E. W. JOHNSTON.

HEAT INSULATED RECEPTACLE

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1,305,903. Patented June 3, 1919.

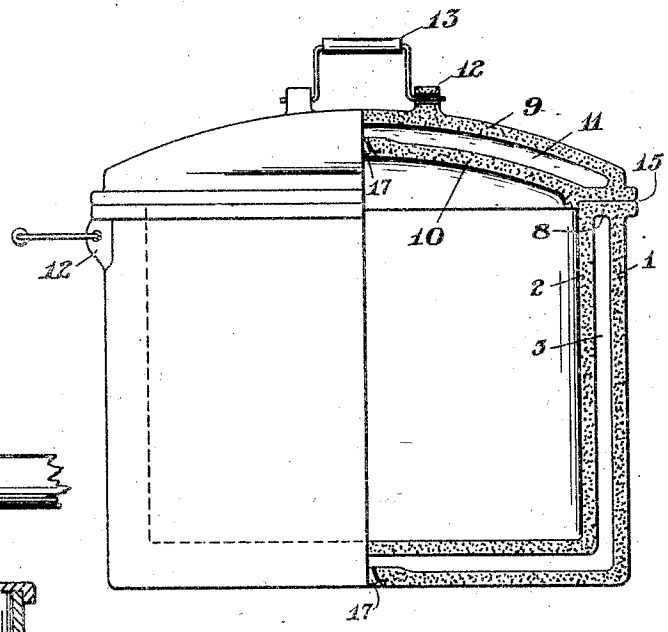


Fig. 1

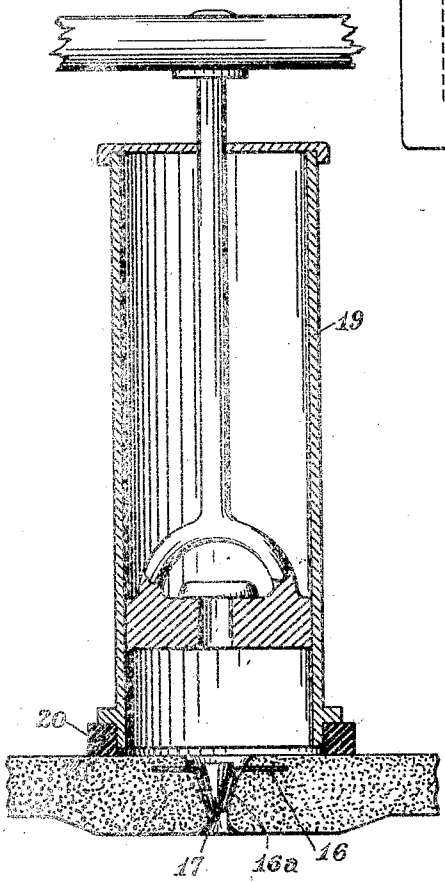


Fig. 2

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HEAT-INSULATED RECEPTACLE.

1,305,903. Specification of Letters Patent. Patented June 3, 1919.

Application filed February 20, 1919. Serial No. 278,243.

To all whom it may concern:

Be it known that I, EARL W. JOHNSTON, citizen of the United States, residing at 16 W. Elizabeth St., Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Heat-Insulated Receptacles, of which the following is a specification.

This invention relates to heat insulated receptacles, particularly to a vessel adapted for use as a fireless cooker, or in other relations when it is desired to retain its contents at a desired temperature.

The device comprises a receptacle having double walls, separated by a vacuum space. The vessel may be made of porcelain or similar material, the body being cast in one piece and the cover in another piece, with a close joint between the two. Improved means are provided for permitting the air to be exhausted from the space between the walls, said means comprising a valve and a valve seat of novel construction, suitable for the purpose of receiving the mouth of an air pump for drawing the vacuum in the wall.

In the accompanying drawings Figure 1 is a half section and elevation of the vessel. Fig. 2 is an enlarged detail showing the valve structure and the manner of applying an air pump thereto.

The body of the vessel comprises an outer wall 1, and an inner wall 2, with a vacuum space 3, therebetween, the walls being connected at the top by a cross wall 8, which forms the seat for the lid or cover. This lid is also hollow, having an outer wall 9, and an inner wall 10, with a vacuum space 11, therebetween. The cover may be provided with lugs 12, to receive a handle, and it fits with a close joint at 15 upon the rim of the body. These parts are preferably molded, each in a single space, of porcelain or other vitreous material.

The body and cover are each provided with valves, through which air may be exhausted from the vacuum space. This valve comprises a seat piece or ring 16, made of metal, the margin of the central opening being upset, or struck up inwardly, as indicated in 16^a, to form a tapered neck or funnel shaped passage adapted to receive a conical valve plug 17. The outer edge of the margin of this seat piece is embedded in the material of the wall in which the valve is set, and consequently is held sealed thereby, forming an air-tight joint. The plug and the taper part of the seat are ground to fit tightly, and make an air tight closure. The pressure of the atmosphere is relied upon to hold the valve closed after the vacuum is drawn in the space within the wall of the vessel.

An air pump 19 may be applied as shown in Fig. 2, the inlet end of this barrel being sealed against the wall of the vessel by the rubber ring 20, or the like, and when the pump is operated, the valve 17 will unseat on the exhaust stroke and will seat on the return, and, as stated, after the removal of the pump, the exterior air pressure will hold the plug closed against the tapered seat, and preserve the vacuum within the wall for an indefinite period. The vacuum can again be drawn by the use of the pump, whenever necessary. Or the valve 17, can be soldered in its closed position, to permanently seal the same, the metal valve seat and valve plug permitting this action.

A vessel so made of porcelain may be enameled, and will be practically air-tight and non-porous, and when the walls are made sufficiently thick, will support themselves and require no internal bracing. This vacuum space prevents the loss of heat in the usual manner, and the absence of any intervening support and braces reduces the conducting area to a minimum.

I claim:

1. A double walled vessel made of molded material and having a vacuum space within the same, one of the walls being provided with a valve comprising a metal seat, the outer edge of which is molded and embedded in the wall, and a plug coöperating with said seat.

2. A double walled vessel made of molded material with a vacuum space between the walls, and a valve comprising a metal disk, the outer edge of which is molded and embedded in the wall and the inner edge of which is upset inwardly to form a tapered neck, and a tapered plug fitting in said neck.

In testimony whereof, I affix my signature in presence of two witnesses.

EARL W. JOHNSTON.

Witnesses:
ARTHUR L. BROWN,
EDWIN H. KOTCHU.