

PATENT SPECIFICATION



Application Date: April 21, 1923. No. 10,878/23. **219,103**

Complete Left: Oct. 31, 1923.

Complete Accepted: July 21, 1924.

PROVISIONAL SPECIFICATION.

Improvements in Apparatus for Washing Household Crockery and the like.

I, WILLIAM HOWARD LIVENS, Captain, D.S.O., M.C., of 32, Howitt Road, London, N.W. 3, British subject, do hereby declare the nature of this invention to be as follows:—

This invention relates to apparatus for washing plates, dishes, cups and the like, especially apparatus of this kind to be used in small establishments such as ordinary houses and flats.

According to this invention I provide a container having a rotating sprayer or sprayers with means for delivering water of the correct temperature for washing the plates by connecting the sprayers to the ordinary hot or cold water system of the establishment in conjunction with a separate boiler, so that water from the ordinary system can be supplied to the sprayers mixed with water from the boiler and/or at first for a certain period water from the ordinary system may be supplied alone. Preferably the pressure in the ordinary supply is used to force the water from the boiler to the sprayers. I find that such an apparatus efficiently washes plates and the like and removes mixed food debris both farinaceous and greasy, whereas if boiling or very hot water is employed only there is a tendency for the farinaceous debris to be hardened on to the plates while if only cooler water is employed the grease will not be effectively removed.

Preferably a gas ring is mounted on the top of the container and a boiler is arranged above this ring. The water from the supply system is divided into two portions, one flowing directly to the rotating sprayers, the other portion to the bottom of the boiler, the very hot water from the boiler so displaced being forced by the supply pressure so that the sprayers are supplied by the com-

bined stream which is of the desired temperature for washing the plates. An alternative device is to provide a tank of cool water above or below the boiler and to force this cool water first through the jets by displacing it with the boiler water, washing being completed by the mixture of boiler water and house supply water in this auxiliary tank being displaced in turn by more water from the boiler. In this case the water from the house supply is not divided but is delivered directly into the bottom of the boiler. This alternative device washes by delivering on to the plates jets of water of gradually increasing temperature and after attaining its maximum the temperature gradually falls.

The plates *etc.* to be washed are placed in a rack or wire cage which is inserted into the container which is then closed. The supply cock is then opened and after a delay of some seconds during which the plates receive a preliminary washing from the ordinary warm or hot water of the house supply, the boiler becomes filled to the flow level to the jets by the other portion of the water from the house supply, displacing the hotter water therein which passes to the sprayers mixed with the cooler portion already flowing and completes the cleansing of the plates. When the water has been shut off the door is opened and the cage is removed, or the plates being hot may be allowed to dry without further handling.

More than one cage may be employed. Preferably I provide one for dinner china, another for breakfast china and another for tea china.

Preferably the spraying apparatus has one balanced tube or it may have two tubes extending outwards from a rotat-

[Price 1/-]

able union. Each tube near its end turns downwards and carries a spherical sprayer which has in it inclined slots so that the reaction of the water jets as they issue from the slots causes the spraying apparatus to rotate.

Dated the 21st day of April, 1923.
CARPMAELS, RANSFORD &
NEWTON,
Agents for Applicant,
24, Southampton Buildings, London,
W.C. 2.

10

COMPLETE SPECIFICATION.

Improvements in Apparatus for Washing Household Crockery and the like.

I, WILLIAM HOWARD LIVEN, Captain, D.S.O., M.C., of 32, Howitt Road, London, N.W. 3, British subject, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to apparatus for washing plates, dishes, cups and the like, especially apparatus of the kind to be used in small establishments such as ordinary houses and flats.

According to this invention I provide a container having a sprayer or sprayers with a boiler from which hot water can be delivered to the sprayers and with a connection and a controlling device by which water from the ordinary water system of the establishment can be delivered to the sprayers and subsequently water from the boiler can be delivered thereto. Preferably the pressure in the ordinary supply is used to force the water from the boiler to the sprayers. I find that such an apparatus efficiently washes plates and the like and removes mixed food debris both farinaceous and greasy, whereas if boiling or very hot water is employed only there is a tendency for the farinaceous debris to be hardened on to the plates while if only cooler water is employed the grease will not be effectively removed.

Preferably a gas ring is mounted on the top of the container and a boiler is arranged above this ring. The water from the supply system is divided into two portions, one flowing directly to rotating sprayers, the other portion to the bottom of the boiler, the very hot water from the boiler so displaced being forced by the supply pressure to the sprayers so that the sprayers are supplied by the combined stream which is of the desired temperature for washing the plates. An alternative device is to provide a tank of cool water above or below the boiler and to force this cool water first through the jets by displacing it with the boiler water, washing being

completed by the mixture of boiler water and house supply water in this auxiliary tank being displaced in turn by more water from the boiler. In this case the water from the house supply is not divided but is delivered directly into the bottom of the boiler. This alternative device washes by delivering on to the plates jets of water of gradually increasing temperature and after attaining its maximum the temperature gradually falls.

The plates *etc.* to be washed are placed in a rack or wire cage which is inserted into the container, which is then closed. the supply cock is then opened and after a delay of some seconds during which the plates receive a preliminary washing from the ordinary water of the house supply, the boiler becomes filled to the flow level to the jets by the other portion of the water from the house supply, displacing the hotter water therein which passes to the sprayers mixed with the cooler portion already flowing and completes the cleansing of the plates. When the water has been shut off the door is opened and the cage is removed, or the plates being hot may be allowed to dry without further handling.

More than one cage may be employed. Preferably I provide one for dinner china, another for breakfast china and another for tea china.

Preferably the spraying apparatus has one balanced tube or it may have two tubes extending outwards from a rotatable union. Each tube near its end turns downwards and carries a spherical sprayer which has in it inclined slots so that the reaction of the water jets as they issue from the slots causes the spraying apparatus to rotate.

My invention is illustrated by the accompanying drawing, Figure 1 of which is a sectional elevation of washing apparatus with the door removed, Figure 2 is a part view showing how the door is fixed in position while Figure 3 shows a modification.

A is the container containing racks B

65

70

75

80

85

90

95

100

105

110

for holding the plates, *etc.* The front of the container is closed by a door C, the lower edge of which can be slipped within an inclined flange D standing up from the bottom of the container while the top edge of the door is provided with a horizontal flange E passing over the top of the container. Above the container is a boiler F provided with a gas ring G. A pipe H passes down from a cock I and cock J to near the bottom of the boiler. By the cock J the apparatus can be connected to the ordinary house supply pipe K. From the cock I passes a pipe L leading down to arms M which can turn about a vertical axis and have spherical ends N so slotted that water passing down the pipe L can escape from them and in escaping causes the arms to revolve about a vertical axis.

The method of using such a washer is as follows:—

When the articles to be washed have been placed in the racks B, the door C is put in position and thus the container is closed. The cock I is then turned to the position shown in Figure 1 so that water from the pipe K passes down through the pipe L and so to the sprayers. After a time the cock is turned to close the inlet to the pipe L so that the water from the pipe K passes directly to the bottom of the boiler; this water displaces the hot water in the boiler which therefore passes up through the passage O and so through the pipe L to the sprayers. By setting the cock in the intermediate position part of the water from the pipe K may be allowed to pass to the boiler and part to the pipe L, so that the temperature of the water delivered to the sprayers may be varied as desired. P is a branch pipe provided with a cock Q by which the hot water displaced from the boiler may be drawn off or allowed to flow into a sink instead of passing to the sprayers. R is a pipe by which the water in the container may be drained off.

Figure 3 shows a modification in which separate cocks S, S¹, are provided

in place of a single cock I. When the house supply water is passing to the sprayers the cock S¹ is opened and the cock S closed. When, however, hot water is to be passed to the sprayers the cock S is opened while S¹ is closed and the water from the pipe K passing through pipe H to the bottom of the boiler displaces the hot water which rises through passage O and so into pipe L. This figure also illustrates diagrammatically the provision of a thermostat T adapted to control the supply of gas to the burner according to the temperature of the water flowing through the pipe L.

I am aware that it has before been proposed to provide a kitchen range with a crockery washing apparatus having in it a spraying device which could be connected to the hot or cold water supply or both, and I make no claim to such an arrangement.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. In apparatus for washing household crockery and the like, the combination with a container having a sprayer, of a boiler, means for connecting the sprayer and the boiler to an ordinary house supply system and a controlling device or devices whereby water from the house supply may be delivered to the sprayer and subsequently hot water from the boiler may be delivered to the sprayer, substantially as described.

2. Apparatus according to Claim 1 in which the inflow to the boiler of water from the house supply causes water to be delivered from the boiler to the sprayer.

3. Apparatus for washing household crockery and the like substantially as described with reference to the drawing.

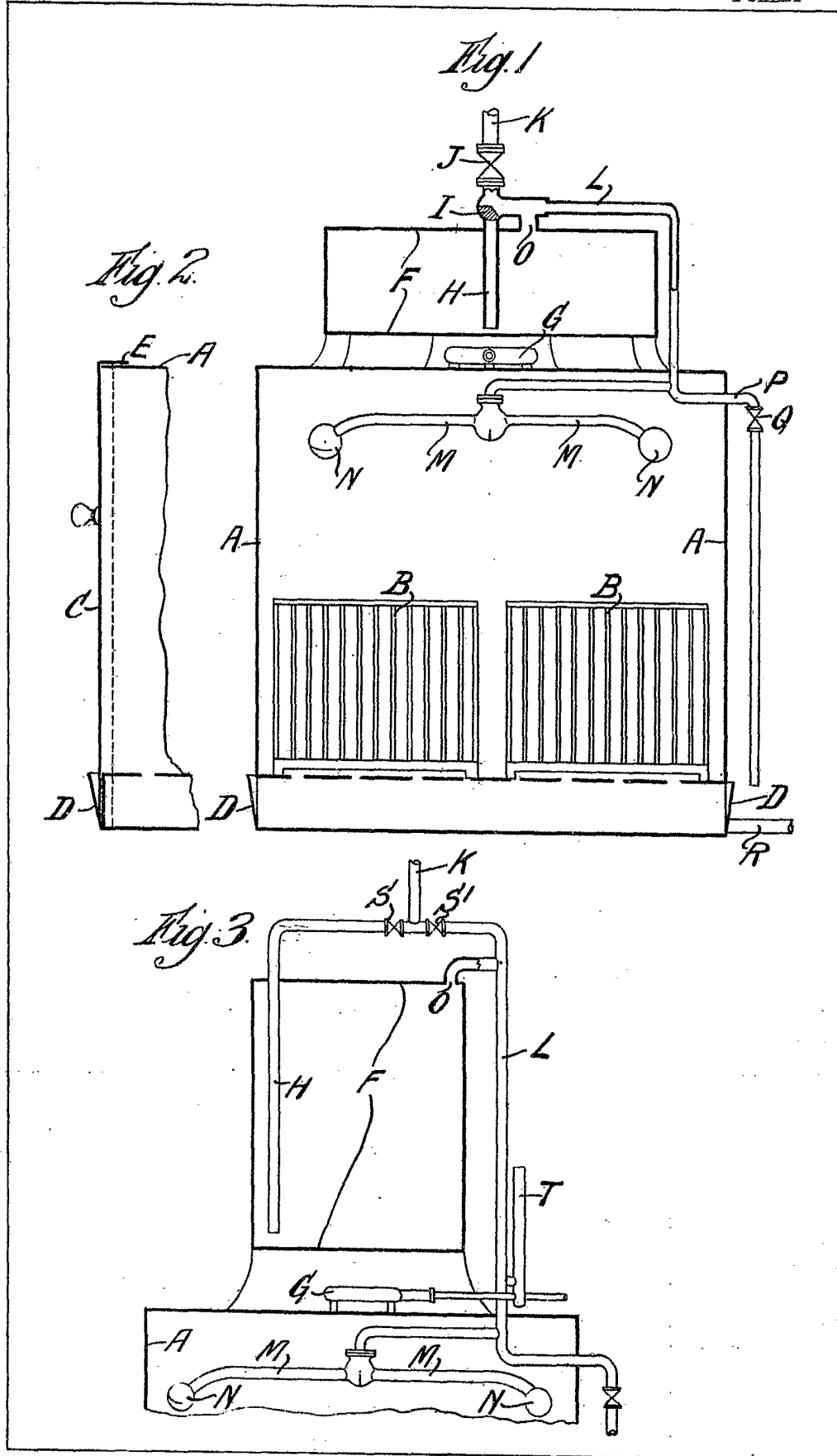
Dated the 31st day of October, 1923.

CARMAELS & RANSFORD,

Agents for Applicant,

24, Southampton Buildings, London, W.C. 2.

[This Drawing is a reproduction of the Original on a reduced scale.]



Malby & Sons, Photo-Litho