

Kettle

The present invention relates to a kettle according to the preamble of the independent Patent Claim 1.

Kettles are cooking vessels which have been known for some time and are used to produce boiling water. It has become customary for such vessels to have no opening apart from the spout, with the result that the water is to be filled through the spout. In order that a user is warned when a steam pressure above atmospheric pressure is forming, the spout is closed by a cover which emits an acoustic signal when the steam pressure exceeds a given limit. Examples of this are disclosed in DE-U-72 29 444, DE-U-75 11 797, and DE-U-84 13 680. In order to pour out the hot water, the caps, along with the signal generators, have to be removed. This can lead to a first setback, namely if the cap is not replaced, but the kettle is put back on the hot plate. In this case, no acoustic warning is given any longer and the water can evaporate completely.

GB-A-349 511 describes a whistling kettle, in which, by raising the kettle by the handle, the whistling closure is lifted off from the spout and, when setting the kettle down, said closure is positioned onto the spout. A disadvantage, however, is that the hot steam from the spout rises towards the hand when pouring out. Moreover, this arrangement does not permit complete emptying when holding the handle by one hand.

According to DE-A-32 41 883, the tilted-up whistling body remains at a point located between spout and hand, with the result that the steam flowing out cannot pass directly to the hand holding the handle.

An object of the invention is therefore to provide a kettle, in the case of which the spout cover can be moved without contact into an open position, in order thus to protect the hand gripping the handle, and covers the spout automatically when the kettle is in the rest position, it being possible, moreover, for the kettle to have as a further opening for cleaning purposes.

According to the invention, this is achieved by the features in the characterizing part of the independent Patent Claim 1.

Exemplary embodiments of the invention are
5 illustrated hereinbelow with reference to the drawing, in which:

Figure 1 shows a sectional view of a kettle, when it has been boiled and at rest, in a single-piece deep-drawn design having a large opening in the
10 upper part and accompanying fitting lid, and having a handle which is articulated in the region of the upper part which is near to the base and which, engaging through the spout cover, rests on the lower inner wall of the spout and keeps the spout cover closed,
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Figure 2 shows a sectional view of a kettle, when it is being carried or is in the pouring-out position, in a two-part design having an upper part which does not have a large filling and cleaning opening and which is connected to the base in a water-tight manner, the handle being raised and, in this case, resting on the upper inner wall of the spout and holding the spout cover in the pouring-out position and steam-deflecting position,
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Figure 3 shows the same sectional view as in Figure 2, but in the emptying position,

Figure 4 shows a view of a kettle having a large filling and cleaning opening and a handle, mounted at
30 two points, which is articulated laterally on the upper part,

Figure 5 shows a sectional detail to represent a hinge for the handle, with a stop above the hinge,

Figure 6 shows a sectional detail to represent a hinge for the handle, with a stop beneath the hinge,
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Figure 7 shows a sectional detail with a spring element for the articulated fastening of the handle,

Figure 8 shows a sectional detail of the spout portion having a spout cover, fastened rigidly on the

handle, and the signal generator installed in said cover, and

Figure 9 shows a sectional detail of the spout portion having a spout cover which is attached by hinges to the handle.

The kettle 1 according to Figure 1 in the form of a hollow body is deep-drawn and drawn into the width of the cover and can thus be designed in a single piece. The upper part 12 which is arched in a dome-like manner has a large upper opening 17 which permits filling and convenient access to within the kettle for easy cleaning. The opening 17 can be closed by means of a cover 16 in the form of a well-fitting plug-in cover.

Figure 2 shows, in contrast, a kettle 1' which does not have a large filling and cleaning opening. This kettle 1' is designed in two pieces and comprises a base 11' and an upper part 12' which is connected thereto in a water-tight manner. The base 11' may be designed in accordance with a particular method of heating or type of oven, for example gas stove or a massive electrically heated plate, an electrically heated glass ceramic plate or inductively heated hot plate or steam heating for use as Caldor.

Common to both embodiments is the handle 14 which, on the one hand, is articulated, from its end part 19, on the region of the upper part 12 which is near to the base and engages, by its other end part 18, through an opening in the spout cover 20 into the spout 13.

In Figure 1, the handle 14 is represented in the position in which it is boiling or at rest and in which the other end part 18 bears on the lower inner wall of the spout 13. In contrast, Figure 2 shows the handle 14 in the raised position, such as would be the case when the kettle is being carried and is in the pouring-out position. Owing to the articulated fastening on the end part 19, the handle 14 can pivot upwards until its other end 18 rests on the upper part of the inner wall of the spout 13. The spout cover 20 is thus displaced upwards and releases the pouring-out opening of the spout 13. The

spout cover 20 consequently remains over the spout 13 and provides a shield-like protection against rising steam for the hand gripping the handle.

On setting the kettle down, the spout cover 20, owing to the dead weight of the handle 14, is once again displaced onto the opening of the spout 13 and thus closes the latter automatically.

The position of the articulation point 30 for the handle 14 on the upper part 12 of the kettle is obtained from the geometry of the centre of gravity 5, as is shown in Figure 3. In order that the last drop of water can be poured out of the kettle, the spout cover 20 has to remain in the open position if the tangent plane to the upper part 12, at the lower border of the spout opening, lies horizontally. As represented, the pouring-out line A is parallel to the tangent plane, as described above, the straight line G, which is perpendicular to the pouring-out line A and passes through the articulation point 30, has to be to the right of the centre of gravity S, as is shown in Figure 3, in order that a torque is obtained in the anticlockwise direction, which torque exerts a force component on the bearing point of the handle in the spout in order thus to hold the spout cover in the open position.

Figure 4 shows a variant of the articulation point for the handle 14'. Together with the centre of the spout, the two hinges 30a and 30b form, in projection onto the base, a triangle. The two handle parts 14a and 14b are combined in the region where the hand usually grips the handle 14'.

Figures 5 and 6 show two further variants for articulation points 30c and 30d of the handle 14 on the upper part 12. In one case, according to Figure 5, the hinge 30c is directly above the base and the tilting angle for the handle 14 is delimited by means of a rivet 31 or the like. According to Figure 6, the hinge 30d is located at a small distance above the base 11, it being necessary, however, to take the abovedescribed effect of the centre of gravity S into account. Serving as a stop

is the angled-off end 19 of the handle 14 which, when the handle 14 is raised, comes to bear on the upper part 12.

A further variant is represented in Figure 7. Here, the end part 19 of the handle is fastened on a leaf spring 15 which, by virtue of its elasticity, replaces a hinge.

The fastening of the spout cover 20 on the handle 14 may also be designed in a number of forms. Consequently, the spout cover 20a according to Figure 8 is fastened rigidly on the end part 18 of the handle 14. It may, in the known manner, be equipped with an acoustic tone generator e.g. with a whistle 21 or steam whistle.

However, the spout cover 20b may also, in accordance with Figure 9 be fastened on the end part of the handle 14 by means of a hinge.



Patent Claims

1. Kettle, comprising a hollow body (1) having a flat base (11) and upper part (12) which is arched in a dome-like manner, having a spout (13) on the above-mentioned upper part (12) and having a bow-shaped handle (14) which is pivotably secured, by one end (19), on its pivot axis (30, 30a, 30b) which is located opposite the spout (13) and in the region of the upper part (12) which is near to the base, the free end (18) of the handle (14) securing a spout cover (20) which covers the spout (13) when the kettle (1) is being boiled or is at rest and releases the opening of the spout when the kettle is being carried or is in the pouring-out position, characterized in that the free end (18) is designed such that it engages into the spout (13) by means of an angled-off end part (18), and in that the tilting angle of the handle (14) is delimited by at least one stop means, and the kettle being designed such that, if the tangent plane to the upper part (12), at the lower border of the spout opening, lies horizontally, then the centre of gravity of the kettle with respect to the straight line (G), which is perpendicular to the tangent plane and passes through the pivot axis (30, 30a, 30b) of the handle (14, 14'), is located on the same side of the[sic] handle.
2. Kettle according to Patent Claim 1, characterized in that the handle (14) is pivotably mounted at two points (30a, 30b) of the upper part (12) which form, with one another and connected to the centre of the opening of the spout (13), a triangle.
3. Kettle according to Patent Claim 1 or 2, characterized in that the spout cover (20) is connected rigidly to the free end (18) of the handle (14).
4. Kettle according to Patent Claim 1 or 2, characterized in that the spout cover (20) is secured, such that it can move freely, on the free end (18) of the handle (14).
5. Kettle according to Patent Claim 1 or 2, characterized in that the spout cover (20) is attached by hinges to the free end (18) of the handle (14).



6. Kettle according to one of Patent Claims 3 to 5, characterized in that the spout cover (20) is provided with a signal generator (21) which signals when the content of the kettle has boiled.

5 7. Kettle according to Patent Claims 4 and 5, characterized in that, when the spout cover (20) is secured, such that it can move freely, on the handle (14), said cover itself serves as signal generator in that it is capable of effecting a vibratory movement at
10 boiling temperature in the kettle.

8. Kettle according to Patent Claim 4, characterized in that the spout cover (20) has an eccentric opening (26) into which the free end (18) of the angled-off handle (14) is loosely plugged such that, by raising the
15 handle (14), the spout cover (20) is pushed away upwards from the spout (13) and, when the handle (14) is released, said cover automatically resumes its closed position on the spout (13).

9. Kettle according to Patent Claim 8, characterized
20 in that the signal generator is in the form of a rattle.

10. Kettle according to Patent Claim 9, characterized in that the spout cover (20) comprises at least two cover layers, of which the inner cover layers have, in addition to the eccentric opening (26), at least one signal
25 opening for the passage of steam.

11. Kettle according to one of Patent Claims 3 to 7, characterized in that, when the kettle is being carried or is in the pouring-out position, the spout cover (20) assumes the position which deflects the steam flowing out
30 of the open spout in order that the hand gripping the handle is not directly exposed to the jet of steam.

12. Kettle according to Patent Claim 1, characterized in that the stop means for the handle (14) are stops in the spout portion.

35 13. Kettle according to Patent Claim 1, characterized in that the stop means for the handle (14) are stops in the hinge portion.

14. Kettle according to Patent Claim 1, characterized in that, on one side, the handle (14) is connected, via



a spring element, to the outer side of the upper part (12).

15. Kettle according to Patent Claim 1, characterized in that, in addition to the spout opening (14)[sic], the
5 kettle (1) has a second and larger filling and cleaning opening (17) covered with a tightly closing cover (16).

16. Kettle according to Patent Claim 1, characterized in that the base portion of the kettle is designed such that, after boiling, a stand which keeps the kettle hot
10 can be fitted in a self-attaching manner.

17. Kettle according to Patent Claim 1, characterized in that the base (11) is designed for placing the kettle onto a pan.