

This invention relates to an electric kettle having a stand connected to the power supply lead.

In their French patent FR-A-2 652 252, applicants have described an electric kettle comprising a water vessel and an electric resistor 2 for heating the water. The vessel rests on a stand into which the kettle power supply lead penetrates.

The side wall of the vessel carries an electric connection and control unit from which pins project and come into contact with conductive strips in a protuberance on the stand when the vessel is placed thereon. For this purpose the protuberance has openings allowing the introduction of the pins into the same.

In this construction, the pins projecting from the connection unit are rectilinear and extend parallel to the bottom of the water vessel.

When the vessel is placed on the stand, these pins engage in slots formed on that surface of the protuberance which is adjacent the vessel. These slots open out both to the connection block and to the top, i.e. they open out at the top of the protuberance.

That surface of said slots which is open towards the exterior is thus relatively large so that the interior of the protuberance and, in particular, the contact strips are relatively exposed to dust and other dirt likely to penetrate via said slots.

Also, because of the orientation of the pins parallel to the base of the vessel, the contact strips extend inside the protuberance substantially perpendicularly to the bottom of the stand. Consequently, because of the length of the strips, the protuberance must have an adequate height, to the detriment of the compactness of the stand.

Also, again because of the orientation of the pins parallel to the base of the vessel, there is nothing to prevent a user from connecting these pins directly to a standard connection plug without using the stand provided for the purpose. This possibility runs counter to the safety which is required in such an electrical appliance.

EP-A-0 332 445 and GB-A-2 204 218 disclose kettles having connecting pins which have one part parallel and one part perpendicular to the base of the vessel.

Also, EP-A-0 380 416 discloses a kettle having the characteristics indicated in the preamble to claim 1.

The object of this invention is to obviate the disadvantages of the above appliances by providing an improved kettle having a number of technical advantages not only with respect to the above appliance but also with respect to other known kettles.

The invention therefore relates to an electric kettle comprising a water vessel and an electric resistor for heating the water, the vessel resting on a stand into which the electric supply lead of the kettle is

inserted, the side wall of the vessel bearing a control and electric connection unit from which pins project and come into contact with conductive strips received in a protuberance on the stand when the vessel is placed on the stand, the protuberance having openings for inserting the pins into the protuberance.

According to the invention, this kettle is characterised in that the pins are bent at a right angle after being fitted in the connection unit and comprise a part extending from the connection unit substantially parallel to the bottom of the vessel and a part extending downwards substantially perpendicularly to the aforementioned bottom, only the top of the protuberance on the stand being formed with apertures for receiving the ends of the pins and guiding them towards the strips.

As a result of the 90° bend in the connecting pins, the openings formed at the top of the stand may have relatively reduced dimensions. All that is required in fact is for their section to be slightly greater than that of the pins.

Because of the reduced size of these openings, the interior of the protuberance and particularly the contact strips are less exposed to dirt. Thus if required there is no need to provide behind the openings a flap which is retractable on engagement of the pins in the openings.

Also, since the pin part extending downwardly is relatively close to the connection unit, it is

impossible to engage the pins in a standard socket to provide the kettle with power other than via the stand. The user is thus guaranteed greater safety.

According to a preferred version of the invention, the conductive strips extend substantially parallel to the bottom of the stand.

As a result of this arrangement of the strips, the height of the protuberance can be reduced, thus improving the stand compactness.

To make the bent pins, all that is required is for the rectilinear pins already mounted in a commercially available known connection unit to be bent at a right angle.

Other features and advantages of the invention will be apparent from the following description.

In the accompanying drawings, which are given by way of example without limiting force:

Fig. 1 is an elevation, partially broken away, of a kettle with a stand according to the invention.

Fig. 2 is a larger-scale view of the broken-away part of Fig. 1 showing in detail the pins of the connection unit and the protuberance on the stand.

Fig. 3 is a similar view to Fig. 2 showing the kettle vessel removed from the stand.

Fig. 4 is a section on the line IV-IV in Fig. 2.

In the construction shown in the accompanying drawings, the electric kettle comprises mainly a water vessel 1 and an electric resistor 2 for heating the water. The vessel 1 rests on a stand 3 into which the kettle power supply lead 4 penetrates. The side wall 5 of the vessel 1 carries an electric connection and control unit 6 from which project the pins 7, 8, 9 (see Fig. 4) coming into contact with conductive strips 10, 11, 12 received in a protuberance 13 on the stand 3 when the vessel 1 is placed on the latter. The protuberance 13 has openings 14, 15, 16 allowing the pins 7, 8, 9 to be inserted into the protuberance.

According to the invention, the pins 7, 8, 9 are bent substantially at right angles and each comprises (see Figs. 2 and 3) a part, such as 7a, extending from the connection unit 6 substantially parallel to the base 17 of the vessel 1, and a part, such as 7b, extending downwards substantially perpendicularly to the said base 17.

It will be apparent from Figs. 2, 3 and 4 that openings 14, 15, 16 are provided solely on the top 18 of the protuberance 13 of the stand 3 to receive the end, such as 7b, of the pins 7, 8, 9 and guide the same towards the strips 10, 11, 12.

The section of the openings 14, 15, 16 is only slightly larger than that of the pins 7, 8, 9.

Figs. 2 and 3 also show that the conductive strips 10, 11, 12 extend substantially parallel to the bottom 3a of the stand 3.

In the embodiment illustrated, the connection unit 6 is of a known type, for example as described in French patent application FR-A-2 652 252 in the name of the applicants, the initially rectilinear pins having been bent after being fitted in the connection unit 6.

It will also be seen from Figs. 2 and 3 that the protuberance 13 on the stand 3 has, on the top part, a horizontal surface 19 serving as a seat for the bottom part 6a of the connection unit 6. This seat surface 19 is laterally bounded by an edge 20 which slopes towards said surface 19 and the top 18 of which is formed with the openings 14, 15, 16 for inserting the pins 7, 8, 9.

Also, the protuberance 13 has, alongside the openings 14, 15, 16 for the insertion of the pins and remote from the seat surface 19 for the connection unit 6, a projection 21 laterally bounded by a flank 21a which slopes towards the openings 14, 15, 16.

It will also be seen in Figs. 2 and 3 that the part 7b of the pins 7, 8, 9 which extends downwards substantially perpendicularly to the bottom 17 of the vessel is sufficiently near the connection unit 6 to prevent the pins 7, 8, 9 from being connected to a standard connection plug connected to an electric supply lead.

Also, the parts 7a of the pins 7, 8, 9 which extend downwards substantially perpendicularly to the bottom 17 of the vessel are all situated in a plane parallel to the connection unit 6. This arrangement also prevents the pins 7, 8, 9 from being connected to a standard plug unlike the known rectilinear pins which are not all disposed in the same plane.

When the kettle is in operation, the vessel 1 rests on the stand 3 as shown in Fig. 2. The pins 7, 8, 9 of the connection unit 6 are in contact with the strips 10, 11, 12 which are in turn connected to the power supply lead 4.

After the heating has been switched on, this being controlled by a lever (not shown) acting on the connection unit 6, the heating resistor is energised and heats the water. When the required temperature has been reached, the connection unit 6 breaks the power supply to the resistor 2. The user can then use the hot water for making tea or some other drink. For this purpose, he removes the vessel 1 from the stand 2, thus separating the pins 7, 8, 9 from the strips 10, 11, 12 contained in the protuberance 3.

To reheat the water in the vessel 1, all that is necessary is to place the vessel on the stand 3 thus again bringing the pins 7, 8, 9 into contact with the strips 10, 11, 12.

C L A I M S

1. An electric kettle comprising a water vessel (1) and an electric resistor (2) for heating the water, the vessel resting on a stand (3) into which the electric supply lead (4) of the kettle is inserted, the side wall (5) of the vessel (1) bearing a control and electric connection unit from which pins (7, 8, 9) project and come into contact with conductive strips (10, 11, 12) received in a protuberance (13) on the stand (3) when the vessel (1) is placed on the stand, the protuberance (13) having openings (14, 15, 16) for inserting the pins (7, 8, 9) into the protuberance, characterised in that the pins (7, 8, 9) are bent at a right angle after being fitted in the connection unit (6) and comprise a part (7a) extending from the connection unit (6) substantially parallel to the bottom (17) of the vessel and a part (7b) extending downwards substantially perpendicularly to the aforementioned bottom (17), only the top (18) of the protuberance (13) on the stand (3) being formed with apertures (14, 15, 16) for receiving the ends of the pins (7, 8, 9) and guiding them towards the strips (10, 11, 12).

2. A kettle according to claim 1, characterised in that the conductive strips 10, 11, 12) extend substantially parallel to the bottom (3a) of the stand (3).

3. A kettle according to claim 1 or 2, characterised in that the upper part of the protuberance (13) on the stand (3) has a surface (19) serving as a seat for the



bottom part (6a) of the connection unit (6), the surface (19) being laterally bounded by an edge (20) which slopes towards the surface (19) and the top (18) of which is formed with the openings (14, 15, 16) for inserting the pins (7, 8, 9).

4. A kettle according to claim 3, characterised in that, alongside the openings (14, 15, 16) for inserting the pins (7, 8, 9) and remote from the seat surface (19) for the connection unit (6), the protuberance (13) has a projection (21) laterally bounded by a flank (21a) which slopes towards the openings (14, 15, 16).

5. A kettle according to any of claims 1 to 4, characterised in that the part (7b) of the pins (7, 8, 9) which extends downwards substantially perpendicularly to the bottom (17) of the vessel is sufficiently near the connection unit (6) to prevent the pins (7, 8, 9) from being connected to a standard connection plug connected to an electric supply lead.

6. A kettle according to any of claims 1 to 5, characterised in that the parts (7b) of the pins (7, 8, 9) which extend downwards substantially perpendicularly to the bottom (17) of the vessel are all situated in a plane parallel to the connection unit 6.

