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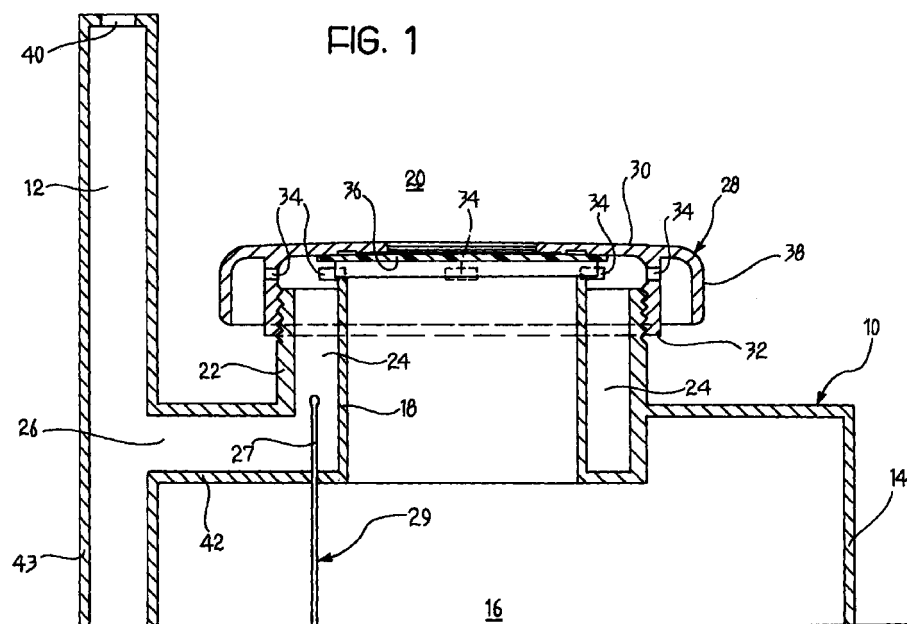
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(54) **Receptacle structure for domestic apparatus**

(57) The device, in particular for dishwashers, comprises: a breather chamber (12) and a receptacle (10) for the salt intended to form, when mixed with water, a brine for regeneration of a decalcifier. The receptacle (10) includes a casing (14) which defines within it a cavity (16) for containing the brine and from which projects a neck (18) through which the cavity (16) communicates with the washing vessel (20). The neck (18) is sur-

rounded by an outer wall (22) in such a way as to define a substantially annular air space (24) between the neck (18) and the wall (22), the receptacle (10) moreover being associated with a removable closure plug (28). The breather chamber (12) communicates on one side with the external environment and on the other with the washing vessel (20) through the air space (24).



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Description

[0001] The present invention relates to a device for electrical domestic apparatus, in particular for a dish-washing machine.

[0002] In more detail, this device comprises:

- a receptacle for salt intended to form, when mixed with water, a brine for regeneration of a decalcifier, the said receptacle including a casing which defines within it a chamber for containing brine and from which projects a communication neck for connecting the said chamber with the washing vessel of the apparatus, the said neck being surrounded by an outer wall in such a way as to define a substantially annular air space between the said neck and the said wall, a removable closure plug being associated with the said receptacle; and
- a breather chamber communicating on one side with the external environment and on the other with the washing vessel.

[0003] The breather chamber serves to allow vapours which occur during the washing operation to escape from the vessel.

[0004] The wall around the neck of the receptacle, for its part, ensures that any salt and/or brine which may escape from the interior of the neck or overflow from it remains confined within the air space, without coming into contact with metal parts of the electrical domestic apparatus.

[0005] According to the known art the breather chamber is put into communication with the washing vessel by an opening formed suitably in a side wall of the washing vessel and communicating with the chamber via a suitable bush.

[0006] The assembly procedure for this is thus rather laborious and requires the presence of additional workpieces such as the bush and associated seal.

[0007] For the purpose of obviating this disadvantage the object of the present invention is a device of the type initially indicated in the present description and characterised in that the said breather chamber communicates with the washing vessel through the said air space.

[0008] The device of the apparatus thus makes use of a pre-existing element of one of its constituent parts - that is the annular air space around the neck of the receptacle - to guarantee communication between the breather chamber and the washing vessel.

[0009] The advantages of a reduction in the number of pieces needed for the device to function and a simplification of its assembly process are thus obtained.

[0010] Moreover, the device of the invention is less bulky than those of the prior art and guarantees a better hydraulic seal of the vessel.

[0011] Further advantages and characteristics of the present invention will become apparent from the fol-

lowing detailed description, with reference to the accompanying drawings, provided by way of non-limitative example, in which:

Figure 1 is a schematic sectional view of an embodiment of the invention; and

Figure 2 is a schematic sectional view of an alternative embodiment of a device according to the invention.

[0012] A device for electrical domestic apparatus, in particular for a dishwasher machine, is produced in the form of an integrated component (Figure 1) which comprises a receptacle 10 and a breather chamber 12 forming part of the mains-water fill circuit.

[0013] In use the receptacle 10 contains salt intended, once mixed with water, to form a brine for regeneration of a decalcifier, known per se and not illustrated in the drawings.

[0014] The receptacle 10 includes a casing 14 within which there is defined a chamber 16 for containing the brine and from which projects a neck 18 by which the chamber 16 communicates with the washing vessel 20 of the apparatus.

[0015] The neck 18 is surrounded by an outer wall 22 in such a way as to define an annular air space 24 between the wall 22 and the neck 18, which is disposed coaxially thereof.

[0016] The air space 24 is connected by a duct 26 to the washing tank (not illustrated in the drawings) of the vessel 20.

[0017] The upper end 27 of an adjustment rod 29 projects into the air space 24, which, in a manner known per se and not illustrated in the drawings, allows the adjustment of the flow of water through the receptacle 10 for the formation of a decalcifier regeneration brine having a desired saline content. The structure and manner of operation of an adjustment device of this type are for example described in DE-A-196 03 619 the content of which is incorporated in the present description by reference.

[0018] A removable closure plug 28 which has a head 30 and a stem 32 capable of engaging the wall 22 is also associated with the receptacle 10.

[0019] In more detail, the stem 32 is threaded and engageable on a thread formed on the outer surface of the wall 22. In the stem 32 there is also formed a plurality of circumferentially spaced slots 34 capable of putting the washing vessel 20 into communication with the air space 24 even when the plug 28 is screwed onto the wall 22.

[0020] The head 30 of the plug 28 is provided internally with a seal 36 capable of sealing against the upper edge of the neck 18.

[0021] The plug 28 is further provided with a skirt 38 disposed coaxially outside the stem 32.

[0022] The breather chamber 12 communicates, through an aperture 40, with the external environment

and, through a section 42 of the duct 26, with the air space 24 which is in turn in communication with the washing vessel 20 through the slots 34.

[0023] The section 42 of the duct 26 as well as the neck 18 and the air space 24 are located at the lower part of the washing vessel 20.

[0024] Moreover, the breather chamber 12 communicates through a section 43 of the duct 26 - disposed in series with the section 42 and forming part of the water fill supply circuit of the dishwashing machine - with the washing tank.

[0025] In a manner known per se, the presence of the wall 22 around the neck 18 ensures that - when salt is being introduced into the receptacle 10, from which the plug 28 has been previously unscrewed - the salt and/or any possible brine splashing out of the neck 18 or overflowing out from it, remains confined within the air space 24 and, through the duct 26, is directed to the wash tank without coming into contact with any metal parts which could become corroded.

[0026] With the plug unscrewed the upper end 27 of the adjustment rod 29 is moreover easily manipulated, thus allowing, if necessary, a variation in the concentration of the decalcifier regeneration brine, which flows out from the receptacle 10.

[0027] Once the salt has been loaded it is possible to reclose the plug 28 and commence the washing operations. During these latter the vessel 20 is in communication with the breather chamber 12 through the slots 34, the air space 24 and the section 42 of the duct 26. Therefore, thanks to this communication, vapours which are generated in the vessel 20 can be directed continuously into the breather chamber 12 and from here discharged to the outside via the aperture 40, or directly condensed. In this latter case the water of condensation formed in the chamber 12 is discharged into the wash tank through the section 43 of the duct 26.

[0028] The skirt 38 of the plug 28, which protects the slots 34, serves to prevent entry into the air space 24 of any water spray from the vessel 20 in addition to the vapour to be discharged through the chamber 12.

[0029] Figure 2 illustrates an alternative embodiment of the invention in which the same reference numerals have been utilised as in Figure 1 to distinguish the same or equivalent parts.

[0030] In this case the threaded stem 44 of the plug 28 can engage a corresponding thread formed on the outer surface of the neck 18 rather than on the wall 22.

[0031] Therefore all communication between the vessel 20 and the air space 24 takes place, due to the presence of an airspace 46 between the upper edge of the wall 22 and the head 30 of the plug 28 rather than via the slots 34.

[0032] The operation of the device remains, however, substantially the same as that illustrated with reference to Figure 1.

[0033] Naturally, the principle of the invention remaining the same, the details of construction and

embodiments can be widely varied with respect to those described purely by way of example, without by this departing from its ambit.

Claims

1. A device for electrical domestic apparatus, in particular for a dishwasher machine, comprising:

- a receptacle (10) for salt intended to form, when mixed with water, a brine for regeneration of a decalcifier, the said receptacle (10) including a casing (14) which defines within it a chamber (16) for containing brine and from which projects a neck (18) by which the said chamber (16) communicates with the washing vessel (20) of the apparatus, the said neck (18) being surrounded by an outer wall (22) such as to define a substantially annular air space (24) between the said neck (18) and the said wall (22), a removable closure plug (28) also being associated with the said receptacle (10), and
- a breather chamber (12) communicating on one side with the external environment and on the other with the washing vessel (20),

the said device being characterised in that the said breather chamber (12) communicates with the washing vessel (20) through the said air space (24).

2. A device according to Claim 1, characterised in that the breather chamber (12) communicates with the air space (24) through a section (42) of a duct (26) through which the air space (24) also communicates with the wash tank of the washing vessel (20).

3. A device according to Claim 2, characterised in that the said section (42) of the duct (26), the neck (18) and the air space (24) are positioned at the lower part of the washing vessel (20).

4. A device according to any preceding claim, characterised in that the said plug (28) has a head (30) and a stem (32) capable of engaging the said wall (22), there being formed at least one slot (34) in the said stem (32), capable of putting the washing vessel (20) into communication with the air space (24).

5. A device according to Claim 4, characterised in that the said stem (32) is formed with a plurality of circumferentially spaced slots (34).

6. A device according to any preceding claim from 4 to 5, characterised in that the said stem (32) is threaded and can engage a corresponding thread formed on the outer surface of the wall (22).

7. A device according to any of Claims 4 to 6, charac-

terised in that the head (30) of the said plug (28) is provided internally with a seal (36) capable of sealing against the upper edge of the said neck (18).

8. A device according to any preceding Claim from 1 to 3, characterised in that the said plug (28) has a head (30) and a stem (44) engageable on the said neck (18). 5
9. A device according to Claim 8, characterised in that the said stem (44) is threaded and is capable of engaging a corresponding thread formed on the outer surface of the neck (18). 10
10. A device according to any of claims from 4 to 9, characterised in that the said plug (28) is provided with a skirt (38) disposed coaxially around the stem (32, 44) and able to impede the passage of water from the vessel (20) into the air space (24). 15
11. A device according to any preceding claim, characterised in that the upper end (27) of an adjustment rod (29) for adjusting the salt concentration in the brine projects into the air space (24). 20
12. A device according to any preceding claim, characterised in that the receptacle (10) and the breather chamber (12) constitute an integrated component. 25

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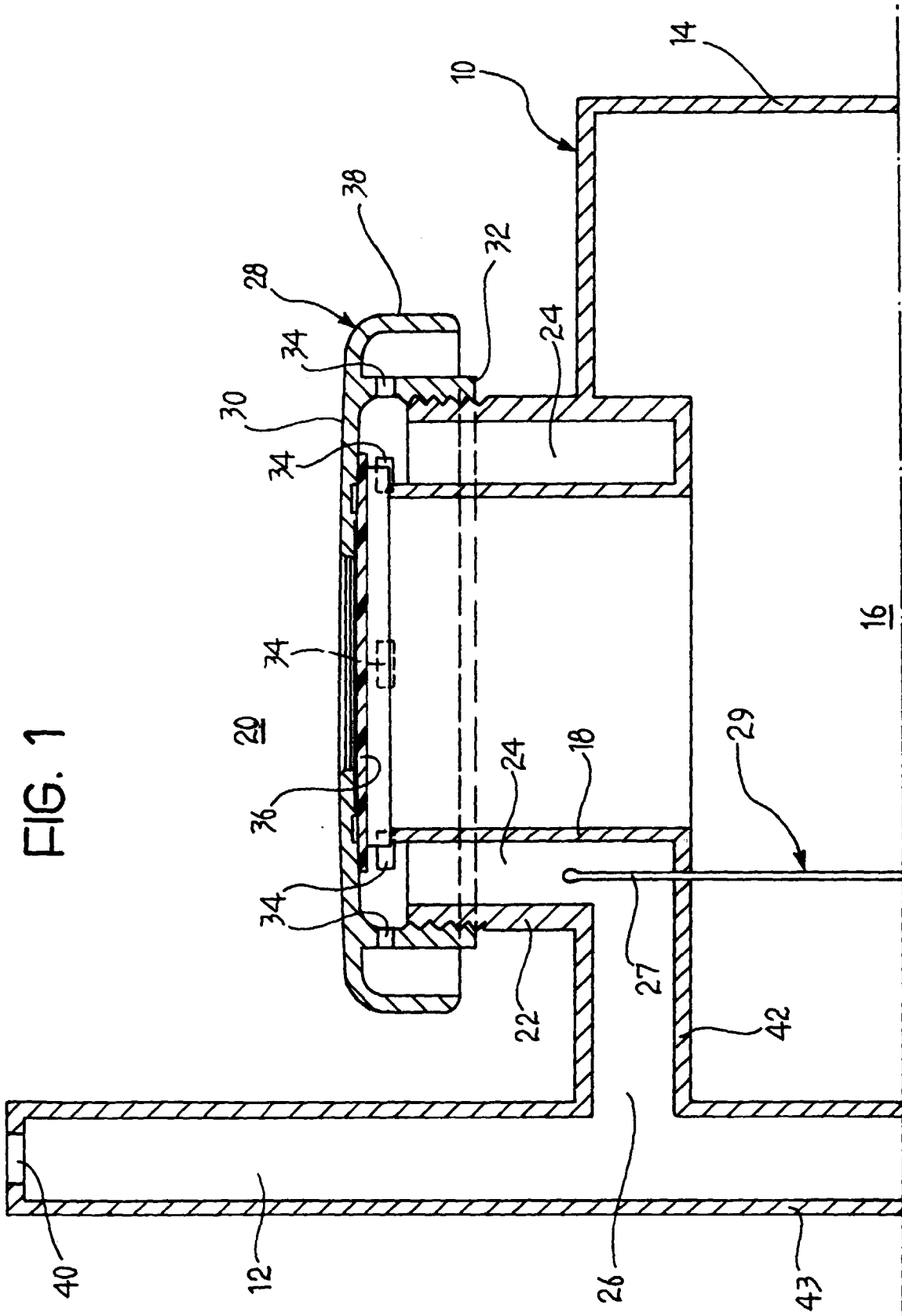


FIG. 2

