No. 720,107. PATENTED FEB. 10, 1903.

J. BRUCKER.

DOOR FOR STERILIZERS.

APPLICATION FILED JUNE 24, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

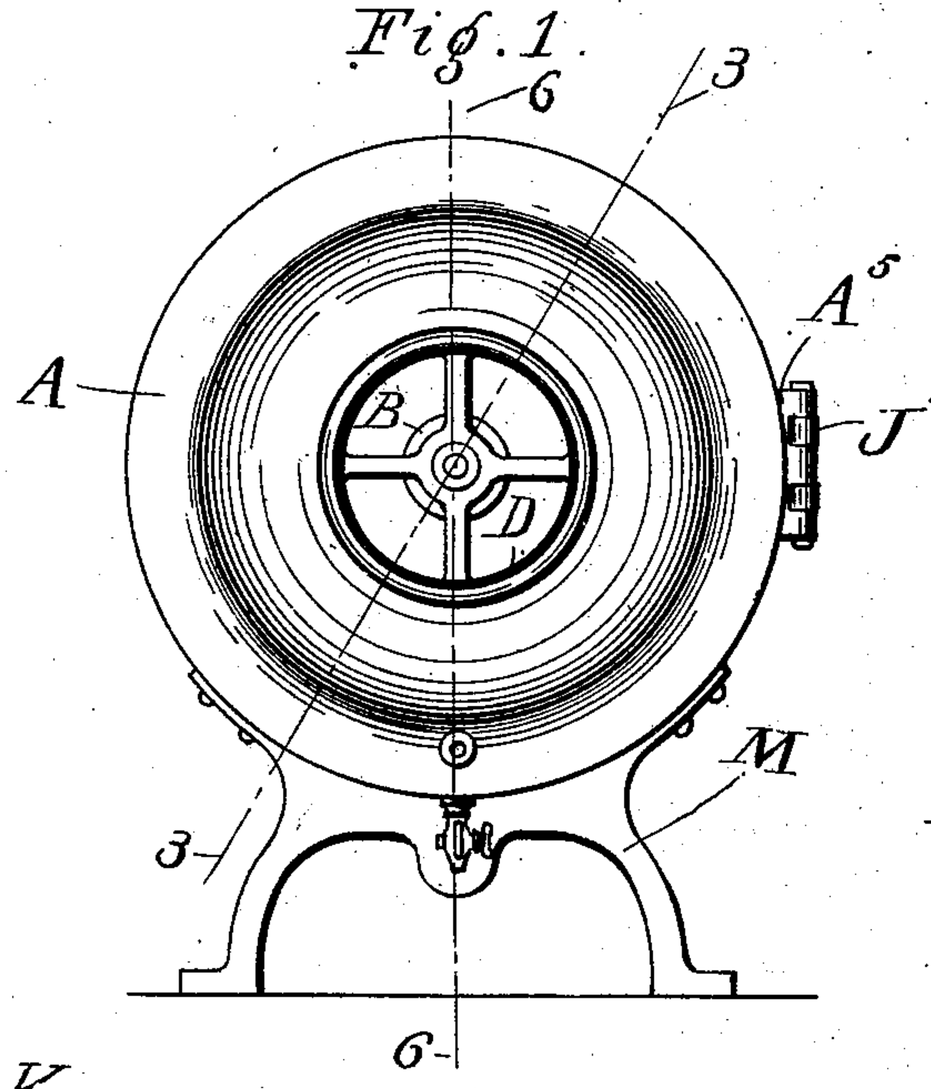
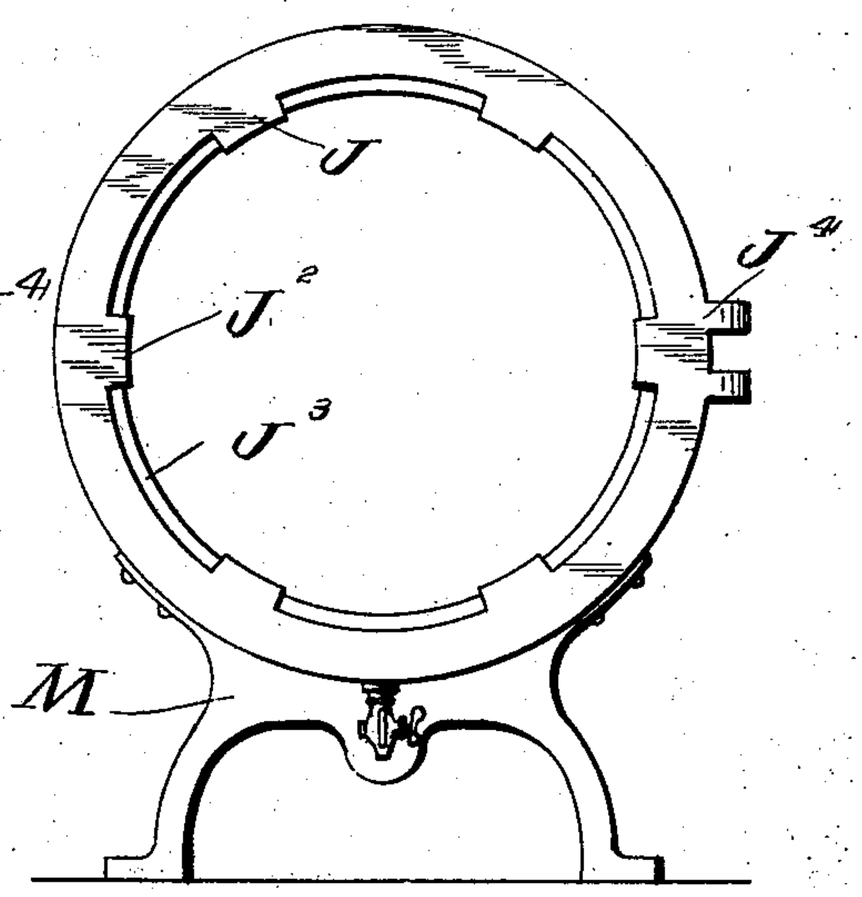


Fig. 2.



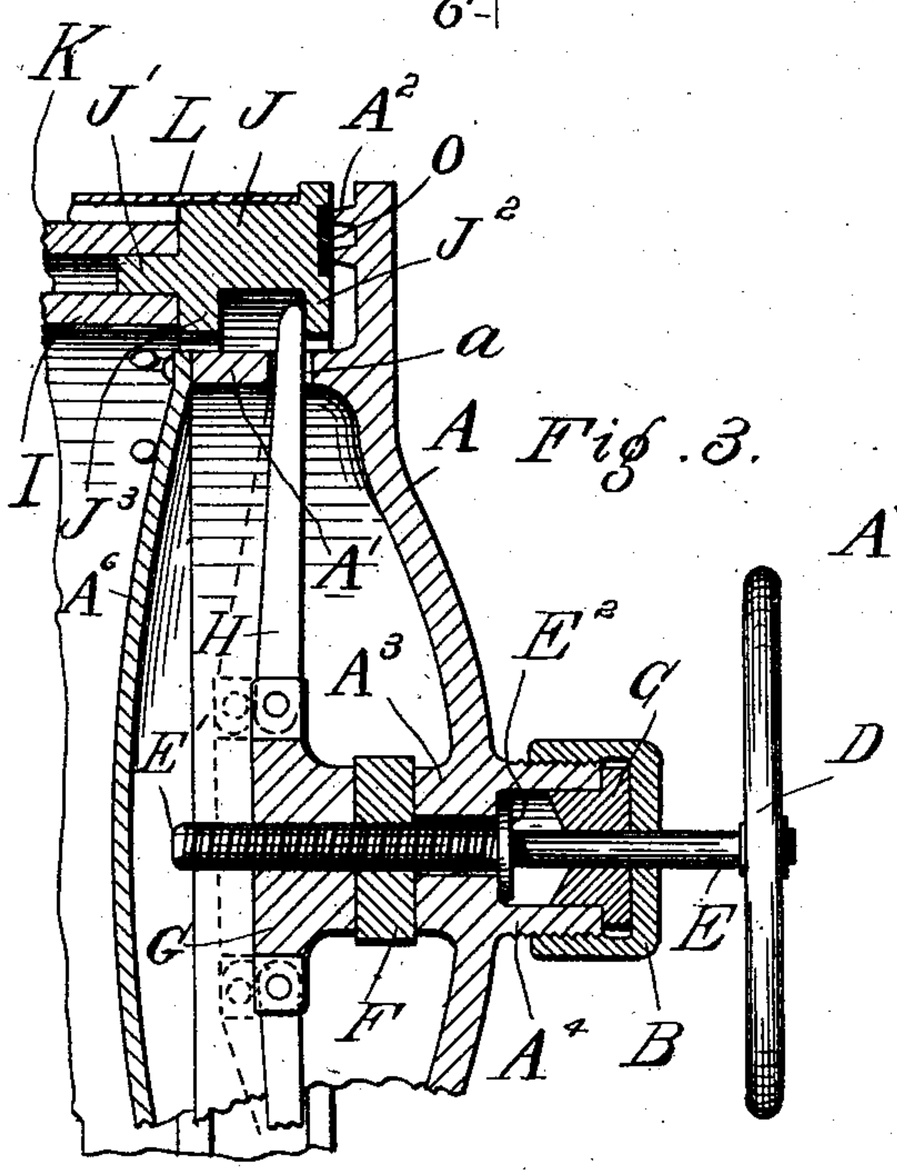
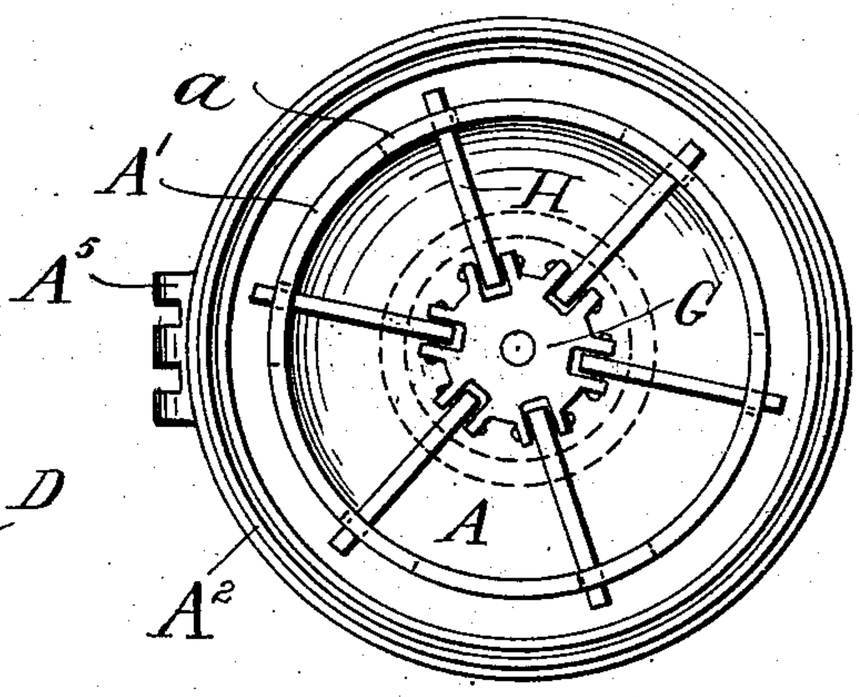


Fig. 3.

Fig. 4.



Witnesses
S. J. Cox.
M. Hyndman

Julius Brucker
Inventor

By His Attorney William R. Baird

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DOOR FOR STERILIZERS.

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 5.

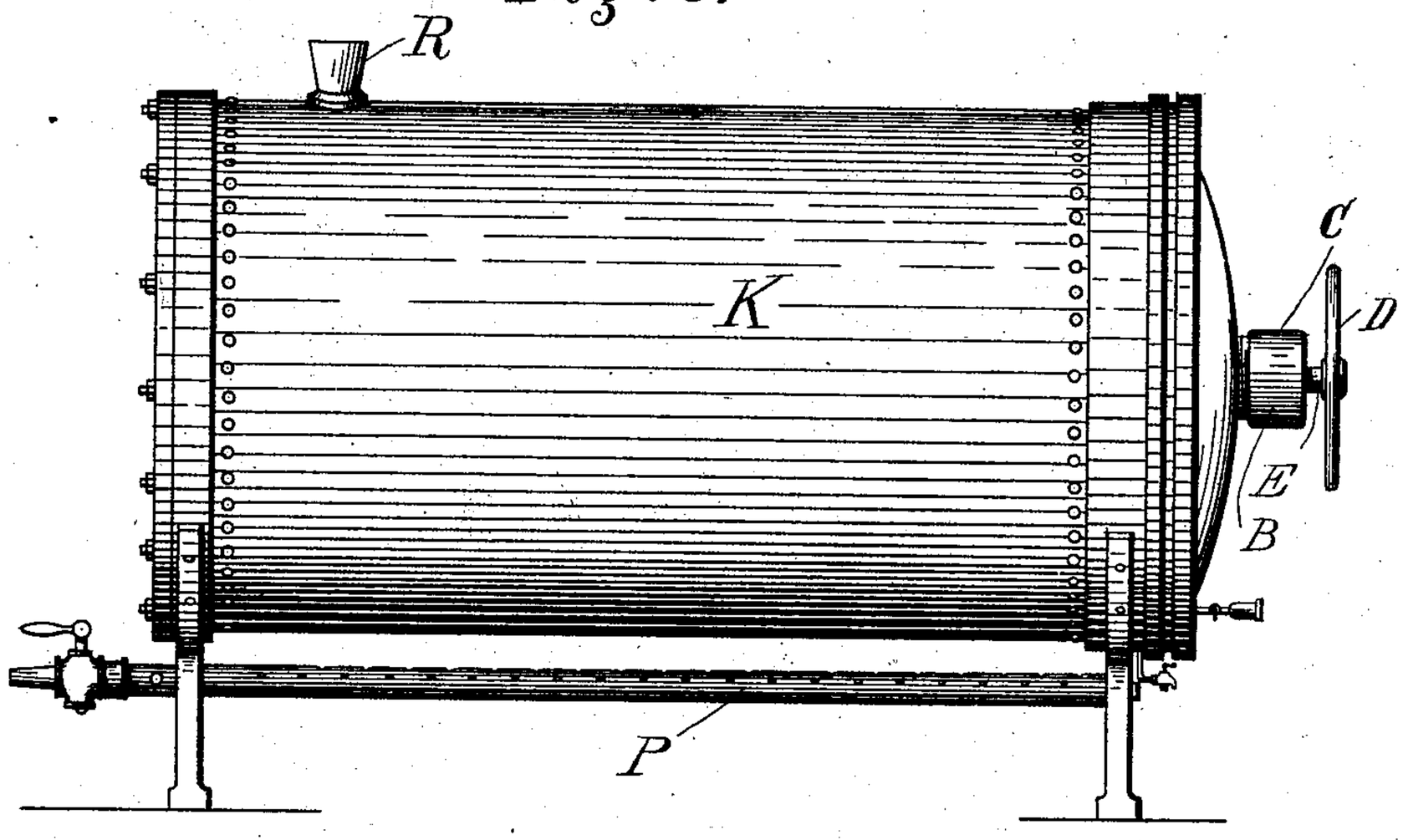
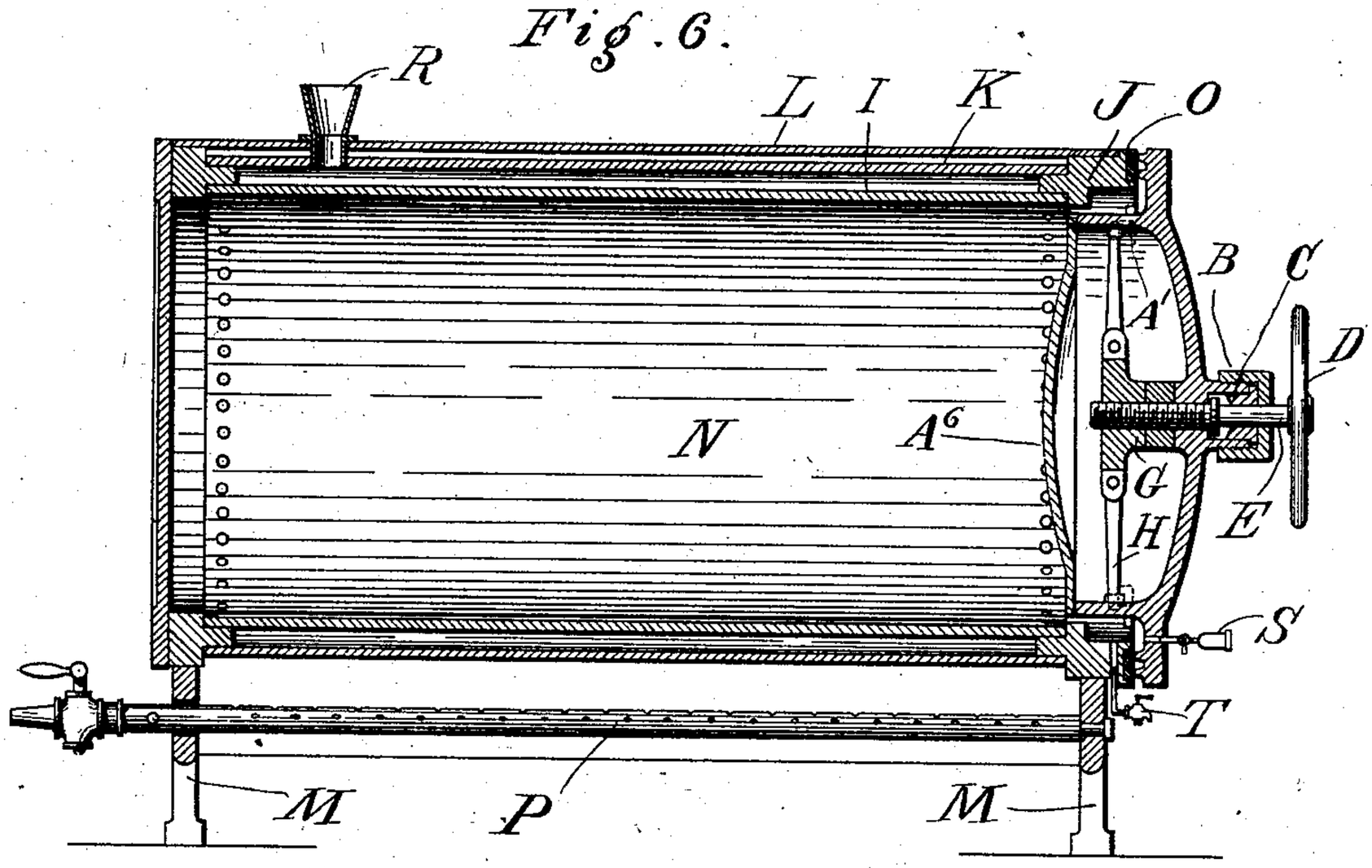


Fig. 6.



Witnesses
S. J. Cox.
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Julius Brucker Inventor
By His Attorney William R Baird

UNITED STATES PATENT OFFICE.

JULIUS BRUCKER, OF BROOKLYN, NEW YORK.

DOOR FOR STERILIZERS.

SPECIFICATION forming part of Letters Patent No. 720,107, dated February 10, 1903.

Application filed June 24, 1902. Serial No. 112,951. (No model.)

To all whom it may concern:

Be it known that I, JULIUS BRUCKER, a citizen of the United States, and a resident of the borough of Brooklyn, in the county of Kings, city and State of New York, have invented certain new and useful Improvements in Doors for Sterilizers, of which the following is a specification.

My invention relates to devices used for sterilizing dressings, surgical instruments, and other articles, and particularly to the door for the sterilizing-chamber.

It has for its object, among others, the furnishing of a device of this character which may be opened and closed and made air and steam tight by a quick and simple manipulation of a single means and which will be of a strong, compact, and durable construction, presenting a neat and finished appearance and having the working parts concealed and protected within the door.

It is illustrated in the accompanying drawings, forming a part hereof, and in which—

Figure 1 is a front view of a sterilizer-door, showing my improvements. Fig. 2 is a like view of the portion of a sterilizing apparatus to which the door is attached. Fig. 3 is a vertical section of the door and adjacent parts of the apparatus on the line 3 3 of Fig. 1, the lower parts thereof being broken away. Fig. 4 is an inside or back view of the said door with the inner cover removed. Fig. 5 is a side view of the entire apparatus with the outer jacket or cover removed. Fig. 6 is a medial longitudinal section of the same with the said cover on the line 6 6 of Fig. 1.

The outer door is composed of a heavy metal plate or disk A, having a deep annular flange A′ on its rear face a short distance from the periphery and a double rib or projection A^2 outside of the said flange. The exteriorly-threaded boss A^4 is located at the center of the door and extends outwardly therefrom, and the boss A^3 extends inwardly at the same point, an internal step being formed in the aperture through the center of the door at this point, against which the ring E^2 of the bolt E bears. The door is provided with hinge members A^5 complemental to those of the sterilizer-rim J^4, by which means the door is hung in position. A back plate or cover A^6 is placed over the door-tightening mechanism and secured to the inner edge of the flange A′.

The bolt E has the wheel D keyed to one end and passes through the aperture in the center of the door. Its opposite end E′ is somewhat enlarged and threaded to correspond with the internal thread of the plate or block G, through which it passes. A nut F is fixed upon the threaded portion of the bolt to prevent its outward movement, while the ring E^2, which is preferably made integral therewith, prevents its movement in the opposite direction.

The central plate G is provided with radial levers H, which are pivotally connected thereto and extend through the slots *a* of the flange A′. It will be seen that when the bolt is rotated the block G will be caused to travel along the same in one direction or the other, according to the direction of the rotation and oscillating movement thus imparted to the levers H, which also by contacting with the ends of the slots *a* prevent the block from having any further rotary motion than is sufficient to cause the said levers to travel the length of said slots. The rim J of the sterilizing apparatus is provided with a series of lugs J^2, corresponding in number to the levers H and so located that when the levers are passed to one end of the slots the outer ends of said levers will be directly beneath the lugs. When therefore the bolt is rotated in one direction, it will first impart rotary motion to the plate or block G and levers H, causing the said levers to pass to one end of the slots and to a position directly beneath the center of the lugs. The rotation of the plate being now checked by the levers, the further rotation of the bolt will cause the said plate to travel toward the inner end thereof and assume the position indicated by dotted lines in Fig. 3. This will cause the outer ends of the levers to press against the lugs J^2 and also against the inner or rear edges of the slots *a*, acting as levers of the second class, and to cause the annular ribs or projections A^2 to press with great force against the rim of the sterilizing-chamber, which is provided at this point with a ring of Babbitt metal or packing O to insure an absolutely air and steam tight closure.

The sterilizing apparatus consists, preferably, of the sterilizing-chamber N, adapted to

receive the articles to be sterilized, and a steam-chamber surrounding the same between the wall I of the sterilizing-chamber and the inner cylinder K, which are riveted or otherwise secured to the rim J and held in position by the portions J′ and J³ of the same. These are surrounded by an outer cylinder L, open at the bottom, between which and the cylinder K is a space for receiving the heated air rising from the burner P, which consists of a perforated tube adapted to be connected at one end to a gas-supply pipe. A water-inlet R is provided at the upper part of the apparatus, through which water may be supplied to the steam-chamber.

In order to prevent leakage around the bolt or shaft E, I have provided the cap B, threaded upon the collar A⁴, and the packing-ring C within the same, by means of which this portion may be rendered air and steam tight.

A small valve S is located near the lower edge of the door and another, T, at the lower part of the rim, controlling communication between the sterilizing-chamber and the outer atmosphere. The valve S may be used to supply air, either medicated or otherwise, to the interior, and the valve T serves to draw off water which may accumulate in the sterilizing-chamber through the condensation of vapor therein.

The entire apparatus is supported upon the frames M at either end, the gas tube and burner P being passed through the rear frame and secured to the forward one by bolt or other suitable means.

What I claim is—

1. The combination with the body of a sterilizing apparatus, said body having projections at its open end, a door for said open end, pivotally connected with said body, a block mounted to move longitudinally and axially with relation to said door, and radial levers each having one of its ends pivotally connected with said block, its other end arranged to bear upon one of said projections and its intermediate portion bearing upon the door, of an axially-movable shaft having a threaded engagement with said block and operable thereby to move said block both longitudinally and pivotally.

2. In a door for a sterilizing apparatus or the like, the combination of a plurality of radial levers connected to said door and independently movable, a central block or plate to which one end of said levers is pivotally secured and a shaft rotatably mounted in the door disposed at an angle to the plane of said levers and a threaded connection between said central plate and shaft, whereby axial movement of said shaft imparts longitudinal movement to said block or plate.

3. In a door for a sterilizing apparatus or the like, the combination of a plurality of radial levers having a limited rotary movement connected to said door and independently movable, a central block or plate to which one end of said levers is pivotally secured and a shaft rotatably mounted in the door disposed at an angle to the plane of said levers and a threaded connection between said central plate and shaft, whereby axial movement of said shaft imparts longitudinal and axial movement to said block or plate.

4. In a door for a sterilizing apparatus or the like, the combination of radial levers, a central plate to which one end of each lever is pivotally secured, a shaft rotatably mounted in the door and a screw connection between said shaft and central plate forming the sole connection between said levers and the door, whereby axial movement of said shaft imparts longitudinal and axial movement to said block or plate.

5. The combination with the body of a sterilizing apparatus or the like, said body having an open end and projections at said open end, of a door therefor, having a face plate or disk provided with annular flange projecting rearwardly therefrom into said body, said flange having slots, radial levers located rearward of said front plate or disk and projecting through said slots and adapted to engage said projections, means for imparting axial and longitudinal movement to said first-mentioned means.

6. The combination with a body of a sterilizing apparatus or the like, said body having projections at its open end, of a door for said open end pivotally connected with said body and provided with an annular flange projecting rearwardly therefrom into said body, said flange having slots, a block or plate mounted to move longitudinally and axially, radial levers each having one of its ends pivotally connected with said block or plate and its other end projecting through one of said slots and arranged to bear upon said projection, and an axially-movable shaft having a threaded engagement with said block or plate and operated to move said block or plate both longitudinally and axially for the purposes specified.

7. The combination with the body of a sterilizing apparatus, or the like, having an open end, of a door pivotally connected with said body adjacent to said open end and provided with an annular flange extended rearward therefrom into said open end, said flange having slots, a series of radial levers extending through said slots and arranged to engage said open end, said levers having limited movements within said slots, means to which said levers are pivoted and means for imparting axial and longitudinal movement to the first-mentioned means, and coöperating means on the confronting faces of said door and body for effecting a tight closure thereat.

8. In a door for a sterilizing apparatus or the like, the combination of radial levers, a central plate to which said levers are pivotally secured, a bolt mounted in the door, a screw connection between said plate and bolt, whereby axial movement of said bolt imparts longitudinal and axial movement to said

plate, slots in the said door through which said levers pass, and projections on the rim of the sterilizing-compartment opposite portions of said slots.

9. In a door for a sterilizing apparatus or the like, the combination of radial levers, a central plate to which the same are pivotally secured, a bolt rotatably mounted in the door, an enlargement on said bolt which confines its longitudinal movement, a screw connection between said central plate and bolt whereby the rotation of said bolt, first, imparts rotary motion to the levers, and, second, imparts oscillatory motion thereto.

10. In a door for a sterilizing apparatus or the like, the combination of a shaft rotatably mounted in the said door, a screw-thread on the said shaft, means for preventing the shaft from having longitudinal movement, a plate or block through which the said shaft projects, a screw-thread on the aperture of said block which receives the shaft, corresponding to the thread on the shaft levers secured to said plate or block, an annular flange on one side of the door, slots therein through which the said levers project, a rim on the sterilizing-compartment and projections upon said rim at intervals corresponding to the levers.

Witness my hand this 14th day of June, 1902, in the presence of two subscribing witnesses.

JULIUS BRUCKER.

Witnesses:
HERMAN MEYER,
ERNEST H. BOISE.