W. A. WILEY & J E. & G. F. HALL.

STERILIZER.

APPLICATION FILED MAR. 20, 1906.

918,409. Patented Apr. 13, 1909.

Fig 1

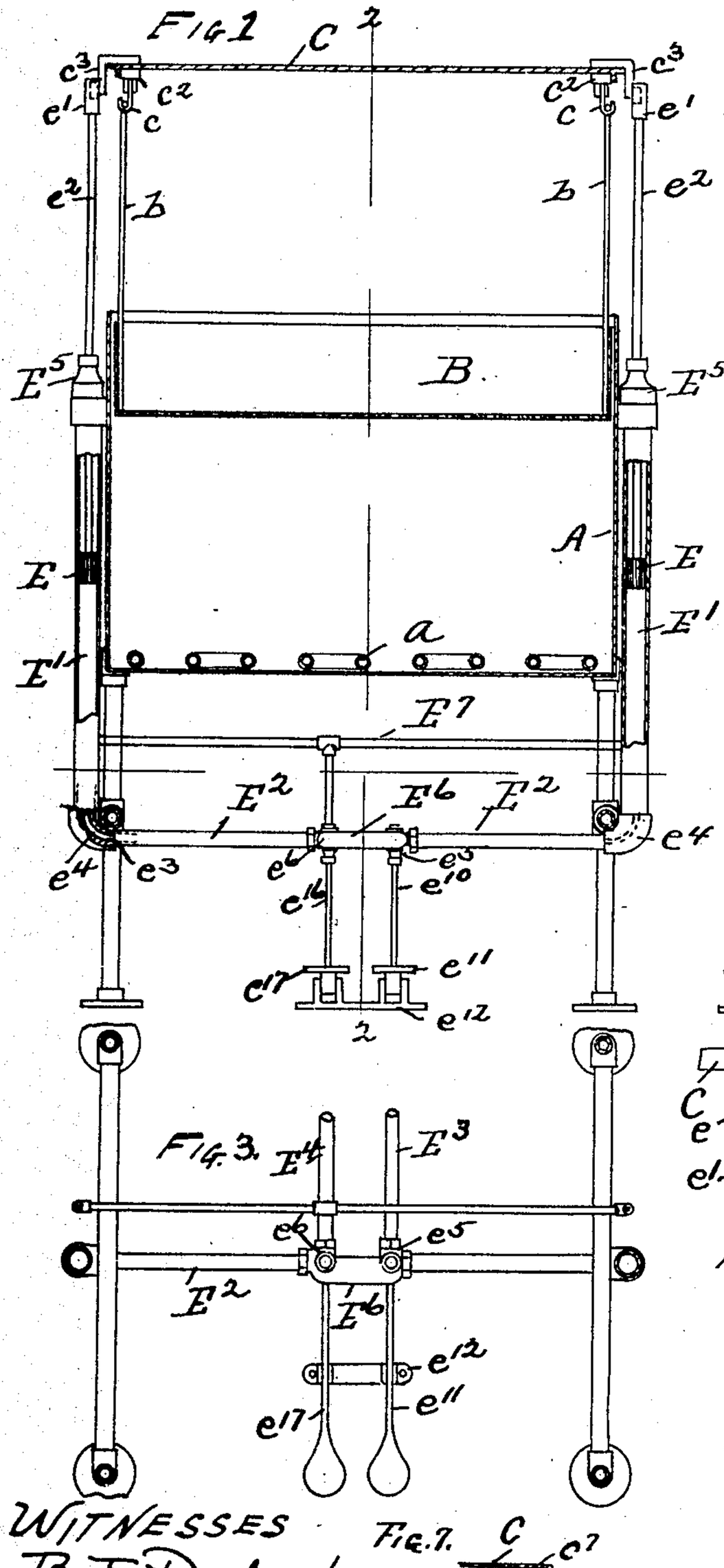


Fig. 2.

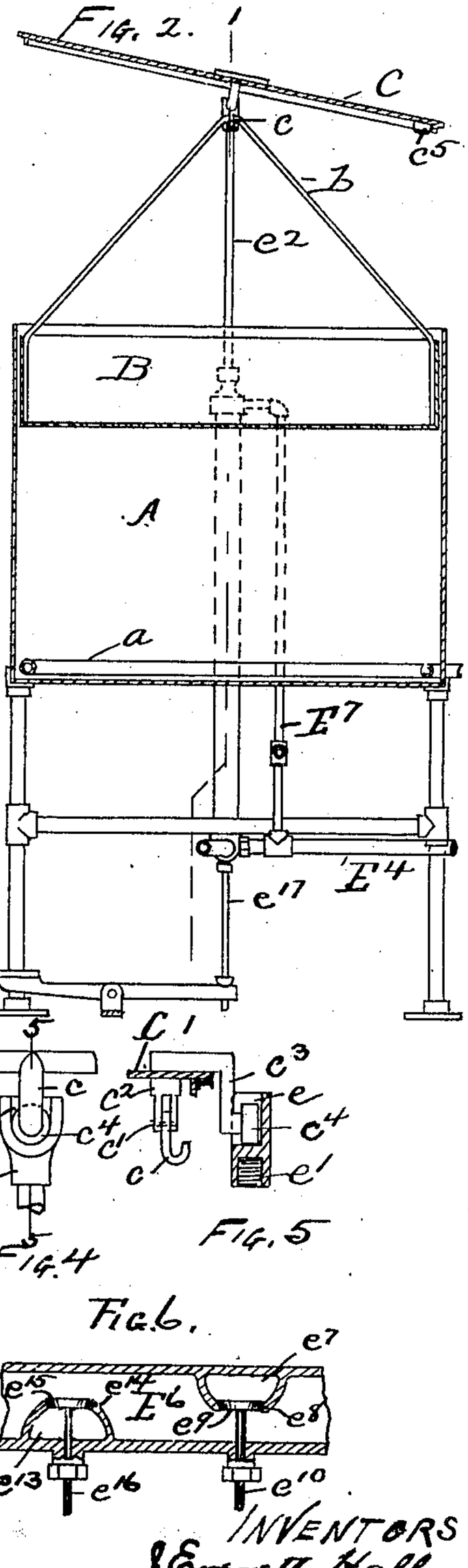


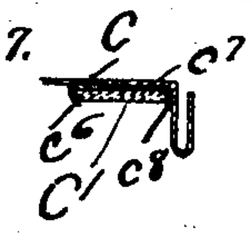
Fig. 3.

Fig. 4.

Fig. 5

Fig. 6.

Fig. 7.



WITNESSES

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UNITED STATES PATENT OFFICE.

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STERILIZER.

No. 918,409. Specification of Letters Patent. Patented April 13, 1909.

Application filed March 20, 1906. Serial No. 307,114.

To all whom it may concern:

Be it known that we, WILLIAM A. WILEY, J EVERETT HALL, and GEORGE F. HALL, citizens of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented new and useful Improvements in Sterilizers, of which the following is a specification.

This invention relates to sterilizers and consists in certain improvements in the construction thereof as will be hereinafter fully described and pointed out in the claims.

In the use of sterilizers, especially those that are designed to be used during the progress of a surgical operation, it is desirable to have them so arranged that they may be opened and articles taken from them or introduced to them, without its being necessary for the operator to touch any part of the exterior of the sterilizer. This forms one of the objects of our invention.

The other objects will appear from the specification and claims.

The invention is illustrated in the accompanying drawings as follows.

Figure 1 shows a section on the line 1—1 in Fig. 2. Fig. 2 a section on the line 2—2 in Fig. 1. Fig. 3 a plan view of the valve mechanism. Fig. 4 a side elevation of the mounting of the cover. Fig. 5 a section on the line 5—5 in Fig. 4. Fig. 6 a section of the valve mechanism. Fig. 7 an enlarged section of the edge of the cover.

A marks the sterilizer chamber which may be of any convenient construction. It is provided with the heating coil *a* in the usual manner. A tray B is arranged in the chamber and is usually suspended above the bottom so that it is out of contact with any sterilizing liquid that may be arranged in the bottom. The bails *b* extend from the bracket and are mounted on the hooks *c*. The hooks *c* are suspended from the cover C and are pivotally mounted at *c'* on the hanger c^2. The hanger is secured to the cover C. The cover C is designed to completely close the chamber and when in place on top of the chamber, the tray is held slightly above the bottom of the same. At each side of the cover there is a bracket c^3 having a rounded end c^4. This rounded end is placed in the sockets *e* arranged in the heads *e'* on the ends of the piston rods e^2. The piston rods extend into the cylinders E' through the glands E^5 and extend from the pistons E. The pistons are arranged to operate in the cylinders E'. At the base of the cylinders are the elbows e^4 in which there are contracted openings e^3. The pipes E^2 connect the cylinder with the supply pipe E^3 and exhaust pipe E^4. The supply is controlled by the valve e^5 and the exhaust by valve e^6. The supply valve has the chamber e^7 connected with the pipe E^3. This chamber is connected with the pipe chamber E^6 by a passage e^8. A valve disk e^9 closes this passage. A stem e^{10} extends from the valve to a pedal e^{11}. The pedal is mounted on a standard e^{12}. Upon depressing the end of the pedal with the foot, the stem e^{10} is raised, carrying with it the valve and so opening the connection to the supply pipe E^3. The exhaust pipe E^4 is connected with the chamber e^{13} and this chamber is connected by a passage e^{14} with the pipe chamber E^6. The disk e^{15} controls the passage. A stem e^{16} extends from the disk to the pedal e^{17}. Upon depressing the pedal with the foot, the disk e^{15} is raised, thus permitting the exhaust of the liquid from the cylinder.

In the operation of the device, starting with the cover in a closed position, the pedal e^{11} is depressed, opening the supply valve. The liquid passing through the minute openings e^3 enters the cylinders E' at a uniform speed, thus moving the pistons E in unison. With the upward movement of the pistons the cover C is raised and with it the tray B. We prefer that the pivot *c'* and the axis of the rounded end c^4 be in alinement so that the cover is free to swing pivotally. We prefer to provide the cover with a weight c^5 so that as it is lifted, it will assume a slanting position with the front edge uppermost.

We prefer to connect the upper ends of the cylinders by means of a pipe E^7 with the exhaust pipe E^4 so as to permit the escape of any leakage past pistons. It will be noted that the tray may be readily removed by removing the bails from the hooks *c* and if desired the cover may be lifted out of the sockets *e* and removed.

We prefer to provide the cover with the packing C'. This engages the edges of the walls of the chamber, and in as much as the cover is weighted with the tray B, the steam

or other sterilizing fluid is maintained at slightly above atmospheric pressure, thus making possible a higher temperature than would otherwise be possible. This packing is arranged in a clip c^7, the clip being secured to the under part of the cover and having the edges c^8 next the shoulder of the cover, and an under cut lip c^6 at opposite sides of the strip. The packing C′ is sprung into this clip and retained by it.

What we claim as new is:

1. In a sterilizer the combination of a sterilizing chamber; a cover therefor; a fluid pressure actuated means for lifting the cover; and a pedal actuated valve for controlling the actuating fluid.

2. In a sterilizer the combination of a sterilizing chamber; a tray arranged in the chamber; a fluid pressure actuated means for lifting the tray; and a pedal actuated valve controlling the actuating fluid pressure.

3. In a sterilizer the combination of a sterilizing chamber; a cover therefor; a tray suspended in the chamber; a fluid pressure actuated means for lifting the tray and cover; and a pedal actuated valve for controlling the actuating fluid.

4. In a sterilizer the combination of a sterilizing chamber; a cover therefor; cylinders arranged each side of the chamber; pistons in said cylinders; means for communicating the action of the pistons to the cover for lifting the same; and means for controlling the actuating fluid.

5. In a sterilizer, the combination of a sterilizing chamber; a tray therefor; cylinders arranged each side of the chamber; pistons in said cylinders; means for communicating the action of the pistons to the tray for lifting the same; and means for controlling the actuating fluid.

6. In a sterilizer the combination of a sterilizing chamber; a tray therefor; cylinders arranged each side of the chamber; pistons in said cylinders; means for communicating the action of the pistons to the tray for lifting the same; and a pedal actuated valve for controlling the actuating fluid.

7. In a sterilizer the combination of a sterilizing chamber; a cover therefor; a fluid pressure actuated means for lifting the cover, said means being arranged to lift the cover bodily from the chamber.

8. In a sterilizer the combination of a sterilizing chamber; a cover therefor; a fluid pressure actuated means for lifting the cover; a pivoted connection arranged between said means and the cover, said connection being approximately at the central points of opposite edges of the cover.

9. In a sterilizer the combination of a sterilizing chamber; a cover therefor; a tray suspended from the cover; and a fluid pressure actuated means for lifting the cover.

10. In a sterilizer the combination of a sterilizing chamber; a cover therefor; a fluid pressure actuated means for lifting the cover; a pivotal connection between said means and the cover; and a pivotal connection between the tray and the cover, the axes of said connections being in alinement.

11. In a sterilizer the combination of a sterilizing chamber; a cover therefor; a fluid pressure actuated means for lifting the cover; a pivotal connection between said means and the cover; and a pivotal connection between the tray and the cover, the axes of said connections being in alinement, and said cover being weighted to tilt as it is raised.

12. In a sterilizer the combination of a sterilizing chamber; a cover therefor; a fluid pressure actuated means for lifting the cover; a pivotal connection between the cover and said means, said cover being weighted to tilt as it is lifted by said means.

13. In a sterilizer the combination of a sterilizing chamber; a cylinder at each side of the chamber; pistons in said cylinders; lifting devices in the chamber actuated by the pistons, means for conveying fluid in said cylinders, said means comprising a contracted opening, for the purpose described.

14. In a sterilizer the combination of a sterilizing chamber; lifting devices in said chamber; fluid actuated means for actuating said devices; a pedal actuated valve for controlling the inflow of the fluid to said means; and a pedal actuated valve for controlling the exhaust of the fluid from said means.

15. In a sterilizer the combination of a sterilizing chamber; lifting devices in said chamber; fluid actuated means for actuating said devices; a pedal actuated valve for controlling the inflow of fluid to said means; and a pedal actuated valve for controlling the exhaust of fluid from said means; the valves controlling the supply and exhaust of fluid comprising the chamber e^7, the supply passage E^6, with the passage e^8 connecting the same, the disk e^9, the stem e^{10} extending from the disk and the pedal e^{11} for operating the stem, the exhaust chamber e^{13} having with a passage e^{14} connecting it with the pipe chamber E^6, disk e^{15} controlling the passage, stem e^{16} and pedal e^{17} for actuating the same.

16. In a sterilizer the combination of a sterilizing chamber; a cover therefor; fluid pressure actuated means for lifting the cover; and a connection between the cover and said means, the said connection being arranged to permit the removal of the cover.

17. In a sterilizer the combination of a sterilizing chamber; a tray arranged therein; fluid pressure actuated means for lifting said tray; and a connection between the fluid actuated means and the tray, said connection being arranged to permit the removal of the tray.

18. In a sterilizer the combination of a

sterilizing chamber; a cover therefor; a tray supported in the chamber; a fluid pressure actuated means for lifting the tray and cover and a pedal actuated valve for controlling the actuating fluid.

19. In a sterilizer, the combination of a sterilizing chamber; a cover therefor; fluid pressure actuated means for lifting the cover; and a connection between the cover and said means, the said connection being arranged to permit the raising of the cover independently of said fluid pressure actuated lifting means.

In testimony whereof, we have hereunto set our hands in the presence of two subscribing witnesses.

WILLIAM A. WILEY.
J EVERETT HALL.
GEORGE F. HALL.

Witnesses:
H. R. Lord,
Bessie F. Parker.