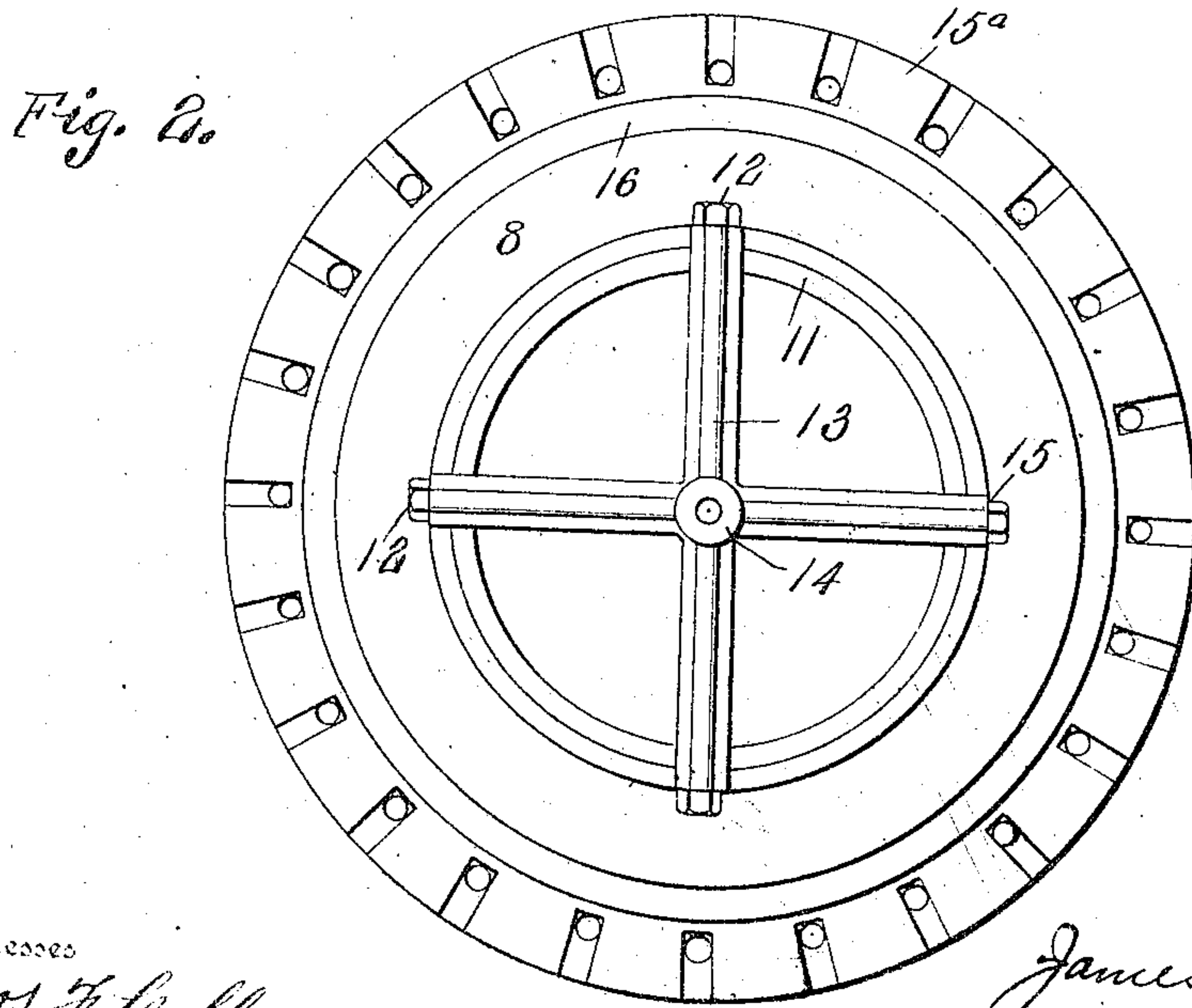
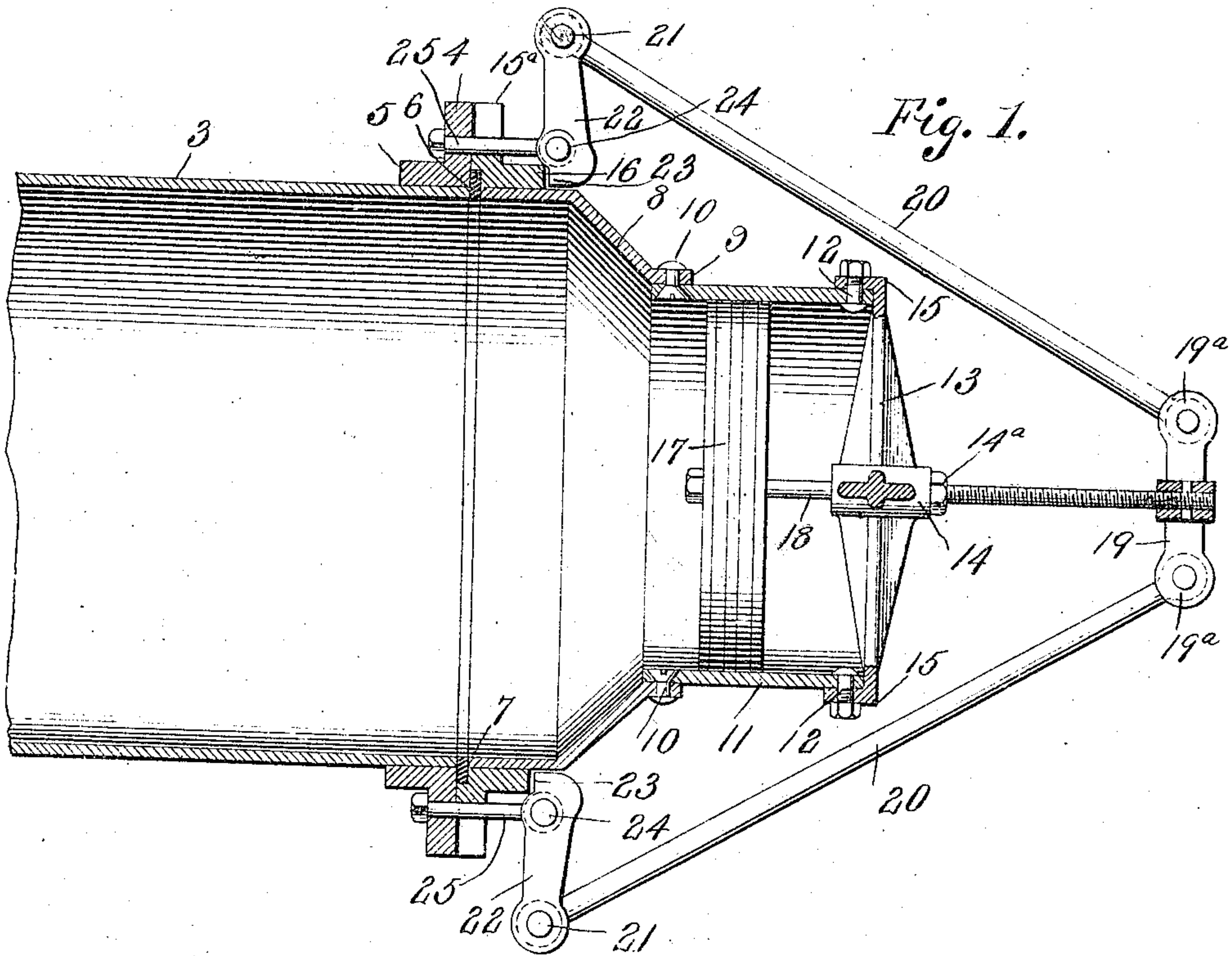


No. 857,148

PATENTED JUNE 18, 1907.

J. J. BARR.
AUTOMATIC RETORT COVER.
APPLICATION FILED JULY 19, 1906.



Witnesses
J. F. Collins
G. M. Stucker

Inventor
James J. Barr
G. Howlett Davis
his Attorney

UNITED STATES PATENT OFFICE.

JAMES J. BARR, OF SLIDELL, LOUISIANA, ASSIGNOR OF ONE-HALF TO CLIFF S. WALKER, OF SLIDELL, LOUISIANA.

AUTOMATIC RETORT-COVER.

No. 857,148.

Specification of Letters Patent.

Patented June 18, 1907.

Application filed July 19, 1906. Serial No. 326,835.

To all whom it may concern:

Be it known that I, JAMES J. BARR, a citizen of the United States, residing at Slidell, in the county of St. Tammany and State of Louisiana, have invented new and useful Improvements in Automatic Retort-Covers, of which the following is a specification.

This invention relates to an automatic closing device for hermetically sealing retorts, cylinders, and for other purposes wherein it is found applicable.

Primarily the invention is designed for use for closing and hermetically sealing the retorts or cylinders used in the preservation of wood and where the material treated, is first subjected to steam pressure and later to heavy pressure under the preservation liquid, the device being so constructed and arranged in such relation with respect to the retort, that the pressure within the retort or cylinder will automatically operate the device to cause the closing and hermetical sealing of the retort or cylinder.

Although the device is designed particularly for use in connection with wood preserving plants, yet it will be stated, that the device is adapted for any usages it may be found applicable.

The invention further aims to provide a closing device which shall be simple in its construction, automatic in its action, constituting a hermetical seal for the opening with which it is arranged in operative relation, efficient in its use, strong, durable, conveniently set up with respect to the opening for which it is adapted to close, and comparatively inexpensive to manufacture.

With the foregoing and other objects in view the invention consists of the novel construction, combination, and arrangement of parts hereinafter more specifically referred to, and illustrated with accompanying drawings, wherein is shown the preferred embodiment of the invention, but, it is to be understood that changes, variations and modification can be resorted to which come within the scope of the claims hereunto appended.

In describing the invention in detail reference is had to the accompanying drawings wherein like reference characters denote corresponding parts throughout the several views, and in which

Figure 1 is a longitudinal sectional view of a cylinder, the latter being broken away, show-

ing the adaption thereto of an automatic closing device in accordance with this invention. Fig. 2 is a front elevation of the device with the shifting links and locking levers removed.

Referring to the drawings by reference characters, 3 denotes a receptacle as shown in the form of a cylinder, to one end of which an automatic closing device, in accordance with this invention, is connected in operative relation so that the closing device forms a continuation of the cylinder 3.

Fixed exteriorly to that end of the cylinder 3 which is to be closed and hermetically sealed by the device is an abutment collar 5 having a laterally extending annular flange 4, the forward face of which is flush with the cylinder edge 6. Adapted to abut against the cylinder edge 6 is the rear edge 7, of a cover having a cylindrical portion of the same diameter as the cylinder. The said cylindrical portion of the cover merges into a cone-shaped or tapering portion 8 terminating in a flange 9. To the inner face of this flange is secured, through the medium of the holdfast devices 10 a cylindrical extension 11, having attached to its forward end by means of the holdfast devices 12, a spider 13. The latter is provided centrally thereof, with a guide sleeve 14 which extends rearwardly and forwardly of the spider 13. The outer ends of the arms of the spider 13 are bent at right angles as at 15 so as to embrace the forward end of the cylindrical extension 11 and, through the said angular ends 15 extend the holdfast devices 12 for securing 11. Although the cover and cylindrical extension are shown in two separate parts, yet the same can be formed of one element, that is to say, the cylindrical extension may be an integral part of the cover.

Fixed to the periphery of the cylindrical portion 7 of the cover at the rear end thereof, is a collar 16, recessed to receive a packing ring 7^a, which lies against the edge of the cylindrical portion and is flush with the rear of the collar. The collar 16 is formed with a radially projecting annular flange 15^a which opposes the flange 4. The collar 16 opposes the collar 5 and the said collars and flanges are adapted to be held together through the medium of a means hereinafter set forth and, when in engagement, to form a hermetical closure or seal.

Operating within the cylindrical extension 11, is a piston 17, which may be built up or cast hollow, and is of such diameter as to snugly fit the inner face of the extension 11.

5 The reference character 18 denotes the piston rod which is of such length as to extend through the guide sleeve 14, projects forwardly of the spider 13, and is provided with a stop 14^a which is adapted to engage the

10 outer end of the guide sleeve 14 to limit the inward movement of the rod 18 in case a vacuum is formed in the cylinder 3. The outer end of the rod 18 has secured thereto an arm 19 which extends from both sides of

15 the rod and has articulated to each end thereof, as at 19^a, the forward end of a shipping link 20 which extend at an inclination outwardly with respect to the rod 18. To the rear end of each of the links 20 is pivotally

20 connected as at 21, the outer end of a combined shifting and locking lever 22, which has its inner end formed with a nose 23 adapted to engage the outer edge of the collar 16, so that when the levers 22 are rocked

25 in one direction on their pivots and in a manner as hereinafter set forth, the collar 16, cover and cylindrical extension 11 will be moved toward the cylinder 3, causing the close contact of the flanges 4 and 15^a and the

30 compressing of the packing 7^a between the collars 5 and 16 thereby forming a hermetical closure.

The levers 22 are arranged diametrically opposite each other and pivoted intermediate near their nose ends, as at 24 to the

35 forward end of a pair of bolts 25. These bolts extend through slots in flange 4 of the collar 5 and through slots in flange 15^a of the collar 16. The bolts 25 not only form fulcrums for the levers 22, but also act as a

40 means for connecting the collar 15^a to the collar 4. Although but two combined shifting and locking levers are shown, yet this number and the necessary operating means there-

45 for can be increased if it be desired.

The manner in which the closing device operates is as follows: The device being set up in the manner as shown, the pressure within the cylinder 3 causes the piston 17 to

50 move forwardly carrying the piston rod therewith. As the piston rod 18 moves forwardly it will carry the shifting links 20 and cause them to swing inwardly on their pivot 19^a, and the said links 20 will rock the levers

55 22 on their pivots 24, bringing the nose ends 23 of the levers 22 against the outer edge of the collar 16. A conformation of the application of pressure against the piston 17 will cause the nose ends 23 of the levers 22 to

60 shift the flange 15^a and cover against the flange 4 and owing to the interposition of the packing 7^a between its collars 5 and 16 it will form a hermetical seal and said seal will be maintained as long as the pressure is ex-

65 erted against the piston 17. The latter not

only constitutes a means for operating the links 20, but also acts as a closure for the open end of the cylinder 3, as the said piston 17 snugly but movably fits the inner face of the extension 11. In case the piston is

70 drawn inwardly, the inward movement thereof is arrested by the stop 14^a engaging the guide sleeve 14.

From the foregoing description taken in connection with the accompanying drawing

75 it will be evident that a closing device is set up, which is unusually strong and automatic in its action and furthermore forms what may be termed a hermetical seal for the open end of a retort or cylinder.

80

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

1. A receptacle, and means for closing the same, said means comprising a cover, and

85 means carried thereby movable independently thereof and actuated by pressure within the receptacle, for securing said cover in position.

2. A receptacle, a cover therefor, and

90 means responsive to pressure within the receptacle and movable independently of the cover for forcing said cover into sealing engagement with the receptacle.

3. A receptacle, a cover therefor, a sealing

95 ring between the cover and receptacle, and movable means whereby said cover will be urged against said ring with a force proportional to the pressure within the receptacle.

4. A receptacle, a cover therefor, adapted

100 to abut against the edge thereof and lie partially in the same plane, and fluid pressure operated means for holding said parts together.

5. A receptacle, a cover therefor, sealing

105 means between said cover and said receptacle, reciprocating means carried by said cover responsive to fluid pressure, and means connected to said means for forcing said cover into engagement with said sealing

110 means.

6. A receptacle, a cover therefor, sealing means between said receptacle and cover, and automatic means, controlled by fluid pressure within said receptacle and movable

115 independently of said cover, for forcing said cover against said sealing means.

7. A receptacle, a cover therefor, and automatically movable means for forcing said cover into engagement with said receptacle,

120 with a pressure proportional to the fluid pressure existing within said receptacle.

8. A receptacle, a cover therefor, locking levers adapted to engage said cover for shifting it against the receptacle thereby forming

125 an air tight closure, a pair of links adapted when operated in one direction to move and hold said levers in locking position, and link operating means arranged within said cover and connected with the links.

130

9. A receptacle, a cover therefor, locking
levers adapted to engage said cover for shift-
ing it against the receptacle thereby forming
an air tight closure, a pair of links adapted
5 when operated in one direction to move and
hold said levers in locking position, and pres-
sure-operated link-operating means arranged
within said cover and connected with the
links.

10 10. A receptacle, a cover, bolts extending
through said receptacle and cover, locking
levers pivotally connected to the bolts and
adapted to engage the cover for shifting it
against the receptacle thereby forming a
15 tight closure, a pair of links for operating the
levers, and link operating means arranged
within said cover and connected to the links.

11. A receptacle, a cover, bolts extending
through said receptacle and cover, locking
levers pivotally connected to the bolts and 20
adapted to engage the cover for shifting it
against the receptacle thereby forming a
tight closure, a pair of links for operating the
levers, and pressure operated, link-operating
means arranged within said cover and con- 25
nected to the links.

In testimony whereof I have hereunto set
my hand in presence of two subscribing wit-
nesses.

JAMES J. BARR.

Witnesses:

H. W. W. ODRUFF, Jr.,
C. A. DELERT.