B. C. OLNEY.

STERILIZING APPARATUS.

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1,114,023.

Patented Oct. 20, 1914.

Fig. 1.

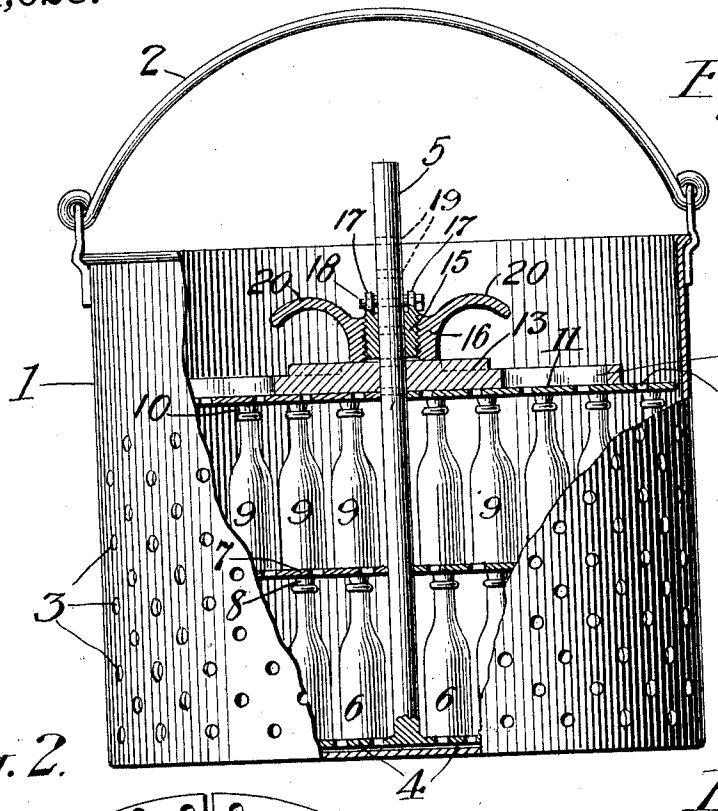


Fig. 2.

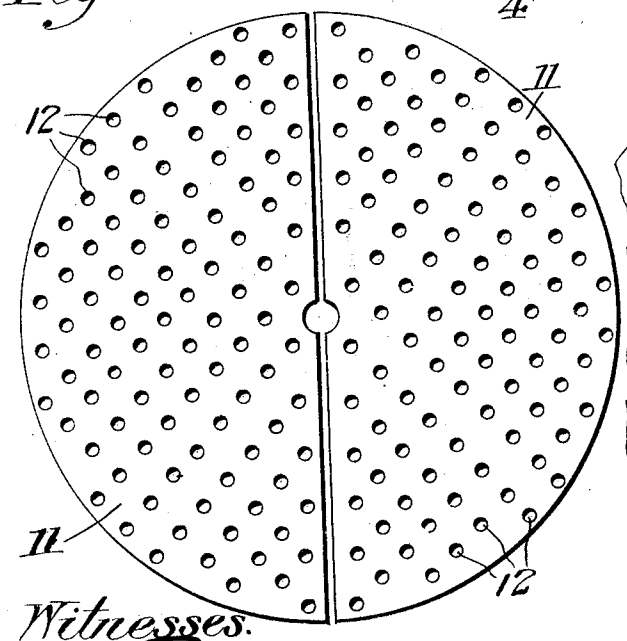
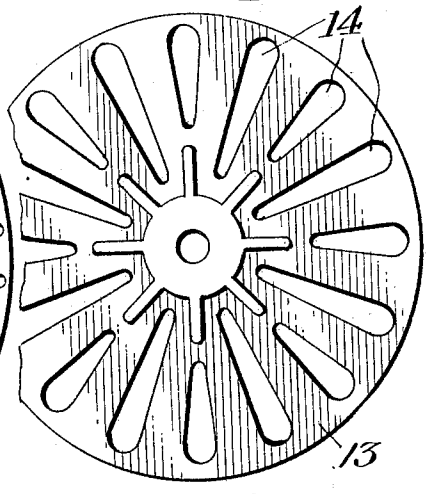


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

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STERILIZING APPARATUS.

1,114,023. Specification of Letters Patent. Patented Oct. 20, 1914.

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To all whom it may concern:

Be it known that I, BURT CADY OLNEY, a citizen of the United States, residing at Rome, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Sterilizing Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to apparatus used for sterilizing sealed containers and its main object is to provide such an apparatus, certain of whose parts will coöperate to retain the containers in the sealed condition while being sterilized. Due to the expansion of the contents of the containers when subjected to heat, the sealing means is often expelled, resulting in a loss of contents in the containers. The present invention aims to overcome this difficulty by providing positive means for holding the sealing means in the containers.

In its broad aspects the invention consists in superposing groups of containers in a suitable sterilizing receptacle and interposing between the groups suitable partitions or plates. By exerting a clamping pressure upon the plate placed on the top group of containers, the sealing means of all the containers may be securely held in position.

Other features of the invention reside in constructing the several parts to fulfil the main object in the most advantageous manner.

One form of the apparatus is disclosed in the accompanying drawing, in which the containers are shown as being bottles having corks or other stoppers for sealing means.

Referring to the drawing:—Figure 1 is a broken elevation partly in section showing several groups of containers placed in a receptacle ready for sterilizing, with the stoppers positively held seated by the improved retaining means. Fig. 2 is a plan view of the preferred form of partition or plate used between the several groups of containers. Fig. 3 is a plan view of the clamping head used between the clamping means and the first of the partitions or plates.

A suitable receptacle 1 is employed provided with a handle 2 to render it portable. It is made pervious to the sterilizing medium, preferably by the perforations 3 formed in the walls of the receptacle. In the bottom of the receptacle 1, a perforated base plate 4 is placed having a co-axial vertical post 5, preferably formed integrally with the plate, although, as will hereinafter be more evident, the post 5 might be passed through the plate 4 and secured to the bottom of the receptacle 1.

A group of containers represented by the bottles 6 in the drawing is then placed in the receptacle on the plate 4. A second plate or partition 7 is provided which is adapted to rest on the sealing means 8 of the first group of containers 6. A second group of the containers 9 may be placed upon the partition 7 and their sealing means 10 retained in turn by a second partition 11 similar to the partition 7. Any number of such groups can be superposed in this manner commensurate with the receptacle 1.

The exact construction of the clamping plates or partitions is immaterial to the invention, but preferably they are made as clearly shown in Fig. 2. They are perforated at 12 to allow a free circulation of the sterilizing medium and are for convenience formed in two segmental parts as further shown in Fig. 2, such that the said parts may be conveniently positioned and removed without removing the clamping means.

A clamping head or follower 13 shown in detail in Fig. 3 is interposed between the top clamping plate 11 and the clamping means. The head 13 is also made pervious to the circulating sterilizing medium by the openings 14.

The clamping means is operative irrespective of the number of groups of superposed containers and the height of the containers. This is accomplished preferably as follows: A compound nut 15—16 is employed, the sleeve member 15 of which is co-axial with the post 5 and vertically adjustable thereon. It is provided with pin receiving lugs 17 adapted to carry the locking pin 18. The post 5 is provided with the transverse pin receiving holes 19 through any one of which the pin 18 is adapted to pass to lock the member 15 in place, as is clearly shown in Fig. 1. The sleeve member 15 of the compound nut 15—16 is exteriorly threaded and is engaged by the interiorly threaded portion of the actuated member 16 of said compound nut. The said member 16 is preferably provided with suitable thumb wings 20 whereby it can be conveniently screwed

down upon the clamping head. It is obvious from the foregoing description of the clamping means that if the holes 19 in the post 5 are properly placed, any adjustment may be obtained which will effect the proper clamping action. Containers of different heights may therefore be accommodated and any number of groups of containers may be used commensurate with the receptacle 1 and the height of the post 5.

It is obvious that the containers can be positioned and the segmental partitions placed on top of each group of such containers and the whole construction clamped before the so formed unit is placed within the receptacle 1. From the foregoing, it will be seen that a construction is devised wherein a large number of containers can be compacted, all of whose sealing means are positively retained in place by a simple operation of a common clamping means. A free circulation of the sterilizing medium is permitted, however, and the provision of the clamping means in no way lessens the effect of the sterilizing agent.

The entire construction forms a compact unit which not only accomplishes the result of retaining the sealing means, but also forms convenient means for handling the containers and for holding them in proper position for the sterilization.

What I claim is:—

1. Sterilizing apparatus comprising a base plate, a vertical post carried thereby, clamping plates adapted to be placed co-axial with said post and between which sealed containers are adapted to be placed, clamping means to coöperate with the uppermost plate, said clamping means comprising a vertically adjustable exteriorly threaded sleeve on said post, a clamping nut having threaded engagement with said sleeve, and a clamping head interposed between said clamping nut and the uppermost plate.

2. Sterilizing apparatus comprising a base-plate, a vertical post, a clamping plate adapted to be placed on the tops of the containers, a vertically adjustable exteriorly threaded sleeve carried by said post, a locking pin carried by said sleeve adapted to engage in any one of a series of suitable holes provided in said post, and a clamp nut having threaded engagement with said sleeve and adapted to be screwed down to exert a pressure on said clamping plate.

3. Sterilizing apparatus comprising a base plate, a vertical post carried thereby, clamping plates adapted to be placed co-axial with said post and between which sealed containers are adapted to be placed, clamping means to coöperate with the uppermost plate, said clamping means comprising a vertically adjustable exteriorly threaded sleeve on said post, and a clamping nut having threaded engagement with said sleeve.

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

BURT CADY OLNEY.

Witnesses:
BESSIE K. FEENEY,
WARNER THOMPSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."