

No. 741,989.

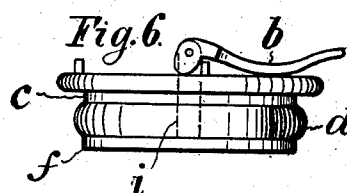
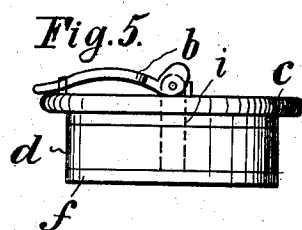
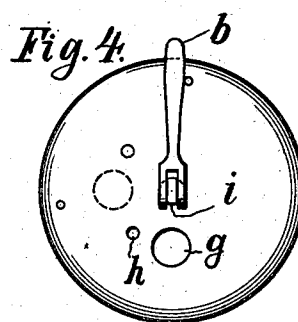
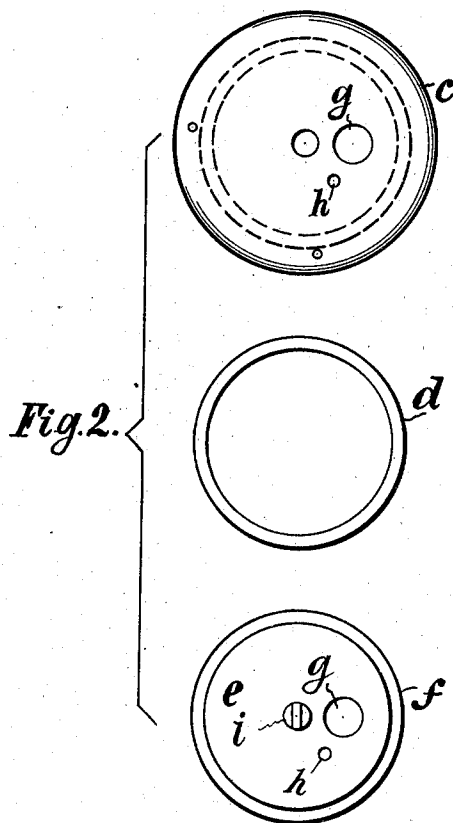
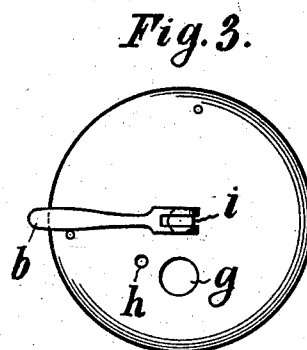
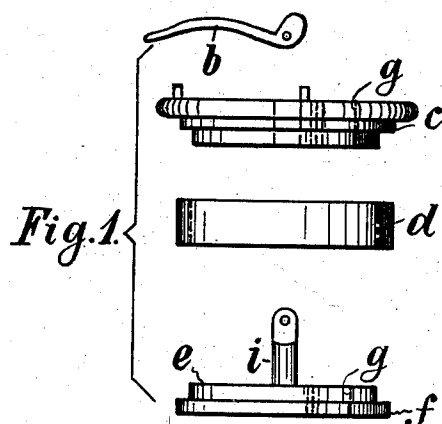
PATENTED OCT. 20, 1903.

J. K. VAN DER HEIDE.

CLOSURE FOR VESSELS FOR STERILIZED SUBSTANCES.

APPLICATION FILED APR. 22, 1903.

NO MODEL.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOCHUM KORNELIUS VAN DER HEIDE, OF AMSTERDAM, NETHERLANDS.

CLOSURE FOR VESSELS FOR STERILIZED SUBSTANCES.

SPECIFICATION forming part of Letters Patent No. 741,989, dated October 20, 1903.

Application filed April 22, 1903. Serial No. 153,808. (No model.)

To all whom it may concern:

Be it known that I, JOCHUM KORNELIUS VAN DER HEIDE, a subject of the Queen of the Netherlands, residing at Amsterdam, Netherlands, have invented certain new and useful Improvements in Closures for Vessels for Sterilized Substances, of which the following is a specification.

My invention relates to a closure for vessels of any style—such as bottles, jars, cans, or the like—which closure permits the filling of a previously-sterilized vessel with a previously-sterilized substance without any danger of infection from the atmosphere.

In ordinary sterilizing processes the liquid is filled into the vessel and then sterilized with the vessel, so as to obtain a liquid of good keeping qualities. In those processes in which the liquid and the vessel are separately sterilized and the sterilized liquid filled into the vessel it often happens that the liquid does not display good keeping qualities. The reason of this is not that the sealing of the vessel is faulty, but that during the filling of the same air containing bacteria is admitted into the vessel. This disadvantage could of course be avoided if the process were carried on in a sterilized room; but this naturally can never be entirely accomplished.

According to my invention the disadvantage stated can be avoided very easily. The closure contains means for opening two passages into the vessel, so that the sterilized liquid may be admitted without the simultaneous admission of bacteria from the atmosphere. The two passages may be then closed to maintain the contents of the vessel sterile.

The invention also provides an improvement consisting of two relatively movable plates provided with openings arranged to be brought into and out of register by the relative movement of the plates and means for pressing the plates together when the openings are out of register, and thus effecting a perfectly tight closure after the vessel is filled.

Other advantages are specified in detail hereinafter.

The accompanying drawings illustrate an embodiment of the invention.

Figure 1 shows in side elevation the several parts of a closure separated. Fig. 2 shows the

principal parts in plan separated from each other. Figs. 3 and 4 are plans of the assembled device, showing different positions of the same. Figs. 5 and 6 are side elevations of the assembled device, showing different positions of the same.

In the embodiment illustrated the closure is seen to consist of two parts—namely, an upper plate *c* and a lower plate *f*, separated from each other by means of a rubber or other elastic ring *d*. The plates are movable relatively to each other, this movement being preferably obtained by means of a pin *i*, fixed to the plate *f* and passing loosely through an aperture in the plate *c*. For pressing the two plates together I have illustrated a lever *b*, pivoted to the upper end of the pin *i* and provided at its pivoted end with a cam or eccentric adapted to bear down on the plate *c*, and so press the two plates *c* and *f* together.

The same lever *b* serves for turning the pin *i* and plate *f* to produce the relative rotary movement of the two plates referred to. Packing material is provided between the plates adapted to register with one of the openings when the two openings are out of register with each other, and the two plates are pressed together, so as to insure a perfectly tight closure. Preferably this packing material is in the form of a rubber or similar plate *e*, forming the face of one of the two plates *f*, as illustrated. Each of the two plates is provided with a similar pair of openings, preferably a larger opening *g* for the pouring in of the liquid and a smaller opening *h* for the escape of the air. These pairs of openings are so arranged that they may be brought into and out of register with each other by the relative rotation of the plates referred to, so that by bringing them into register the vessel to which the closure is applied may be sterilized and filled with the sterilized liquid.

The operation of the device may be as follows: The respective openings *g* and *h* in the two plates are brought into register and are filled with stoppers of wadding. Fig. 3 shows the position. The vessel is then sterilized in any suitable way, the stoppers serving to filter the air entering during the cooling of the vessel and to free the same from bacteria. Then the stoppers of wadding are removed and the sterilized liquid is poured in through

the larger opening *g*, while the air within the vessel escapes through the smaller opening *h*. When the vessel is filled, the operator turns the lever *b* in a horizontal direction—
 5 say about ninety degrees—so that the openings are moved out of register of each other, as in Fig. 4, and then turns the lever *b* over in the vertical direction, which presses the plates together and presses the openings of
 10 the plate *c* against the packing *e*. At the same time the rubber ring *d* by having its edges squeezed together is pressed outward, as illustrated in Fig. 6, against the neck of the bottle or other vessel, so as to form an
 15 air-tight sterile closure.

The manner of fastening the closure in the neck of the vessel may be varied without departure from the broad invention. For example, it may be attached by a screw-thread
 20 at its lower portion or in any other suitable way.

Though I have described with great particularity of detail a device embodying my invention, yet it is to be understood that the
 25 invention is not limited to the specific form disclosed. Various modifications of the same may be made by those skilled in the art in details and in the arrangement and combination of the parts without departure from
 30 the invention.

What I claim is—

1. A closure for vessels comprising in combination a pair of relatively movable plates provided with openings arranged to be brought into or out of register by the relative
 35 movement of said plates, packing material between said plates adapted to close one of said openings when the two openings are out of register with each other, and means for pressing said plates together, so as to effect a
 40 tight closure.

2. A closure for vessels for sterilized substances comprising in combination two relatively rotatable plates provided with openings arranged to be brought into or out of
 45 register by the relative rotation of said plates, one of said plates being provided with a packing-face to make an air-tight closure when the plates are pressed together with their openings out of register, an elastic ring be-
 50 tween said plates adapted to be expanded tightly against the neck of the vessel when said plates are pressed together, means for turning said plates relatively to each other, and means for pressing said plates together.
 55

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JOCHUM KORNELIUS VAN DER HEIDE.

Witnesses:

WILLEM FREDRIK PROOST,
 AUGUST SIEGFRIED DOCEM.