

N. M. BEEDE.
GLASS WASHING APPARATUS.
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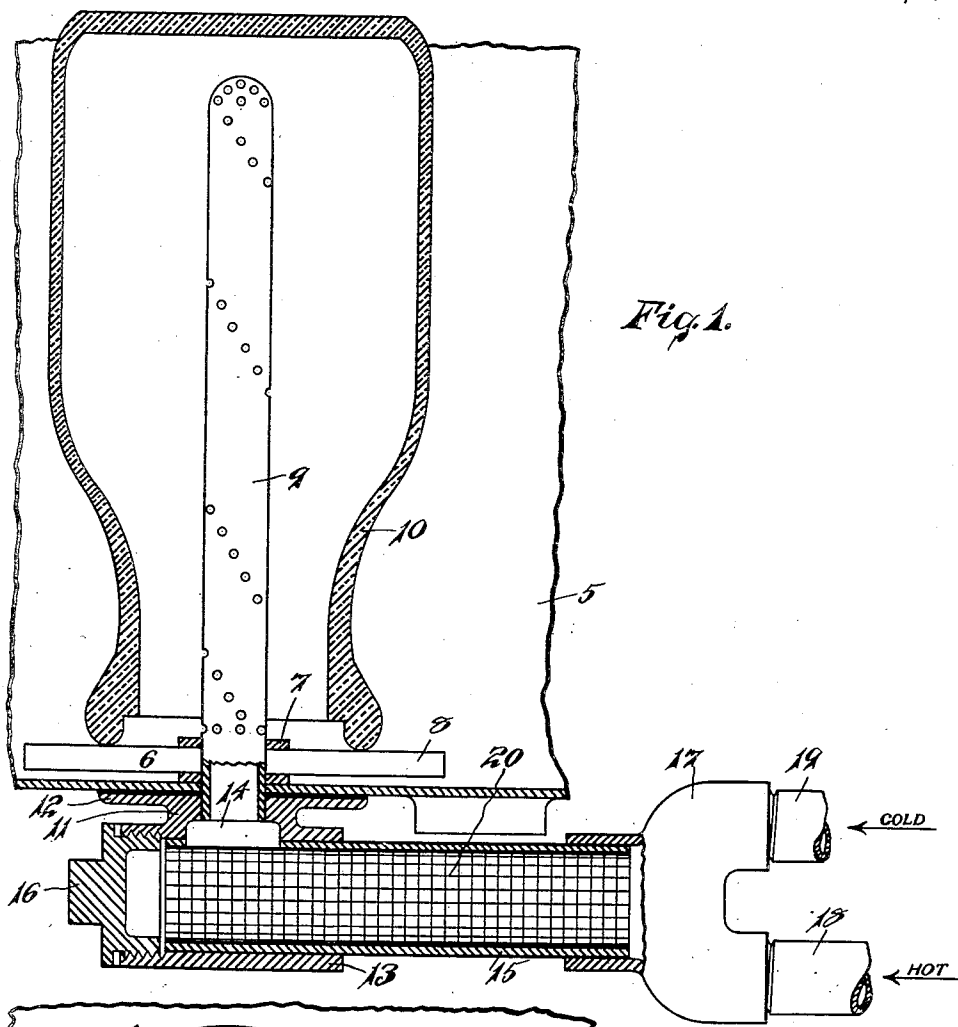


Fig. 1.

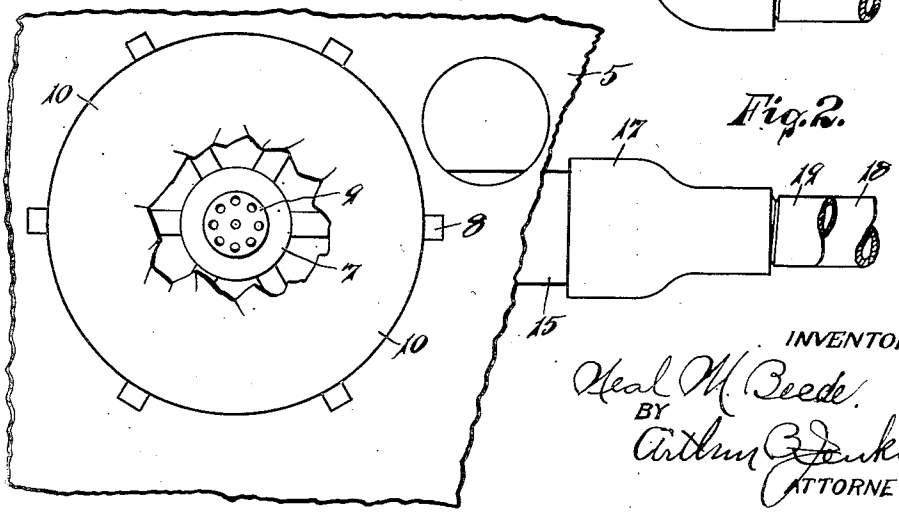


Fig. 2.

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GLASS-WASHING APPARATUS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, NEAL M. BEEDE, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and Improved Glass-Washing Apparatus, of which the following is a specification.

My invention relates particularly to apparatus for washing articles of glassware, and an object of my invention, among others, is to provide an apparatus of this class by means of which glassware may be thoroughly and efficiently cleaned and particularly one in which damage by breakage, owing to rapid changes in temperature of the cleansing fluid shall be practically avoided.

One form of apparatus embodying my invention and in the construction and use of which the objects herein set out, as well as others, may be attained, is illustrated in the accompanying drawings, in which:

Figure 1 is a view in elevation and in section through an apparatus embodying my invention, a portion only, however, of the receptacle for receiving the bottle being shown.

Fig. 2 is a top plan view of the same, the bottle being broken away to show construction.

In the accompanying drawings the numeral 5 indicates the receptacle within which the article to be washed may be located, this receptacle (a portion only being shown) being provided with any suitable outflow for the discharge of liquid used in the washing operation. As my invention is especially applicable in washing milk bottles and like devices I have shown the apparatus as constructed for such use, but it will be understood that my invention is not limited to the washing of glass articles employed for any special purpose.

A support 6 is located within the receptacle 5, and any desired number of these supports may be located within the receptacle. These supports need not be of any special form or construction but a satisfactory arrangement consists of a hub 7 within the receptacle from which radial arms 8 extend. Any suitable number of these arms may be employed, six being shown herein as producing satisfactory results. A spraying nozzle 9 extends upwardly through the hub 7 and within the receptacle 5, this nozzle being of such length as to suit the size of the

article, as a bottle 10, to be washed. This nozzle may be secured in any desired manner to a support 11 located underneath the receptacle, and this support may be so constructed as to constitute a clamp nut for securing the hub 7 and nozzle 9 in position.

In the preferred form of construction this support comprises a flange 12 to rest against the under side of the receptacle 5 and a body 13 having an inlet chamber 14 into which liquid is conducted from a casing 15. This casing preferably projects into the body from one end thereof and it may be secured in any suitable manner, and a cap 16 may be employed to close the opposite end of the receptacle and hence the inlet chamber 14.

The casing 15 is preferably of cylindrical shape and a union 17 is connected to one end of the casing to supply a cleansing liquid, as soapy water, thereto, the union 17 having hot and cold water pipes 18 and 19 respectively secured thereto whereby either hot or cold water may be passed through the casing and through the spraying nozzle 9 into the interior of the receptacle. It will be understood that the pipes 18 and 19 will be supplied with any suitable means for controlling the flow of liquid through them.

In the cleansing of glass articles it is desirable to use both hot and cold water at the beginning and end of the operation, or during the process of cleaning the article. Often hot water is employed to begin with and the washing operation is terminated by the use of cold water but in some instances the opposite method may be desired. If hot water is applied to a cold glass article breakage is liable to result and contrariwise should cold water be suddenly applied to a hot glass article breakage is also liable to follow. The temperature of the water might be controlled by a judicious manipulation of the means for controlling the supply of hot and cold water but such operation would require great care and would at the best be uncertain and, moreover, would prove troublesome and involve a waste of time. By the use of my improved apparatus the temperature of the water or other cleaning liquid is automatically controlled so that sudden changes in the temperature of the liquid are avoided. One means for accomplishing this purpose consists of a regulating medium 20 that is lo-

cated in the casing 15. This medium may consist of any suitable material in any desired form, as a coil or net work of wire within and between the meshes of which the liquid must pass, this regulating medium having such body that the temperature of the liquid will be materially affected by it. It will thus be seen that if hot liquid has been projected through the spraying nozzle, as from the pipe 18, into the glass article and it is immediately shut off and cold liquid is introduced, as through the pipe 19, the temperature of the cold liquid will at once be increased in passing through the medium 20, and by the time this liquid is projected against the surface of the glass article it will be at such temperature as not to be liable to cause breakage. Continuous flowing of the cold liquid, however, will cause the temperature to be gradually lowered until it becomes cold. The temperature of the glass article conforms to the temperature of the liquid and will be so gradually changed as to avoid any chance of breaking. If cold liquid is first used and hot liquid is then turned on the conditions will be gradually changed but in an opposite direction to that above described.

In accordance with the provisions of the patent statutes, I have described the principles of operation of my invention, together with the apparatus which I now consider to represent the best embodiment thereof; but I desire to have it understood that the apparatus shown is only illustrative, and that the invention may be carried out by other means.

I claim:

1. An apparatus for washing glassware including a support for a glass article, means for projecting a liquid upon said article, a hot and cold liquid supply, both delivering to said projecting means, and means in

the passage between said hot and cold liquid supply and said projecting means for conducting said liquid, said means in the passage being distributed through the mass of said liquid to automatically graduate the temperature thereof.

2. An apparatus for washing glassware including a support for a glass article, means for projecting liquid upon said article, a support with which said projecting means is connected, said support having an inlet chamber, a casing projecting into said support, a hot liquid supply connected with said casing, a cold liquid supply connected with said casing, and a medium located within said casing to graduate the temperature of liquid passed therethrough.

3. A receptacle, a spraying device extending through the bottom of the receptacle, a support for a glass article surrounding the spraying device within the receptacle, a support secured to the spraying device against the bottom of the receptacle, said support having an inlet chamber, a casing extending into said support, a medium within said casing for graduating the temperature of liquid passing therethrough, a hot liquid supply connected with said support, and a cold liquid supply connected with said support.

4. An apparatus for washing glassware including a support for a glass article, means for projecting a liquid upon said article, a casing having a mixing chamber for liquid passing to said projecting means, a hot and cold water supply communicating with said mixing chamber, and a medium distributed throughout said chamber to receive a liquid delivered thereto whereby one extreme in temperature of said liquid is employed to prevent a sudden change to an opposite extreme.

NEAL M. BEEDE.