

No. 717,448.

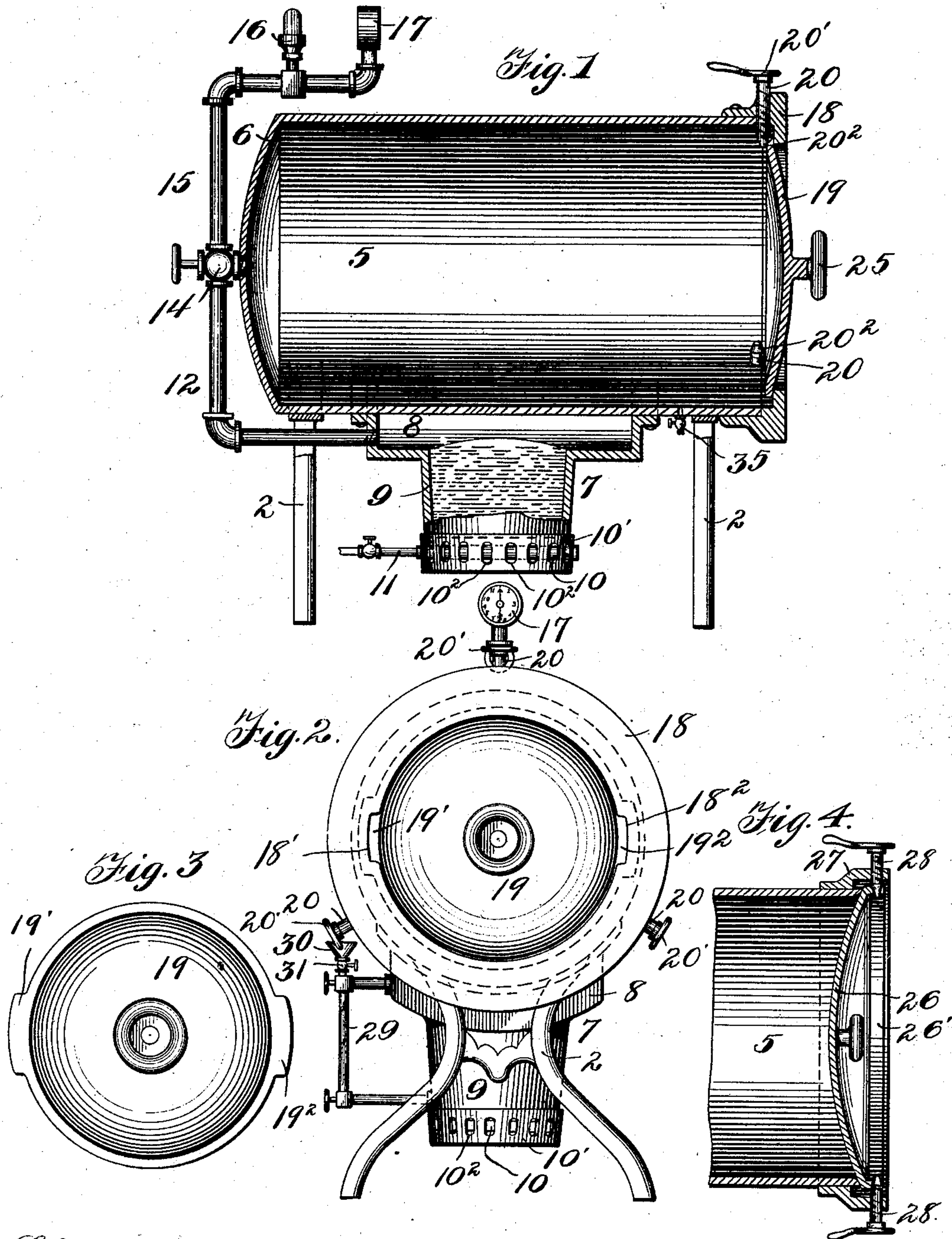
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R. R. PEASE & P. J. TUCKER.

STERILIZING APPARATUS.

(Application filed Aug. 26, 1902.)

(No Model.)



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UNITED STATES PATENT OFFICE.

ROBERT R. PEASE AND PHILIP J. TUCKER, OF HARTFORD, CONNECTICUT.

STERILIZING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 717,448, dated December 30, 1902.

Application filed August 26, 1902. Serial No. 121,119. (No model.)

To all whom it may concern:

Be it known that we, ROBERT R. PEASE and PHILIP J. TUCKER, citizens of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Sterilizing Apparatus, of which the following is a specification.

Our invention relates to sterilizing apparatus, and has for its object the provision of an improved device of this character by means of which surgical dressings, bandages, and other articles may be sterilized and any germs or bacilli destroyed.

Further objects and advantages of the invention will be set forth in the detailed description which now follows.

In the accompanying drawings, Figure 1 is a longitudinal vertical section of our improved sterilizing apparatus. Fig. 2 is a front elevation of the same. Fig. 3 is an elevation of the door of said apparatus; and Fig. 4 is a longitudinal vertical section of a portion of a sterilizing apparatus, showing a modified form of door which may be employed.

Like numerals refer to similar parts throughout the several views.

Referring to the drawings, the numeral 5 designates a preferably drawn integral tubular metallic shell or casing, the rear end of which is closed, as at 6, and secured to the bottom of said shell by rivets or otherwise is a steam-generator 7, comprising a steam-chamber 8, having a well 9 for the reception of water, this generator serving as a saddle to receive the casing 5. For applying heat to said steam-generator a gas or other burner 10 is inclosed within an ornamental ring 10', having air-admission ports 10², said burner being connected by a pipe 11, leading to a source of supply. Piping 12 connects the steam-chamber 8 of the generator with a valve 14, communication being had through said valve with the interior of the shell or casing 5, said valve 14 also communicating with tubing 15, leading to a safety-valve 16 and a pressure-recording gage 17.

Secured to the front end of shell or casing 5 is a flanged ring 18, having slots 18' 18² formed in the flange thereof to permit the door 19, provided with extensions 19' 19², to

be inserted therethrough, as will be presently described. Threaded into the flanged ring 18 are screws 20, having lever-heads 20' to permit of their ready rotation and beveled ends 20², which serve a purpose hereinafter described. When it is desired to secure the door 19 after material has been placed in the shell 5, said door is held by the operator in such a way that the ears or extensions 19' 19² thereof are in a vertical position, or in the position they would assume if the door were to be given a quarter-turn in Fig. 3. The door is then tilted at an angle sufficient to permit of its being passed through the slots 18' 18² to the interior of shell 5, when it is again brought to a vertical position and given a quarter-turn to bring the ears or extensions 19' 19² over said slots, as shown in Fig. 2, after which the retaining-screws 20 are rotated until their beveled ends 20² come into contact with said door to force it tightly against the flanged ring 18, thereby to form a steam-tight joint, and to enable the operator to handle said door with greater facility a handle 25 is formed thereon.

Fig. 4 illustrates, as before stated, a modified form of door, and when said door (indicated by the numeral 26) is used a ring 27 is substituted for the one shown in Figs. 1 and 2, said ring having retaining-screws 28, similar to the screws 20, hereinbefore described, threaded therein, and after the door 26 has been placed in position to close the entrance to shell 5 said screws are rotated until their beveled ends come into contact with a flange 26' of the door to bind said door firmly against the end of shell 5. A gage-glass for indicating the water-level in the steam-generator is illustrated at 29, a funnel 30 communicating with said gage-glass through a cock 31.

Supports 2 of any desired kind are secured to shell 5 to maintain the apparatus in an upright position.

This improved sterilizing apparatus is operated as follows: The cock 31 is opened and water is poured into the funnel 30 until a desired amount has entered the boiler, as indicated by the gage-glass 29, after which the cock 31 and valve 14 are closed and heat is applied to the steam-generator by means of the burner 10. When steam at a sufficient

pressure has been generated, valve 14 is opened to permit it to enter the casing 5, and thereby sterilize whatever articles may have been placed therein. The opening of valve 5 14 also permits the steam to pass through tubing 15 to the safety-valve and pressure-recording gage. After the articles have been thoroughly sterilized and it is desired to dry them the valve 14 is again closed, cutting off 10 the supply of steam to chamber 5 and permitting said articles to be dried, and any water of condensation which may have collected in said chamber is drawn off through a drip-cock 35 in the bottom of said chamber, after 15 which the screws 20 are retracted, the cover is withdrawn, and the now sterilized articles are removed.

It will be observed that the cover 19 is not only held in place by the conical ends of the 20 lever-screws, but is also forced snugly against its seat on the flange of ring 18 by the pressure of the steam within the shell, thereby affording double means for securing it in a steam-tight position.

25 Our invention is not limited to the precise devices shown and described, nor to any particular way of applying heat to the steam-generator. Furthermore, the screws may be operated simultaneously, if desired, instead 30 of individually, as shown.

Having described our invention, what we claim is—

1. In a sterilizing apparatus, the combination, with a sterilizing-chamber having a 35 flanged end, of means for applying heat to said chamber; a closure for said chamber; and devices passing through the flanged end of the chamber, and serving to force said closure against its seat.

40 2. In sterilizing apparatus, the combination, with a sterilizing-chamber, of a steam-generator connected to said chamber; means for conducting steam from the steam-generator to said chamber; a door; and screws passing 45 through a portion of the generator, and having points shaped to force said door against its seat.

3. In sterilizing apparatus, the combination, with a sterilizing-chamber, of means for 50 supplying steam under pressure to the interior and exterior of said chamber; a flange upon one end of said chamber; a door; and screws threaded into said flange and having conical points serving to bear against the 55 door and secure the same in position.

4. In sterilizing apparatus, the combination, with a sterilizing-chamber, of means for supplying steam to said chamber; a door; a

flanged ring; and bevel-ended screws passing through said ring, and serving to force said 60 door against the flange thereof.

5. In sterilizing apparatus, the combination, with a sterilizing-chamber, of means for supplying steam to said chamber; a door; a 65 ring, and retaining-screws threaded into said ring and having points bearing against the edge of the door.

6. In sterilizing apparatus, the combination, with a sterilizing-chamber, of means for supplying steam to said chamber; a flanged 70 ring having slots formed therein; a door having ears or projections designed to cover said slots when the door is closed; and screws threaded into the flange for securing said door 75 in position.

7. In sterilizing apparatus, the combination, with a sterilizing-chamber, of a steam-generator secured to said chamber in such 80 manner that the steam comes into direct contact with the exterior surface thereof; means for conducting said steam to the interior of said sterilizing-chamber; a door; and screws having wedge-shaped portions bearing 85 against the edge of the door for securing said door in position.

8. In sterilizing apparatus, the combination, with a sterilizing-chamber, of a steam-generator secured to said chamber in such 90 manner that the steam comes into direct contact with the exterior thereof; means for conducting said steam to the interior of said sterilizing-chamber; a door of construction to be closed by the pressure of the steam; and screws passing through a part of the chamber and bearing against the inner side of the 95 door.

9. A sterilizing apparatus comprising a sterilizing-chamber; a steam-chamber having a well and a top concaved to fit the wall of said sterilizing-chamber; means for applying 100 heat to the well of the steam-chamber; a pipe leading from the steam-chamber to the interior of the sterilizing-chamber; a valve in said pipe; a flanged and slotted ring on the end of the sterilizing-chamber; a closure having 105 ears adapted to be inserted in the slots of the flange and to be then turned to cause said ears to bear against the flange; and means for forcing said closure against said flange.

In testimony whereof we affix our signatures in presence of two witnesses. 110

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