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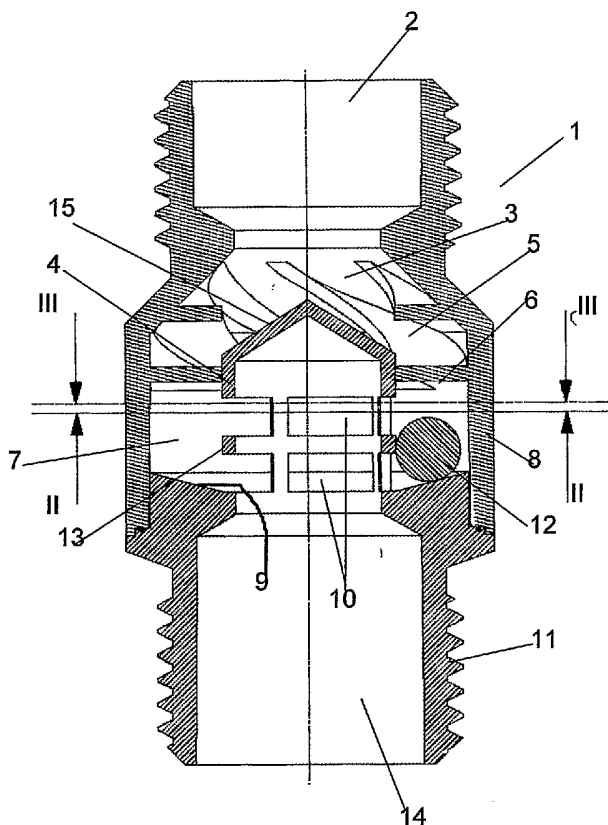
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(54) Title: ORBITAL BALL FLOWMETER FOR GAS AND FLUID



(57) Abstract: The invention concerns a flow meter (1) for fluid or gas of the type where the fluid or gas flow is put in rotation and the amount of fluid or gas is measured with a circulating ball (12) in a measuring chamber (7). The flow meter (1) has a measuring chamber (7) with a ball (12) in which the to be measured medium is put in rotation where the medium is brought radially into the chamber (7) and centripetally leaves the chamber (7).

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ORBITAL BALL FLOWMETER FOR GAS AND FLUID

5 The invention concerns a flow meter for fluid or gas being the type where the fluid flow or gas flow is made to circulate and the amount of fluid or gas is measured with a circulating ball inside a measuring chamber.

Flow meters of this kind are known from the German Offenlegungsschrift DE 100643093 A1. The drawback of this type is the fact that the ball is large in relation to the passage of the flow meter which results in a larger measuring error. The dimension of the flow meter is large,
10 relatively seen. It is estimated that this flow meter is having a high flow resistance.

The invention concerns a flow meter which can measure fluid or gas quantities with high accuracy and repeatability. By having wide flow passages and the ball the flow meter is indifferent for air bubbles and dirt. The amount of the fluid or gas that is flowing through is measured in a known way by detecting optical or magnetic the number of circulations of the
15 ball.

The flow meter has a measuring chamber with a ball where the to be measured medium is put in circulation where the medium is directed radial into the chamber and leaves centripetal the chamber.

20 The invention is described with the help of the drawing.

Fig. 1 shows a length wise cross section of the flow meter.

Fig. 2 shows a cross section with view to the blade section.

Fig. 3 shows a cross section with view to the outlet.

25 In Fig.1 is indicated with (1) the flow meter. Inlet (2) is connected with blade section (3). Blade section (3) guides the fluid or gas flow to a larger diameter around core (4). Blades (5) are placed in an inclination relative of the centreline of the flow meter (1). Blade section (3) is connected to the measuring chamber (7) at (6) where the influx out of the blade section (3) is radial into the measuring chamber (7). The measuring chamber is bordered by the outer wall (8)
30 of blade section (3), the conical side wall (9) and the core (4). Core (4) has on site of the measuring chamber (7) openings (10) directed to the center (centripetal). Core (4) and outlet section (11) form constitute a whole and is fitting inside blade section (3). Ball (12) is in measuring chamber (7) and can circulate. Openings (10) in core (4) are divided by ring (13) which is a part of core (4). Ring (13) prevents ball (12) to fall out of the measuring chamber (7).
35 Openings (12) are connected with outlet (14).

The operation is as follows:

The fluid flows via inlet (2) and is rotated by blades (5). Next the rotating flow fluid reaches the measuring chamber (7). The rotating flow takes ball (12) along. Continuing the fluid flows in he way of a spiral via openings (10) to outlet (14). By giving the ball (12) a specific weight that is

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nearly the same as the to be measured medium a very accurate measuring can be realised.
Core (4) can be foreseen with a conical flow conduction part (15).

Claims.

- 5
1. Flow meter for gas and fluid of the type where the fluid or gas flow via the centre is taken to a larger diameter and put by blades in rotation where a ball is brought in a circular movement characterised by that the fluid or gas flows via a blade section (3) where blades (5) are placed in the part of the blade section (3) that the gas or fluid flow leads to a larger diameter and to a measuring chamber (7) that has the form of a ring where the ball (12) moves and where the blade section (3) is radial connected to the measuring chamber (7) and the outlet openings (10) are radial connected with the in central position being outlet (14).
- 10
2. Flow meter according to claim 1 characterised in that the flow meter consists of a part that is foreseen with blades (5) and a measuring chamber (7) situated around the core (4) that is foreseen with a side wall (9) and the core (4) with radial openings (10) with an inside the blade section (3) fitting core (4) with flow guiding part (15).
- 15

Fig. 1

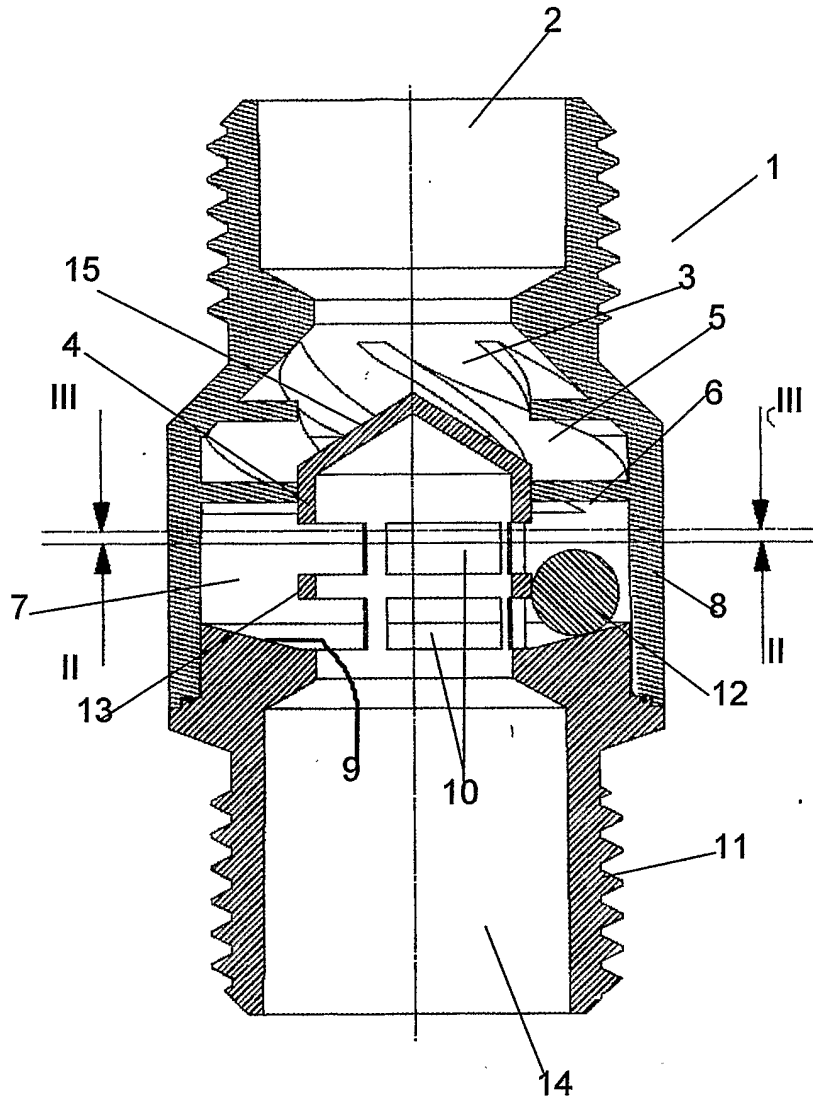


Fig. 2

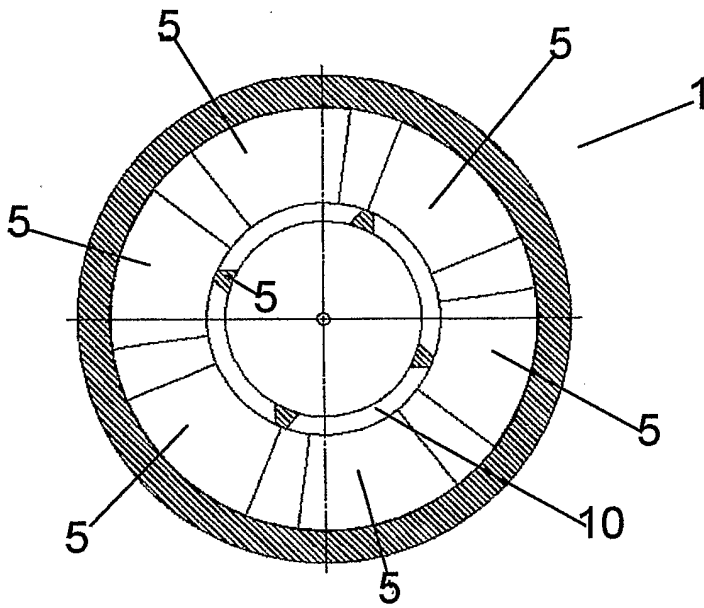
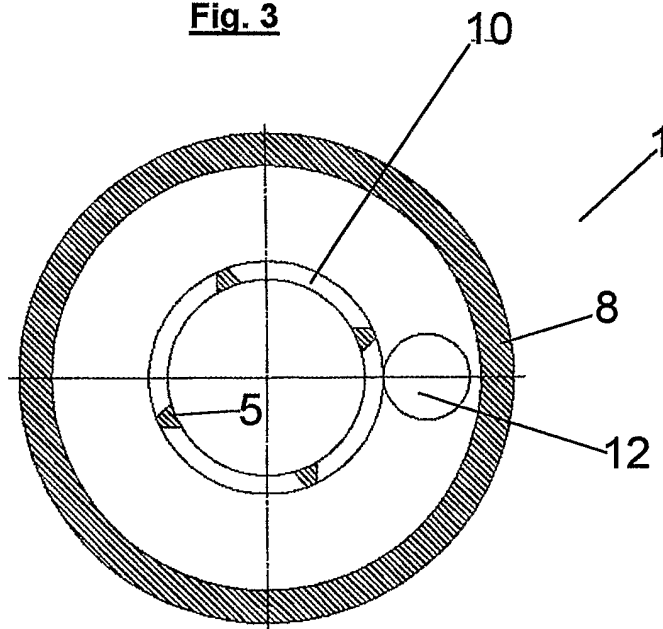


Fig. 3



INTERNATIONAL SEARCH REPORT

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According to International Patent Classification (IPC) or to both national classification and IPC				
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched				
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C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
X	NL 1 013 231 C2 (PETERS MARCEL LEONARDUS JOSEPH [NL]) 9 April 2001 (2001-04-09) page 2, line 20 - line 37; figure 3 -----	1,2		
X	DE 29 10 387 A1 (LICENTIA GMBH) 18 September 1980 (1980-09-18) the whole document -----	1,2		
A	US 4 089 220 A (HOULBERG DONALD M) 16 May 1978 (1978-05-16) the whole document -----	1,2		
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.				
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INTERNATIONAL SEARCH REPORT

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
NL 1013231	C2	AU 1061901 A WO 0125729 A1	10-05-2001 12-04-2001
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US 4089220	A	NONE	