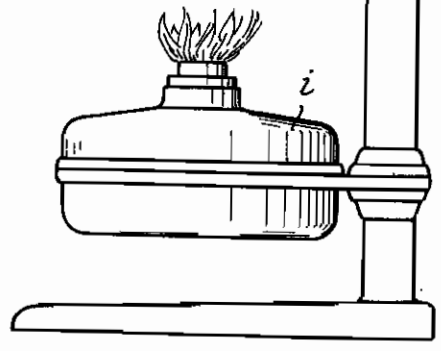
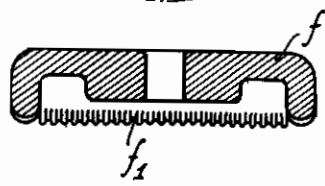
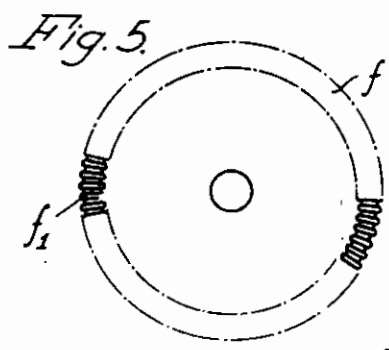
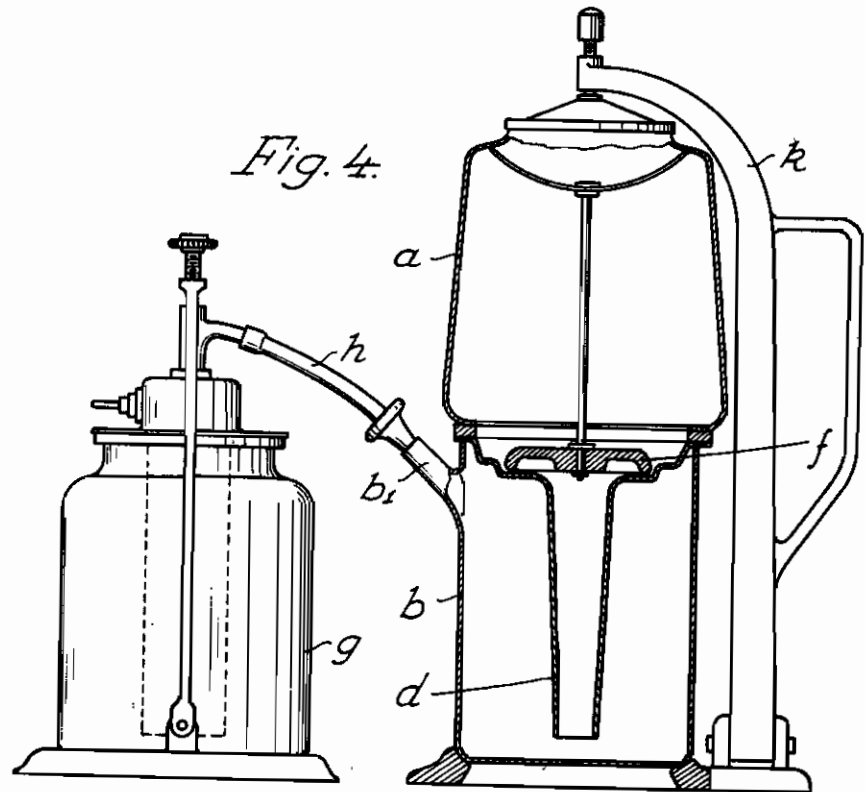


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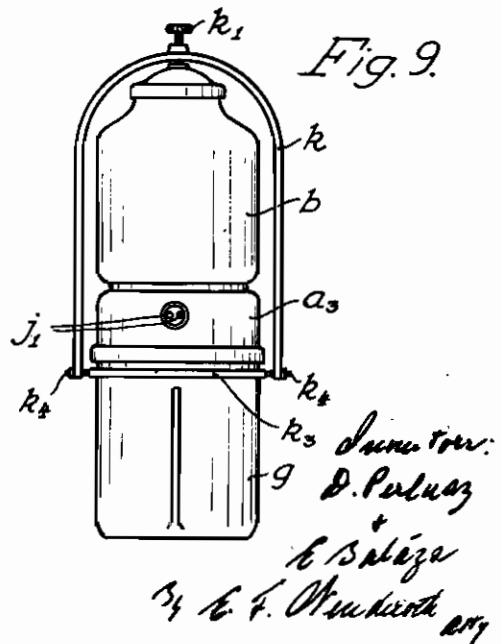
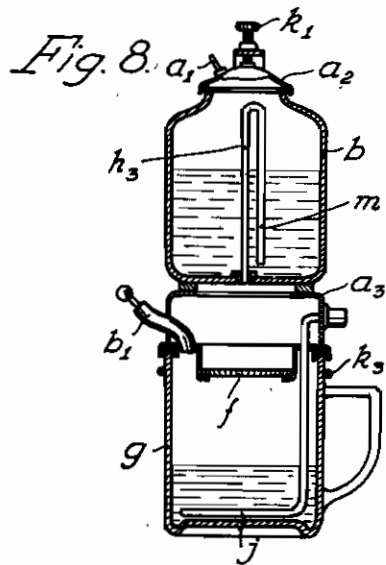
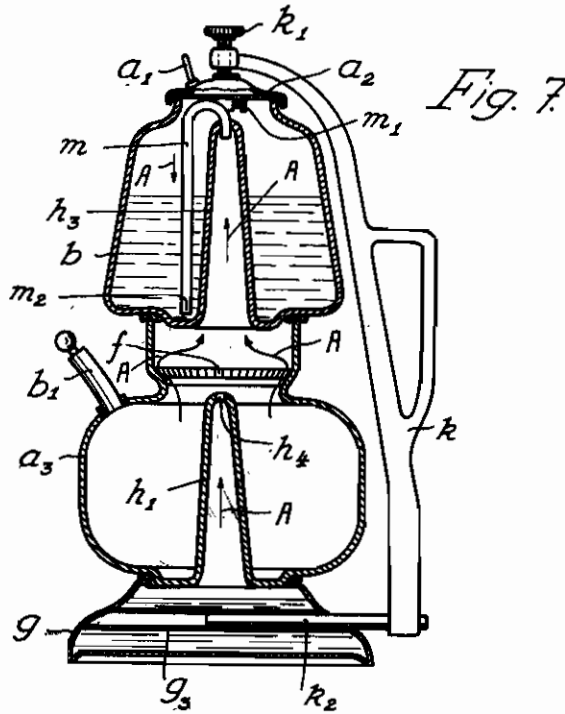


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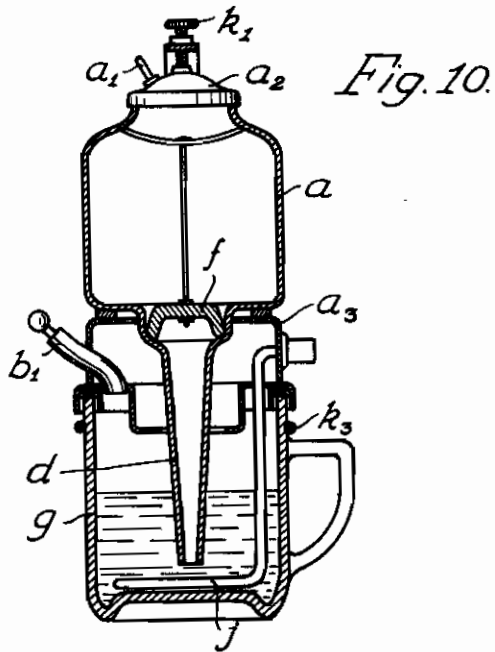


Fig. 10.

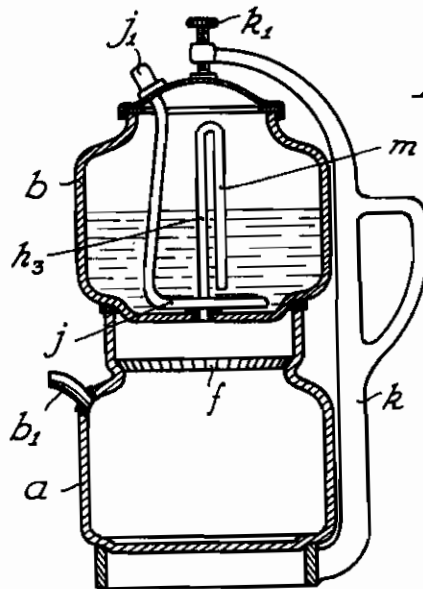


Fig. 11.

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ALIEN PROPERTY CUSTODIAN

DEVICES FOR EXTRACTING COFFEE AND/OR TEA

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Alien Property Custodian

Application filed March 7, 1939

The invention relates to improvements in devices for extracting coffee and/or tea, comprising a container for the supply of extraction water and a strainer on which the coffee or tea to be extracted is supported in such a manner as to keep the said substances separated from the said supply of water before extraction occurs.

According to the invention the device for extracting coffee and/or tea comprises means enabling the extraction water to be brought to boiling by the heat of steam.

The advantage offered by the invention consists in the fact that the container for the supply of extraction water in case it is made of glass need not be made of fire-proof glass which is expensive, and the shaping and working of which is difficult, but may be made of ordinary kinds of glass such as may be manufactured in any glass factory. A further advantage results from the fact that heating by means of steam will cause the water in the water container and intended to be used for extracting coffee and/or tea to be heated in a gradual manner and under the most favourable conditions.

According to a particular embodiment of the invention, the device for extracting coffee and/or tea comprises means adapted for the direct introduction of steam into the interior of the container for the said supply of extraction water, this being done preferably in such a manner that the said means issue into the said container above or, preferably, below the level of the supply of extraction water. It results therefrom the advantage that the coffee or tea decoction obtained will not suffer a disadvantageous change of flavour, i. e. will not assume a so-called metallic flavour even in case the generation of steam is effected electrically by means of members placed directly into the water. Another advantage consists in that heating the extracting water by means of steam introduced directly into said water will improve the quality of the ordinary water used for extracting, owing to the fact that the said steam, becoming recondensed in the extracting water, is converted into distilled water.

The invention will be explained in greater detail with reference to the various embodiments shown by way of example on the drawings.

Figs. 1, 2, 3, and 4 are side elevations, partly in section, each showing one embodiment of the invention. Fig. 5 is a view from below of a strainer to be inserted into the device, and Fig. 6 is a section belonging to Fig. 6. Figs. 7 and 8 are side elevations, partly in section, each showing a further embodiment of the invention; Fig.

9 is a side elevation belonging to Fig. 8, Fig. 10 shows a combination in connection with Figs. 8 and 9, and Fig. 11 is the vertical section of a variant.

On all of said figures corresponding parts are denoted by identical letters of reference.

On Fig. 1 *a* denotes the container where extraction takes place, and *b* is the container to be filled partly with the supply of extraction water; container *b* is arranged below the extraction container *a* and into the water space of container *b* a rising pipe *d* is descending at the top of which is inserted a strainer *f* shown more detailed in Figs. 2, 5 and 6. The said strainer is preferably made of a pressed glass disc into the periphery of which serrations *f*₁ are pressed which are of such depth that whilst the water is able to flow through them from the container *b* into the container *a* and vice-versa, the said serrations nevertheless produce the desired strainer effect *a*_s against the particles of tea and coffee. By making the disc *f* from such pressed glass instead of polished glass manufacture is rendered substantially easier and less expensive.

According to Fig. 1, a steam generating container *g* is provided below the water container *b*. The steam generated in the container *g* is passing through the steam discharge pipe constituted by three parts *h*₁, *h*₂, *h*₃ assembled to a single pipe line as shown, and the steam is introduced into the container *b* above the level of the water contained in the latter.

We prefer to place the three containers *a*, *b* and *g* loosely above each other and to press them mutually against each other by a yoke *k* made of metal and shaped so as to serve as a handle, the containers being fixed and held together by means of a screw *k*₁ inserted in the top of said yoke *k* and pressing against the cover *a*₁ of said upper container *a*, the said cover being preferably made of metal. This will enable the decoction after its preparation has been completed to be poured out from the container *b* through the pipe branch or spout *b*₁ without having to dismantle the apparatus, which dismantling (apart from the complication of handling) might be disadvantageous owing to the fact that the substances imparting its aroma to the decoction might be lost by volatilizing away.

All three containers *a*, *b*, *g* are preferably made of glass but it is advantageous to apply on the top of the steam generating container *g* and the water container *b* a metal border *g*₂ and *b*₂, respectively. The steam generating container *g*

as shown in Fig. 1 is adapted for being heated electrically for which purpose we prefer to employ an electric heating system comprising electrodes *j*, into which the current is led through terminals *j*₁.

During the preparation of the decoction, the spout pipe *b*₁ provided on the bordering metal ring *g*₂ is closed by a stopper. The containers *b* and *g* are preferably made open on their top and they are closed merely by assembling the device through the container to be situated above them. Between two containers to be assembled in the manner shown we prefer to interpose a packing ring *i*.

The parts *h*₁ and *h*₃ of the steam discharge pipe *h*₁, *h*₂, *h*₃ are preferably made of metal. The said pipe branches *h*₁ and *h*₃ may be soldered to the bordering metal rings *g*₂ and *b*₂, respectively, and are connected by means of a small rubber pipe *h*₂ drawn on them.

The device has to be handled and operates in the following manner:

The steam-generating container *g* is filled with water to about one-half, and the container *b* is filled with water to about three-quarters of its total volume. Following this the containers *a*, *b* and *g* are placed on each other and united by means of the yoke *k* so as it is shown in Fig. 1. Thereupon, heating is started which can be done by means of electric current as mentioned. The steam generated in the container *g* passes through the pipe *h*₁, *h*₂, *h*₃ into the middle water tank *b* in which the cold water will at first absorb the steam streaming in. As soon as the water has already become heated in the central container *b*, the steam pressure produced will force the water through the rising pipe *d* upwards into the extraction container *a* and through the layer of tea or ground coffee which has been placed already previously on the strainer *f*. The steam will now be absorbed by the water until latter reaches a temperature of about 100° C. As soon as the said temperature has been reached the excess steam will blow out through the pipe or valve *a*₁ which is mounted on the top of the extraction container *a* and is adapted, in a manner known per se, to indicate the discharge of the steam acoustically in the manner of a whistle whereby the completion of the process of decoction is indicated in an audible manner. In case of Fig. 1 all the containers can be made of ordinary non-fireproof glass.

The embodiment shown in Fig. 2 differs from the embodiment according to Fig. 1 by the fact that heating of the steam-generating container *g* is effected by means of a spirit lamp. Another difference consists in that the spout *b*₁ is not applied to the water container *b* itself or a bordering metal ring *b*₂ fixed thereto, a separate ring *b*₃ being inserted between containers *a* and *b* provided, one one side with said spout *b*₁ and, on the other side, with a pipe branch *h*₃ to pass the steam generated in container *g* into the container *b*. The said ring *b*₃ may be made of glass or metal as desired, the advantage of the arrangement shown in Fig. 2 consists in that the water container *b* may be constituted by an ordinary drinking glass or a coffee or tea cup. In Fig. 2, we have shown by dotted lines that the spout *b*₁ might also be arranged at the bottom of the water container *b* in which case, of course, the upper spout *b*₁ may be dispensed with.

According to Fig. 3, we provide for a number of units, each composed of an extraction container *a* and of a water container *b*, a common steam-

generating container *g* to which all of the coffee or tea extracting devices join on separately in such manner that each of them may be disconnected from said steam-generating container *g* independently. Thus, if the water container *b* is constituted by the drinking cup or drinking glass itself it is possible to produce a decoction for direct consumption, which is particularly advantageous in view of its enabling a fresh decoction to be prepared immediately before consumption, e. g. in cafés or other public places. On Fig. 3, that place of the device where, at the moment, no decoction is taking place is shown as immediately adjoining the steam-generating container *g*; at this place, only the ring *b*₄ joining on to the steam discharge pipe *h* is visible and below said ring *b*₄ a cup *b* and above said ring an extracting container *a* has to be placed if it is desired to prepare a decoction.

The embodiment according to Fig. 4 differs from those described above mainly in that the steam-generating container *g* is separated from the apparatus and it is only the extraction container *a* and the water container *b* which are united by the yoke *k*. Another difference consists in the fact that the steam from the steam-generating container *g* is introduced into the water container *b* through the discharge pipe *h* and the spout *b*₁ intended also for pouring out the decoction after its preparation has been completed. The water container *b* of the device shown in Fig. 4 is adapted for being heated not only by steam but also by direct heating means, a spirit lamp *l* being shown therefore by way of example. Accordingly, if desired the said device may be also used without the steam-generating container *g*. Instead of the spirit lamp *l* shown, of course, heating by electricity or by gas may be used too.

Fig. 7 illustrates an embodiment in which the pipe branches *h*₁ and *h*₃ shown in Figs. 1 and 2 through which the steam is discharged from the steam-generating container *g* are arranged inside the device so as to extend upward inside the containers *a*₃ and *b*, respectively, like a pillar. Moreover, according to Fig. 7, the container *b* containing the extraction water is arranged on top whilst the container *a*₃ containing the strainer *f* is arranged in the middle. The strainer *f* is inserted between the steam pipe branches *h*₁ and *h*₃ into the path of flow of the steam. The lower steam pipe branch *h*₁ ends at the top below the strainer *f*, in the immediate vicinity of the latter, and is formed here with a discharge opening *h*₄, whereas the upper steam pipe branch *h*₃ is followed by a pipe *m* bent back and ending, at its lower opening *m*₂, in the vicinity of the bottom of the container *b* below the level of water filled into said upper container *b*. The said arrangement results in a pipe line having a syphon effect as will be explained in greater detail below. In order to enable the pipe *m* to be cleaned, we prefer to make the said pipe of a separate piece which is inserted into the steam pipe branch *h*₃. We further prefer to make the free throughflow cross-section of the pipe *m* adjustable, for instance by means of a screw spindle *m*₁.

The apparatus shown in Fig. 5 operates in the following manner:

The steam generating container *g* is heated in any desired manner, e. g. by placing it directly on a gas heater, or by means of a spirit lamp, or by means of a built-in electric device, etc., and the steam generated therein flows over the path indicated by the arrows A into the extraction

water placed into the container *b*, thereby gradually heating the said water and finally causing it to boil, which latter condition may be recognised, among other indications, also by the fact that the steam flowing out through the whistle *a*₁ will give an audible acoustic signal. As soon as this occurs, the heating of the steam-generating container *g* is discontinued. The steam, accumulating during heating in the container *a*₃ also, will, owing to the coolingdown taking place after the discontinuation of the heating, become condensed and in consequence thereof a vacuum will be set up in the container *a*₃, by which vacuum the hot extraction water will be drawn down from the container *b* through the syphon pipe line *m*, *h*₃ into the container *a*₃ and during its passage the hot water will parboil the coffee or tea placed on the strainer *f*. The flow of the water through the syphon pipe *m*, *h*₃ will continue as long as the lower outlet opening *m*₂ of the pipe *m* is below water. The decoction accumulates in the container *a*₃ and can be poured out through the spout *b*₁. In order to facilitate this, we employ the yoke *k* shaped as a handle already described in connection with Fig. 1. According to Fig. 7, the said yoke *k* may be supported by means of its extension *k*₂ in a rotatable manner in a pipe *g*₃ soldered into the steam-generating container *g*, preferably made of metal, so that for the purpose of dismantling the device, after loosening the screw *k*₁, the said yoke *k* can be tilted aside.

We prefer to make the containers *a*₃ and *b* of glass although they may also be made of metal. We further prefer the said steam pipe branches *h*₁ and *h*₃ to make integral with the containers *a*₃ and *b*, respectively.

The embodiment according to Fig. 7 is suitable for the production of a decoction of coffee and tea of the highest possible quality, because it is only once from above that the coffee or tea placed on the strainer *f* is parboiled by water at boiling temperature, whereas, e.g. in case of Fig. 1, the water passes through the layer of coffee or tea twice which may result in such flavouring substances also being extracted as may not suit everyone's taste. Moreover, the device according to Fig. 7 is also highly suitable for the production of a mixture of coffee and milk, because the milk which, as well known, is not well suitable for parboiling coffee or tea, may be placed previously in the container *a*₃ where it will become mixed with the decoction prepared only with the aid of the water contained in the container *b*, the

said mixing taking place but subsequently when the decoction has been already effected.

Figs. 8 and 9 are illustrating a type of device comprising container *b* for the supply of extraction water fitted with a syphon pipe *m*, *h*₃ similar to that as shown in Fig. 7. In case of Figs. 8 and 9, however, the container *a*₃ containing the strainer *f* is not fitted with a bottom as in the case of Fig. 7 rendering the said container *a*₃ suitable for the collection of the ready decoction. Accordingly, in the case of Figs. 8 and 9, the ready decoction passing the strainer *f* flows into the steam generating container *g* itself. The method of operation of the device shown in Figs. 8 and 9 is, accordingly, in principle, similar to that explained in connection with Fig. 7, a difference existing only in so far that in the case of Figs. 8 and 9 it is in the steam-generating container *g* itself that the completed coffee or tea decoction accumulates. The clamping yoke or handle *k* is in this case capable of being tilted around the journals *k*₄ of the metal ring *k*₃ surrounding the container *g*, as clearly shown in Fig. 9.

Fig. 10 represents a device partly identical with that shown on Figs. 8 and 9, in so far as the lower container *g* and the middle container *a*₃ are identical, but the upper container *b* of Figs. 8 and 9 is replaced by a container *a* such as shown e. g. in Fig. 1 and which, accordingly, comprises the rising pipe *d* and the strainer *f*. In order to replace the upper container *a* according to Fig. 10 by the upper container *b* according to Figs. 8 and 9, it is also necessary to remove the strainer *f* according to Figs. 8 and 9, and in addition thereto the container *a* according to Fig. 10 has to be made of such height and with such diameters as to enable the container *a* to be used for replacing the upper container *b* according to Figs. 8 and 9, and to be pressed down by means of the same yoke *k*. If the coffee and tea-extracting device is supplied to the public with two kinds of upper containers according to Figs. 8, 9 and 10, the public will thereby come into possession of a set capable of being used in two different ways, according to two different methods of extracting coffee or tea.

Fig. 11 represents a simplified embodiment of the device according to Fig. 7, in which the electric heating members *j* and *j*₁ are mounted into the container *b* containing the extraction water and fitted also with the syphon pipe *h*₃, *m* as described in connection with Fig. 7.

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