PUBLISHED
APRIL 27, 1943.
BY A. P. C.

T. T. OEY

COOKING-UTENSIL

Filed Nov. 28, 1939

Serial No.
306,443

FIG. 5

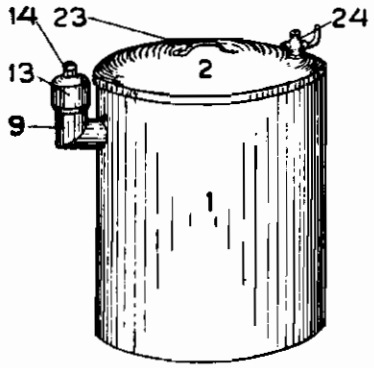


FIG. 6

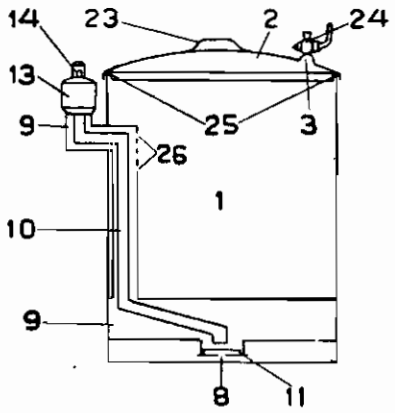


FIG. 3

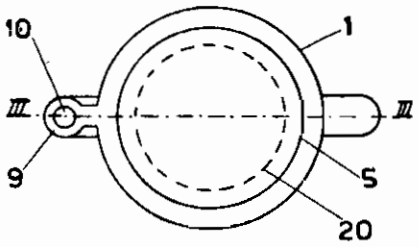


FIG. 4

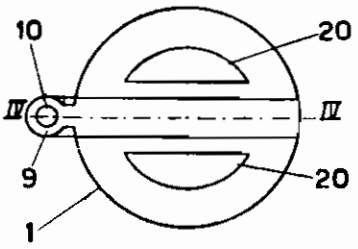


FIG. 1

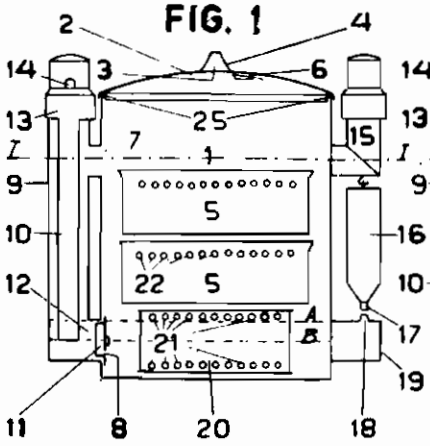
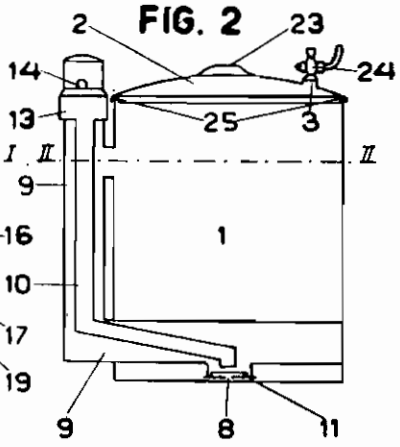


FIG. 2



INVENTOR:
TJIEN TO OEY
BY Haseltine, Lake & Co.
ATTORNEYS

Published Apr. 27, 1943 Serial No. 306,443

ALIEN PROPERTY CUSTODIAN

COOKING-UTENSIL

Tjien To Oey, Semarang, Java, Netherlands East Indies; vested in the Alien Property Custodian

Application filed November 28, 1939

The present invention relates to a method by means of an improved steam cooker for the cooking of food in a general sense, and belongs to that kind of cooking apparatus, heretofore used, whereby the food to be cooked is placed within the cooker, the top or cover is held to the vessel and a relatively small vent is made through the cover from which vapor constantly escapes during the cooking process, the interior of the vessel being at atmosphere pressure or a little above it. Many of such apparatus are known, though none of them is constructed in such a manner as to give automatically warning when the food is done.

A characteristic of the construction according to the invention is, that a signal is brought into action after the food has been boiling for a certain length of time in the steam bath. This characteristic consists in the lowering of the level of the liquid, caused by the boiling down of the water after some fixed time.

The advantage obtained by application of this cooking apparatus is, that the length of cooking is not left to the personal opinion of the cook, who mostly only guesses that length, thus causing the food to be too hard or too soft. By this method every table can be provided with well-cooked food, while during the cooking other work may be performed as the whistle will warn directly the food is ready.

As an illustration of the invention some constructions are shown, by way of example and schematically, on the accompanying drawing.

Fig. 1 shows the cross-section III—III of Fig. 3.

Fig. 2 shows the cross-section IV—IV of Fig. 4.

Fig. 3 shows the cross-section I—I of Fig. 1.

Fig. 4 shows the cross-section II—II of Fig. 2.

Fig. 5 shows the view of the cooking apparatus according to Fig. 6, embodying the present invention.

Fig. 6 shows a section of the cooking apparatus according to Fig. 5.

In this figure, 1 shows the cooking apparatus, on which fits a detachable lid 2. This lid contains an opening 3 with chimney 4. This lid, which is constructed rather heavy, is placed on the cooking basin by way of packing or trimming, allowing no steam to escape.

The purpose of this steam-basin is to subject the space, in which the pans 5, containing rice or other food, is placed, to a small excess pressure of steam.

When the apparatus is used a certain quantity of water is put in cooking basin 1, for instance till dash A. This quantity depends on the size of the basin and the cooking time of the food that is to be steamed. Subsequently the ring 20 is put in the basin, which ring is provided at top and bottom with openings 21. These openings are necessary to allow the formation of steam within the ring, to be released under the pan that rests upon it. This ring is constructed with a high wall with the purpose of keeping the pan above the waterlevel in basin 1.

In consequence hereof the pans are, during the cooking, only in a steam bath. The pan is marked 5 and in the drawing it is drawn free from the ring. The pans can be kept above the waterlevel in another way, for instance by a ring that is fixed at the wall etc. At the upper brim the pans have a row of openings 22. These serve to constitute a connection between the space of cooking basin 1 and the contents of the pans, when a greater number of pans are placed upon each other.

First the food or a certain quantity of rice is put in the pan, together with a certain quantity of water. As a result of the pan being completely closed at the bottom side the water, in which the food is cooked, cannot flow away, so that all nutritious matter remains in the food. For vegetables, fish and meat it is not even necessary that any water is added.

Dependent on the source of heat more or less steam will be developed and in the same degree the escape of this steam from the pan will vary. Besides gas and electricity also that fuel can be used as source of heat which is commonly used by natives as wood, charcoal, moss, etc. When this fuel is used, however, the source cannot be regulated as when gas is used. Dependent on the source of heat the escape of steam through the chimney can be regulated as the case may require. The comparative heavy lid serves then as a safety valve.

The purpose of keeping a slight excess-pressure in the cooking basin serves in the first place as a security for keeping the food in a steam bath, and secondly to accommodate the varying cooking time in case the source of heat does not yield a constant heating.

It stands to reason that the time needed for cooking depends on the source of heat; with a big fire the evaporation of the water will be much quicker than with a small fire. As, however, the temperature of the steam in the cooking basin is slightly increased with a big fire a compensation is obtained for the shorter period. In spite of the shorter period the food gets done just as well. With the sources of heat as applied in the house-

hold the variations in the cooking periods usually remain very small, as a rule not exceeding 5 minutes, which cannot be of any great importance regarding the final result.

The cooking basin can be connected with a space, f.i. a cylinder 8, at two places 7 and 8, in which cylinder a boiler 10 is inserted, that is open at either side, and that terminates at the lower end at a certain distance from the bottom. The opening 8 is very small and is preferably applied in a lid that closes the larger passage 12 between basin 1 and cylinder 9, which passage serves to enable the cleaning of the cylinder 9. Opening 8 was kept very small to guarantee a quiet waterlevel in cylinder 9. On top of cylinder 9 an alarm device 13 can be fixed of which 14 shows the hole of the whistle. The space of 13 is connected with the space of boiler 10.

When the cooking apparatus is put on the fire the water at the height of A will shut off the boiler 10, which is freely connected with cooking basin 1 via 8 and 9, from the bottom. After a lapse of a certain time the waterlevel in basin 1, together with that in cylinder 8, will be fallen so low that boiler 10 is no longer shut off by the water with the result that the steam can also escape through this boiler. The waterlevel has sunk then till B and after this has taken place also the alarm signal is brought into action, giving warning that the food is ready and that the source of heat may be extinguished.

For reasons of symmetry an installation 15 is applied to the other side of the cooking basin, at which is suspended, by means of a hook and eye, a movable arrangement 18 which has a continuation in a small hafting 17. Basin 1 also has, at the lower side, a circular bracket 19 with a hafting 18. The purpose of this arrangement is to control the vertical position of the basin on the source of heat, on which position the function of the cooking basin largely depends. The cooking time adjusts itself, as is evident, to the level of liquid with regard to the bottom side of 10. When the cooking basin does not rest vertically on the fire the cooking period will be either too long or too short.

The arrangements 15 and 9 may also be used as handles, though separate handles may be applied. Also on the lid some grip or handle can be fixed.

Independent from the size of the fire the food is cooked when the alarm gives warning.

Experiment proved that several foods, as fish, meat, vegetables etc. can be cooked in the same time as rice. When more pans are used on top of each other they can contain several foods (see fig. 1). If, however, the pans contain foods that require different cooking-times, then more cylinders 9 with boiler 10 may be applied, each one having its own alarmwhistle, so that for each kind of food special warning is given when they are ready. Boiler 10 may also be slid into cylinder 9. When the first warning is given that the contents of a pan are ready, this pan can be taken out of the basin after which the basin is closed again. Boiler 10 is inserted lower into cylinder 9 and one has only to wait for the second warning.

Another construction according to the invention is given in fig. 2. By this method the lower end of the boiler 10 is led to the centre of the cooking basin where, between the mouthpiece of boiler 10 and cooking basin 1, a partition is placed by way of a lid 11 or in any other way, in which partition a small hole 8 is cut. This hole serves again to keep the waterlevel in the vicinity of the end of boiler 10 as quiet as possible. The advantage of this construction is, that the vertical position (16, 19, see fig. 1) of the cooking apparatus can be neglected, while the cooking basin always will have a vertical position on the source of heat, and minor deviations, in the centre of the basin, are of no practical significance.

Boiler 10 can, however, also be constructed without boiler 9, either at the side or in the basin 1.

Another construction according to the invention by which the cylinder 9 and the boiler 10 are partly executed inside the basin is given in figs. 5 and 6. Fig. 5 being an outside view of the cooker in fig. 6. In this figure 6, just like in fig. 2, the opening 3 pass into a stop-cock by which the escape of steam from the basin may be varied. The cylinder 9, inside the cooker, is provided with passages 26, allowing steam to enter within it. In this way, when the boiler is no longer shut off by the water, a sufficient quantity of steam can escape through the boiler 10, bringing the alarm signal into a firm action. Preferably a horizontal cylinder 9 is applied getting a quiet waterlevel round the inlet of boiler 10.

In this way the length of cooking or steaming is fixed by the apparatus itself.

Other advantages may be mentioned:

The cooking apparatus is simple of construction and can be sold at a cheap price, thus facilitating its distribution especially among natives.

The cooking apparatus does not possess any movable parts, so that the upkeep does not incur any extra expences.

The invention is not restricted to the construction as shown in the drawing. It is possible to find other solutions within the scope of the invention, f.i. for the working of the alarm-arrangement; in cylinder 9 an enchaser might be inserted instead of boiler 10, in such a way as to shut off the eduction-opening for the steam to the larm-arrangement, till the waterlevel is sunk so low that the enchaser opens the steam valve.

TJIEN TO OEY.