



(11)

**EP 1 564 496 A2**

(12)

**EUROPEAN PATENT APPLICATION**

(43) Date of publication:  
**17.08.2005 Bulletin 2005/33**

(51) Int Cl.7: **F24C 3/12**

(21) Application number: **05380023.1**

(22) Date of filing: **09.02.2005**

(84) Designated Contracting States:  
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR  
HU IE IS IT LI LT LU MC NL PL PT RO SE SI SK TR**  
Designated Extension States:  
**AL BA HR LV MK YU**

(72) Inventors:  
• **Salbide Mutiloa, Amaia**  
**20600 Eibar (Gipuzkoa) (ES)**  
• **San Miguel Arenaza, Aitor**  
**20550 Aretxabaleta (Gipuzkoa) (ES)**

(30) Priority: **16.02.2004 ES 200400323 U**

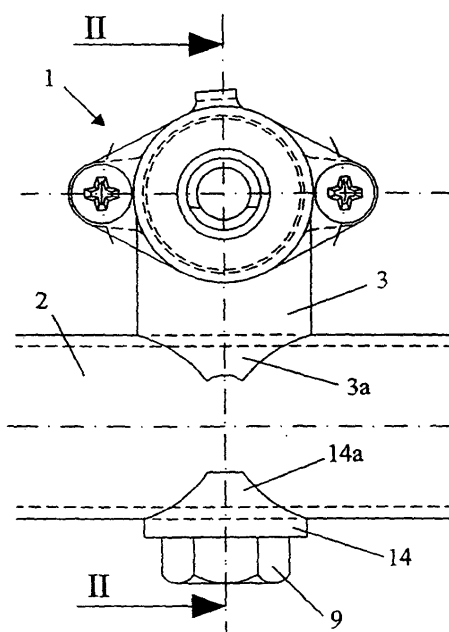
(74) Representative: **Fernandez Guzman, Juan**  
**Apartado 213 (Dpto. Propiedad Industrial)**  
**20500 Mondragon (Guipuzcoa) (ES)**

(71) Applicant: **FAGOR, S.Coop**  
**20500 Mondragon (Guipuzcoa) (ES)**

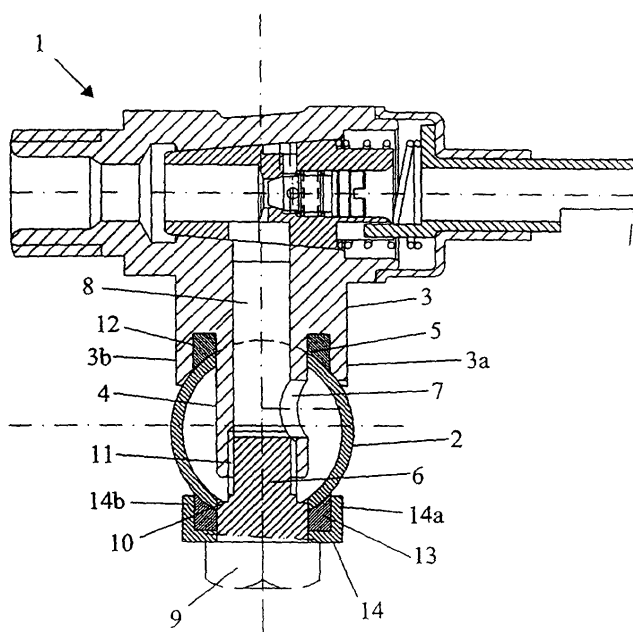
(54) **Coupling system of a gas valve in a manifold**

(57) "Coupling system of a gas valve (1) in a manifold (2) (e.g. gas tube), with said manifold (2) having a substantially circular cross-section and the valve (1) comprising a valve body (3) that comprises a base that is supported on the manifold (2) and a projecting piece (4) with a circular cross-section, acting as a neck, that is introduced into a first circular hole (5) formed in said manifold (2), giving rise to the access of gas from the

manifold (2) to the valve (1) through a main conduit (8) formed in the projecting piece (4). The manifold (2) comprises a second hole (10) facing the first hole (5), and the main conduit (8) comprises a threaded section (11) on one end, so that the valve (1) is attached to the manifold (2) by a screw (6) that is introduced into said second hole (10) and is screwed into said threaded section (11)."



**Fig. 1**



**Fig. 2**

## Description

### TECHNICAL FIELD

**[0001]** The present invention relates to coupling systems of gas valves in manifolds for gas cookers. 5

### PRIOR ART

**[0002]** In known arrangements manifolds are used to distribute gas from a gas inlet to one or more gas burners through the corresponding gas valve. 10

**[0003]** In the past thick wall manifolds were used in which the gas valves were screwed on directly. At the moment the tendency is for thin wall manifolds to be used, with the result that it is necessary to use other alternatives to attach the gas valves to the manifolds. 15

**[0004]** In known arrangements gas valves are fixed to manifolds with a circular cross-section by a flange that is attached to the gas valve by screws. 20

**[0005]** ES 129527 U discloses a gas valve that comprises a projecting piece, acting as a neck, that is fitted into a hole formed in a manifold with a circular cross-section, and also comprises extensions to form a flange with threaded tabs in order to fix, by means of screws, through holes that also retain a flange that has a seating for the manifold. 25

### DISCLOSURE OF THE INVENTION

**[0006]** The object of the invention is to provide a coupling system of a gas valve in a manifold that improves some of the features of the coupling systems of the prior art.

**[0007]** The inventive coupling system is used in manifolds with a substantially circular cross-section. The gas valve comprises a valve body that itself comprises a base that is supported on the manifold giving rise to two lateral projections, and which also comprises a circular projecting piece, acting as a neck, which is introduced into a first circular hole formed in said manifold. The access of gas from the manifold to the gas valve occurs through a main conduit formed in the projecting piece and coaxial to said projecting piece. 30 35

**[0008]** The manifold comprises a second hole facing the first hole, and the main conduit comprises a threaded section on one end. The gas valve is attached to the manifold by a screw that is introduced into said second hole and screwed into said threaded section. The main conduit of the projecting piece is connected to the interior of the manifold by a radial hole formed in said projecting piece. 40 45

**[0009]** The inventive coupling system requires less pieces and a simpler mechanisation in comparison with other solutions in which the gas valve is attached to the manifold by fixing means such as flanges, thereby reducing costs. 50 55

**[0010]** These and other advantages and characteris-

tics of the invention will be made evident in the light of the drawings and the detailed description thereof.

### DESCRIPTION OF THE DRAWINGS

#### **[0011]**

FIG. 1 is an elevation view of a first embodiment of the invention with a gas valve without a safety magnet assembly.

FIG. 2 is a view in section according to section II-II of the embodiment in FIG. 1.

FIG. 3 is an elevation view of a second embodiment of the invention with a gas valve without a safety magnet assembly.

FIG. 4 is a view in section according to section IV-IV of the embodiment in FIG. 3.

FIG. 5 shows an elevation view, a profile view in section and a ground view in section of the first embodiment of the invention with a gas valve with a safety magnet assembly.

### DETAILED DESCRIPTION OF THE INVENTION

**[0012]** The inventive coupling system is applied to manifolds 2 with a substantially circular cross-section. As shown in the figures, in the inventive system the gas valve 1 comprises a valve body 3 that comprises a base that is supported on the manifold 2 giving rise to two lateral projections 3a and 3b. The valve body 3 also comprises a projecting piece 4 with a circular cross-section, acting as a neck, which is introduced into a first circular hole 5 formed in the manifold 2. The access of gas from the manifold 2 to the gas valve 1 occurs through a main conduit 8 formed in the projecting piece 4 and coaxial to said projecting piece 4. 30 35 40

**[0013]** The manifold 2 comprises a second hole 10 facing the first hole 5, and the main conduit 8 comprises a threaded section 11 on one end. The gas valve 1 is attached to the manifold 2 by a screw 6 that is introduced into said second hole 10 and is screwed into said threaded section 11, with the main conduit 8 being connected to the interior of the manifold 2 by a radial hole 7 formed in the projecting piece 4. 45

**[0014]** As the screw 6 is fixed onto the gas valve 1 shaft (the projecting piece 4), better tightening is achieved than in coupling systems of the prior art in which the screw or screws are fixed onto one or both sides of the gas valve 1 shaft. 50

**[0015]** The valve body 3 comprises a circular groove coaxial to the projecting piece 4 in which a first gasket 12 is housed. 55

**[0016]** The manifold 2, in a first embodiment shown in figures 1 and 2, is not deformed in any of its parts.

The only operation that must be performed on the manifold 2 is that of forming a through hole in order to form the holes 5 and 10. In this embodiment the screw 6 comprises a head 9 that presses a second gasket 13 against the manifold 2 through a bushing 14. Said bushing 14, similarly to the valve body 3, has a base that fits into the manifold 2 arrangement, giving rise to two lateral projections 14a and 14b.

**[0017]** In a second embodiment, shown in figures 3 and 4, the manifold 2 is deformed on the side onto which the screw 6 is introduced, giving rise to a flat surface 15. In this embodiment, the screw 6 comprises a head 9 with a base that is supported on said flat surface 15, and said head 9 has a circular groove in which a second gasket 16 is housed.

**[0018]** The inventive coupling system can be applied to different types of gas valves. By way of example, figure 5 shows a gas valve that comprises a safety magnet assembly 20. The manner in which said gas valve is attached to the manifold 2 according to the first of the embodiments described can be seen.

ment (2), giving rise to two lateral projections (14a, 14b).

4. Coupling system according to claim 2, **characterised in that** the manifold (2) is deformed on the side onto which the screw is introduced (6), giving rise to a flat surface (15), with the screw (6) comprising a head (9) with a base that is supported on said flat surface (15), and with said head (9) having a circular groove coaxial to the screw (6) in which a second gasket (16) is housed.

## Claims

1. Coupling system of a gas valve (1) in a manifold (2), with said manifold (2) having a substantially circular cross-section and the gas valve (1) comprising a valve body (3) that comprises a base that is supported on the manifold (2) giving rise to two lateral projections (3a,3b), and which also comprises a projecting piece (4) with a circular cross-section, acting as a neck, that is introduced into a first circular hole (5) formed in said manifold (2), giving rise to the access of gas from the manifold (2) to the gas valve (1) through a main conduit (8) formed in the projecting piece (4) and coaxial to said projecting piece (4), **characterised in that** the manifold (2) comprises a second hole (10) facing the first hole (5), and the main conduit (8) comprises a threaded section (11) on one end, so that the gas valve (1) is attached to the manifold (2) by a screw (6) that is introduced into said second hole (10) and is screwed into said threaded section (11), with the main conduit (8) being connected to the interior of the manifold (2) by a radial hole (7) formed in the projecting piece (4).
2. Coupling system according to claim 1, **characterised in that** the valve body (3) comprises a circular groove coaxial to the projecting piece (4) in which a first gasket (12) is housed.
3. Coupling system according to claim 2 **characterised in that** the screw (6) comprises a head (9) that presses a second gasket (13) against the manifold (2) through a bushing (14), with said bushing (14) having a base that fits into the manifold arrange-

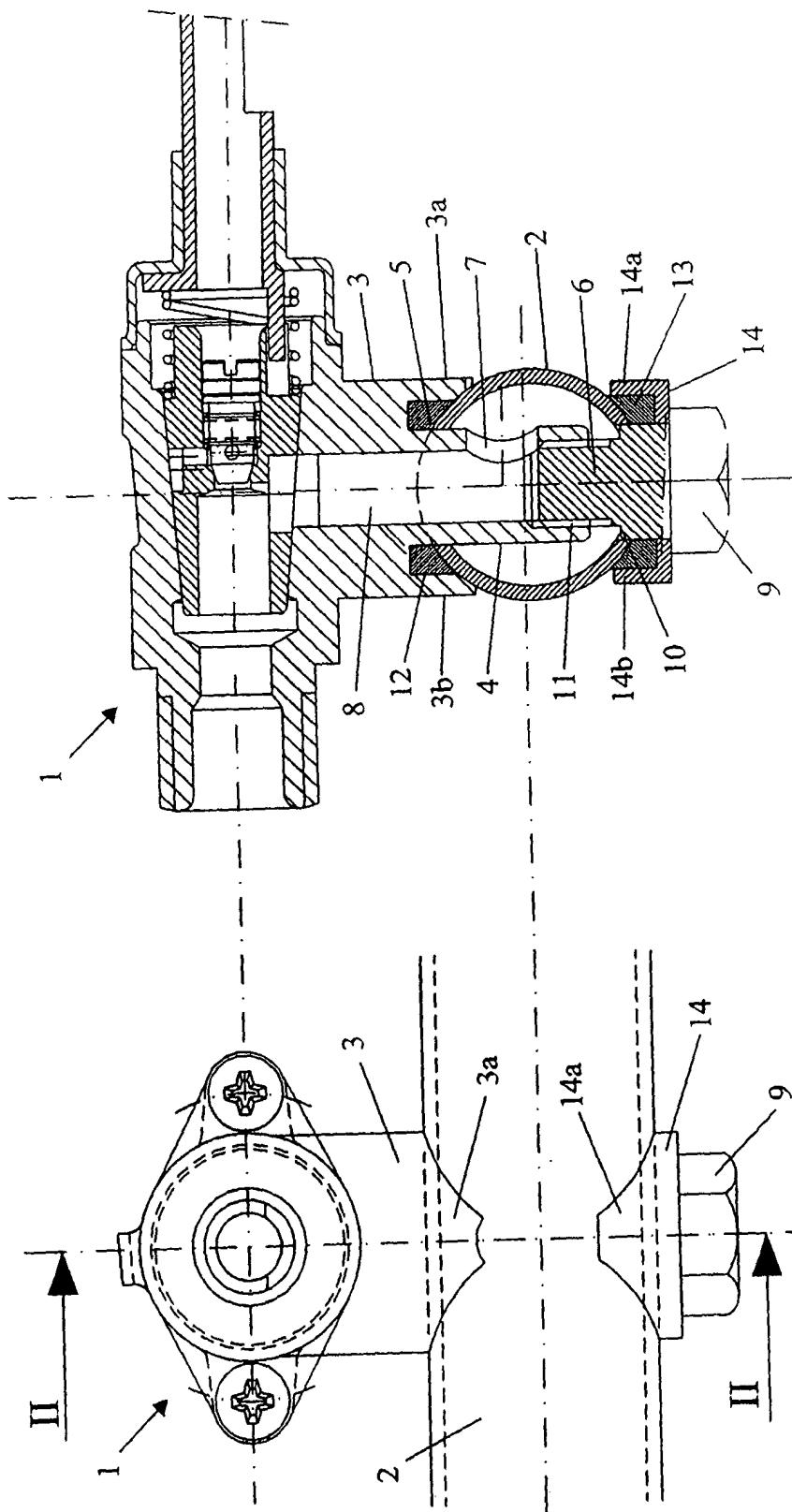


Fig. 2

Fig. 1

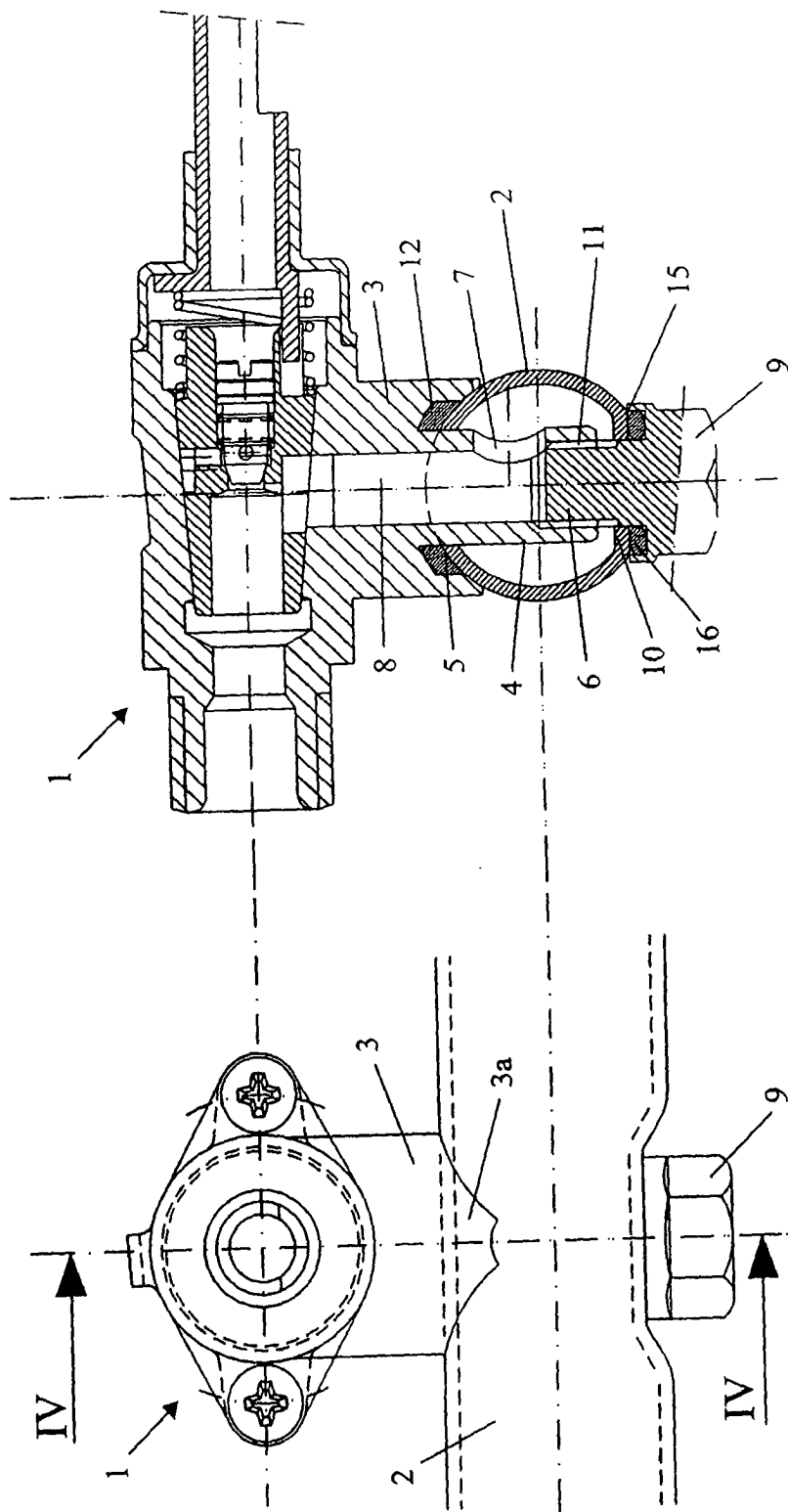


Fig. 4

Fig. 3

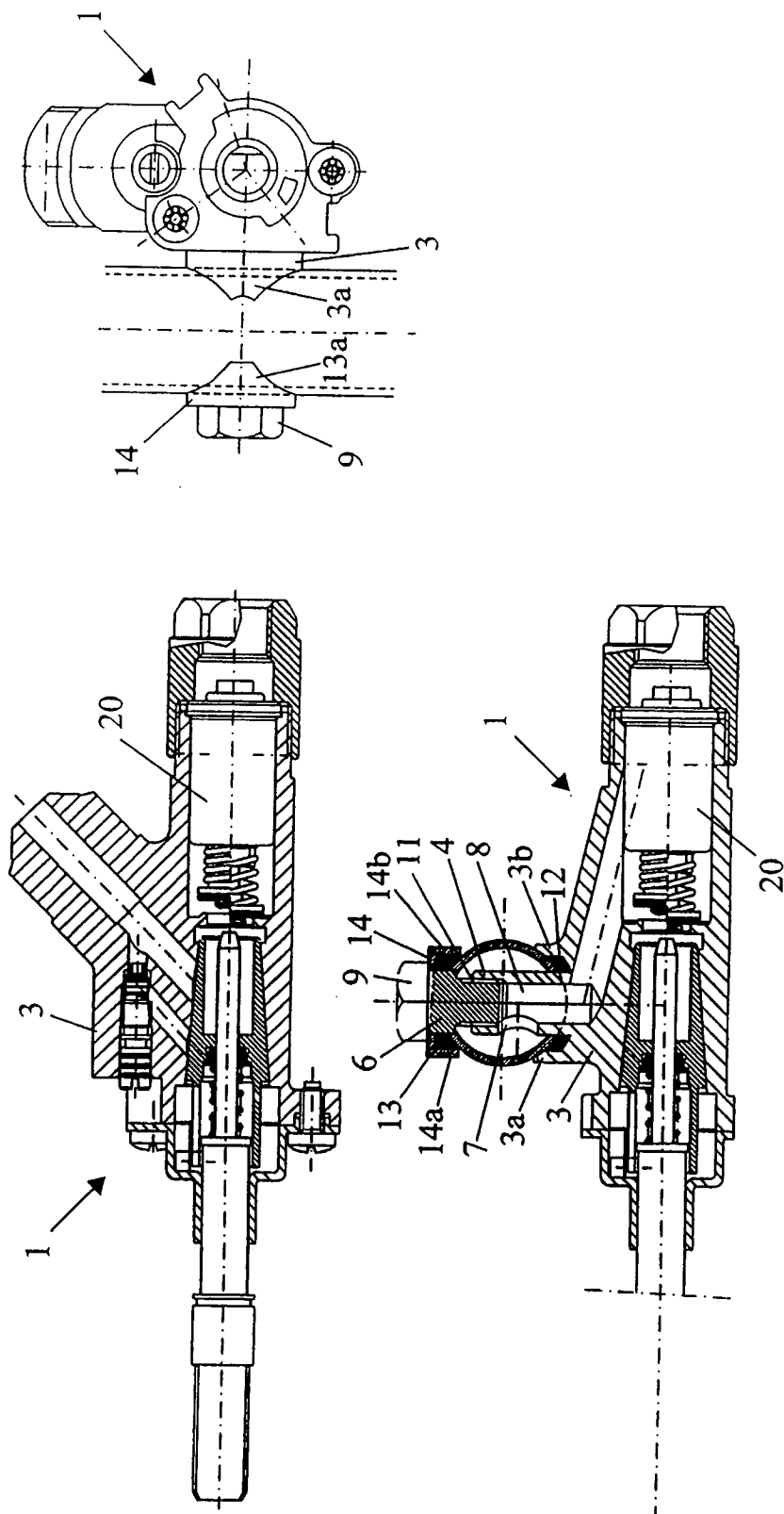


Fig. 5