

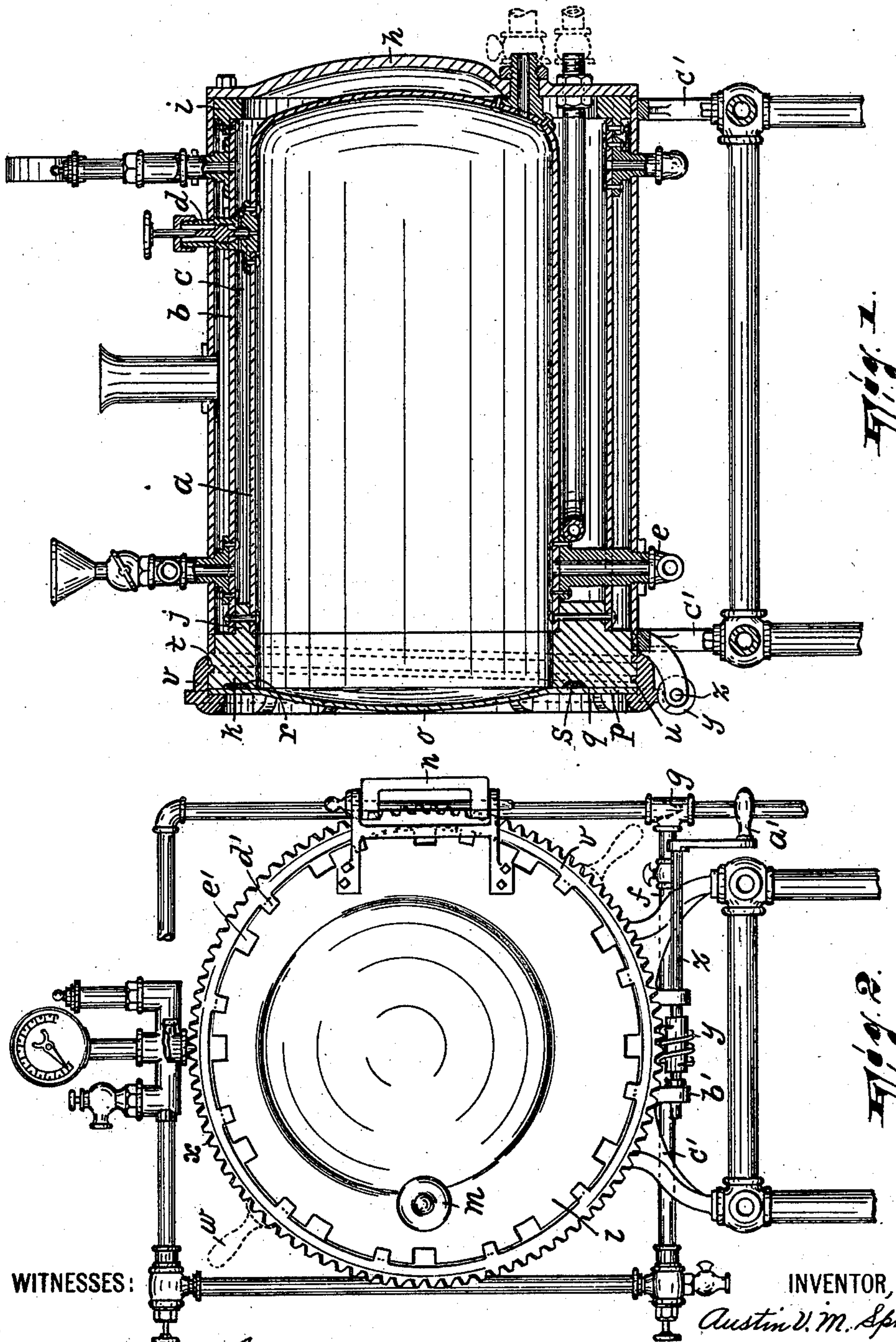
No. 671,500.

Patented Apr. 9, 1901.

A. V. M. SPRAGUE.
DOOR FOR STERILIZING APPARATUS.

(Application filed July 31, 1900.)

(No Model.)



WITNESSES:

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AUSTIN V. M. SPRAGUE, OF BROOKLYN, NEW YORK.

DOOR FOR STERILIZING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 671,500, dated April 9, 1901.

Application filed July 31, 1900. Serial No. 25,421. (No model.)

To all whom it may concern:

Be it known that I, AUSTIN V. M. SPRAGUE, a citizen of the United States, residing in Brooklyn, in the State of New York, have invented a certain new and useful Improvement in Doors for Sterilizing Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to sterilizing apparatus, and it has reference particularly to closures for the sterilizing-chambers of apparatus of the kind referred to in my copending application for United States Letters Patent filed May 23, 1900, and bearing the Serial No. 17,675.

In the operation of the apparatus of the kind indicated it becomes necessary to occasionally produce a vacuum in the sterilizing-chamber of said apparatus; and it is therefore the object of this my present invention to provide a simple and readily-operative closure whereby the sterilizing-chamber may be practically hermetically sealed and all possibility of the admission of air to said chamber by way of the opening for which such closure is provided and while the vacuum is being maintained thus avoided.

My invention is fully illustrated in the accompanying drawings, wherein—

Figure 1 is a sectional view of a sterilizing apparatus provided with my improved closure, and Fig. 2 is a view of the front or closure end of said apparatus.

In the accompanying drawings, *a* designates a seamless shell which is open at one end and closed at the other, said shell affording a chamber in which the sterilizing operation is adapted to be performed. Surrounding this shell is another shell *b*, which, with said shell *a*, forms a surrounding chamber or jacket *c*, provided for the generation of the sterilizing medium, as steam, said chambers having communication with each other through a suitable valve *d*. In order to exhaust air out of the sterilizing-chamber previously to admitting the steam of steriliza-

tion and to exhaust said steam when the sterilizing has been completed, a fitting *e* is provided, said fitting being connected with an ejector-containing pipe *g*, and said pipe being connected with the steam-chamber *c* at one of its ends and being adapted to discharge into the atmosphere at the other of its ends.

The shell *b* is closed at its rear end by a wall *h*, secured to an annular head *i*, to which said shell is itself riveted, the other end of said shell and the corresponding end of the inner shell *a* being secured to a flange *j*, projecting rearwardly from another annular head *k*.

l designates the door of the apparatus. This door consists of a substantially circular metallic plate having a knob *m* and being sustained on the head *k* by means of a hinge *n*.

It will be observed upon a view of the accompanying drawings that the portion of the door which is immediately opposite the sterilizing-chamber is bulged outwardly, as at *o*, while the part *p* of said door which surrounds said bulged portion is perfectly flat and on its rear face affords an extended bearing-surface. It will also be observed that the front face *q* of the head *k* is also perfectly flat, said head being quite thick, so that an extended bearing-surface is here also provided. Thus pressure, such as atmospheric pressure, being exerted upon the bulged portion of the door, with the extended contacting portions of the surfaces of said door and the head impinging uniformly against each other, a perfectly tight joint is effected and the possibility of vitiating a vacuum existing in the sterilizing-chamber minimized.

In order to further insure the preservation of the vacuum, I form an annular groove *r* in the face *q* of the head *k*, and in said groove I place a soft elastic sealing-ring *s*, preferably of rubber. The head *k* is provided with external screw-threading *t*, which threading is adapted to receive corresponding internal screw-threading *u*, formed on a ring *v*, which surrounds the head and may have radial handles *w* projecting from it whereby to operate it, according to one embodiment of my invention. According to another embodiment of the invention the periphery of the ring may be formed with gear-teeth *x*, with which may engage the threading of a worm *y*, which is carried by a shaft *z*, having a handle *a'* and

journalled in arms b' , which project from one of the supports c' for the apparatus. The ring v is provided with a series of inwardly-projecting radial lugs d' , which overlap the periphery of the door, being adapted to take against its front face when said ring is turned into place either by the handles w or the worm y . In order that the door may swing clear of these projections when it is opened or closed, a series of recesses e' , corresponding in number and disposition to the lugs d' , is formed in its edge portion, it being understood that the ring is to be turned so that the lugs and recesses register when the door is swung.

A closure constructed substantially as above described will be found to offer a perfect seal against the admission of air to the sterilizing-chamber, it being of course understood that it is highly important in order that the sterilizing operation be successfully performed that after the operation has been once begun atmospheric air, which would have a contaminating influence upon the articles being treated, should be absolutely excluded from the sterilizing-chamber.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a sterilizing apparatus, a closure mechanism for the sterilizing-chamber of said apparatus consisting of a stationary part, a door adapted to seat against said stationary part, and a clamping-ring having a threaded engagement with said stationary part, said clamping-ring being adapted to take against

the door to bind the latter in place, and the one having spaced projections and the other having correspondingly-spaced recesses, substantially as described.

2. In a sterilizing apparatus, a closure mechanism for the sterilizing-chamber consisting of an annular head disposed at the mouth of said chamber, a door adapted to seat against said head, and a clamping-ring having a threaded engagement with said head, said clamping-ring having spaced projections adapted to take against the door to bind the latter in place and said door having correspondingly-spaced recesses, substantially as described.

3. In a sterilizing apparatus, a closure mechanism for the sterilizing-chamber consisting of an annular head disposed at the mouth of said chamber, a door adapted to seat against said head, a clamping-ring having a threaded engagement with said head, said clamping-ring having spaced projections adapted to take against the door to bind the latter in place and said door having correspondingly-spaced recesses, said clamping-ring also having gear-teeth, a worm having a crank and handle and meshing with said gear-teeth, and a support providing bearings for said worm, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 30th day of June, 1900.

AUSTIN V. M. SPRAGUE.

Witnesses:

JOHN W. STEWARD,
ALFRED GARTNER.