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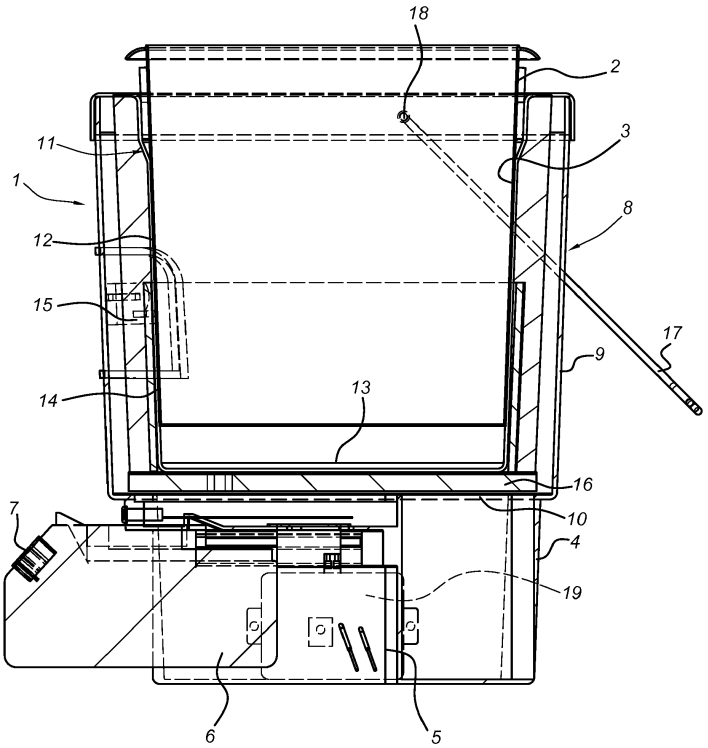
# (54) PORTABLE LIQUID HOLDER SUCH AS FOR A PAINT

(57) A portable paint holder comprises a housing (1) which delimits a chamber (3), a paint container (2) accommodated in the chamber and a temperature influencing element (14) for controlling the temperature of paint in the paint container, The temperature influencing element (14) is fed by an electric battery (6) and that said electric battery is connected to the chamber (3). The electric temperature influencing element (14) is arranged around the chamber (3) and is coil-shaped.

*Fig. 2*

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## Description

**[0001]** The invention is related to a portable liquid holder such as for a paint, comprising a housing which delimits a chamber, a liquid container accommodated in the chamber and a temperature influencing element for controlling the temperature of the liquid container and any liquid contained therein.

**[0002]** Such a portable liquid holder for paint is disclosed in GB-A-749394 and comprises a heating element which is arranged beneath the bottom of the chamber and which is immersed in a heating liquid. The electric heating element is fed with electricity through an electric cable which has to be connected to the electric grid. The chamber has an oblong shape, in such a way that several containers may be loosely arranged next to each other on the bottom.

**[0003]** In the process of applying a liquid such as paint to a surface, it is desirable to maintain a certain temperature of the paint. In particular but not exclusively, temperature control of the paint is of importance when treating the external surfaces of a building by professional painters. Maintaining the desired temperature is favorable for processing the paint. It provides the possibility to cover a larger area per liter; moreover the paint may be applied in a quicker fashion. It is generally not necessary to use additives such as thinner, which is better for environmental reasons. Moreover, the quality of the paint coating is improved by applying the paint at the prescribed temperature.

**[0004]** An object of the invention is to provide a portable liquid holder such as for a paint which can be used in a mobile way, independent of a grid. A further object is to provide a portable liquid holder which requires less energy for controlling the temperature of the paint. A further object is to provide a portable liquid holder which provides a more stable position of the container. Still a further object is to provide a portable container which provides a better heat transfer between the temperature influencing element and the liquid.

**[0005]** These and other objects are achieved in that the temperature influencing element is fed by an electric battery and that said electric battery is connected to the chamber. The electric battery provides the possibility to use the liquid holder at any desired location, also externally and without the hazard posed by electric cables. The heat transfer can be improved by arranging the electric temperature influencing element around the chamber and is coil-shaped. In addition, or alternatively, the electric temperature influencing element may be arranged under the bottom of the chamber. For improving the user-friendliness of the portable paint holder, a control device may be provided for controlling the temperature of the liquid container. Said control device preferably comprises a thermostat so as to maintain the temperature of the liquid at a certain predetermined temperature. For paint for instance, a fixed temperature of around 20° is desirable.

**[0006]** The housing may comprise an inner casing having an inner casing circumferential wall and preferably an inner casing bottom at the lower end of the inner casing circumferential wall, said inner casing delimiting the chamber. In this case, the electric temperature influencing element may be arranged on the outside of the inner casing circumferential wall, preferable in contact with the outside of the inner casing circumferential wall. In addition or alternatively, the electric temperature influencing element may be arranged on the underside of the inner casing bottom wall, and preferably in contact with said inner casing bottom wall.

**[0007]** For preserving energy, the housing may be provided with a heat isolating layer which surrounds the inner casing circumferential wall, and preferable the electric temperature influencing element. Also, a heat isolating layer my cover the inner casing bottom wall.

**[0008]** Furthermore, the housing may comprise an outer casing having an outer casing circumferential wall and preferably an outer casing bottom at the lower end of the outer casing circumferential wall, which outer casing defines the outside of the housing.

**[0009]** Preferably, the liquid container comprises a liquid cup which fits, preferably snugly fits, inside the inner casing, and most preferably contacts the inner casing circumferential wall. By a snugly fit, a favorable heat transfer may be obtained between the electric heating element and the liquid inside the liquid cup. The proper fit between the liquid cup and the inner casing preferably allows for an easy insertion and removal of the liquid cup. This could for instance be obtained in case the inner casing circumferential wall and the liquid cup have a tapering shape with a relative wide top end. The liquid cup may also contact the inner casing bottom wall.

**[0010]** Preferably, the electric battery is mounted to the outer casing, more preferably to the outer casing bottom. Said electric battery may be accommodated in a replaceable battery pack; in that case the housing may be provided with a dock accommodating the battery pack.

**[0011]** In a preferred embodiment, a pedestal is mounted to the outer casing bottom, and the dock, the electric battery and the controller are accommodated in the pedestal. This pedestal may comprise input devices and output devices related to the activity of the temperature influencing element, such as a press button, rotating knob, indicating lights etc.

**[0012]** For ease of handling, the housing top side may be provided with a handle mounted to opposite sides of the housing. By means of this handle the portable liquid holder may be carried properly and be suspended at a desired location, ready for use. This can further be improved in case the handle is rotatable around a hinge line, and, in the upright position of the portable liquid holder, said hinge line is offset with respect to the centre of gravity of the rest of the portable liquid holder. The portable liquid holder will then have a somewhat slanted position when suspended from the handle, allowing better access to the paint.

**[0013]** Although in the previous description reference has been made to paint as an example of the liquid in the portable liquid holder, it is suitable for use in other environments as well, For instance, the portable liquid holder may be used in laboratories for controlling the temperature of certain liquid media.

**[0014]** The invention will further be described with reference to the figures.

Figure 1 shows a front view of the portable paint holder.

Figure 2 shows a section through the portable paint holder according to II-II of figure 1.

**[0015]** The portable paint holder shown in figures 1 and 2 has a housing 1 and a paint container 2 accommodated in the chamber 3 of the housing 1. Furthermore, it has a pedestal 4 which supports the housing 1. Said pedestal 4 is provided with a battery dock in which a replaceable battery pack 6 is accommodated. Furthermore, the pedestal is provided with knobs, dials 7 etc for control purposes as will de discussed below.

**[0016]** The housing 1 has an outer casing 8 having an outer casing circumferential wall 9 and an outer casing bottom wall 10. Inside this outer casing 8, the inner casing 11 is arranged which has an inner casing circumferential wall 12 and an inner casing bottom wall 13. Around and in contact with the inner casing circumferential wall 12, an electric heating coil 14 is arranged. Surrounding the heating coil 14 and the inner casing circumferential wall 12, a temperature isolating layer 15 is provided. The inner casing bottom wall 13 is covered by a temperature isolating layer 16.This temperature isolating layer 15 is thus arranged in between the outer casing 8 and the inner casing 11.

**[0017]** The inner casing circumferential wall 12 is slightly tapered, as is the paint cup 2. the paint cup 2 and the inner casing 8 are thus in intimate contact which each other, which promotes the heat transfer between the electric heating coil 14 and the paint in the paint cup 2.

**[0018]** By means of the input/output device 7, a specific temperature for the paint in the paint cup can be selected. In a known manner, the temperature of the paint can be maintained by means of a control device 19, a sensor and thermostat, which are known per se. The temperature isolating layers 15, 16 limit the loss of heat energy, in such a way that the temperature can be maintained during prolonged periods with one and the same battery pack. The handle 17 is hingeably mounted to the outer casing 8 at hinge points 18 which are somewhat offset with respect to the center of gravity of the housing 1. Thus, when being suspended from the handle 17, the housing will be in a somewhat slanted position.

**[0019]** Although in the foregoing figure description, the invention has been described with reference to a paint holder, it is also possible to use the liquid holder for other substances.

List of reference numerals

**[0020]**

| | |
|---|---|
| 1. | Housing |
| 2. | Paint cup |
| 3. | Chamber in housing |
| 4. | Pedestal |
| 5. | Battery dock |
| 6. | Battery pack |
| 7. | Input/output device |
| 8. | Outer casing |
| 9. | Outer casing circumferential wall |
| 10. | Outer casing bottom wall |
| 11. | Inner casing |
| 12. | Inner casing circumferential wall |
| 13. | Inner casing bottom wall |
| 14. | Electric heating coil |
| 15., 16. | Temperature isolating layer |
| 17. | Handle |
| 18. | Hinge point |
| 19. | Control device |

## Claims

1. Portable liquid holder for a liquid such as paint, comprising a housing (1) which delimits a chamber (3), a liquid container (2) accommodated in the chamber and a temperature influencing element (14) for controlling the temperature of the liquid container and any liquid contained therein, **characterized in that** the temperature influencing element (14) is fed by an electric battery (6) and that said electric battery is connected to the chamber (3).

2. Portable liquid holder according to claim 1, wherein the electric temperature influencing element (14) is arranged on the outside of the chamber (3), preferably around the chamber (3) in a coil-shaped fashion.

3. Portable liquid holder according to claim 1 or 2, wherein a control device (19) is provided for controlling the temperature of the container (2), said control device preferably containing a thermostat.

4. Portable liquid holder according to any of the preceding claims, wherein the housing (1) comprises an inner casing (11) having an inner casing circumferential wall (12) and preferably an inner casing bottom (13) at the lower end of the inner casing circumferential wall, said inner casing delimiting the chamber (3).

5. Portable liquid holder according to claim 4, wherein the electric temperature influencing element (14) is arranged on the outside of the inner casing circumferential wall (12), preferable in contact with the out-

side of the inner casing circumferential wall, and/or on the outside of the inner casing bottom (13), preferably in contact with the outside of the inner casing bottom (13).

**6.** Portable liquid holder according to claim 4 or 5, wherein the housing (1) is provided with a heat isolating layer (15) which surrounds the inner casing circumferential wall (12) and/or which is below the inner casing bottom (13), and which preferably covers the electric temperature influencing element.

**7.** Portable liquid holder according to any of claims 4-6, wherein the housing (1) comprises an outer casing (8) having an outer casing circumferential wall (9) and preferably an outer casing bottom (10) at the lower end of the outer casing circumferential wall, which outer casing defines the outside of the housing.

**8.** Portable liquid holder according to any of claims 4-7, wherein the liquid container comprises a liquid cup (2)which fits, preferably snugly fits, inside the inner casing (11), and most preferably contacts the inner casing circumferential wall (12) an/or which contacts the inner casing bottom (13).

**9.** Portable liquid holder according to claim 8, wherein the inner casing circumferential wall(12) and the liquid cup (2) have a tapering shape with a relative wide top end.

**10.** Portable liquid holder according to any of claims 7-9, wherein the electric battery (6) is mounted to the outer casing (8), preferably to the outer casing bottom (10).

**11.** Portable liquid holder according to any of the preceding claims, wherein the electric battery (6) is accommodated in a replaceable battery pack and the housing (1) is provided with a dock (5) accommodating the battery pack.

**12.** Portable liquid holder according to claim 10 or 11, wherein a pedestal (4) is mounted to the outer casing bottom (10), and the dock (5), the electric battery (6) and the controller (19) are accommodated in the pedestal.

**13.** Portable liquid holder according to claim 12, wherein the pedestal (4) comprises input devices and output devices (7) related to the activity of the temperature influencing element, such as a press button, rotating knob, indicating lights etc.

**14.** Portable liquid holder according to any of the preceding claims, wherein the housing top side is provided with a handle (17) mounted to opposite sides of the housing.

**15.** Portable liquid holder according to claim 14, wherein the handle (17) is rotatable around a hinge line, and, in the upright position of the portable liquid holder, said hinge line is offset with respect to the centre of gravity of the rest of the portable liquid holder.

Fig. 1

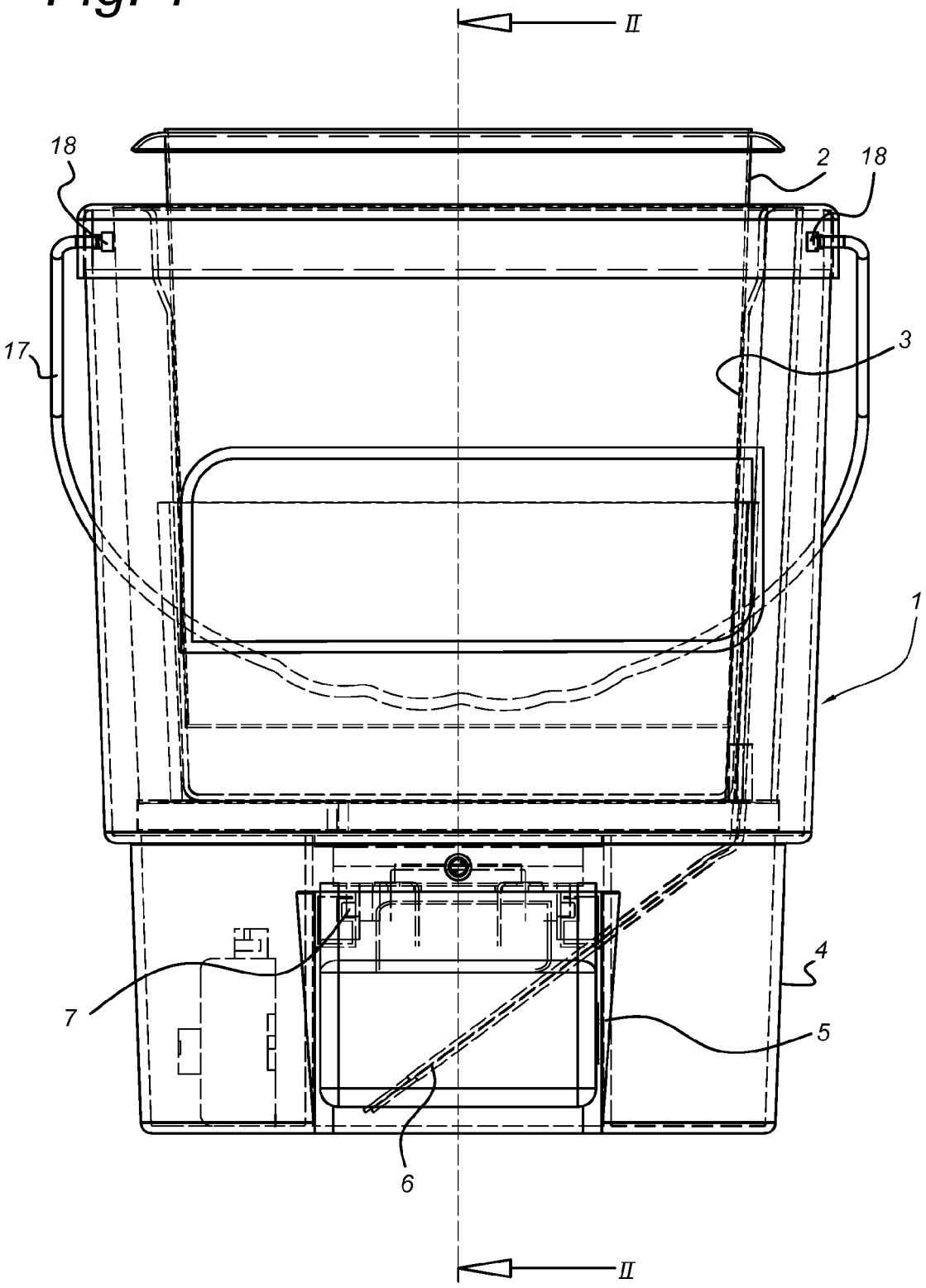
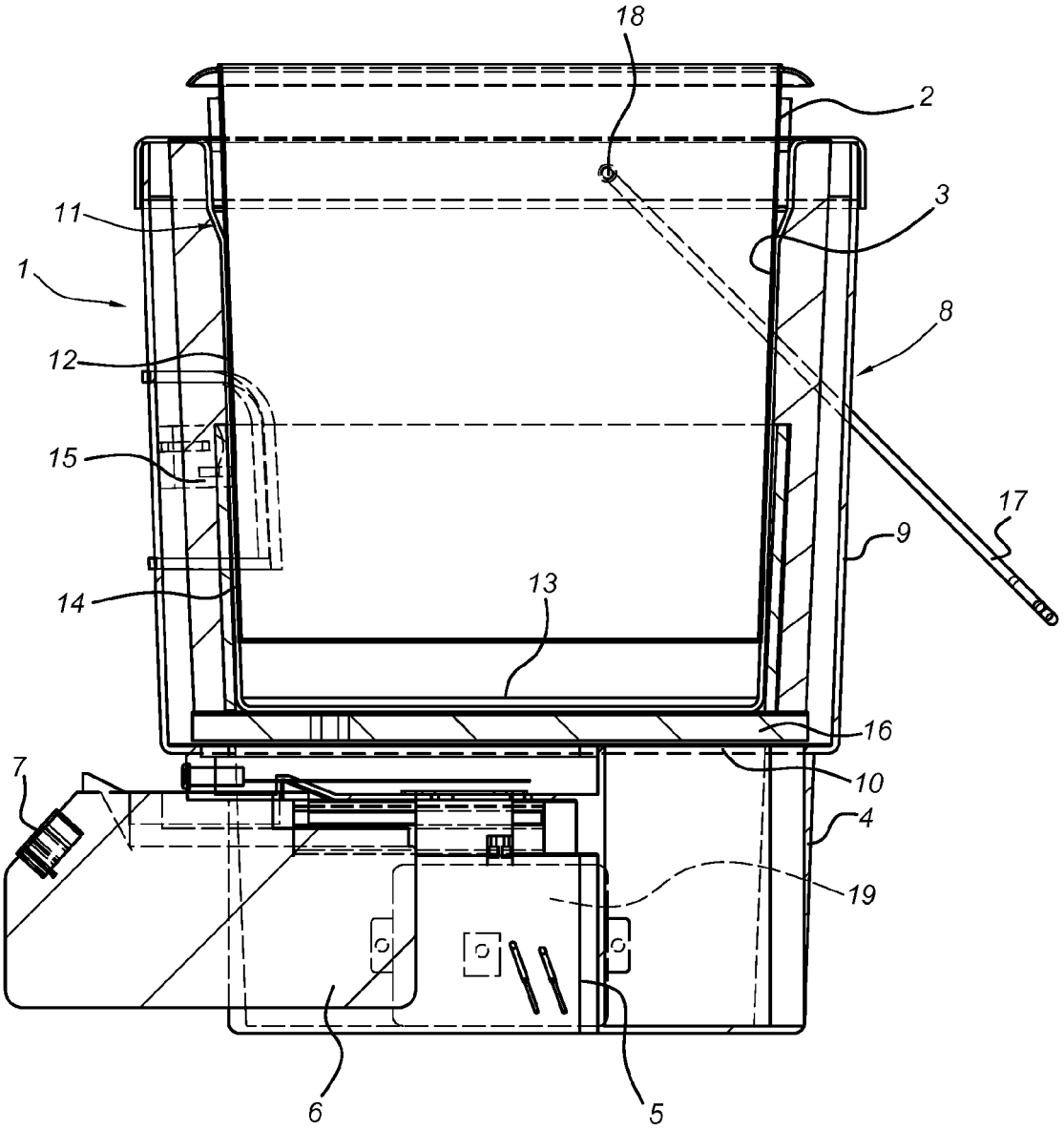


Fig. 2



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# EUROPEAN SEARCH REPORT

Application Number
EP 15 17 3277

## DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (IPC) |
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TECHNICAL FIELDS SEARCHED (IPC)

B05C
B05B
B44D
B41F
H05B

The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| Munich | 27 November 2015 | Endrizzi, Silvio |

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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## ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 15 17 3277

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## REFERENCES CITED IN THE DESCRIPTION

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