

EUROPEAN PATENT APPLICATION

Application number: 86300294.5

Int. Cl.⁴: **A 61 H 33/02**

Date of filing: 17.01.86

Priority: 17.01.85 GB 8501174

Applicant: **HEATONS BATHROOMS LIMITED**, Denby
Way Euroway Industrial Estate, Helliaby Rotherham,
S66 8HR (GB)

Date of publication of application: 30.07.86
Bulletin 86/31

Inventor: **Tennant, Howard**, 2 Staithes Walk, Denaby
Main Doncaster (GB)

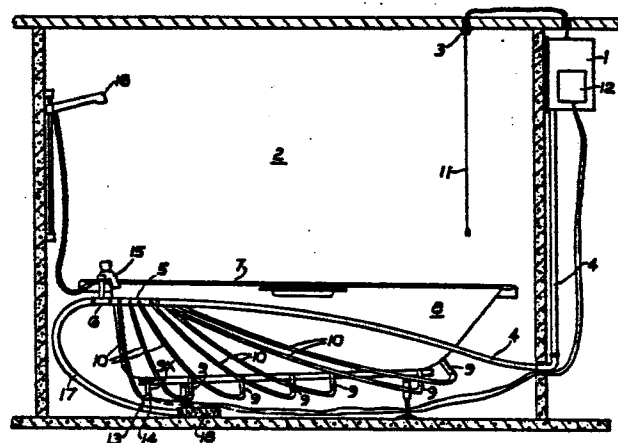
Designated Contracting States: **AT BE CH DE FR GB IT**
LI LU NL SE

Representative: **Houghton, David et al, Hulse & Co.**
Cavendish Buildings West Street, Sheffield, S1 1ZZ (GB)

Activated water baths.

An air activated bath system comprises a remote blower (1), a remote on/off switch (3) for activating the blower, ducting (4) from the blower (1) to a manifold (5) with an air control valve (6) adjacent the rim (7) of the bath (8), a plurality of jets or nozzles (9) in the bottom of the bath, piping (10) from the manifold (5) to the jets or nozzles (9), and a safety device (11) adjacent the bath (8) for activating the on/off switch (3).

The safety device (11) has a timer switch (12) for activating the blower (1), and a sensor (13) at the bottom of the bath (8) sensitive to the presence of water in the bath and connected to the timer switch (12) so that when the on/off switch (3) is off and the bath drained, the sensor (13) sets a timer switch (12) to activate or re-activate the blower (1) for a preset period sufficient to evacuate all water from the piping (10) below the bath.



ACTIVATED WATER BATHS

This invention relates to activated water baths, which may be activated by recirculating the water (as in "Jacuzzi" or "Whirlpool" systems) or by blowing air into
5 the water (as in what are generally known as "Spa" systems).

Water recirculating systems have the disadvantage that water is retained in piping beneath the bath, thus exposing the next
10 person bathing to the last person's "dirty" water, which if left to stagnate can cause infection of the type known as pseudomonas pneumonia - commonly referred to as "legionnaires disease".

15 Air blowing systems are capable of overcoming this disadvantage by blowing the air through a plurality of jets or nozzles with gravitationally sealing non-return valves positioned at least in the bottom of the bath,
20 but sticking of the non-return valves in the open position allows water to gain entry to the piping beneath the bath, thus giving rise to some potential health problem if not blown through after use. The problem of sticking
25 non-return valves is exacerbated by the

presence of lime scale from the water, and the air pressure may be insufficient to lift the non-return valves.

Water recirculating systems have had
5 their recirculating pumps situated beneath or adjacent the bath, but electrics in the bathroom are contrary to regulations, other than pull-cord type switches, as well-established for bathroom lights. It has
10 proved feasible with an air blowing system to locate the blower remotely e.g., outside the bathroom, with a remote on/off switch for activating the blower, ducting from the blower to at least one manifold with an air control
15 valve adjacent the rim of the bath, piping from the manifold to the jets or nozzles, and a safety device adjacent the bath for actuating the on/off switch.

The object of the present invention
20 is, therefore, to provide an air activated bath system in which all electrical switches are situated remote from the bath and in which means is provided to ensure that all piping under the bath is cleared of water after each
25 and every use of the system.

According to the present invention, an

air activated bath system comprises a remote blower, a remote on/off switch for activating the blower, ducting from the blower to at least one manifold with an air control valve
5 adjacent the rim of the bath, a plurality of jets or nozzles in at least the bottom of the bath, piping from the manifold to the jets or nozzles, and a safety device adjacent the bath for actuating the on/off switch, and is
10 characterised by a timer switch for activating the blower, and a sensor at the bottom of the bath sensitive to the presence of water in the bath and connected to the timer switch in such a manner that when the on/off switch is off
15 and the bath is drained, the sensor sets the timer switch to activate or re-activate the blower for a preset period sufficient to evacuate all water from the piping below the bath.

20 The sensor may be a temperature-responsive transducer in a jet or nozzle at the bottom of the bath; but it is preferably a circuit-closing device for the timer switch having spaced terminals at the bottom of the
25 bath to be short-circuited by hot or cold water in the bottom of the bath, whether from

the bath taps or mixer unit or from a shower over the bath. Thus the bath and the piping may be formed of plastics material (i.e., non-electrically conductive) and at least two jets
5 or nozzles at the bottom of the bath provided with conductive fittings (e.g., elbows) to serve as the spaced terminals of the circuit-closing device for the timer switch.

The safety device adjacent the bath
10 for activating the on/off switch may be a pull-cord or vacuum switch or any other safety device whereby it is not possible for a wet finger or other part of a wet body to make contact with electricity.

15 The timer switch is preferably adapted to activate or re-activate the blower after a pre-set delay, say ten minutes after all water has drained from the bath, to ensure that the user has left the bath. Thereafter a
20 relatively short period of activation of the blower, say fifteen seconds, will suffice to ensure that all water is evacuated from the piping below the bath.

The air control valve is preferably
25 disposed between the manifold and an exhaust pipe, so that the air control valve serves as

a by-pass enabling the flow of air to the jets or nozzles to be adjusted without having to adjust the output of the blower correspondingly, and the exhaust pipe
5 conveniently exhausts under the bath through a muffle.

Thus, with the siting of the blower and its switches remote from the bath, the problems of hygiene and safety are overcome.

10 An embodiment of the invention will now be described, by way of example only, with reference to the accompanying diagrammatic drawings, in which:-

Figure 1 is a part-sectional side
15 elevation of a bath with an air activated blowing system in accordance with the invention;

Figure 2 is a plan of the bath of Figure 1 indicating the position of the water-
20 sensor; and

Figure 3 is a cross-section of the bath taken from the line III-III in Figure 2.

In Figure 1 an air activated bath system comprises a remote blower 1 outside the
25 bathroom 2, a remote on/off switch 3 for activating the blower, ducting 4 from the

blower to a manifold 5 with an air control valve 6 adjacent the rim 7 of the bath 8, a plurality of jets or nozzles 9 in the bottom of the bath, piping 10 from the manifold to the jets or nozzles, a pull-cord safety device 11 adjacent the bath for activating the on/off switch 3, a timer switch 12 for activating the blower 1, and a sensor 13 (see also Figures 2 and 3) at the bottom of the bath sensitive to the presence of water in the bath and connected to the timer switch 12 in such a manner that when the on/off switch 3 is off and the bath is drained, the sensor 13 sets the timer switch 12 to activate or re-activate the blower 1 for a preset period sufficient to evacuate all water from the piping 10 below the bath.

The sensor 13 shown is a circuit-closing device for the timer switch 12 having spaced terminals formed by conductive elbows 14 for two jets or nozzles 9X, while the bath 8 and piping 10 are formed of plastics material, the terminals 14 being short-circuited by hot or cold water in the bottom of the bath, whether from the bath taps 15 or from a shower 16 over the bath.

- 7 -

The timer switch 12 is adapted to activate or re-activate the blower 1 after a preset delay of ten minutes after all water has drained from the bath 8, to ensure that
5 the user has left the bath, and activation of the blower for fifteen seconds suffices to ensure that all water is evacuated from the piping 10.

The air control valve 6 is disposed
10 between the manifold 5 and an exhaust pipe 17, so that the valve 6 serves as a by-pass enabling the flow of air to the jets 9 to be adjusted without having to adjust the output of the blower 1 correspondingly, and the
15 exhaust pipe 17 exhausts under the bath 8 through a muffle 18.

CLAIMS

1. An air activated bath system comprising a remote blower (1), a remote on/off switch (3) for activating the blower, ducting (4) from the blower (1) to at least
5 one manifold (5) with an air control valve (6) adjacent the rim (7) of the bath (8), a plurality of jets or nozzles (9) in at least the bottom of the bath, piping (10) from the manifold (5) to the jets or nozzles (9), and a
10 safety device (11) adjacent the bath (8) for actuating the on/off switch (3), characterised by a timer switch (12) for activating the blower (1), and a sensor (13) at the bottom of the bath (8) sensitive to the presence of
15 water in the bath and connected to the timer switch (12) in such a manner that when the on/off switch (3) is off and the bath is drained, the sensor (13) sets the timer switch (12) to activate or re-activate the blower (1)
20 for a preset period sufficient to evacuate all water from the piping (10) below the bath.

2. An air activated bath system as in Claim 1, characterised in that the sensor (13) is a temperature-responsive transducer in a
25 jet or nozzle (9) at the bottom of the bath

(8).

3. An air activated bath system as in Claim 1, characterised in that the sensor (13) is a circuit-closing device for the timer switch (12) having spaced terminals (14) at the bottom of the bath to be short-circuited by hot or cold water in the bottom of the bath, whether from the bath taps (15) or mixer unit or from a shower (16) over the bath.

4. An air activated bath system as in Claim 3, characterised in that the jets or nozzles (9) are formed of plastics material and at least two jets or nozzles (9X) at the bottom of the bath provided with metallic fittings (14) to serve as the spaced terminals of the circuit-closing device for the timer switch.

5. An air activated bath system as in any one of Claims 1 to 4, characterised in that the safety device adjacent the bath for activating the on/off switch (3) is a pull-cord or vacuum switch (11).

6. An air activated bath system as in any one of Claims 1 to 5, characterised in that the timer switch (12) is adapted to activate or re-activate the blower (1) after a

preset delay.

7. An air activated bath system as
in any one of Claims 1 to 6, characterised in
that the air control valve (6) is disposed
5 between the manifold (5) and an exhaust pipe
(17).

8. An air activated bath system as
in Claim 7, characterised in that the exhaust
pipe (17) exhausts under the bath (8) through
10 a muffle (19).

1/2

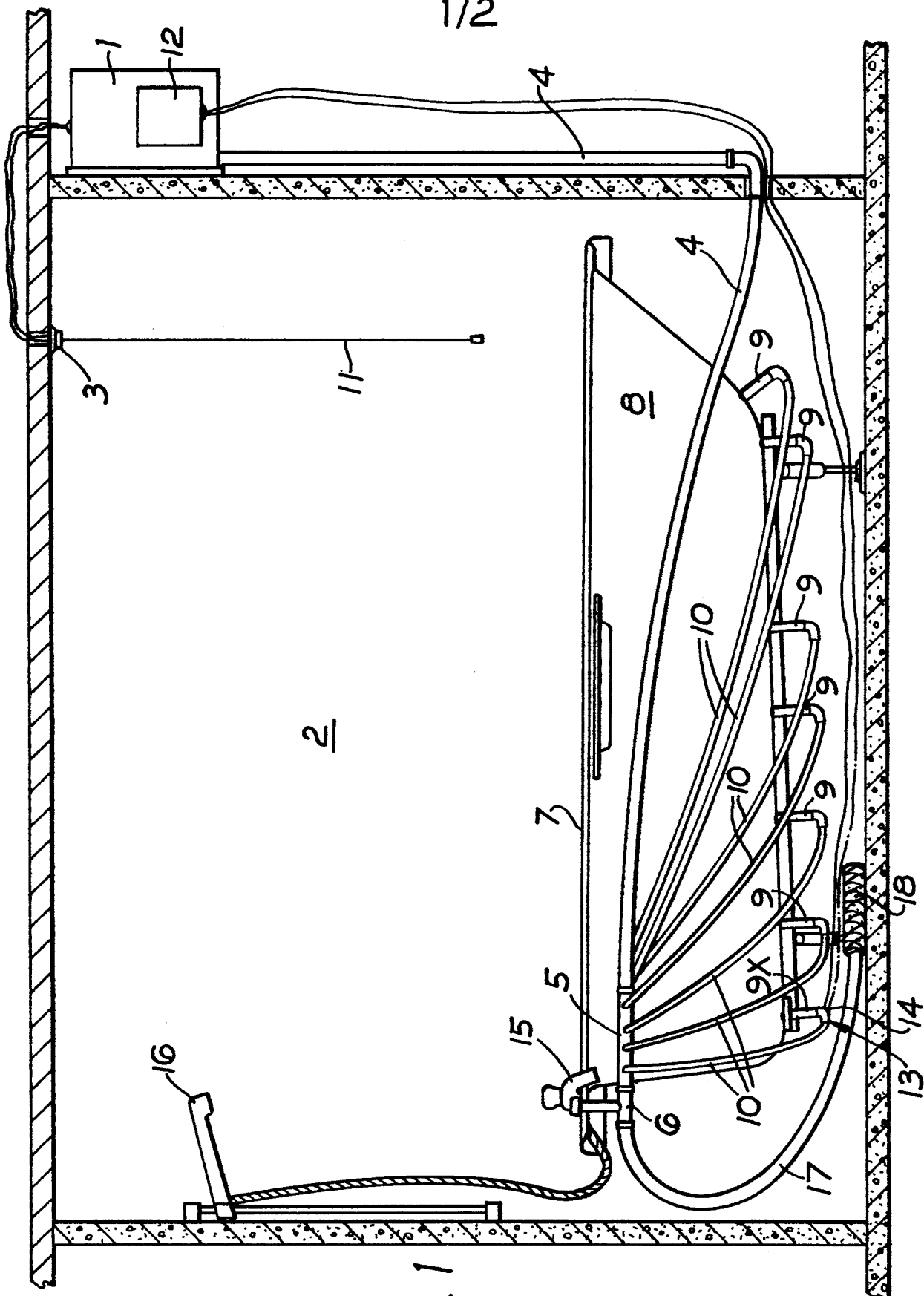


Fig. 1

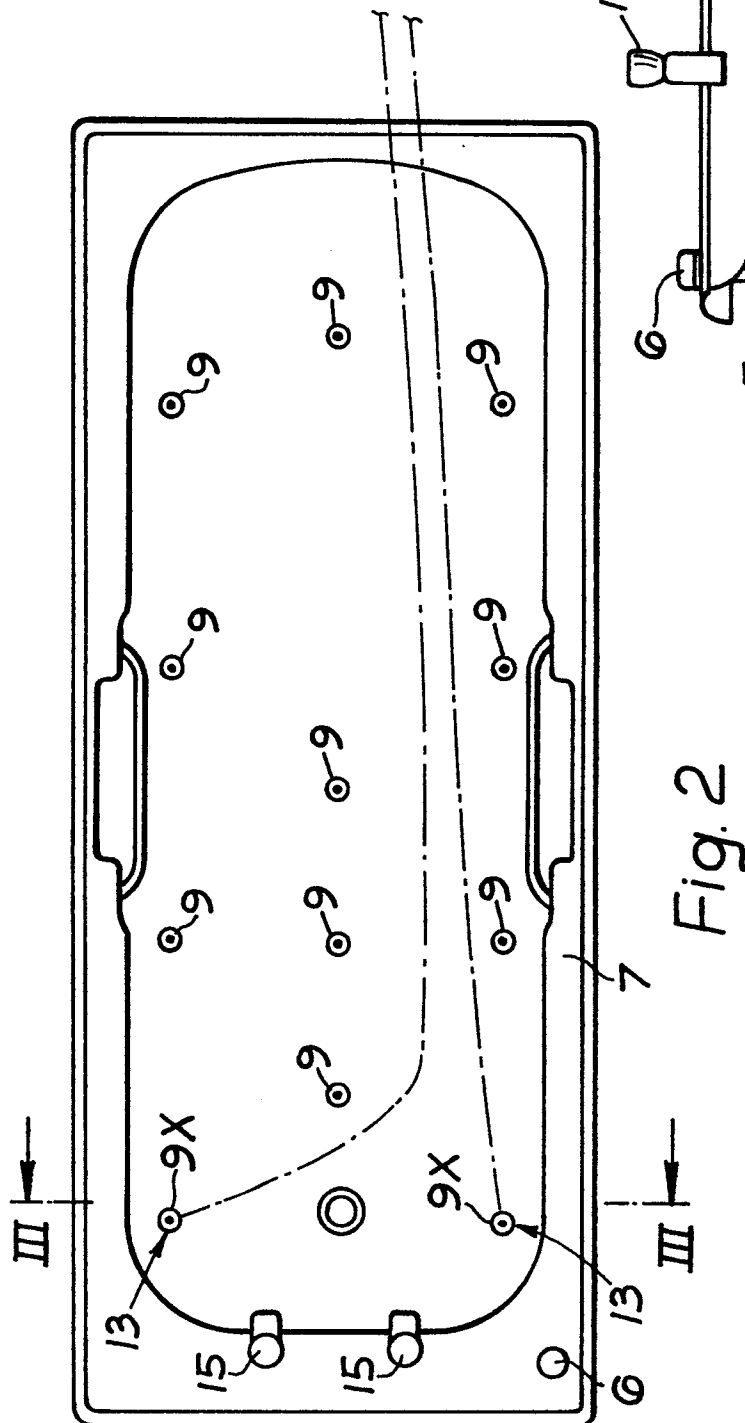


Fig. 2

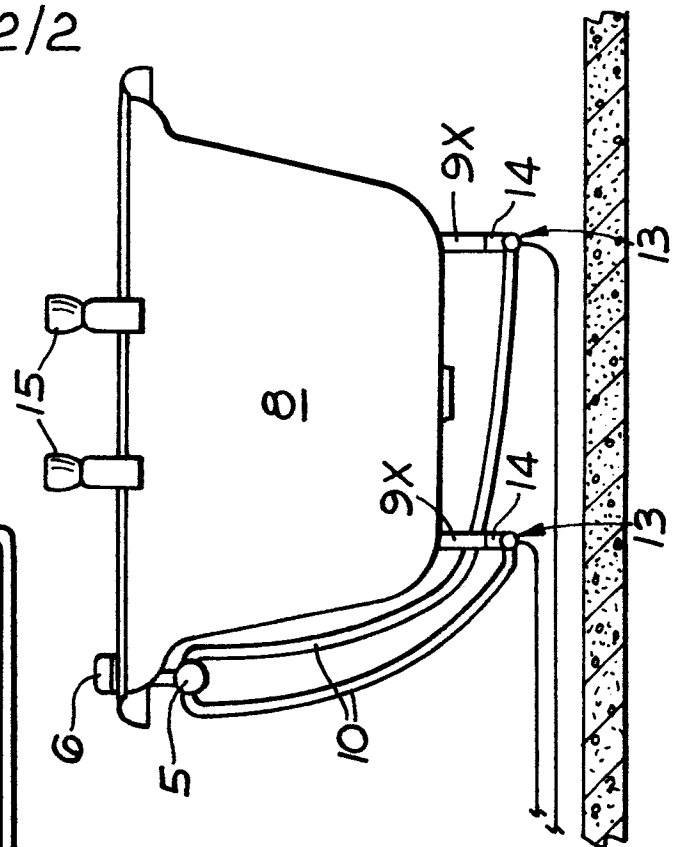


Fig. 3