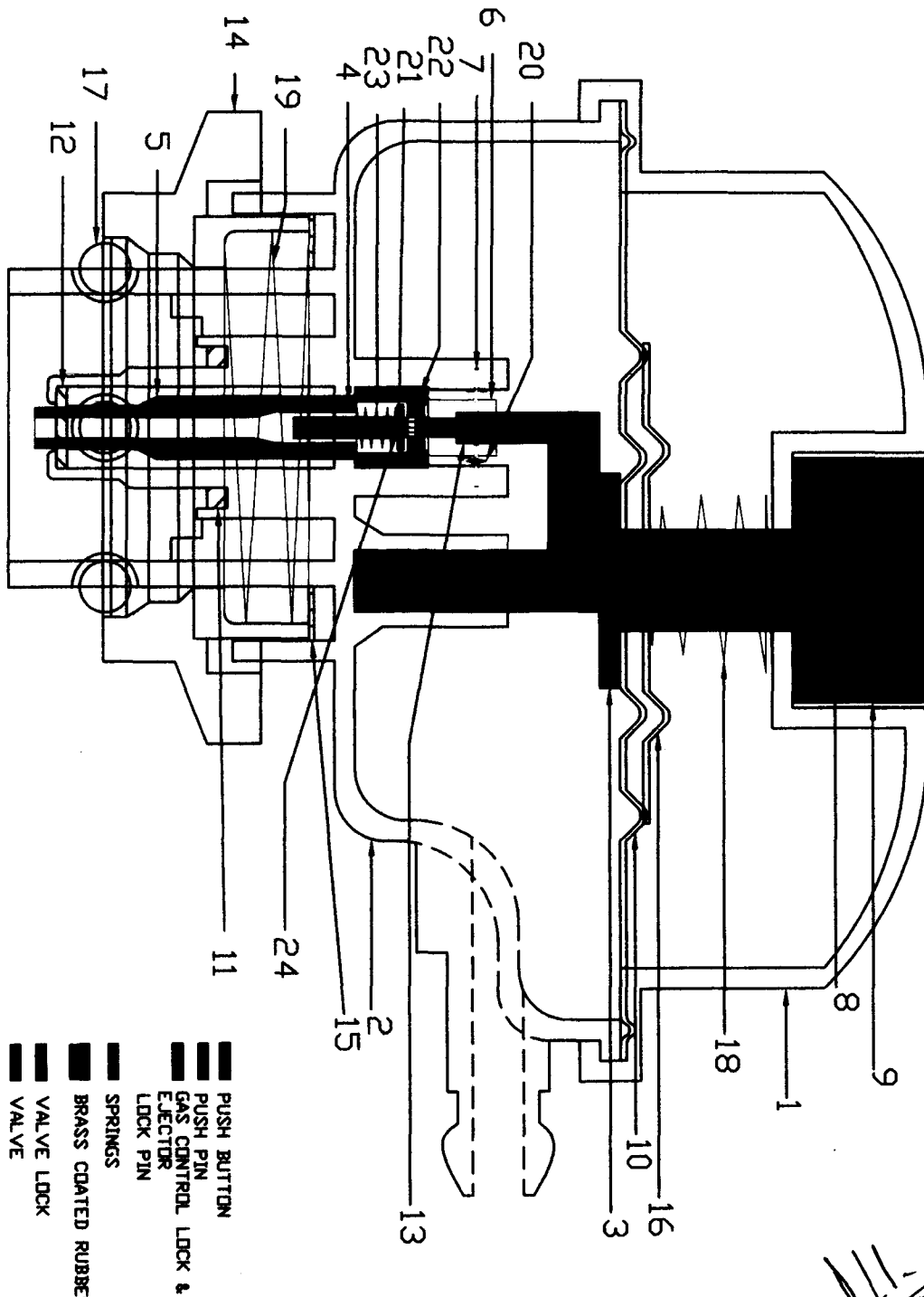


FIG. 1

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(SANKU SIVADASAN)
 NATIONALITY: INDIAN

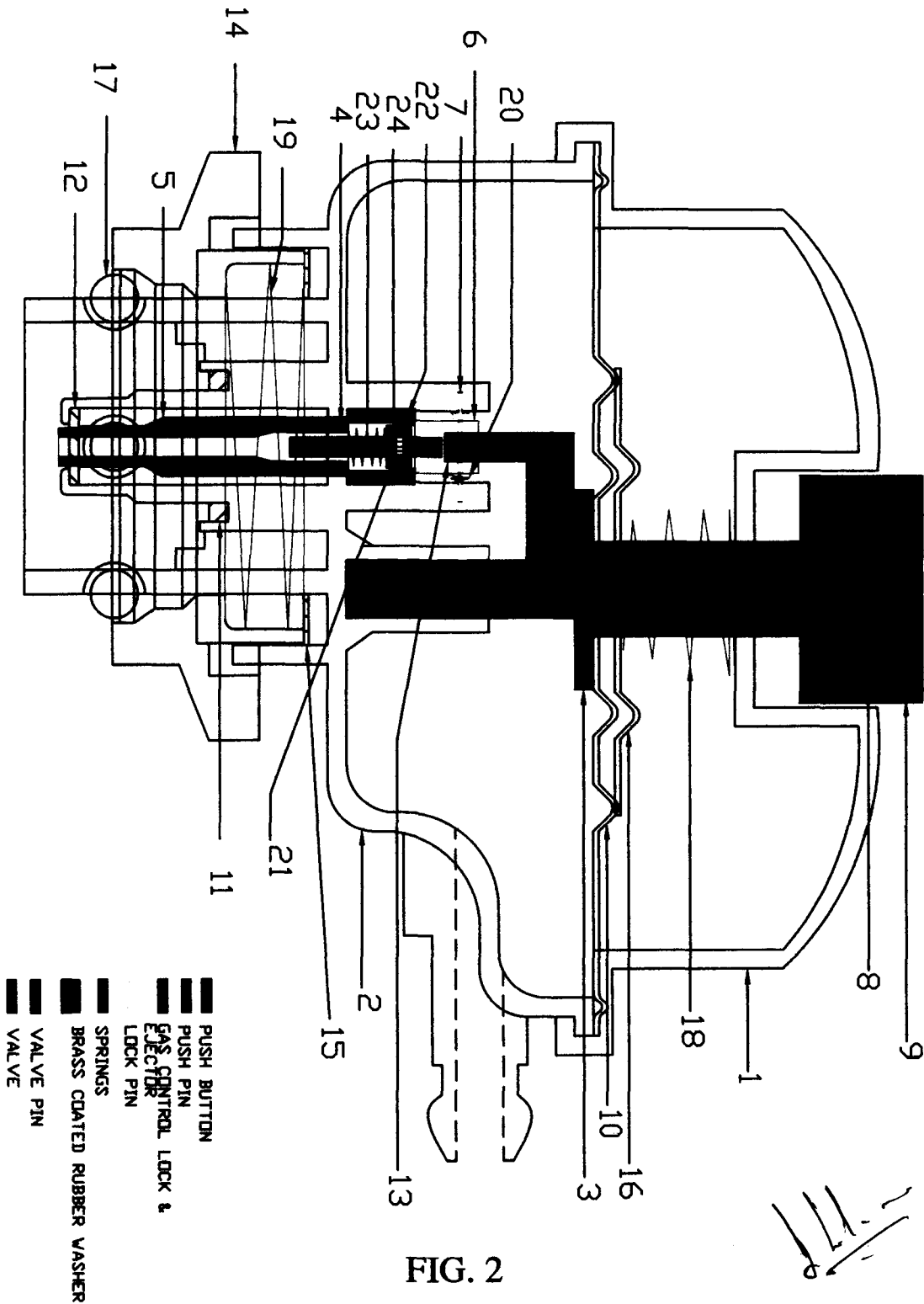
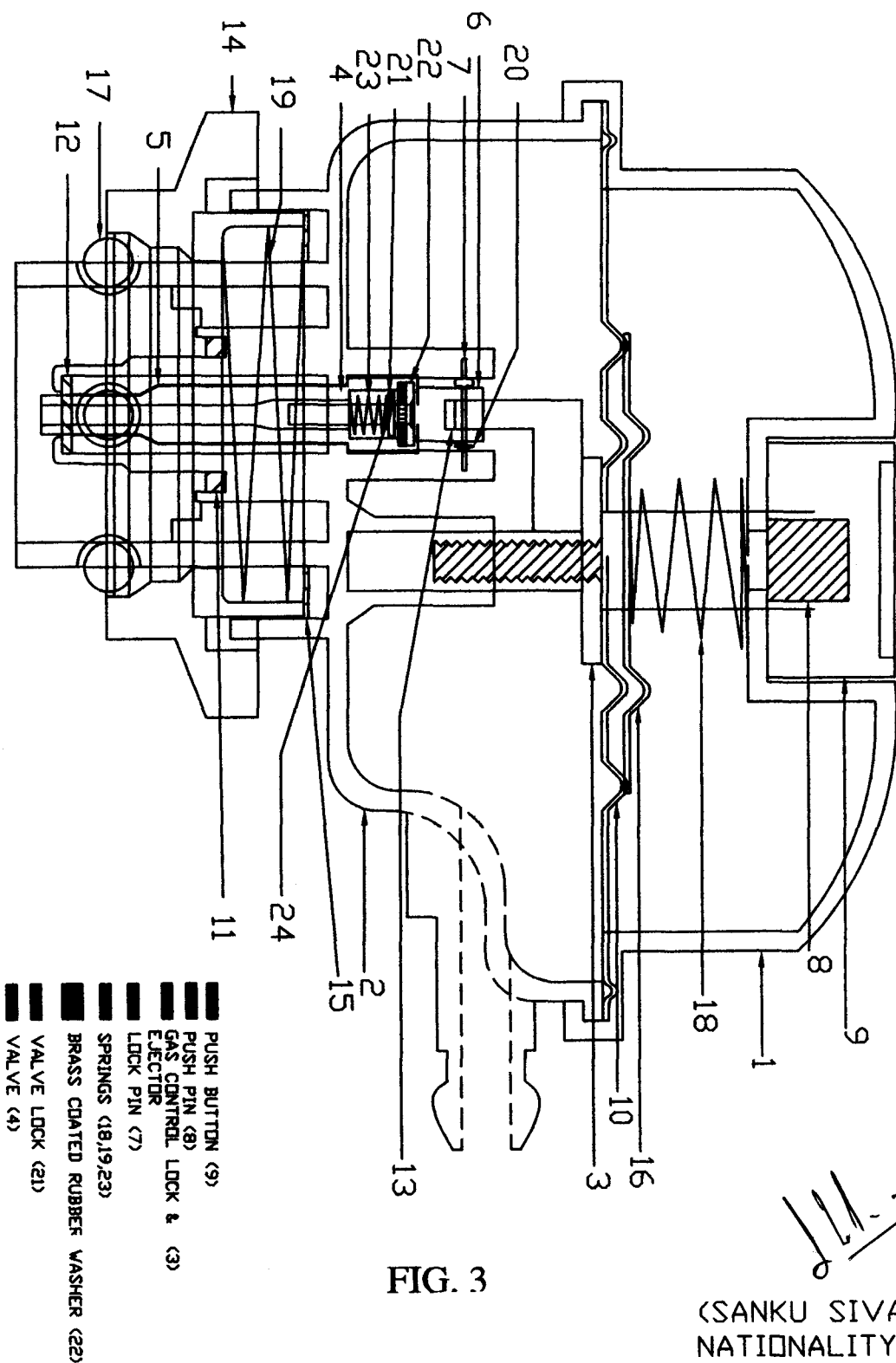


FIG. 2

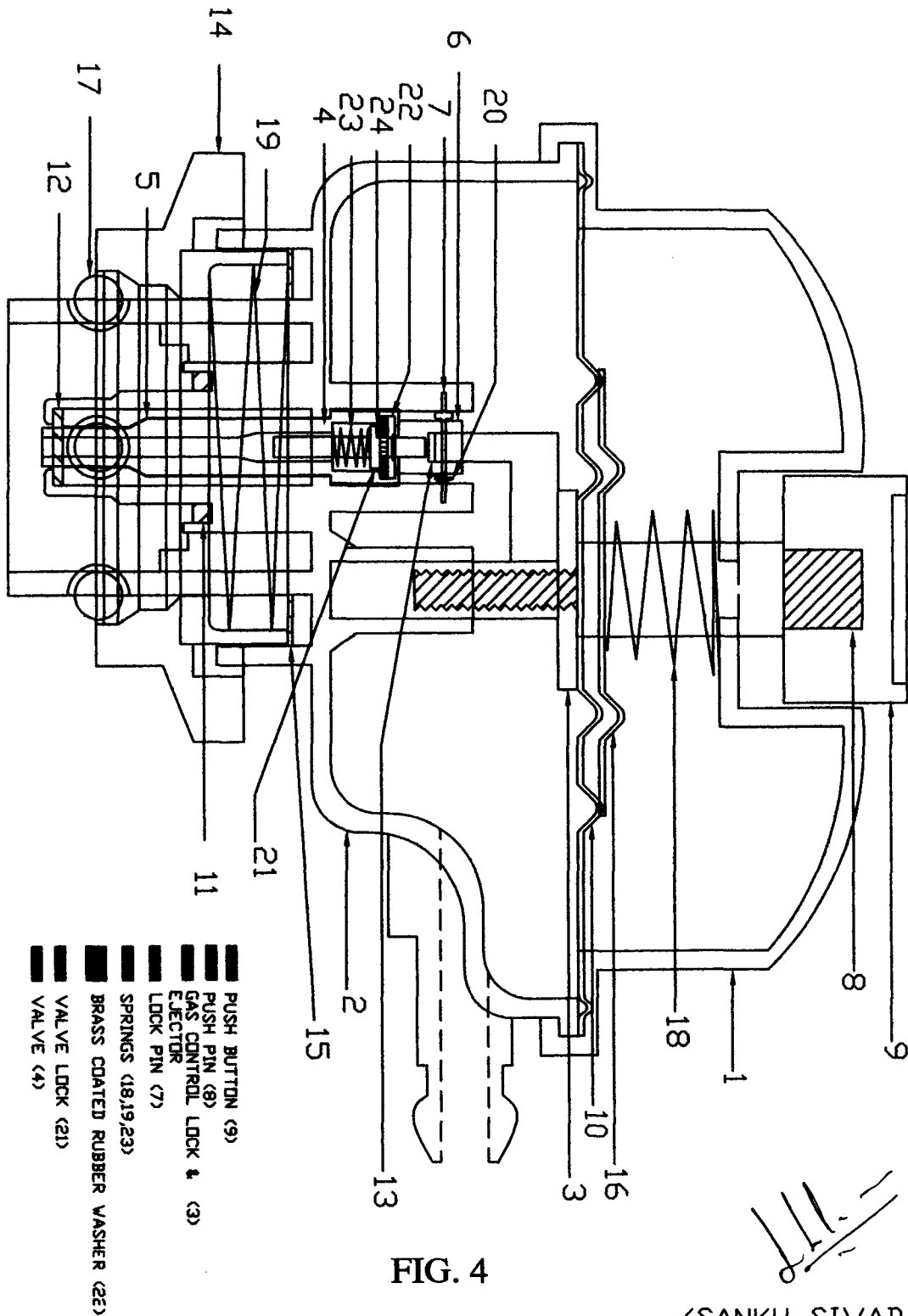
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- PUSH BUTTON (9)
- PUSH PIN (8)
- GAS CONTROL LOCK & EJECTOR (3)
- LOCK PIN (7)
- SPRINGS (18, 19, 23)
- BRASS COATED RUBBER WASHER (22)
- VALVE LOCK (21)
- VALVE (4)

FIG. 3

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- PUSH BUTTON (9)
- PUSH PIN (8)
- GAS CONTROL LOCK & (3)
- EJECTOR
- LOCK PIN (7)
- SPRINGS (18, 19, 23)
- BRASS COATED RUBBER WASHER (22)
- VALVE LOCK (21)
- VALVE (44)

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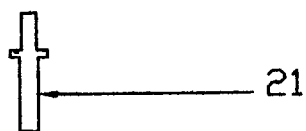
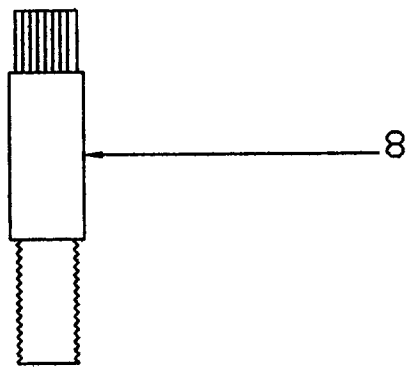
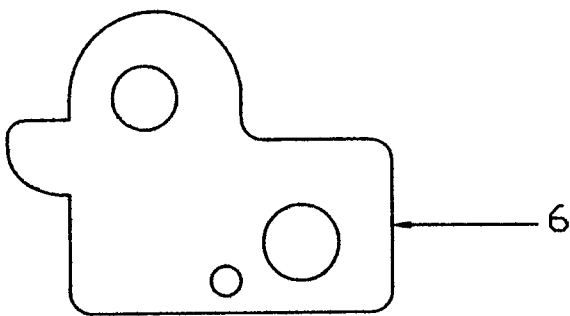
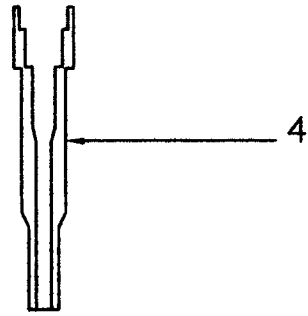
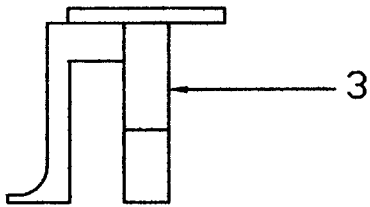
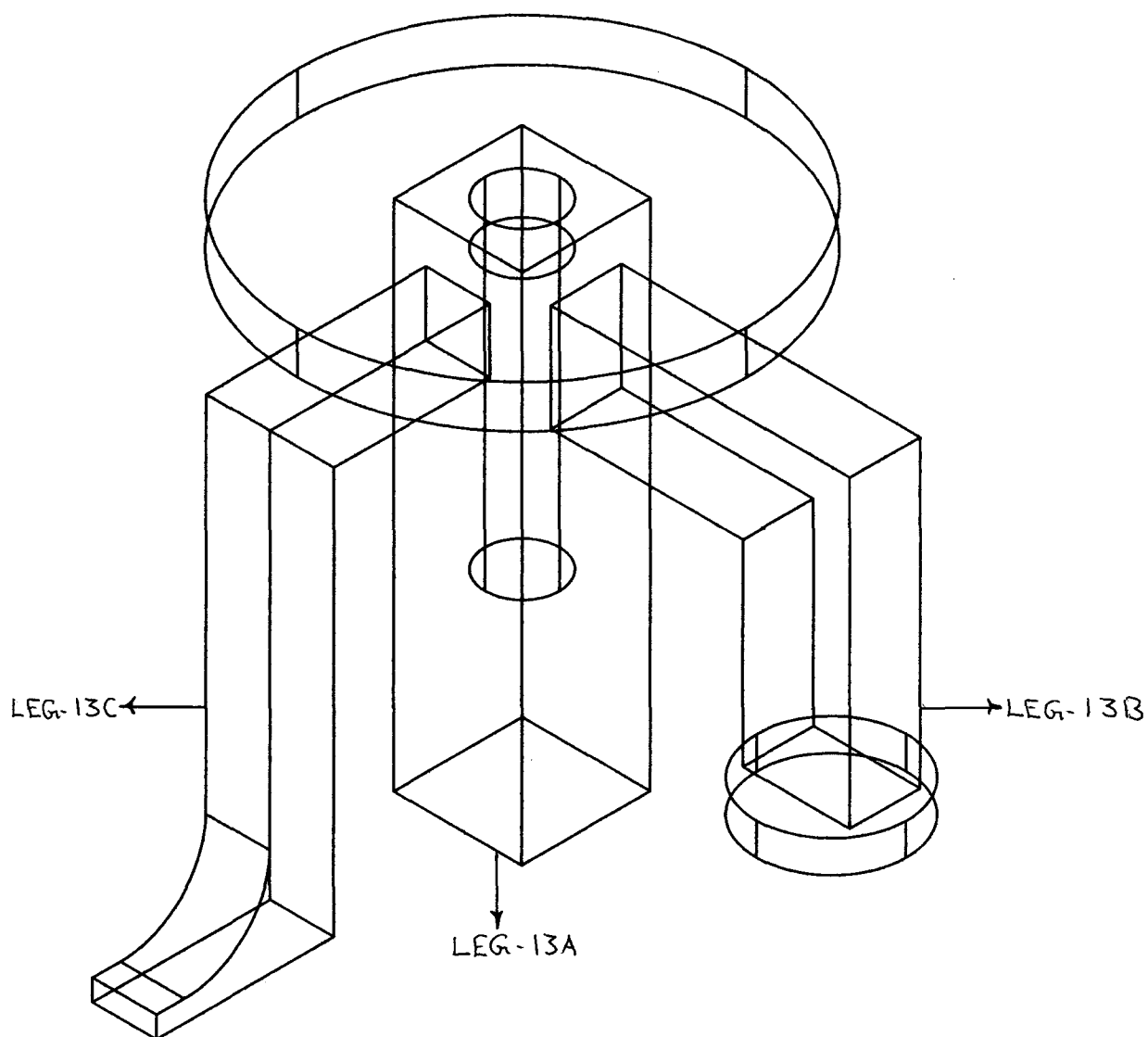


FIG. 5


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ISOMETRIC VIEW OF GAS CONTROLLED LOCK EJECTOR
FIG.6

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FORM 2

THE PATENTS ACT, 1970.

(39 OF 1970)

COMPELTE

SPECIFICATION

(See Section 10; Rule 13)

TITLE

"Auto Stop Cooking Gas Regulator"

APPLICANTS

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The Following specification particularly describes
the nature of this invention and the manner in which
it is to be performed

ORIGINAL 13/01/2007

1828/CHC/05
14/12/05

FIELD OF INVENTION

[01] This invention relates to cooking gas regulator in India. In particular, this invention relates to a cooking gas regulator commonly used in LPG domestic gas cylinders in India, for cooking and in which the gas regulator automatically stops when the cooking stove knob is turned off. By applying this typical regulator we can control the gas flow from the cylinder and avoid accidents.

BACK GROUND OF INVENTION

[02]In this modern world the usage of different type of cylinder or container or tank to keep different type of gas's inside is risky task. If we classify those gases are mainly hazardous and harmful to human beings. This product has wide range of application in all the gas control system in any form of storage.

[03]The main reason behind this invention is to find a solution to stop cooking gas accidents and save the human life. These types of accidents are very often happening in India that will be the foremost background of this invention.

[04]As compared to the existing regulators the auto stop cooking gas regulator is entirely different and it can be easily understood by its name itself.

[05]In the existing regulators the stove knob is turned to off position manually. In common most of the time people forget to turn off the regulator in their busy life style. Due to this accidents will happen.

[06]It would be advantageous & safety to use a auto stop cooking gas regulator.

[07]The present invention will make the regulator automatically stopped when the stove knob is turned off.

[08]In the preferred embodiment this is accomplished by providing a valve lock to lock the valve when it moves downward and unlock the valve when it moves upward. When the valve moves upwards the gas flow will stop but not completely. Then the gas already available inside the valve will flow through the 0.1,0.2 opening, and the auto stop mechanism works.

SUMMARY OF INVENTION

[09]An auto stop cooking gas regulator comprises of a top cover is folded to the bottom cover for preventing gas leakage and to avoid impurities from the gas. The regulator will operates in accordance with the variation of different gas pressure level inside. Once pressing the Push button downward then the valve move downwards to release the gas from the cylinder to pass through the regulator to the stove.

[10]The Valve will function as controlling instrument for gas flow. Once the stove knob is switched Off then the gas inside the Valve will be stopped and the existing gas inside the Valve will passes through a horizontal cut path provided in the Valve pin and the gas pressure pulls the gas control lock-ejector to release the lock to attain the initial off position of the regulator and makes this gas regulator to stop the gas flow to the stove simultaneously.

BRIEF DESCRIPTION OF THE DRAWING

[11] In drawings which illustrate by way of example only a preferred embodiment of the invention.

[12]FIG:- 1 is a cross sectional view of the auto stop cooking gas regulator in 'ON' position .The diagram shown in color is to identify & differentiate the individual parts and the mechanism.

[13]FIG. 2 is a cross sectional view of the auto stop cooking gas regulator in 'OFF' position. The diagram shown in color is to identify & differentiate the individual parts and the mechanism.

[14]FIG. 3 is a cross sectional view of the auto stop cooking gas regulator in 'ON' position is shown in black and white.

[15]FIG. 4 is a cross sectional view of the auto stop cooking gas regulator in 'OFF' position is shown in black and white.

[16]FIG. 5 is the exploded view of the functioning parts.

[17]FIG.6 is the Isometric View of Gas Control Lock Ejector.

DETAILED DESCRIPTION OF THE INVENTION

[18]FIG. 1 is a cross sectional view of the auto stop cooking gas regulator in 'ON' position .The diagram shown in color is to identify & differentiate the individual parts and the mechanism. The Fig. illustrates a preferred embodiment of an auto stop cooking gas regulator according to the invention. This gas regulator is commonly used in domestic cooking gas cylinder and this mechanism is applicable for all gas cylinders of any form using domestic or industrial purposes.

[19]As shown in FIG. 1,2,3,4 & 5 of this cooking gas regulator comprises, a Top Cover - 1, a Bottom Cover - 2 and the Top Cover - 1 is made up of stainless steel and Bottom Cover- 2 is of mazak material and folded. The Rubber Diaphragm - 10 is provided in the middle of the Top Cover - 1 and the Bottom Cover - 2 to prevent leakage. The Load Spring - 18 made up of spring steel is placed in circling the Push Pin - 8 connected to the Push Button - 9. The brass Push Pin - 8 will move up and down through the hole, which is mounted on center of the Top Cover - 1.The Bottom Cover - 2 is having a withstanding pressure of 25kgs

[20]The Push Button – 9 on the top of the regulator, which is made up of nylon material and is used to switch On the gas for lighting the stove. When the Push Button 9 is pressed down the Valve -4 moves down and passes through the Nozzle bush-5. The Rubber'O'ring - 12 will be placed on top of the Nozzle Bush – 5 and it is folded. The Spring Level Plate Washer – 15 is placed on the bottom portion of the Bottom Cover – 2 and the Ball Lock Spring – 19 placed on top of it. By pressing the Ball Press Bush – 14 the five Balls – 17 is placed inside the groove provided on the Ball Press Bush - 14. The cylinder valve seating rubber bush - 11 is provided to fix the regulator with the cylinder nose and in this position it will open the cylinder mouth and the gas flow through the Valve - 4 in a upward motion. The Ball Press Bush - 14 made of glass filled nylon material is used to lock and unlock the balls with the cylinder once the regulator is fixed above the gas cylinder.

[21]The regulator comprising a Three Legged Gas Control Lock- Ejector – 3, will move in a vertical up and down motion (leg-13A). The Three Legged Gas Controlled Lock- Ejector - 3 comprises of Three legs in which one of the leg with a Valve Rubber Stopper (leg-13B) locks the Valve - 4 and one of the L-shaped leg (leg-13C) works as lock ejector. This Three Legged Gas Controlled Lock-Ejector - 3 functions mainly in two ways while in downward motion opens the gas flow inside the regulator and in the upward motion it releases the Valve Lock-6.The Valve lock-6 is fixed in that position by a Valve lock-pin –7 and it works with the tension of the Lock Spring - 20. This Gas Controlled Lock-Ejector - 3 works according to the adjustment of the stove flame position and it is the incredible part of this auto stop cooking gas regulator.

[22]Three legged Gas Controlled Lock-Ejector - **3** comprises a threaded grooved hole provided on the top to connect the Push Pin - **8** on it and the Diaphragm Safety Plate-**16** with the Rubber Diaphragm – **10** fixed on the upper portion of this three legged Gas Controlled Lock-Ejector - **3** and in the bottom end of the Three Legged Gas Controlled Lock –Ejector - **3** has two distinctive functions like One of the legs with a round Valve Rubber Stopper – **13B** will press the Valve pin - **21** and keeps it downward to allow & regulate the gas flow inside and one of the other L-shaped leg sit below the horizontal lever connected to the Valve lock - **6** and according to the pressure of the gas flow inside the regulator and this L-shaped leg move by pulling the Valve lock – **6** regulate the flow of gas pressure .

[23]The Valve pin - **21** comprises a Rubber Coated Brass Washer - **22** placed on the top circular portion of the Valve pin - **21** and below that circular portion there is a Valve Pin Spring-**23** and it is kept inside the Valve – **4** and folded. The circular platform of the Valve pin - **21** top portion has a 0.2 Horizontal Cut Path - **24** has provided and when the stove knob is turned off the Rubber Coated Brass Washer-**22** will compress and stopped the normal gas flow to the stove but at the same time the gas pressure reduces comparatively and gas available inside the Valve - **4** at time of closing the stove knob the gas passes through the 0.2 Horizontal Cut Path –**24** to move and push the top Rubber Diaphragm - **10** & the Diaphragm safety plate – **16** connected with the Push Pin – **8** placed below the Push Button-**9** to come to the Off position of the regulator.

The descriptions and the connected Drawing, designs enclosed here with are to be claimed under our claim.