



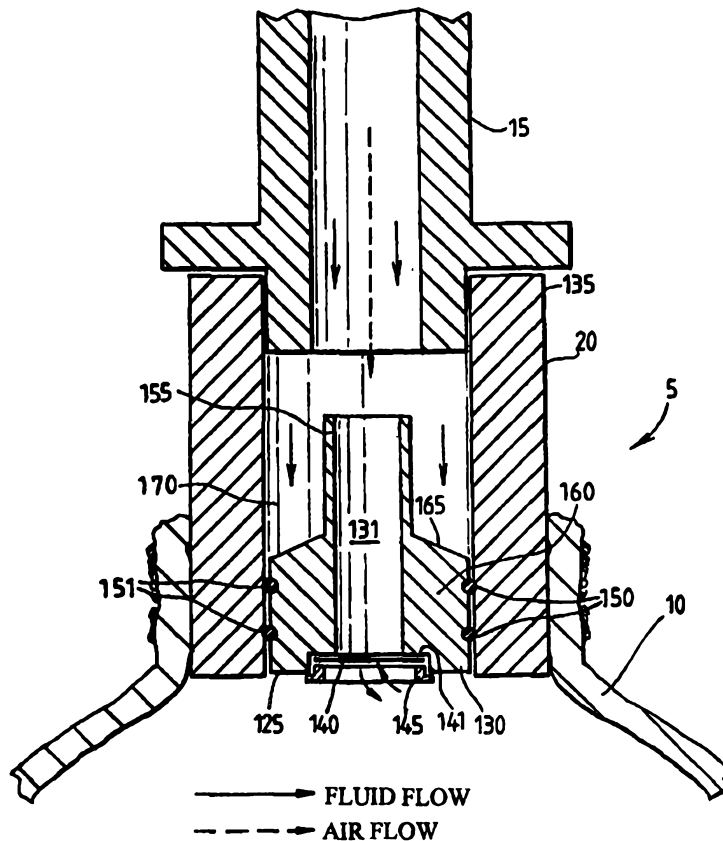
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification <sup>6</sup> : <b>G10D 7/06</b></p>	<p><b>A1</b></p>	<p>(11) International Publication Number: <b>WO 99/45529</b> (43) International Publication Date: 10 September 1999 (10.09.99)</p>
<p>(21) International Application Number: PCT/GB99/00607 (22) International Filing Date: 1 March 1999 (01.03.99) (30) Priority Data: 9804654.3 6 March 1998 (06.03.98) GB (71)(72) Applicant and Inventor: MCMILLAN, Charles [GB/GB]; 1 Isle View, Machrihanish, Campbeltown, Argyll PA28 6PY (GB). (74) Agents: McCALLUM, William, Potter et al.; Cruikshank &amp; Fairweather, 19 Royal Exchange Square, Glasgow G1 3AE (GB).</p>		<p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p><b>Published</b> <i>With international search report.</i></p>

(54) Title: SPITTLE-TRAP FOR WIND INSTRUMENT

(57) Abstract

There is disclosed a fluid trap (125, 225) for use in wind instruments and particularly bagpipes. A problem exists in that during playing a player may tend to secrete oral fluids such as saliva into a blow pipe (15). This fluid may thence tend to descend within the blow pipe (15) through a blow pipe stock (20) into a bag (10), and even down into a chanter (40). To address this problem the fluid trap (125, 225) for use in bagpipes (5) comprises a hollow tubular body (130, 230) adapted to be received within a blow pipe stock (20) of the bagpipes (5).



**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

<b>AL</b>	Albania	<b>ES</b>	Spain	<b>LS</b>	Lesotho	<b>SI</b>	Slovenia
<b>AM</b>	Armenia	<b>FI</b>	Finland	<b>LT</b>	Lithuania	<b>SK</b>	Slovakia
<b>AT</b>	Austria	<b>FR</b>	France	<b>LU</b>	Luxembourg	<b>SN</b>	Senegal
<b>AU</b>	Australia	<b>GA</b>	Gabon	<b>LV</b>	Latvia	<b>SZ</b>	Swaziland
<b>AZ</b>	Azerbaijan	<b>GB</b>	United Kingdom	<b>MC</b>	Monaco	<b>TD</b>	Chad
<b>BA</b>	Bosnia and Herzegovina	<b>GE</b>	Georgia	<b>MD</b>	Republic of Moldova	<b>TG</b>	Togo
<b>BB</b>	Barbados	<b>GH</b>	Ghana	<b>MG</b>	Madagascar	<b>TJ</b>	Tajikistan
<b>BE</b>	Belgium	<b>GN</b>	Guinea	<b>MK</b>	The former Yugoslav Republic of Macedonia	<b>TM</b>	Turkmenistan
<b>BF</b>	Burkina Faso	<b>GR</b>	Greece			<b>TR</b>	Turkey
<b>BG</b>	Bulgaria	<b>HU</b>	Hungary	<b>ML</b>	Mali	<b>TT</b>	Trinidad and Tobago
<b>BJ</b>	Benin	<b>IE</b>	Ireland	<b>MN</b>	Mongolia	<b>UA</b>	Ukraine
<b>BR</b>	Brazil	<b>IL</b>	Israel	<b>MR</b>	Mauritania	<b>UG</b>	Uganda
<b>BY</b>	Belarus	<b>IS</b>	Iceland	<b>MW</b>	Malawi	<b>US</b>	United States of America
<b>CA</b>	Canada	<b>IT</b>	Italy	<b>MX</b>	Mexico	<b>UZ</b>	Uzbekistan
<b>CF</b>	Central African Republic	<b>JP</b>	Japan	<b>NE</b>	Niger	<b>VN</b>	Viet Nam
<b>CG</b>	Congo	<b>KE</b>	Kenya	<b>NL</b>	Netherlands	<b>YU</b>	Yugoslavia
<b>CH</b>	Switzerland	<b>KG</b>	Kyrgyzstan	<b>NO</b>	Norway	<b>ZW</b>	Zimbabwe
<b>CI</b>	Côte d'Ivoire	<b>KP</b>	Democratic People's Republic of Korea	<b>NZ</b>	New Zealand		
<b>CM</b>	Cameroon			<b>PL</b>	Poland		
<b>CN</b>	China	<b>KR</b>	Republic of Korea	<b>PT</b>	Portugal		
<b>CU</b>	Cuba	<b>KZ</b>	Kazakistan	<b>RO</b>	Romania		
<b>CZ</b>	Czech Republic	<b>LC</b>	Saint Lucia	<b>RU</b>	Russian Federation		
<b>DE</b>	Germany	<b>LI</b>	Liechtenstein	<b>SD</b>	Sudan		
<b>DK</b>	Denmark	<b>LK</b>	Sri Lanka	<b>SE</b>	Sweden		
<b>EE</b>	Estonia	<b>LR</b>	Liberia	<b>SG</b>	Singapore		

**SPITTLE-TRAP FOR WIND INSTRUMENT**

This invention relates to wind instruments, and in particular, though not exclusively to bagpipes - such as Highland bagpipes.

Traditionally Highland bagpipes include a bag having five stocks, one for reception of a blow pipe, one for reception of a chanter, and three for reception of respective drones.

A problem exists in that during playing, a player may tend to secrete oral fluids such as saliva into the blow pipe. This fluid may thence tend to descend within the blow pipe through the blow pipe stock into the bag, and even down into the chanter - thereby causing difficulties in fingering of the instrument.

In order to obviate this problem a number of water traps have been proposed. However, known traps tend to suffer from a number of problems, such as difficulty of installation and removal, adverse affect on the bag, and difficulty in draining.

A similar problem exists in other wind instruments such as wood wind instruments and brass instruments.

It is an object of the present invention to obviate or mitigate at least one of the aforementioned problems in the prior art.

According to a first aspect of the present invention there is provided a fluid trap for use in a wind instrument, the trap comprising a hollow tubular body adapted to be received within a body of the instrument.

The trap may be adapted for use in bagpipes.

Further, the body of the instrument may comprise a blow pipe stock.

Advantageously the body carries a one way flapper or valve.

Preferably, the trap may be inserted within the stock

from an uppermost/outermost end thereof.

Preferably also, the body carries a one way flapper valve.

5 The body may carry resilient means for retaining the trap within the stock.

Conveniently, the resilient means provide a seal between the body and the stock.

In a preferred embodiment the resilient means provide an annular seal between the body and the stock.

10 The resilient means may comprise one or more seals such as O-rings and/or cup seals.

There may be provided a set of interchangeable seals of different sizes so as to allow the trap to be used in differently sized stocks. The stock may have an inner diameter of between 20 mm and 23 mm, and most preferably approximately 20 mm or 22 mm.

The body may comprise an (upper) reduced outer diameter portion, a (lower) enlarged outer diameter portion, and a step portion therebetween.

20 In use, a fluid chamber is formed by a portion of an inner wall of the stock, an outer wall of the upper portion of the body and the step portion of the body.

According to a second aspect of the present invention there is provided a wind instrument including a fluid trap according to the first aspect.

According to a third aspect of the present invention, there is provided a set of bagpipes including a fluid trap, the trap comprising a hollow tubular body adapted to be received within a blow pipe stock of the bagpipes.

30 These and other aspects of the present invention will now be described, by way of example only, with reference to the accompanying drawings which are:

Fig. 1 a schematic side view of a set of Highland bagpipes including a fluid (water) trap according to the present invention;

35

Fig. 2 a partial schematic cross-sectional side view of the Highland bagpipes of Fig. 1 including a fluid trap according to a first embodiment of the present invention; and

5 Fig. 3 a partial cross-sectional side view of the Highland bagpipes of Fig. 1 including a fluid trap according to a second embodiment of the present invention.

Referring initially to Fig. 1 there is illustrated a  
10 set of Highland bagpipes, generally designated 5. The bagpipes 5 include a bag 10, a blow piece 15 and a blow piece stock 20 adapted for reception of the blow piece 15. The blow piece 15 also carries a mouth piece 25. As well as blow piece stock 20, the bag 10 carries a chanter stock  
15 30 and three drone stocks 35. The chanter stock 30 is adapted for reception of a chanter 40, while the drone stocks 35 are each adapted for reception of one of three drones 45.

Referring now to Fig. 2 the bagpipes 5 further include  
20 a fluid trap 125, according to a first embodiment of the present invention. The fluid trap 125 comprises a hollow tubular body 130 having a through-passage 131 and adapted to be received within the blow pipe stock 20 of the bagpipes 5 in a push fit fashion. The trap 125 may be  
25 inserted within the stock 20 from an uppermost (outermost) end 135 thereof, and removed in a similar manner.

The body 130 carries a one way flapper valve 140 retained in a recess 141 formed at a lower end of the body 130 by a push fit retaining ring 145.

30 The body 130 carries resilient means 150 which retain the trap 125 within the stock 20, and which provide an annular seal between the body 130 and the stock 20. The retaining means 150 may conveniently comprise one or more rubber washers or O-rings.

35 In this embodiment there are provided two rubber

washers longitudinally spaced from one another, each being received within an annular recess 151, formed on an outermost wall of the body 130.

5 The body 130 comprises an upper reduced outer diameter portion 155, a lower increased outer diameter portion 160 and a step portion 165 therebetween.

10 In use, a fluid chamber 170 is formed by a portion of an inner wall of the stock 20, an outer wall of the upper portion 155 of the body 130, and the step portion 105 of the body 130.

The body 130 may be made of any suitable material, for example, a plastics material or metallic material. For example, the body may be at least partly made of aluminium, or PVC such as Class 7 PVC.

15 Referring now to Fig. 3 there is illustrated a set of bagpipes 5 including a fluid trap 225 according to a second embodiment of the present invention. The fluid trap 225 is similar to the fluid trap 125 and like parts are identified by like numerals increased by one hundred.

20 In this embodiment the dimensions of the trap 225 are as follows:

the length of the tubular body 230 is approximately 65 mm;

25 the outer diameter of the increased outer diameter portion 160 of the tubular body 230 is approximately 19.5 mm;

the outer diameter of the reduced outer diameter portion 155 of the tubular body 230 is approximately 14 mm;

30 the inner diameter of the tubular body 230 is approximately 12.5 mm;

the diameter of the O-rings is approximately 2.5 mm;  
the distance between lower end of the body 230 and centre of adjacent O-ring is approximately 12 mm;

35 the inner diameter of sock 20 is approximately 21 mm.

In an alternative embodiment:

the length of the tubular body 230 is approximately 38.5 mm;

5 the outer diameter of the increased outer diameter portion 160 of the tubular body 230 is approximately 20 mm;

the distance between lower end of the body 230 and centre of adjacent O-ring is approximately 16 mm.

10 The embodiments of the invention hereinbefore described are given by way of example only, and are not meant to limit the scope thereof in any way. In particular, it should be appreciated that the present invention is suitable for use in any wind instruments such as woodwind or brass, but is particularly suitable for  
15 bagpipes, for example, Highland, Lowland, Irish and/or Northumbrian.

20

25

30

35

**CLAIMS**

1. A fluid trap for use in a wind instrument, the trap comprising a hollow tubular body adapted to be received within a body of the instrument.  
5
2. A fluid trap as claimed in claim 1, wherein the trap is adapted for use in bagpipes.
- 10 3. A fluid trap as claimed in either of claims 1 or 2, wherein the body of the instrument comprises a blow pipe stock.
- 15 4. A trap as claimed in claim 3, wherein the body carries a one way valve.
5. A trap as claimed in claim 3, wherein, in use, the trap is inserted into the stock from an uppermost/outermost end thereof.  
20
6. A trap as claimed in claim 4, wherein the valve is a flapper valve.
7. A trap as claimed in any of claims 3 to 6, wherein the body carries resilient means for retaining the trap with the stock.  
25
8. A trap as claimed in claim 7, wherein the resilient means provide a seal between the body and the stock.  
30
9. A trap as claimed in claim 8, wherein the resilient means provide an annular seal between the body and the stock.
- 35 10. A trap as claimed in claim 9, wherein the resilient



means comprise one or more seals such as O-rings and/or cup seals.

- 5 11. A trap as claimed in claim 10, wherein there are provided a plurality of interchangeable seals of varying sizes so as to allow the trap to be used in differently sized stocks.
- 10 12. A trap as claimed in any preceding claim, wherein the body comprises an upper reduced outer diameter portion, a lower enlarged outer diameter portion, and a step portion therebetween.
- 15 13. A trap as claimed in claim 13, wherein, in use, a fluid chamber is formed by a portion of an inner wall of the stock, an outer wall of the upper portion of the body and the step portion of the body.
- 20 14. A fluid trap as hereinbefore described with reference to Figs. 2 and 3.
- 25 15. A wind instrument as hereinbefore described with reference to Figs. 1, 2 and 3.
- 30
- 35

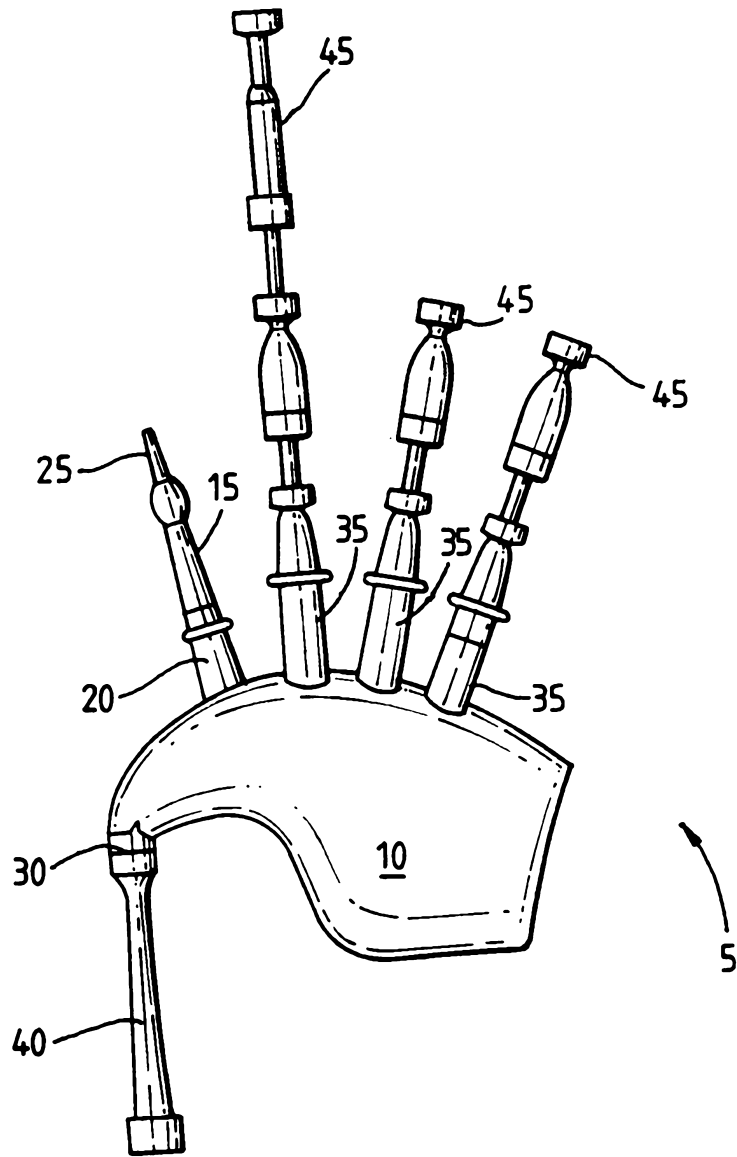


Fig. 1

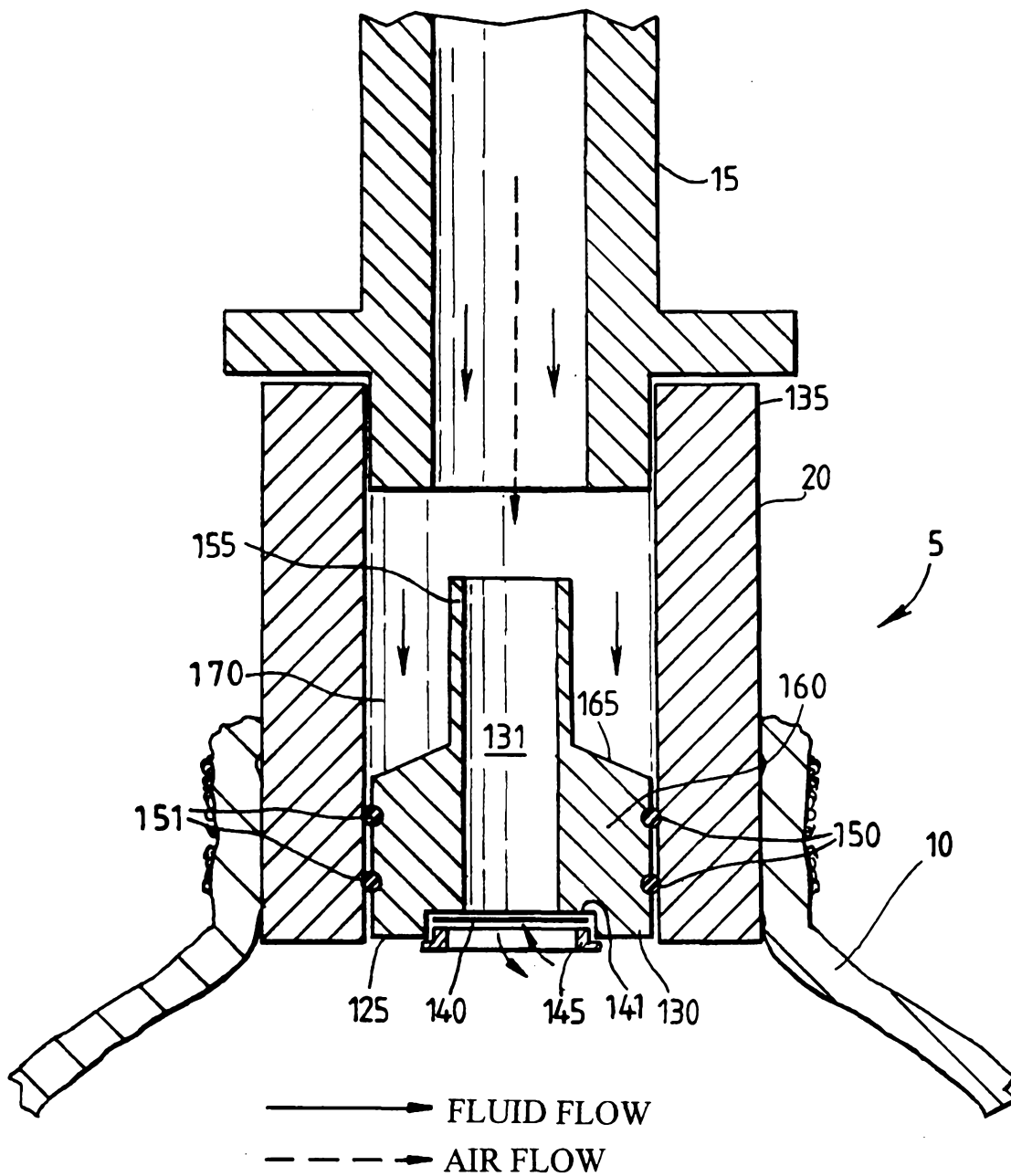


Fig. 2

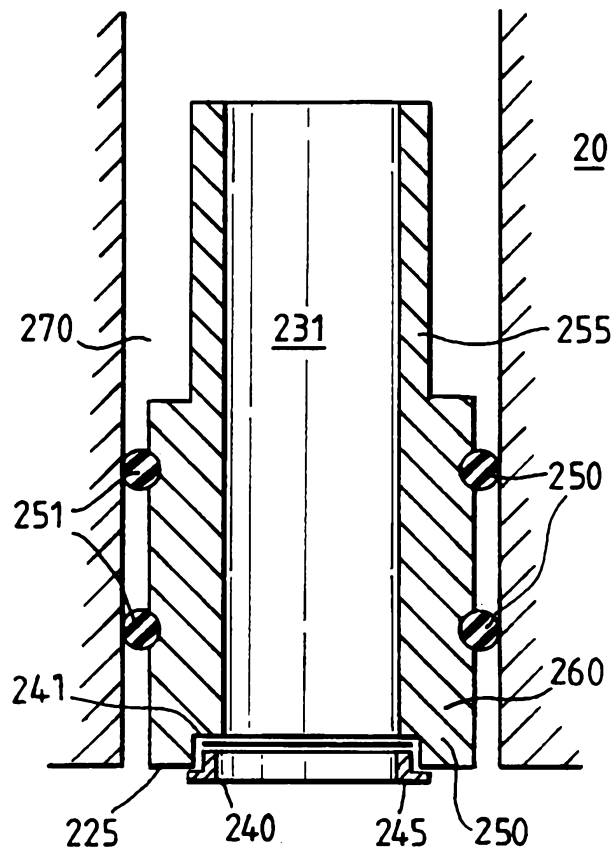


Fig. 3