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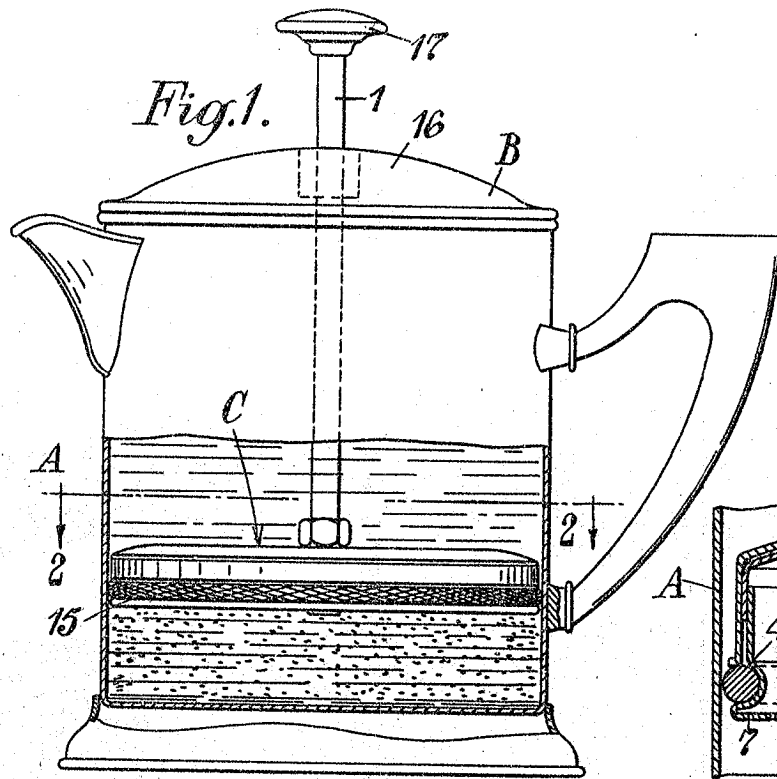


Fig. 1.

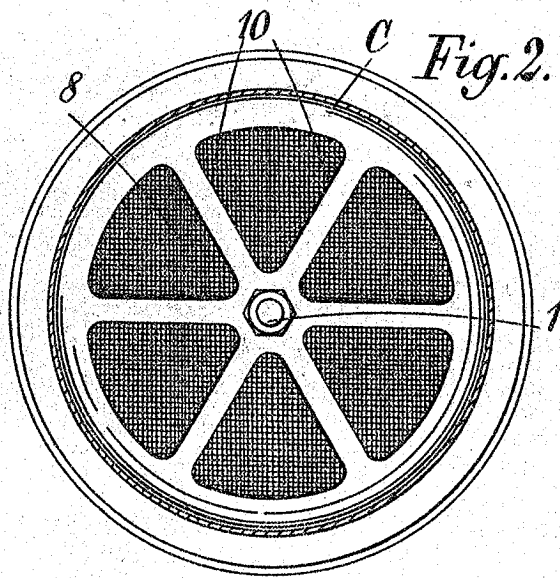


Fig. 2.

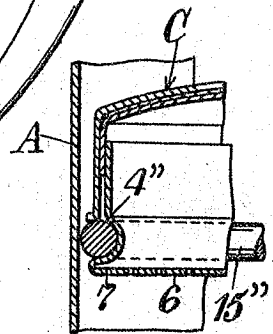


Fig. 5.

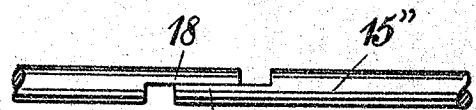


Fig. 6.

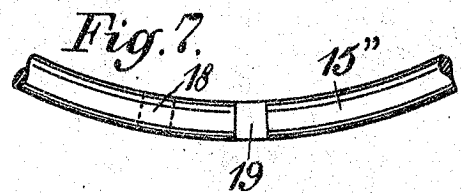


Fig. 7.

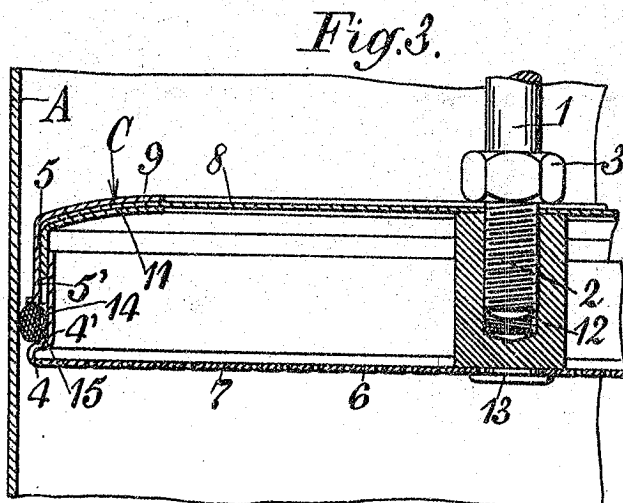


Fig. 3.

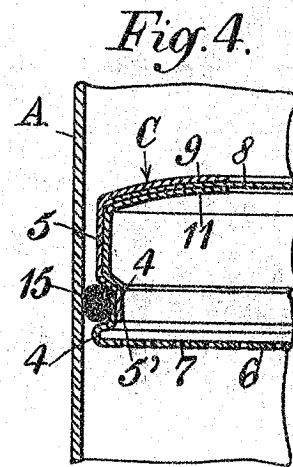


Fig. 4.

Ottawa, August 31, 1933.

Certified to be the drawings referred to in the specification herewith annexed.

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THE PRESENT INVENTION relates to apparatus for the preparation and quick filtration of infusions and especially coffee, of the kind in which a filter member attached to a rod is made to slide like a piston in a vessel in which the infusion is prepared so that the residues are confined at the bottom of the vessel, while the clear liquid remains above the filtrating member in a condition ready for use.

The invention consists in providing the piston-like filter around its periphery with resiliently deformable sealing means, such as one or more split rings of any form, or a helically coiled spring or the like, or a solid or hollow rubber ring or rings, or a ring or rings made wholly or partly of cork composition, which prevent liquid from leaking past the periphery of the filter and permit the filter to be pressed down by a moderate amount of force.

In one advantageous embodiment of the invention, the piston comprises two parts threaded into one another to form a sort of box and screwed on the inner end of the above-mentioned rod. The bottom part of the box-shaped piston is pierced with holes and the upper part has apertures formed in it, fitted with wire gauze; in the piston periphery at least one groove is formed, for accommodating a packing which may be an elastic ring or the like.

The apparatus according to the invention will now be described with reference to the accompanying drawing which illustrates, merely by way of example, an embodiment of a coffee-pot constructed according to the invention.

Figure 1 is an elevation of a coffee pot, shown partly in section.

Figure 2 is a horizontal section taken along the line 2-2 in Figure 1.

Figure 3 is a part longitudinal section of the filtering piston to a larger scale.

Figure 4 shows a modification of the piston, concerning the method of connecting the two parts making up the piston.

Figure 5 shows a further modification in which the packing is formed by a split metal ring.

Figures 6 and 7 are different views showing the division in the split packing ring.

The apparatus shown in the drawing comprises a pot or container A fitted with a lid B, the lid being traversed by the rod 1 of the filtering piston C.

The inner end of the rod 1 is provided with a screw-thread 2 and nut 3 for receiving the piston C.

The piston C is built up of two box shaped parts 4 and 5. The lower part 4 has a sheet metal bottom 6 pierced with numerous holes 7 the size of which is designed to suit the solid matter from which the infusion is made, and the upper part 5 carries the other filtering surface formed by a wire gauze 8.

The gauze 8 is secured to the top sheet metal plate 9 of the box, in which apertures 10 are formed, so that these apertures are obstructed by the metal gauze 8. In order to hold the gauze 8 in place, a ring 11 is provided, the ring being forced into the part 9 and bearing against the inner surface thereof due to its own elasticity. The peripheral edge of the gauze is thus firmly held.

The centre portion of the gauze is firmly held between the nut 3 and a screw threaded socket 12, carried by the lower half 4 of the box shaped piston, to the bottom 6 of which it may be fixed in any convenient manner, for instance by riveting as at 13.

In the side wall of the piston a groove 14 (Figure 3) is formed in any suitable manner for accommodating the resiliently deformable packing 15. This packing may consist for example of a split ring, a helical spring ring or the like, a solid rubber ring or a hollow ring of rubber or a ring or rings made wholly or partly of cork composition, other suitable material arranged so that the packing bears resiliently against the inner surface of the pot A and prevents the minute particles of solid matter from passing above the piston.

In the example shown in Figure 3 the groove 14 is formed between the inwardly and outwardly bent edges 4' and 5' of the two parts 4 and 5, which are engaged one in the other.

In the modified construction shown in Figure 4, the edges 4' and 5' of the piston halves 4 and 5 are engaged into one another in an inverted manner as compared with Figure 3.

In a simple and advantageous form of construction shown in Figures 5, 6 and 7, the packing 15" is in the form of an elastic ring made of metal wire, the two ends 18 and 19 of which show the shape of teeth matching one another. Instead of being formed between suitably shaped co-operating parts of the top and bottom halves of the box the groove for the packing ring may obviously consist of a peripheral recess formed in the side wall of one or the other half of the piston.

No special explanations are required concerning the operation of taking the filter asunder and assembling it together again for cleaning and replacing purposes.

The apparatus works as follows:

After introducing the ground coffee or other material into the pot, the necessary amount of water is added and heated up to ebullition, or the water is added in a condition of ebullition. During the infusion of the coffee, the piston C is kept in the raised position by the friction of the packing 15 upon the wall of the pot, the rod 1 sliding through the bush 16 in the lid B.

In order to filter the infusion quickly, it suffices to exert a pressure on the rod head 17 so as to cause the piston C to move downwardly through the liquid. The solid residues are then retained by the two filtering elements 6 and 8, the lower one holding back the coarser particles and the upper one, the finer particles. The packing 15 holds back the particles which would otherwise escape between the wall 4 and the pot wall.

Accordingly, a clear filtered liquid collects above the filter, whilst the solid matter remains trapped below.

Constructional modifications may obviously be made without on that account going outside the invention. For example by providing a larger number of filtering elements, the filtering action may be increased to any desired degree. Also, the method of carrying and of actuating the filter may be varied and other means

may be thought out though not advantageously for braking and locking the filtering device. Apertures may likewise be provided in the side wall of the piston for rapidly washing the inner space and thus avoiding the necessity of frequently taking the piston asunder. In a general way, the details of the practical execution may be varied without overstepping the limits of the invention and of the patent asked for.

Apparatus of the kind set forth has previously been proposed in which a porous piston is made of a metal ring covered with a piece of porous material such as canvas, cloth or the like, fastened in place by means of string lodging in a groove in the ring.

In this arrangement the piston, a light member by virtue of its construction, was made a loose enough fit to fall by its own weight in the chamber containing it, and no special provision was made to ensure a good circumferential seal, the string being evidently lodged in a groove so that the necessary knots would not project and impede the movement of the piston.

The Applicants, in a previous specification, have also proposed to make the filter member of a rigid perforated plate, which could thus be made to fit as closely as desired in its container.

The present invention, however, provides a great improvement over constructions such as those indicated above. It permits the filter piston proper to be made without exercising any special care as regards its fit in the container, since this fit is given by the

resiliently deformable sealing means provided on the periphery of the piston. These means exert at all times a pressure on the walls of the container and prevent the passage of solid residues while they yield when a force is applied to move the piston, and avoid any risk of the piston jamming.