C. W. BRYANT.

STERILIZER.

APPLICATION FILED MAR. 24, 1919.

1,345,123.

Patented June 29, 1920.

2 SHEETS—SHEET 1.

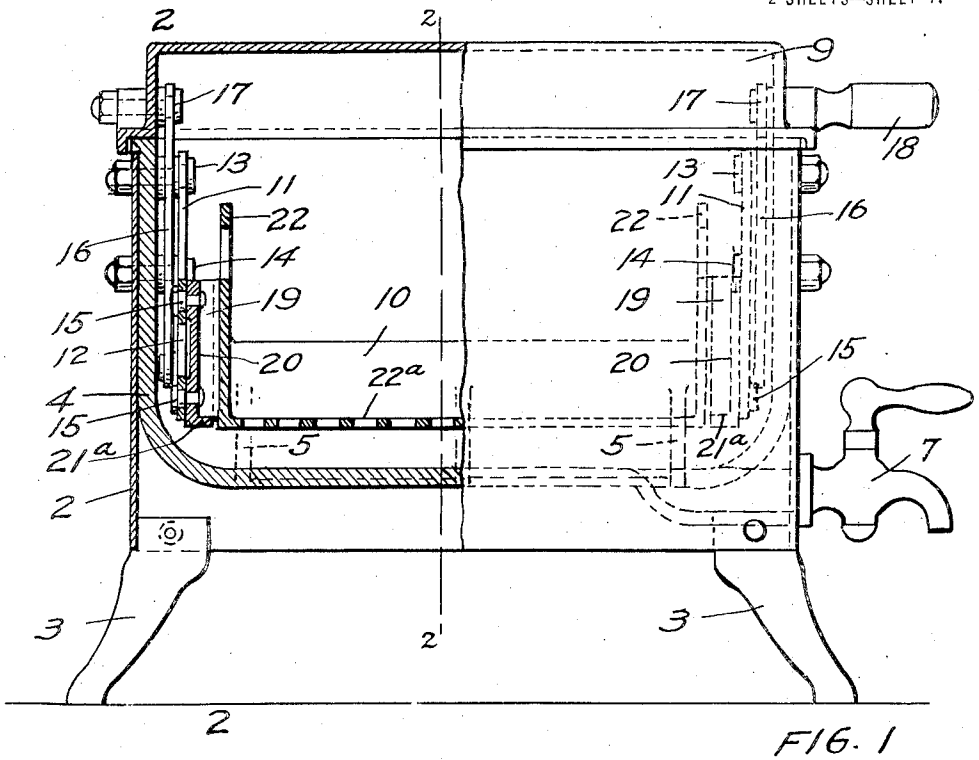


FIG. 1

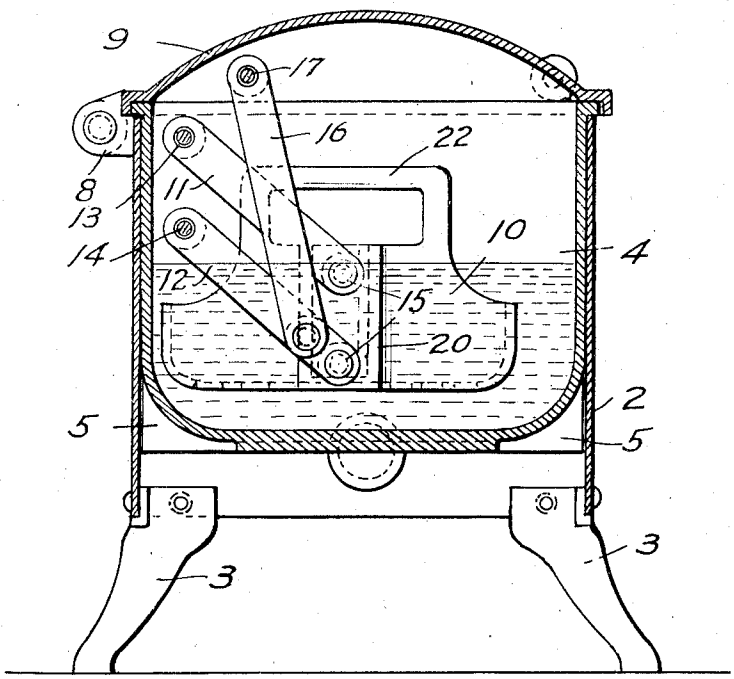


FIG. 2

WITNESS

J. Jessen

INVENTOR

CORWIN W. BRYANT.

BY Paul & Paul

HIS ATTORNEYS.

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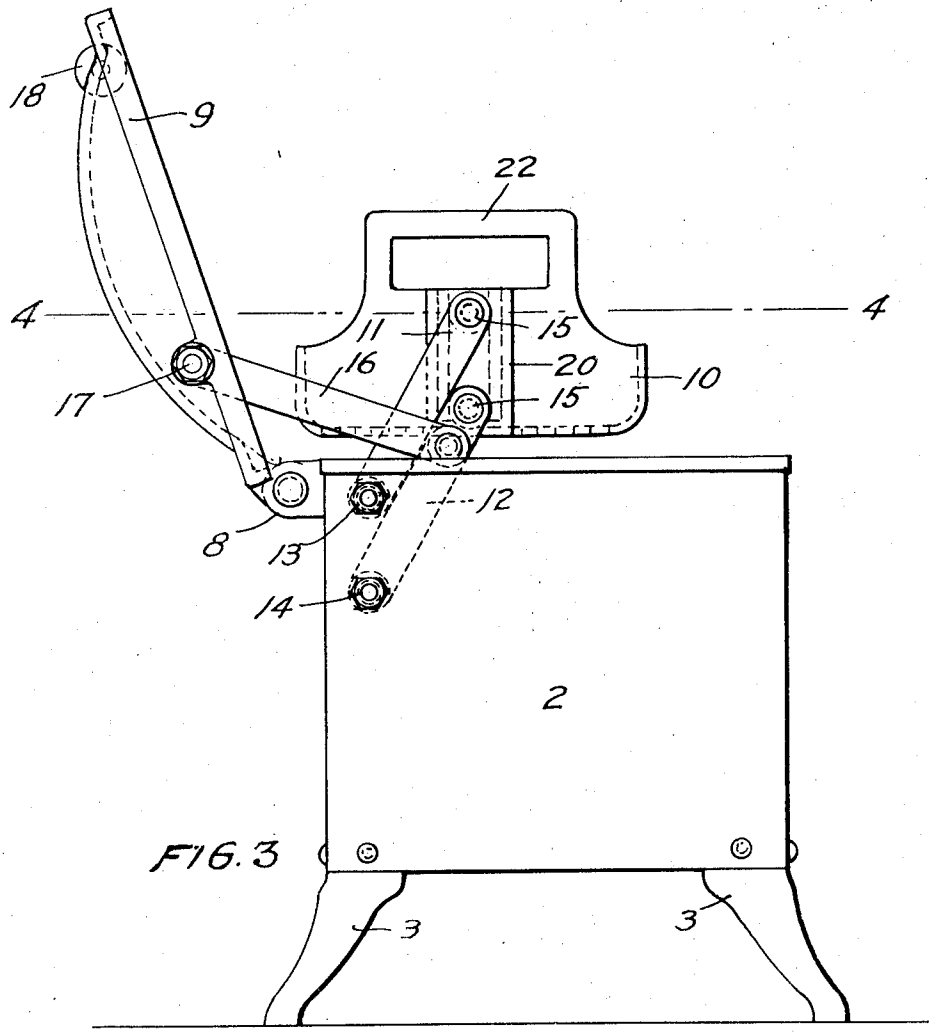


FIG. 3

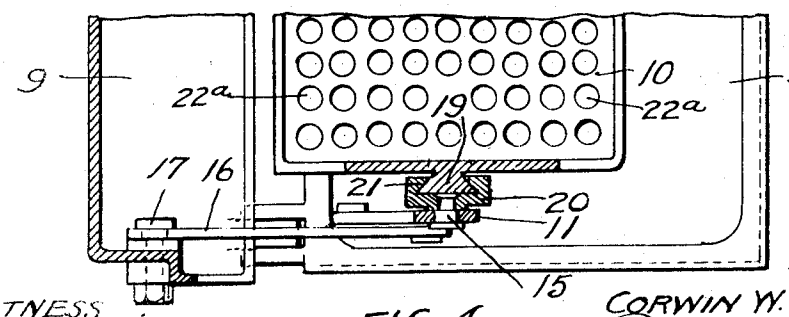


FIG. 4

WITNESS

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UNITED STATES PATENT OFFICE.

CORWIN W. BRYANT, OF MINNEAPOLIS, MINNESOTA.

STERILIZER.

1,345,123. Specification of Letters Patent. Patented June 29, 1920.

Application filed March 24, 1919. Serial No. 284,574.

To all whom it may concern:

Be it known that I, CORWIN W. BRYANT, a citizen of the United States, resident of Minneapolis, county of Hennepin, State of Minnesota, have invented certain new and useful Improvements in Sterilizers, of which the following is a specification.

The object of my invention is to provide a sterilizer having its instrument supporting tray so mounted that the instruments will not be rolled together or upon one another when the tray is raised out of the boiler or sterilizing agent.

A further object is to provide a sterilizing tray so mounted that when raised out of the boiler the drippings will flow back into the boiler instead of running down on the outside of the housing or casing therefor.

A further object is to provide a sterilizer of comparatively simple, inexpensive construction and one which is readily accessible for repairing or cleansing purposes.

Other objects of the invention will appear from the following detailed description.

The invention consists generally in various constructions and combinations, all as hereinafter described and particularly pointed out in the claims.

In the accompanying drawings forming part of this specification,

Figure 1 is a side elevation of a sterilizer embodying my invention, with a portion of the wall broken away to illustrate the position of the sterilizing tray therein,

Fig. 2 is a transverse sectional view on the line 2—2 of Fig. 1 showing the preferred manner of supporting the tray,

Fig. 3 is a side elevation of the sterilizer, showing the tray in its raised position,

Fig. 4 is a detail section on the line 4—4 of Fig. 3.

In the drawing, 2 represents the outer casing for the boiler or tank, having suitable supporting legs 3, and 4 is the boiler proper, made of aluminum or other suitable material, preferably having its walls curved and merging into the bottom to avoid the formation of corners or angles in the boiler. A series of integral webs 5 are formed, preferably on the outer walls of the boiler, the vertical edges of the webs forming continuations of the upper vertical portions of the boiler walls and the horizontal edges of the webs being in alinement with the under surface of the base of the boiler. A suitable faucet 7 is mounted in the bottom of the boiler for drawing off the water therein whenever desired. The boiler has ears 8 thereon at the top and a cover 9 is hinged on these ears and is adapted to swing to a horizontal position and close the top of the boiler, said cover being preferably arched for convenience in connecting the links thereto by means of which the tray is raised when the cover is opened. The cover is so mounted that when it is in its raised position it will remain open by gravity and provision is made, as will hereinafter appear, for supporting the tray in its raised position through the weight of the cover.

10 represents the tray in which the instruments to be sterilized are placed. This tray is immersed in the liquid in the boiler and allowed to remain there until the instruments are thoroughly sterilized. Many of the surgical instruments have sharp cutting edges and it is desirable, of course, that these instruments do not rub upon one another or roll around in the tray, as the keen edges would become dulled thereby and necessitate frequent sharpening. It is also desirable that the tray be raised in such a manner that the drippings therefrom will flow back into the boiler. I therefore provide parallel links 11 and 12 pivoted at 13 and 14 on the end walls of the boiler and having pivotal connections at 15 with the middle portion of the end walls of the tray. Links 16 are pivoted to the links 12 near their pivots on the tray and are pivoted at 17 to the cover 9 preferably at a point about midway between the hinge of the cover and the longitudinal center thereof, this point being properly determined by suitable measurements so that when the cover is raised, the tray will be lifted also, substantially without horizontal movement and without swaying or rocking. When the cover is fully open, the tray will be lifted above the level of the boiler where the instruments can be easily reached and where the drippings from the tray will flow back into the boiler. The cover will swing back to the opposite side of the center of its pivots from the tray and form a counter-balance for holding the tray in its open position, the parallel links 11 and 12 bearing against each other and forming a stop. No levers, springs or cams are necessary in this device, the cover and the connecting links forming the means for lifting the tray and supporting it in its raised position.

One end of the cover may be provided with a suitable handle 18 for convenience in opening or closing it.

I prefer to mount the tray so that it can be easily and quickly separated from its supports in the boiler and with this end in view I provide vertically arranged ribs 19 on the ends of the boilers, substantially wedge-shaped in cross section to fit dove-tailed guides 21 provided in plates 20 which are connected to the links 11 and 12 by the pivot pins 15. The lower ends of the plates 20 are preferably provided with stops 21ª which limit the downward movement of the tray when mounted in the boiler. The tray is preferably provided with handles 22 by means of which it can be conveniently placed in its supports in the boiler and as readily removed therefrom.

The studs 15 will be mounted parallel with the pivots 13 and 14. When the device is in use, the tray rests upon the stops 21ª and is dipped down into the liquid in the boiler when the cover is closed and raised to a point entirely clear of the boiler when the cover is opened. The tray is shown provided with a series of perforations 22ª and it will be understood that any other suitable material, such as wire mesh, may be used for this perforated plate bottom, the purpose of the perforations being to allow the sterilizing liquid and drippings from the instruments to flow back into the boiler as soon as the tray is raised. By making the tray removable, the instruments can be placed therein at a distance from the boiler and the tray then seated in its supports and lowered into the boiler for sterilizing and when this work has been performed, the cover may be raised and the tray lifted to a point where the instruments can be conveniently reached or the entire tray can be removed, if desired.

I claim as my invention:

1. A sterilizer comprising a boiler adapted to contain a sterilizing liquid, an instrument tray arranged therein, a cover for said boiler, parallel links connecting said tray with the walls of the boiler and means connecting said cover and links for lifting said tray vertically to a point above the boiler and substantially within the plane of the vertical walls thereof.

2. A sterilizer comprising a boiler adapted to contain a sterilizing liquid, an instrument tray fitting therein, parallel links connecting said tray with the end walls of the boiler, a cover hinged at one side of said boiler and links connecting said cover near its hinge with one of said parallel links at each end of the tray near their pivotal connection with the tray.

3. A sterilizer comprising a boiler adapted to contain a sterilizing liquid, a cover hinged to one side of said boiler and adapted, when opened, to remain open by gravity, an instrument tray fitting within said boiler, parallel links pivotally connecting the end walls of said tray with the corresponding walls of said boiler, means pivotally connecting said cover with said links for raising said tray vertically and supporting it in its raised position above and near the middle portion of said boiler.

4. A sterilizer comprising a boiler adapted to contain a sterilizing liquid, a cover therefor, links pivotally connected with the walls of the boiler and in parallel relation, a plate mounted on said links and having a vertical guideway, means connecting said links near said guideway with said cover, and a tray having ribs thereon adapted to slide in said guideway and supported therein.

5. A sterilizer comprising a boiler adapted to contain a sterilizing liquid, a cover therefor, links pivotally connected with the walls of said boiler, blocks pivotally supported by said links and having vertical dove-tailed guideways therein, means connecting said links with said cover for oscillating said links when said cover is opened or closed, and a tray having vertical ribs thereon to slide in the guideways of said plates and means for limiting the downward movement of said ribs in said guideways.

6. A sterilizer comprising a boiler adapted to contain a sterilizing liquid, an instrument tray arranged therein, a cover for said boiler, links connecting said tray with the walls of said boiler and means connecting said cover and links for lifting said tray vertically to a point above the boiler and substantially within the plane of the vertical walls thereof.

7. A sterilizer comprising a boiler adapted to contain a sterilizing liquid, a cover therefor, links pivotally connected with the walls of the boiler, plates mounted on said links and having vertical guideways, means connecting said links with said cover, and a tray mounted to slide in said guideways.

In witness whereof I have hereunto set my hand this 28″ day of February, 1919.

CORWIN W. BRYANT.