

PATENT SPECIFICATION

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(54) COFFEE MAKER

(71) We, N. V. PHILIPS' GLOEIL-AMPENFABRIKEN, a limited liability Company, organised and established under the laws of the Kingdom of the Netherlands, of Emmasingel 29, Eindhoven, the Netherlands, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:

The invention relates to a coffee maker, comprising a housing in which a filter holder can be positioned, and a leak tray underneath the filter holder, which tray can be displaced by a collecting vessel.

Such a filtering device is known from German "Gebrauchsmuster" 69 19 363.

A problem associated with such coffee makers is filtrate dripping from the filter after the collecting vessel has been removed. As a result of this the device and in particular a heating plate, if any, may be soiled. Moreover, the filtrate could leak along the heating plate into the housing underneath the heating plate and cause a short-circuit between electrical components.

In the prior art device this problem has been solved by means of a horizontally movable leak tray. When the collecting vessel is placed underneath the filter holder the leak tray is bodily pressed away from the filter holder against the spring force, so that the filtrate can flow into the collecting vessel. When the collecting vessel is removed the leak tray resumes its position underneath the filter holder under the influence of the spring, so that drops of filtrate which drip from the filter are then collected in the leak tray.

It is an object of the invention to provide a different solution to this problem. According to the invention, there is provided a coffee maker comprising a housing in which a filter holder can be positioned, an opening in said housing beneath the position of the filter holder, said opening having an inwardly extending edge, a leak tray arranged underneath the filter

holder position, said leak tray having an outwardly extending rim for resting on the inwardly extending edge of the housing opening, means to permit vertical movement of one portion of the leak tray rim with respect to the opposite portion of said rim, and a discharge outlet in said leak tray adjacent said opposite rim portion for the passage of filtrate into a collecting vessel arrangeable beneath and in contact with said leak tray, said one rim portion of the leak tray being vertically raised when the collecting vessel is in contact with the leak tray, said discharge outlet thereby being located at the lowest point of the bottom of said leak tray, and said one rim portion of the leak tray being vertically lowered when the collecting vessel is removed from contact with said leak tray, the bottom portion of the leak tray adjacent said one rim portion being thereby situated below the level of the discharge outlet.

Preferably, the means to permit vertical movement of said one rim portion of the leak tray comprises a recess, and a vertically extending longitudinal cam on said housing for engagement with said recess.

The height of the side wall of the leak tray adjacent said one rim portion may be greater than that adjacent the discharge outlet. The thickness of the bottom of the leak tray may increase from the discharge outlet diametrically towards said one rim portion. The leak tray may be provided with a handle for removal of the leak tray from the housing. Preferably, the handle comprises a vertical projection extending upwardly from the bottom of the leak tray.

The invention will now be described in further detail by means of an embodiment of a coffee maker shown in the accompanying drawings.

Figure 1 is a schematic view of a coffee maker to which the invention has been applied.

Figure 2 is a partial cross-section of the coffee maker of Figure 1 with the leak tray in accordance with the invention in a position in which the collecting vessel has been removed from the coffee maker,

Figure 3 is a partial cross-section of the coffee maker shown in Figure 2, but now with a collecting vessel placed in the appliance,

5 Figure 4 is a plan view of the leak tray in accordance with the invention,

Figure 5 is a cross-section of the leak tray of Figure 4, and

10 Figure 6 is a perspective view of the leak tray of Figure 4.

Figure 1 depicts a coffee maker having a housing 1 which accommodates a water reservoir 2, a discharge conduit 3, a flow heater 4 with a heating plate 5, a riser pipe 6, an outlet pipe 7, which is rotatably connected to the riser pipe, having an outlet opening 8. The housing furthermore accommodates a filtering device, comprising a detachable filter holder 9. A collecting vessel 10 for collecting the filtered coffee brew can be placed on the heating plate 5 underneath the filter holder.

20 Underneath the filter holder 9 there is provided a leak tray 11. As is shown in Figure 2, the leak tray is placed in an opening 12 of the housing 1. The leak tray has an outwardly extending rim 13 which bears on an inwardly extending edge 14 of the housing opening 12 when the collecting vessel 10 has been removed.

30 In the bottom 15 of the leak tray a discharge outlet 16 is formed for the passage of the filtered coffee brew. When the collecting vessel 10 is placed on the heating plate 5 of the coffee maker, the leak tray is supported by the top of the collecting vessel. In this filtering position (see Figure 3) the discharge outlet 16 is located at the lowest point of the bottom of the leak tray. 40 In the present example this is achieved by means of an increasing thickness of the bottom from the discharge outlet 16 towards a bottom portion 17. A portion of the tray rim which is immediately above the bottom portion 17 is to be considered as the said one rim portion of the tray, whilst the diametrically opposite portion of said rim is located adjacent the discharge outlet 16.

50 Upon completion of the filtration process, the collecting vessel 10 is removed from the appliance. The leak tray is lowered under the influence of gravity and is positioned in the housing opening 12 in such a way that the bottom portion 17 is situated below the level of the discharge outlet 16. In the present example this has been achieved by the provision that the height of the side wall 18 adjacent the bottom portion 17 is greater than that adjacent the discharge outlet 16. 60 Residual drops of coffee brew dripping from the filter are received by the leak tray and collect near the bottom portion 17.

65 The leak tray may furthermore be provided with a handle by which the leak tray can be removed from the coffee maker,

for example for cleaning purposes. In the present example the handle takes the form of a vertical projection 19.

In the rim 13 of the leak tray a recess 20 may be formed (also see Figure 4), which engages with a vertical longitudinal cam 21 of the housing 1. This ensures that the leak tray is always positioned in the appliance in the same manner. For the sake of clarity the leak tray is shown separately in Figures 4, 5 and 6. 75

Instead of the leak tray being supported on the edge of the housing opening 12, the leak tray can be mounted in the housing so as to be rotatable. This is for example possible by providing the side wall 18 of the leak tray with two diametrically opposed trunnions, which engage with corresponding half-open bearing cups of the housing. The position of the trunnions should then be selected so that when the collecting vessel is removed the leak tray is tilted in such a way that the bottom portion 17 is situated below the level of the discharge outlet 16. 80 85

WHAT WE CLAIM IS:—

90 1. A coffee maker, comprising a housing in which a filter holder can be positioned opening in said housing beneath the position of the filter holder, said opening having an inwardly extending edge, a leak tray 95 arranged underneath the filter holder position, said leak tray having an outwardly extending rim for resting on the inwardly extending edge of the housing opening, means to permit vertical movement of one portion of the leak tray rim with respect to the opposite portion of said rim, and a discharge outlet in said leak tray adjacent said opposite rim portion for the passage of filtrate into a collecting vessel arrangeable 100 beneath and in contact with said leak tray, said one rim portion of the leak tray being vertically raised when the collecting vessel is in contact with the leak tray, said discharge outlet thereby being located at the lowest point of the bottom of said leak tray, and said one rim portion of the leak tray being vertically lowered when the 105 collecting vessel is removed from contact with said leak tray, the bottom portion of the leak tray adjacent said one rim portion being thereby situated below the level of the discharge outlet. 110

120 2. A coffee maker as claimed in Claim 1, in which the means to permit vertical movement of said one rim portion of the leak tray comprises a recess and a vertically extending longitudinal cam on said housing for engagement with said recess.

125 3. A coffee maker as claimed in any one of the preceding Claims, in which the height of the side wall of the leak tray adjacent said one rim portion is greater than that adjacent the discharge outlet.



Figure 3 is a partial cross-section of the coffee maker shown in Figure 2, but now with a collecting vessel placed in the appliance,

5 Figure 4 is a plan view of the leak tray in accordance with the invention,

Figure 5 is a cross-section of the leak tray of Figure 4, and

10 Figure 6 is a perspective view of the leak tray of Figure 4.

Figure 1 depicts a coffee maker having a housing 1 which accommodates a water reservoir 2, a discharge conduit 3, a flow heater 4 with a heating plate 5, a riser pipe 6, an outlet pipe 7, which is rotatably connected to the riser pipe, having an outlet opening 8. The housing furthermore accommodates a filtering device, comprising a detachable filter holder 9. A collecting vessel 10 for collecting the filtered coffee brew can be placed on the heating plate 5 underneath the filter holder.

Underneath the filter holder 9 there is provided a leak tray 11. As is shown in Figure 2, the leak tray is placed in an opening 12 of the housing 1. The leak tray has an outwardly extending rim 13 which bears on an inwardly extending edge 14 of the housing opening 12 when the collecting vessel 10 has been removed.

30 In the bottom 15 of the leak tray a discharge outlet 16 is formed for the passage of the filtered coffee brew. When the collecting vessel 10 is placed on the heating plate 5 of the coffee maker, the leak tray is supported by the top of the collecting vessel. In this filtering position (see Figure 3) the discharge outlet 16 is located at the lowest point of the bottom of the leak tray. 40 In the present example this is achieved by means of an increasing thickness of the bottom from the discharge outlet 16 towards a bottom portion 17. A portion of the tray rim which is immediately above the bottom portion 17 is to be considered as the said one rim portion of the tray, whilst the diametrically opposite portion of said rim is located adjacent the discharge outlet 16.

Upon completion of the filtration process, 50 the collecting vessel 10 is removed from the appliance. The leak tray is lowered under the influence of gravity and is positioned in the housing opening 12 in such a way that the bottom portion 17 is situated below the level of the discharge outlet 16. In the present example this has been achieved by the provision that the height of the side wall 18 adjacent the bottom portion 17 is greater than that adjacent the discharge outlet 16. 60 Residual drops of coffee brew dripping from the filter are received by the leak tray and collect near the bottom portion 17.

The leak tray may furthermore be provided with a handle by which the leak 65 tray can be removed from the coffee maker,

for example for cleaning purposes. In the present example the handle takes the form of a vertical projection 19.

In the rim 13 of the leak tray a recess 20 may be formed (also see Figure 4), which 70 engages with a vertical longitudinal cam 21 of the housing 1. This ensures that the leak tray is always positioned in the appliance in the same manner. For the sake of clarity the leak tray is shown separately in Figures 4, 5 75 and 6.

Instead of the leak tray being supported on the edge of the housing opening 12, the leak tray can be mounted in the housing so as to be rotatable. This is for example 80 possible by providing the side wall 18 of the leak tray with two diametrically opposed trunnions, which engage with corresponding half-open bearing cups of the housing. The position of the trunnions should then be 85 selected so that when the collecting vessel is removed the leak tray is tilted in such a way that the bottom portion 17 is situated below the level of the discharge outlet 16.

WHAT WE CLAIM IS:—

90 1. A coffee maker, comprising a housing in which a filter holder can be positioned an opening in said housing beneath the position of the filter holder, said opening having an inwardly extending edge, a leak tray 95 arranged underneath the filter holder position, said leak tray having an outwardly extending rim for resting on the inwardly extending edge of the housing opening, means to permit vertical movement of one 100 portion of the leak tray rim with respect to the opposite portion of said rim, and a discharge outlet in said leak tray adjacent said opposite rim portion for the passage of filtrate into a collecting vessel arrangeable 105 beneath and in contact with said leak tray, said one rim portion of the leak tray being vertically raised when the collecting vessel is in contact with the leak tray, said discharge outlet thereby being located at 110 the lowest point of the bottom of said leak tray, and said one rim portion of the leak tray being vertically lowered when the collecting vessel is removed from contact with said leak tray, the bottom portion of 115 the leak tray adjacent said one rim portion being thereby situated below the level of the discharge outlet.

2. A coffee maker as claimed in Claim 1, 120 in which the means to permit vertical movement of said one rim portion of the leak tray comprises a recess and a vertically extending longitudinal cam on said housing for engagement with said recess.

3. A coffee maker as claimed in any one of the preceding Claims, in which the height 125 of the side wall of the leak tray adjacent said one rim portion is greater than that adjacent the discharge outlet.



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4. A coffee maker as claimed in any one of the preceding Claims, in which the thickness of the bottom of the leak tray increases from the discharge outlet diametrically towards said one rim portion.

projection extending upwardly from the bottom of the leak tray.

7. A coffee maker substantially as hereinbefore described, with reference to the accompanying drawings.

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5 5. A coffee maker as claimed in any one of the preceding Claims, in which the leak tray is provided with a handle for removal of the leak tray from the housing.

10 6. A coffee maker as claimed in Claim 5, in which the handle comprises vertical

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