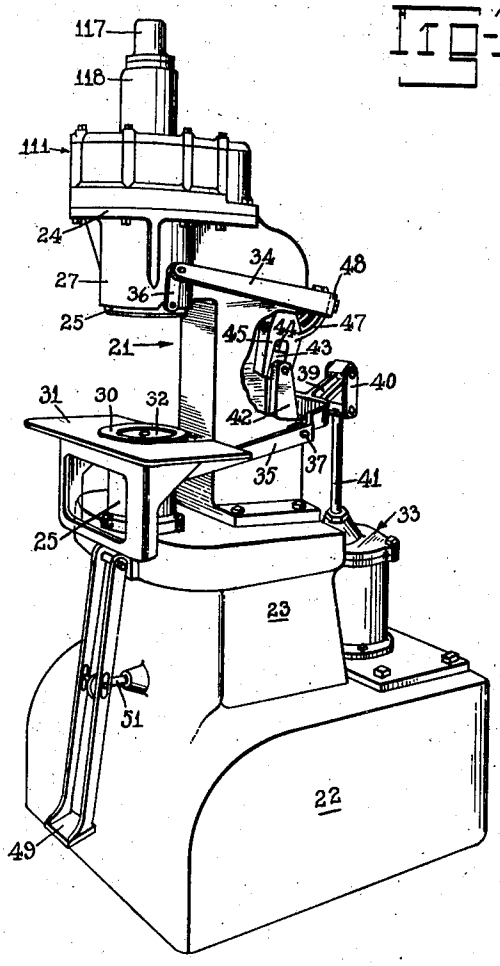
Dec. 19, 1933. L. D. SOUBIER 1,940,635

APPARATUS FOR VACUUMIZING AND SEALING JARS

Filed Feb. 10, 1930 8 Sheets-Sheet 1

Fig. 1.



Inventor

Leonard D. Soubier

By J. F. Rule

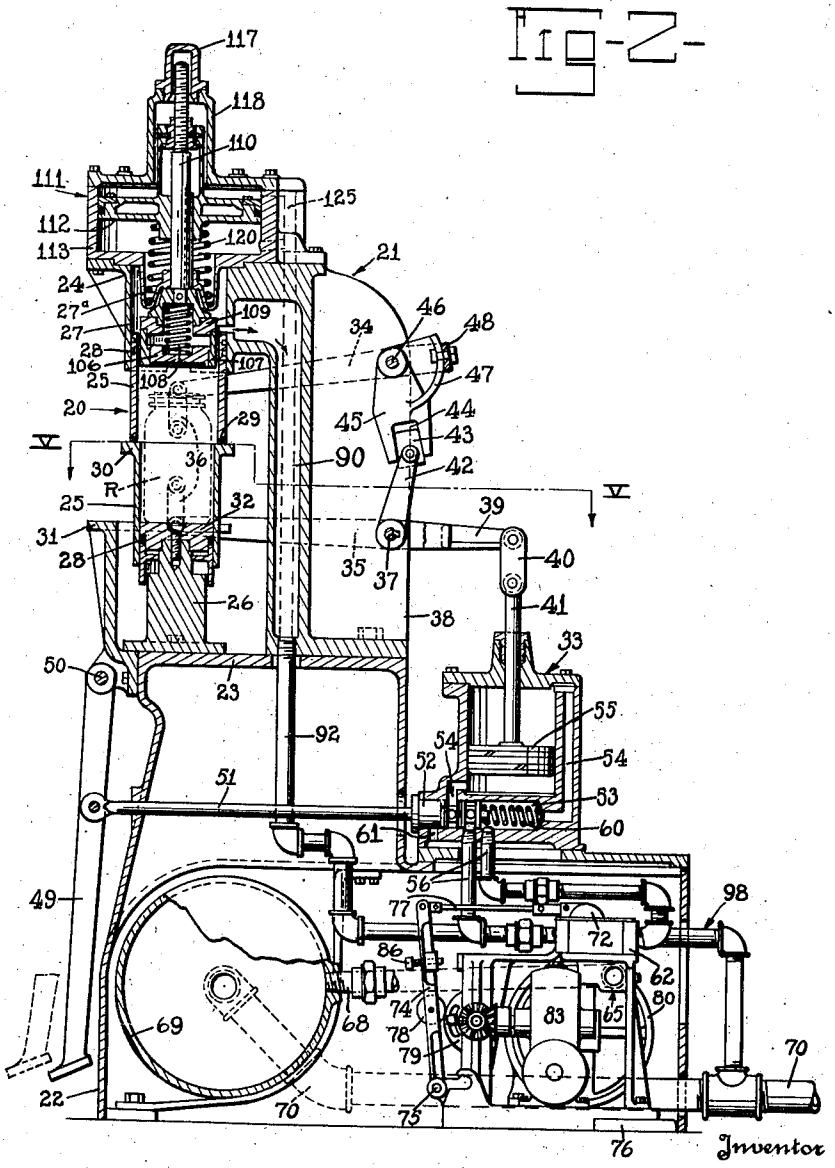
Attorney

Dec. 19, 1933. L. D. SOUBIER 1,940,635

APPARATUS FOR VACUUMIZING AND SEALING JARS

Filed Feb. 10, 1930 8 Sheets-Sheet 2

Fig-2-



Inventor

Leonard D. Soubier

By J. F. Rule

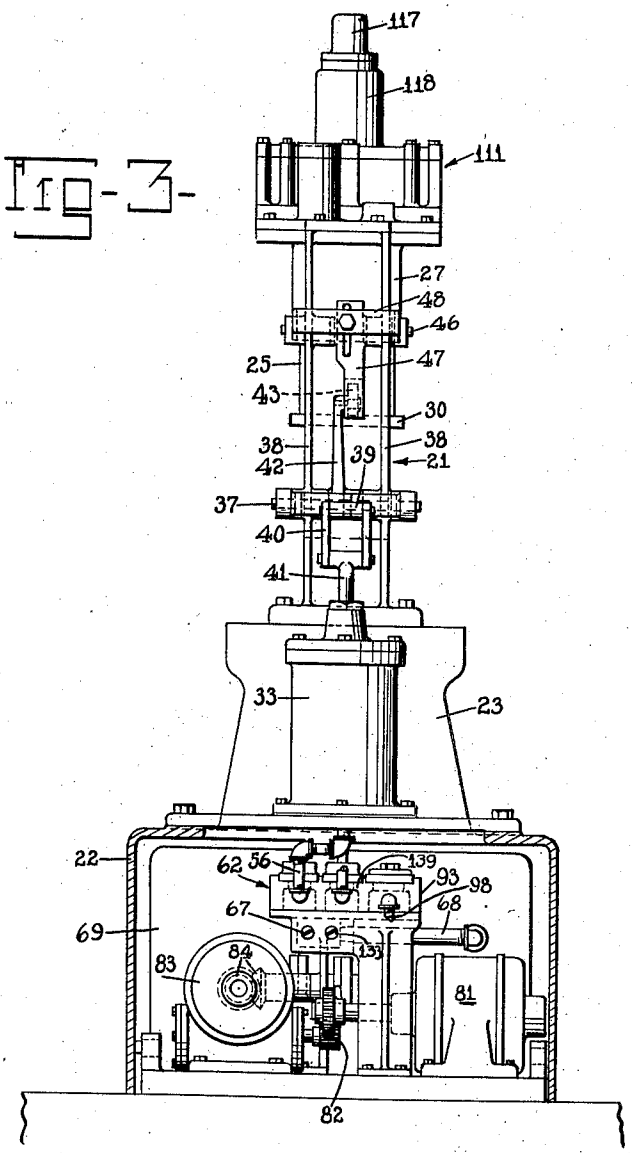
Attorney

Dec. 19, 1933. L. D. SOUBIER 1,940,635

APPARATUS FOR VACUUMIZING AND SEALING JARS

Filed Feb. 10, 1930 8 Sheets-Sheet 3

Fig-3-



Inventor

Leonard D. Soubier

By J. F. Rule

Attorney

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APPARATUS FOR VACUUMIZING AND SEALING JARS

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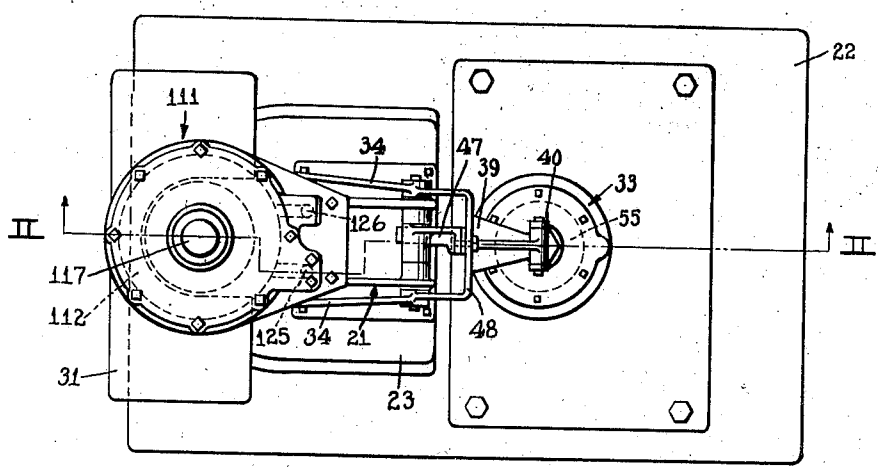


Fig-4-

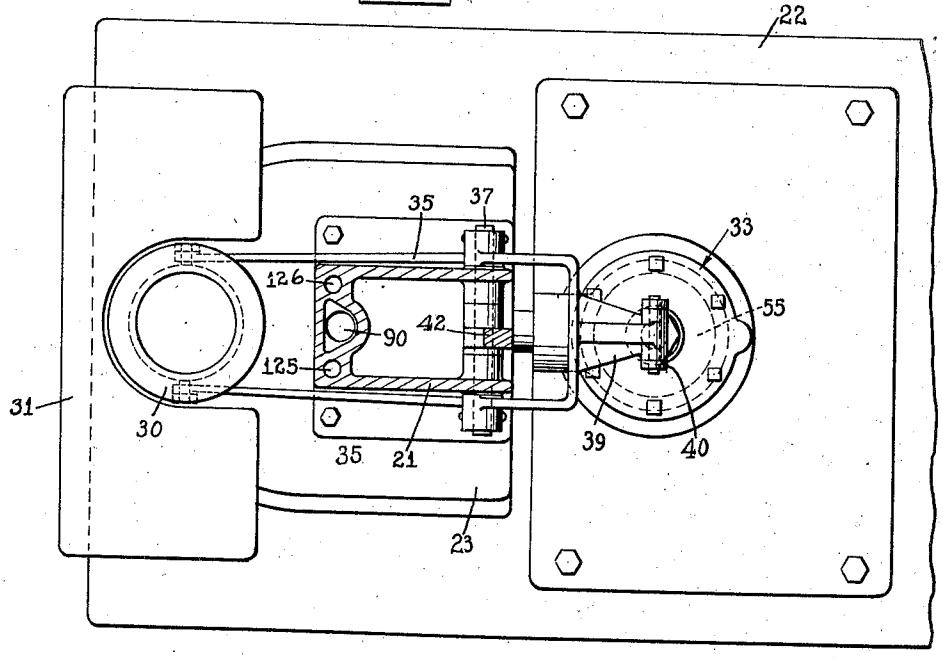


Fig-5-

Inventor

Leonard D. Soubier,

By J. F. Rule,

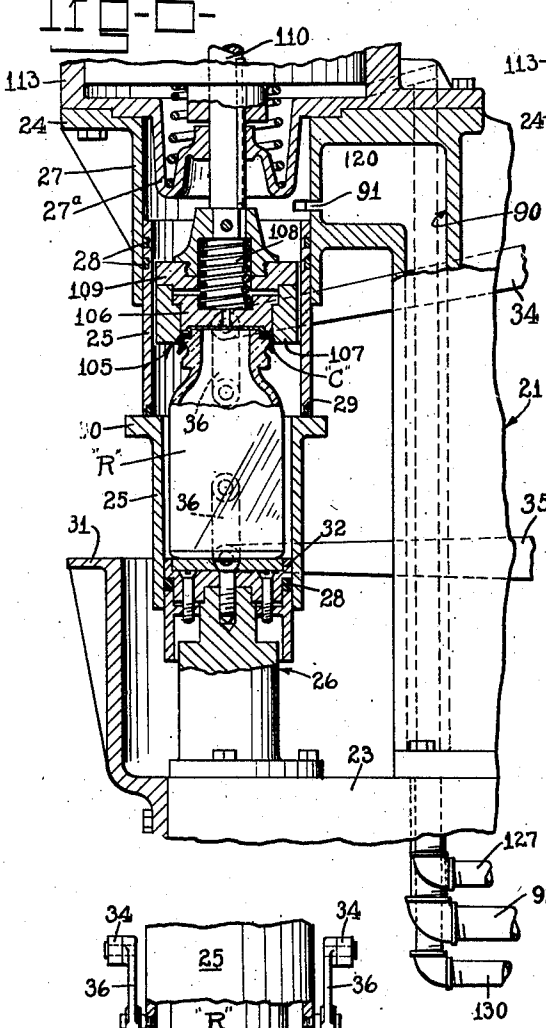
Attorney

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APPARATUS FOR VACUUMIZING AND SEALING JARS

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Fig. 6.



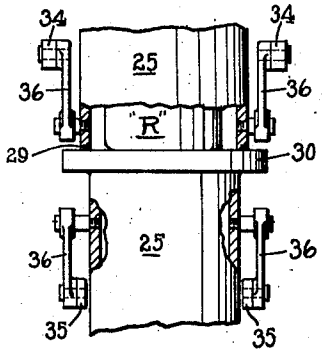
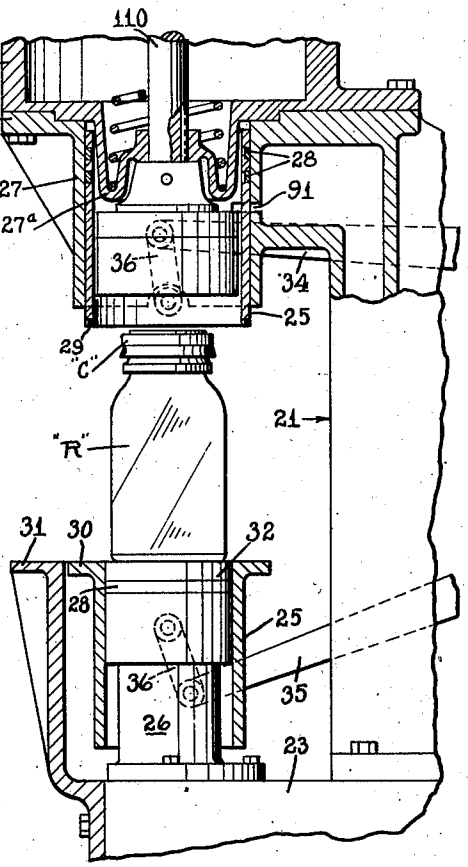


Fig. 8.

Fig. 7.



Inventor

Leonard D. Soubier

By J. F. Rule.

Attorney

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APPARATUS FOR VACUUMIZING AND SEALING JARS

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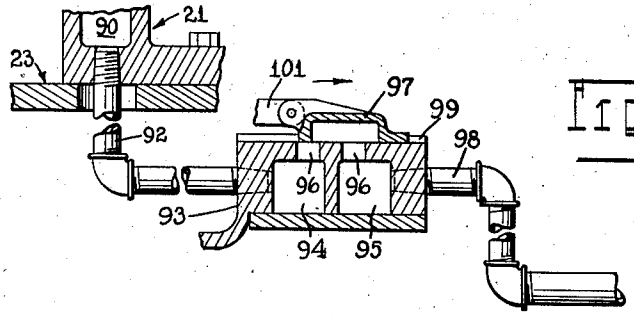


Fig-10-

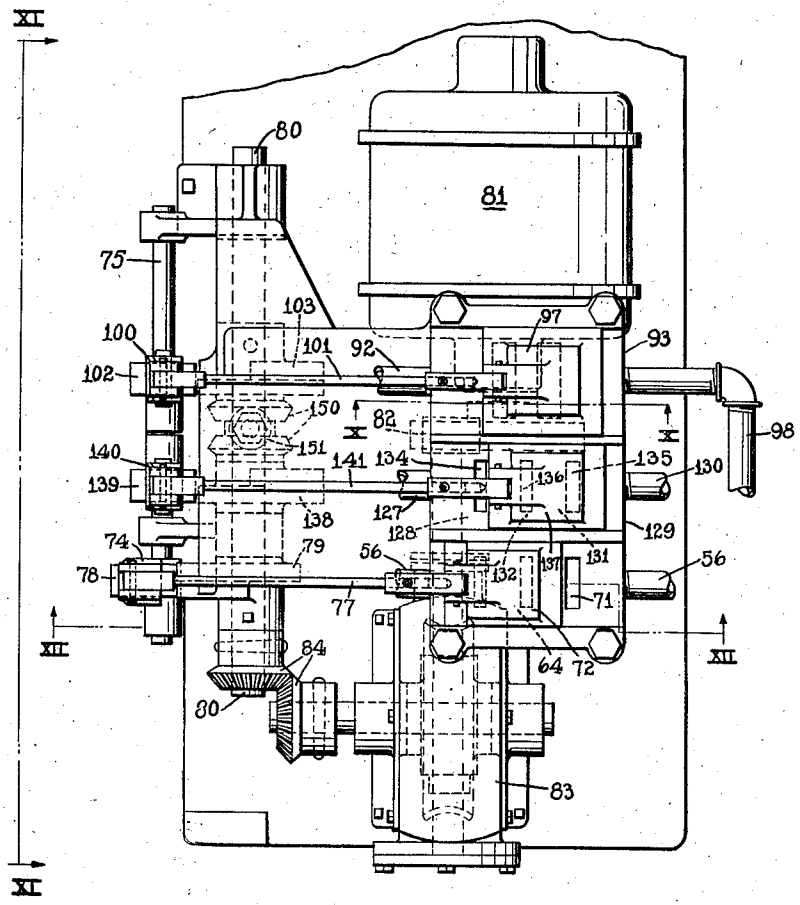


Fig-9-

Inventor

Leonard D. Soubier

By J. F. Rule,

Attorney

Dec. 19, 1933. L. D. SOUBIER 1,940,635

APPARATUS FOR VACUUMIZING AND SEALING JARS

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Fig-11-

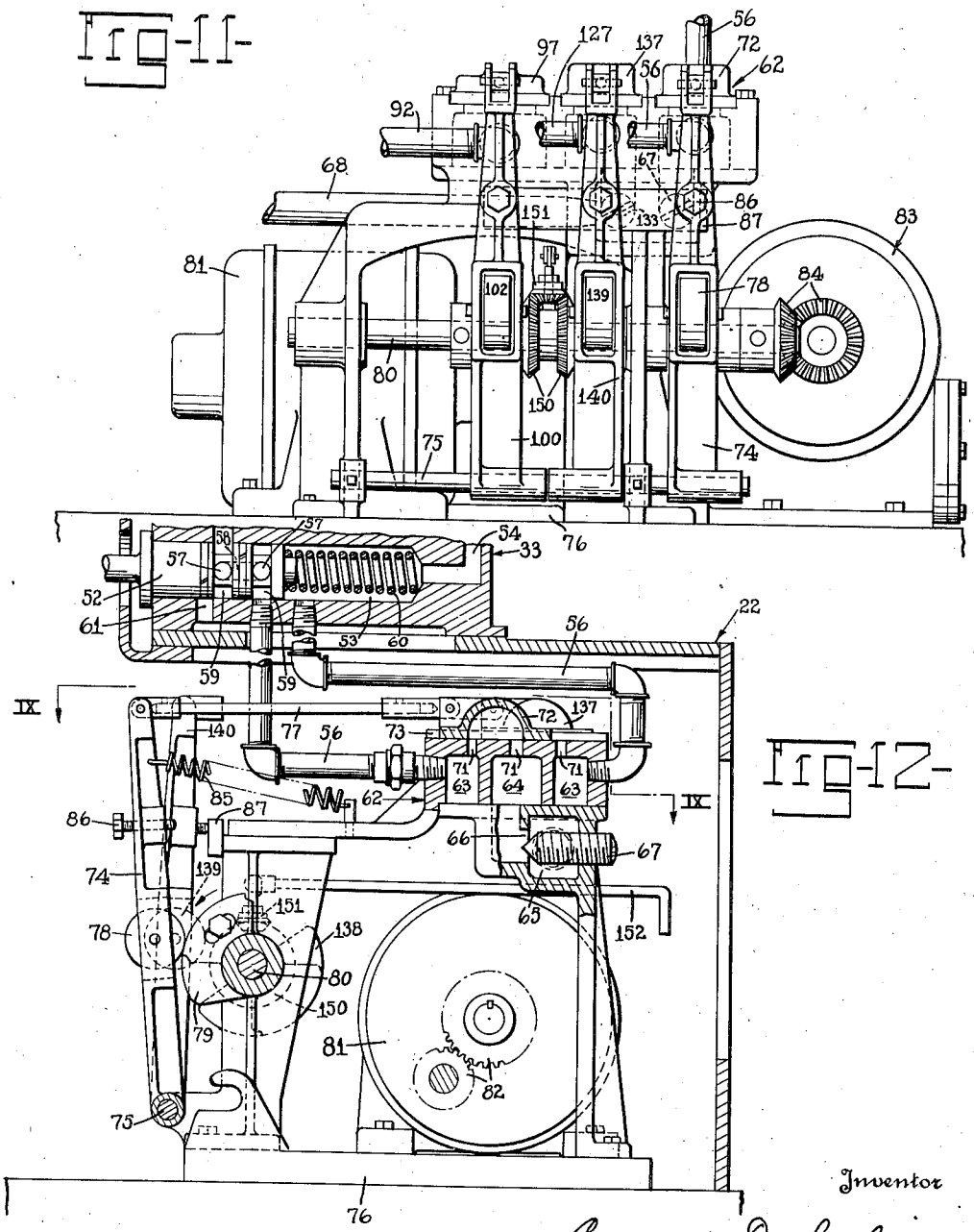


Fig-12-

Inventor

Leonard D. Soubier

By J. F. Rule.

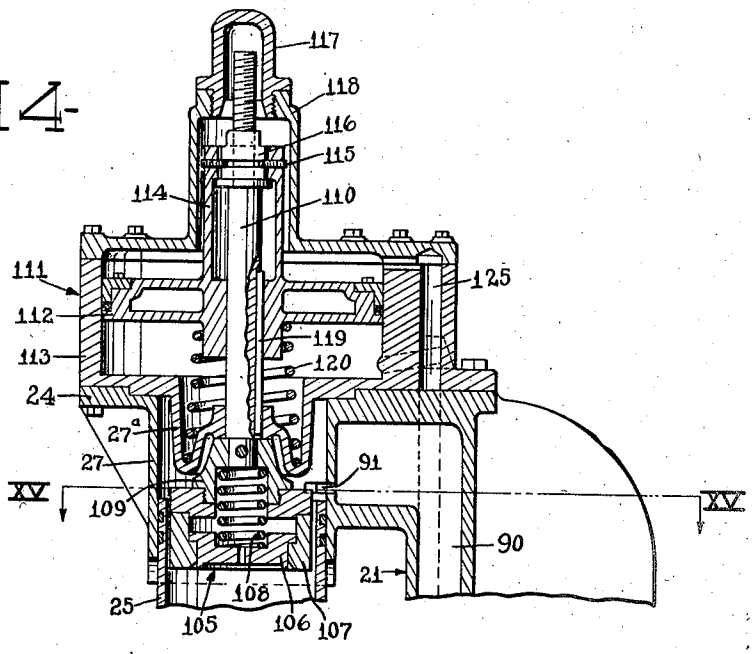
Attorney

Dec. 19, 1933. L. D. SOUBIER 1,940,635

APPARATUS FOR VACUUMIZING AND SEALING JARS

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Fig-14-



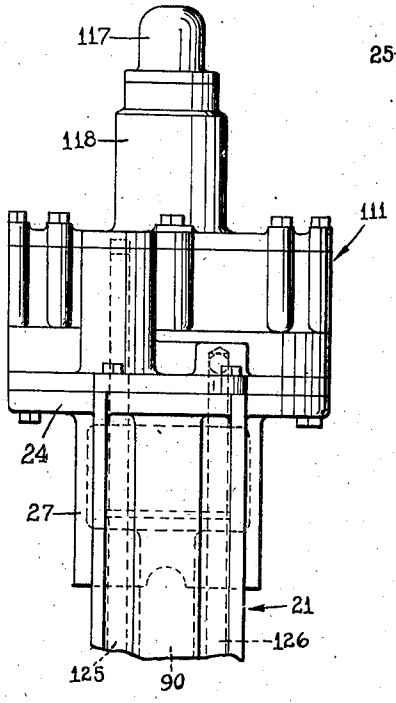


Fig-17-

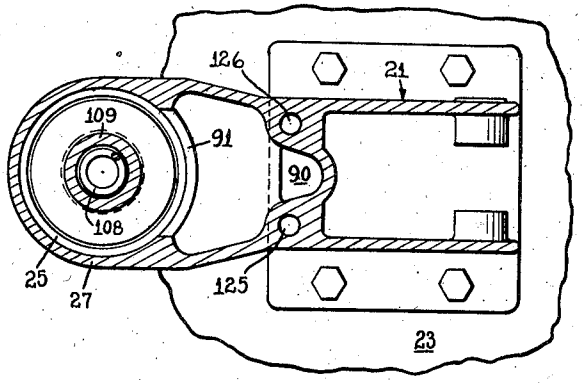


Fig-15-

Inventor

Leonard D. Soubier

By J. F. Rule

Attorney

Patented Dec. 19, 1933 1,940,635

UNITED STATES PATENT OFFICE

1,940,635

APPARATUS FOR VACUUMIZING AND SEALING JARS

Leonard D. Scubier, Toledo, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio

Application February 10, 1930. Serial No. 427,398

15 Claims. (Cl. 226—82)

The present invention relates to improvements in apparatus for vacuumizing and sealing jars and the like receptacles in vacuum.

An object of the present invention is the provision of an apparatus of the above character capable of exceptionally rapid sealing of jars and similar receptacles and creating a higher vacuum in the jars than is obtainable in present day commercial machines.

Another object is the provision of novel means whereby opening and closing of the jar receiving chamber or vacuum chamber at least in part controls the application of vacuum thereto. To this end the chamber may comprise two sections movable toward and away from each other and means whereby a predetermined extent of movement on the part of one section alternately opens and closes a port through which vacuum is applied to the chamber.

Another object is the provision in an apparatus of the above character, of novel means for adjusting the closure applying device so that it may reliably apply closures to jars or receptacles of different heights.

Other objects will be in part apparent and in part pointed out hereinafter.

In the drawings:

Fig. 1 is a perspective view of the vacuumizing and sealing apparatus.

Fig. 2 is a vertical central sectional view with parts in elevation, taken substantially along the line II—II of Fig. 4.

Fig. 3 is a rear elevation with a portion of the base broken away showing the vacuum controlling valves and operating means therefor.

Fig. 4 is a plan view.

Fig. 5 is a sectional plan view taken substantially along the line V—V of Fig. 2.

Fig. 6 is a detail sectional elevation showing the jar receiving chamber enclosing a jar and the chuck in position to apply a closure to the jar.

Fig. 7 is a view similar to Fig. 6 showing the chamber opened upon completion of the jar sealing operation.

Fig. 8 is a fragmentary sectional elevation showing the connection between the sections of the jar receiving chamber and arms for actuating said sections.

Fig. 9 is a detail plan view taken substantially along the line IX—IX of Fig. 12.

Fig. 10 is a sectional view taken substantially along the line X—X of Fig. 9 and including part of a vacuum passageway extending upwardly through the frame.

Fig. 11 is a view taken along the line XI—XI of Fig. 9 showing the means for actuating the vacuum control valves.

Fig. 12 is a sectional elevation taken substantially along the line XII—XII of Fig. 9.

Fig. 13 is a detail fragmentary elevation of the upper end of the apparatus.

Fig. 14 is a detail sectional elevation of the upper end of the apparatus.

Fig. 15 is a horizontal sectional view taken substantially along the line XV—XV of Fig. 14.

In more or less general terms, the illustrated embodiment of my invention comprises a partible vacuum chamber 20 in which jars or the like receptacles "R", containing goods to be packaged in vacuum, are placed so that the air may be exhausted from the jars and the latter sealed, while enclosed in the chamber. This vacuum chamber 20 is mounted on a frame 21 rising from the base 22, both, said frame and base, being constructed to provide a housing for a considerable portion of the operating mechanism to be described. The base 22 (Figs. 1, 2 and 3) includes an upstanding forward portion 23 upon which the aforementioned frame 21 is mounted. This frame 21 is substantially inverted L-shape, providing a horizontally extending arm 24 at its upper end supporting mechanism for applying closures to the jars "R" in the vacuum chamber 20, and also supporting the upper part of said chamber, as will be described presently. Within the base 22 are arranged valve mechanisms for regulating and controlling the application of vacuum to the vacuum chamber 20 and the piston motors which operate the closure applying means and alternately open and close said chamber.

The vacuum chamber 20 (Figs. 1, 2, 6 and 7) in which the jars "R" or receptacles are vacuumized and sealed, comprises a pair of separable sections 25 arranged for vertical movement relative to each other for alternately opening and closing the chamber. These sections 25 may be of cylindrical or sleeve-like formation. The lower section is slidingly fitted over an upstanding guide 26 (Figs. 2, 6 and 7) while the upper section telescopes within a sleeve-like guide 27 depending from and forming a part of the horizontally extending arm 24 on the frame 21. A downward extension 27a on the chuck actuating motor 111 described hereinafter, closes the upper end of the guide 27. Sealing rings 28 are interposed between and have contact with the adjacent surfaces of the chamber sections 25 and the guides therefor, to prevent

influx of air while the chamber is closed. A sealing ring 29 (Fig. 6) is affixed to the lower end of the upper section 25 of the chamber 20 for sealing contact with a flange 30 extending radially outward from the upper end of the lower section. The upper face of this flange 30, when the chamber is completely open, is flush with the upper side of the table 31 upon which the jars "R" or other receptacles may be placed prior to and after the sealing operations. Because the upper surfaces of the flange 30 and table 31 occupy the same plane, when the chamber 20 is open, jars may be slid over these surfaces into or out of position upon a support 32 which is arranged within the lower section 25 of the chamber and suitably secured to the guide 26.

Relative movement between the upper and lower sections 25 of the vacuum chamber, for alternately opening and closing the latter, is obtained by mechanism including a vacuum operated piston motor 33. This mechanism comprises upper and lower U shaped arms 34 and 35 respectively, which straddle the frame 21 (Figs. 1 and 2) to which they are pivoted. The outer ends of these arms are connected through links 36 to adjacent portions of the vacuum chamber sections 25 whereby vertical movement of the arms 34 and 35, or levers, toward and from each other, alternately closes and opens the chamber. The lower arm 35 is pivoted to a horizontal hinge pin 37 extending through a pair of vertical webs 38 on the frame 21. A finger 39 extending rearwardly from the inner end of the arm 35 is connected through links 40 to the piston rod 41 of the motor 33. In order that rocking motion imparted to the lever 35 through operation of the piston motor 33 may in turn be transmitted to the upper arm or lever 34 and cause the latter to move in the opposite direction to the movement of the arm 35, these arms (Figs. 1, 2 and 3) are connected by a lever 42 keyed to the hinge pin 37, said lever carrying a slide block 43 which is pivoted to said arm and projects into a guideway 44 on an arm 45, the latter suitably attached to the upper arm 34. This arm 45 is rotatably mounted on a horizontal hinge pin 46 and includes an attaching plate 47 curved about the axis of the hinge pin 46. The attaching plate 47 has bolt and slot connection to cross bar 48 and is part of upper arm 34. Through this bolt and slot connection, the angular relation of the two arms 34 and 35 may be varied when necessary.

During operation of the machine, the vacuum chamber 20 is alternately opened and closed at regular time intervals by means of the piston motor 33 and mechanism just described. This piston motor is operated by vacuum and is directly controlled by the operator through the medium of a treadle 49 or lever which is pivoted at its upper end to a horizontal hinge pin 50 on the forward end of the base and connected through a valve rod 51 to a valve 52. This valve 52 is slidingly arranged in an elongated chamber 53 in the lower end of the piston motor 33, said chamber connected through a pair of conduits 54 with the interior of the motor cylinder at opposite sides of the piston 55. A pair of vacuum pipes 56 open into the chamber 53 and function alternately to conduct air from said chamber. The valve 52 (Fig. 12) is provided with a pair of ports 57 connected together by a short passageway 58, both ports opening into annular channels 59 provided in the body of the valve and opening through the periphery thereof. A coil spring 60 in the chamber 53 normally holds the valve 52 in such position that one of these annular channels 59 registers with the conduit 54 leading to the lower end of the motor cylinder, while the other annular channel registers with a port 61 which opens into the interior of the base 22. With the valve 52 so positioned and the valve 72 operating, air is exhausted from the motor cylinder above the piston 55 through one pipe 56 at a time. When the valve 52 in the bottom of the motor 33 is moved to the position shown in Figs. 1 and 12, one of the ports 57 registers with one of the vacuum pipes 56 while the other port communicates with the lower end of the motor cylinder through one of the conduits 54. With the valve 52 so positioned, vacuum is applied to the opposite sides of the piston 55 in alternation, through one of the pipes 56 at a time, so that a reciprocating movement is imparted to the piston and thence through the above described mechanism to the sections 25 of the vacuum chamber 20.

Application of vacuum to one of the pipes 56 at a time is accomplished by valve mechanism (Figs. 2, 9, 11 and 12). This valve mechanism comprises a valve chamber 62 (Fig. 12) provided with three compartments, the two outer compartments 63 communicating directly with the vacuum pipes 56 while the intermediate compartment 64 opens into a vacuum supply chamber 65 by way of a valved opening 66. A needle valve 67 is adjustable to vary the area of the opening 66. This chamber 65 is connected by means of a pipe 68 to a reserve vacuum tank 69 which in turn communicates with any suitable source of vacuum supply (not shown) through a pipe 70. The compartments 63 and 64 are provided with ports 71 opening through the upper wall of the chamber 62. A slide valve 72 of inverted cup-like formation is mounted on the upper side of the chamber 62 in a slideway 73, and is adapted to be positioned for the purpose of alternately providing communication between the port 71 in the intermediate compartment 64 and the other ports, so that vacuum is applied first to one of the pipes 56 and then to the other. It will be apparent that while vacuum is being applied to one of the pipes the other pipe opens to the atmosphere through one of the end compartments 63 and port 71 therein. By sliding the valve 72 to provide communication between the intermediate compartment and the end compartments 63 one at a time, air is exhausted first from one side of the piston and then from the other, thereby imparting a reciprocating movement to the piston 55 and alternately opening and closing the vacuum chamber 20.

Operation of this valve 72 is obtained by a cam controlled rocker arm 74 (Figs. 2, 11 and 12) pivoted at its lower end to a hinge pin 75 on a support 76 and pivoted at its upper end to a valve rod 77 which extends forwardly for suitable connection to the valve 72. A cam roll 78 on the rocker arm 74 is engaged at regular time intervals by a rotary cam 79, the latter secured to a horizontal shaft 80 which is constantly rotated by a motor 81. This motor is operatively connected to the shaft 80 through a train of gears 82, speed reduction gearing 83 and a pair of meshing bevel gears 84, one of the latter being secured to one end of the shaft 80. A coil spring 85 (Fig. 12) yieldingly holds the rocker arm 74 in its innermost position and insures proper contact between the cam roll 78 and cam

79. An adjustable screw 86 carried by the rocker arm 74 and adapted to engage a stop 87, regulates the degree of movement of the rocker arm under influence of the spring 85 and thereby predetermines the position of the valve 72 at one end of its stroke. The cam 79 (Fig. 12) may comprise two sections relatively adjustable to increase the degree of time interval during which the valve 72 maintains communication between the intermediate compartment 64 and the left hand compartment 63 (Fig. 12). From the foregoing, it is apparent that with the main control valve 52 positioned as shown in Fig. 12, vacuum will be applied first through one pipe 56 and then the other, due to movement of the valve 72 as just described. Accordingly, the sections 25 of the vacuum chamber 20 will be alternately moved toward and away from each other, permitting an operator to remove sealed jars "R" or receptacles from the chamber and replace them with jars to be sealed.

Just before the jars or receptacles have the closures affixed thereto, the air is exhausted from the vacuum chamber 20 and from the interior of the jars. The construction whereby such removal of air from the vacuum chamber 20 is obtained, comprises a conduit 90 extending vertically through the frame 21 and opening at its upper end through an arcuate slot 91 or port into the chamber provided by the sleeve guide 27. The lower end of the vertical passageway or conduit 90 is connected to a vacuum pipe 92 (Figs. 2, 6, 9, 10 and 11) which leads to a valve chamber 93 (Fig. 10) comprising two compartments 94 and 95 having upwardly opening ports 96 therein which co-operate with a valve 97 at times, in providing communication between said vacuum pipe 92 and a pipe 98 in which vacuum is constantly maintained. The pipe 92 (Fig. 10) opens into the compartment 94, while the pipe 98 in which vacuum is constantly maintained opens into the other compartment 95. The valve 97 is mounted for horizontal sliding movement in a guideway 99 in the upper side of the chamber 93 and at regular time intervals, during ordinary operation of the apparatus, is reciprocated by motor controlled cam mechanism. This cam mechanism (Fig. 9) includes a rocker arm 100 pivoted at its lower end to the rock shaft 75 and suitably connected at its upper end to a valve rod 101 which extends forwardly and is pivoted to the valve 97. A cam roll 102 on the rocker arm 100 is engaged at regular time intervals by a continuously rotating cam 103 on the shaft 80, resulting in rocking of the arm 100 and actuation of the valve 97. After the air has been exhausted from the vacuum chamber 20 and incidentally from the interior of a jar "R" or receptacle placed therein for sealing, a closure "C" is securely attached to the jar.

Means for attaching closures to the jars or receptacles while in the chamber may comprise a chuck 105 arranged within the upper section 25 of the chamber for vertical reciprocating movement into and out of operating position. This chuck comprises a circular block 106 shaped to contact with the entire upper surface of the closure "C" and a wiper ring 107 surrounding said block and adapted to be projected downwardly relative to said block and closure for the purpose of pressing the corrugations on the attaching flange inwardly beneath a shoulder formed on the jar. This method of sealing receptacles is well known. A coil spring 108 (Fig. 6) is interposed between the block 106 and the wiper ring carrier 109 to normally yieldingly hold the wiper ring in its uppermost position relative to the block 106. A chuck holder 110 suitably connected to the upper end of the wiper ring carrier 109 is adapted to be reciprocated at regular time intervals for actuating the chuck as stated above. Reciprocation of the holder 110 in timed relation to other operations is obtained by a piston motor 111 mounted on the upper side of the arm 24 of the frame 21, said motor including a vertically movable piston 112 in the cylinder 113. This piston 112 is connected through an upwardly extending sleeve 114 (Figs. 2 and 14) and a pair of radial pins 115 running in an annular groove in an adjusting nut 116 or collar, to the chuck holder 110. This adjusting nut 116 is threaded on the upper end of the holder 110 so that it may be adjusted vertically to vary the spaced relation between the piston 112 and chuck 105 and thereby change the operating position of said chuck as may be required by jars of different heights. A closure 117 attached to an upwardly extending sleeve 118 on the motor cylinder 113 protects the working parts within the upper portion of the cylinder and at the same time permits access thereto for the purpose of adjusting the nut or collar 116 for the purpose stated. A key 119 (Fig. 14) prevents relative rotary movement of the holder 110 and piston 112. A coil spring 120 encircling the lower portion of the holder 110 and seated in the downwardly extending portion 27^a yieldingly holds the piston 112 in its uppermost position. Operation of the motor is obtained by the alternate application of vacuum to the opposite sides of the piston 112, such application being effected in timed relation to movement of the sections 25 of the vacuum chamber 20 and exhaust the air therefrom.

Vacuum for operating the piston motor 111 (Figs. 13 and 14) is applied to the upper side of the piston 112 through a conduit 125 and to the lower through a conduit 126, both of said conduits being formed in the frame 21. The lower end of the conduit 125 (Figs. 4, 5, 13 and 15) is connected to a pipe 127 (Figs. 6 and 9) leading to one compartment 128 of a valve chamber 129, while the other conduit 126 is connected to a pipe 130 leading to another compartment 131 of said valve chamber. This valve chamber 129 is of the same construction as the chamber 62 shown in Fig. 12, and includes an intermediate chamber 132 communicating through suitable passageways (not shown) with the vacuum chamber 65. A needle valve 133 (Fig. 3) functions in connection with this valve chamber 139 in the same manner as the needle valve 67 (Fig. 12) functions with respect to the chamber 62. Upwardly opening ports 134 and 135 (Fig. 9) in the compartments 128 and 131 respectively co-operate one at a time with the port 136 and valve 137, in providing communication between the intermediate compartment 132 and the end compartments 128 and 131. The intermediate compartment 132 to which vacuum is constantly applied, communicates first with one compartment 128 and then with the other compartment 131, so that vacuum may be applied to the opposite sides of the piston 112 in alternation. Movement of the valve 137 to accomplish the above result is effected by cam mechanism including a rotary cam 138 on the shaft 80, said cam rotating continuously, and periodically engaging a cam roll 139 on a rocker

arm 140. This rocker arm is pivoted at its lower end to the rock shaft 75 and at its upper end is suitably connected to a valve rod 141 which extends forwardly for connection to the valve 137.

The timed relation between application of vacuum to the vacuum chamber 20 and closing of the chamber may require adjustment from time to time in order that the chamber may completely close prior to initial application of vacuum thereto. For this purpose, a differential gearing is arranged between the cams 103 and 138 (Fig. 9) on the shaft 80, said gearing including a pair of bevel gears 150 running in mesh with an adjusting pinion 151 which may be moved about the axis of the shaft 80 in a well known fashion, to thereby vary the relation between said cams 103 and 138 and correspondingly change the time interval between actuation of the valves 97 and 137. An adjusting rod 152 is provided for moving the pinion 151. This differential gearing may well be of any conventional or preferred form.

In operation, the motor 81 is running continuously and through a suitable train of gears (Fig. 9) imparts continuous rotary movement to the shaft 80 and the cams thereon for operating the vacuum controlled valves 72, 97 and 137 which regulate the application of vacuum to the motor 33 for opening and closing the vacuum chamber to the conduit 90 for supplying vacuum to the chamber and to the piston motor 111 for actuating the closure applying chuck. Vacuum is constantly supplied to the chamber 65 (Fig. 12) and thence to the compartments 64 and 132 in the valve chambers 62 and 129 respectively and through pipe 98 (Fig. 10) to the compartment 95 in the valve chamber 93, the first two valve chambers 62 and 129 being connected through the pipe 68 to the reserve tank 69 while the latter valve chamber 93 is connected directly to the main vacuum supply pipe 70. Considering these valves to be operating in proper timed relation to each other and the valve 52 moved to the left end of its stroke (Fig. 1), vacuum is constantly applied to the upper side of the piston 55 in the motor 33 by way of the pipes 56 so that the sections 25 of the vacuum chamber 20 are held apart as shown in Figs. 1 and 7. The operator, by moving the treadle 49 to the position shown in Fig. 2, places the valve 52 as shown in Fig. 12. With the valve so positioned and vacuum being applied first to one of the pipes 56 and then to the other, vacuum is applied in alternation to the opposite sides of the piston 55, causing reciprocation thereof, and, as previously described, alternate opening and closing of the vacuum chamber 20. While the vacuum chamber is open (Figs. 1 and 7), a jar "R" with a closure "C" resting lightly on its upper end is placed upon the support 32. Vacuum is applied to the lower side of the piston 55, pulling the latter downwardly into the lower portion of the motor cylinder and through the arms 34 and 35 closes the vacuum chamber about the jar. The valve 97 (Figs. 9 and 10) is moved to provide communication between the compartments 94 and 95 so that air is exhausted from the vacuum chamber and jar therein. It may be here noted that closing of the vacuum chamber 20 involving downward movement of the upper section 25, or sleeve, opens the vacuum port 91 (Figs. 2 and 6) so that the air in the chamber may be exhausted through said port and the open space between the upper section 25 and the chuck 105. Immediately following this air exhausting operation, the piston 112 in the chuck operating motor 111 is moved downwardly in the manner previously described, resulting first in the application of top pressure to the closure "C" by the circular block 106 and then in rolling the corrugations of the attaching flange over the usual external shoulder extending about the neck of the jar, by means of the wiper ring 107. Thus, the jar is sealed in vacuum. Vacuum is now applied to the upper side of the piston 112 and in co-operation with the spring 120 quickly returns said piston to its uppermost position. The valve 97 (Figs. 9 and 10) is moved in the direction of the arrow shown in Fig. 10 to thereby break the vacuum in the conduit 90 and to a considerable extent in the vacuum chamber 20. Preliminary or initial movement of this valve 97 is followed immediately by upward movement of the piston 55 in the motor 33 for opening the chamber 20. This completely breaks the vacuum in the chamber and permits removal of the sealed jar from said chamber and replacing said jar with another to be vacuumized and sealed in the manner just described.

Modifications may be resorted to within the spirit and scope of the appended claims.

What I claim is:

1. In combination, a jar receiving chamber comprising separable cylindrical sections, vacuum operated mechanism for causing relative movement of the sections to alternately open and close the chamber, means for exhausting air from the chamber, and means whereby the position of one of said sections at least in part controls and regulates the exhaust of air from the chamber.

2. In combination, a jar receiving chamber comprising separable cylindrical sections, vacuum operated mechanism for causing relative movement of the sections to alternately open and close the chamber, means for exhausting air from the chamber, means whereby the position of one of said sections at least in part controls and regulates the exhaust of air from the chamber, and a chuck within the chamber adapted to apply closures to jars.

3. In combination, a jar receiving chamber comprising a pair of sections movable vertically toward and away from each other to thereby alternately open and close the chamber, vacuum controlled means for moving said sections, means for exhausting the air from said chamber, a closure applying chuck within the chamber, and means for actuating the chuck after the air has been exhausted from the chamber.

4. In combination, a jar receiving chamber comprising separable cylindrical sections and having a support, mechanism including a vacuum operated piston motor for causing movement of said sections relative to each other and the support to thereby alternately open and close the chamber, means at least in part controlled by movement of one of said sections to exhaust air from the chamber, and means within the chamber to apply closures to jars in the latter.

5. In combination, a jar receiving chamber comprising separable cylindrical sections, mechanism including a piston motor for causing relative movement of said sections to thereby alternately open and close the chamber, means at least in part controlled by movement of one of said sections to exhaust air from the chamber,

means within the chamber to apply closures to jars in the latter, and vacuum means for actuating the piston motor.

6. In combination, a jar receiving chamber comprising separable sections, vacuum operated mechanism for moving the sections to alternately open and close the chamber, means at least in part controlled by the position of one of said sections to exhaust air from the chamber, and means within the chamber for applying closures to jars.

7. In combination, a jar receiving chamber comprising separable sections, mechanism including a piston motor for moving the sections to alternately open and close the chamber, vacuum means for actuating the motor, means for exhausting the air from the vacuum chamber after the latter has been closed, closure applying means at least in part arranged within the chamber, and a vacuum operated piston motor for actuating the closure applying means.

8. In combination, a jar receiving chamber comprising separable sections, mechanism including a piston motor for moving the sections to alternately open and close the chamber, vacuum means for actuating the motor, means for exhausting the air from the vacuum chamber after the latter has been closed, closure applying means at least in part arranged within the chamber, and manually adjustable means for varying the operating positions of said closure applying means.

9. In combination, a jar receiving chamber comprising separable sections, means for moving the sections to alternately open and close the chamber, means for exhausting air from the chamber including a conduit communicating at times with the interior of the chamber by way of a port at one end of the conduit, means for exhausting air from said conduit, a cam controlled valve interposed between said conduit and means for exhausting air from the latter, and means whereby one section of the jar receiving chamber opens and closes the port in timed relation to operation of said valve.

10. In combination, a jar receiving chamber comprising vertically separable sleeve-like sections, means for causing relative movement of the sections to alternately open and close the chamber including levers individual to the sections, means connecting the levers and providing for adjustment of the angular relation between said levers, and a piston motor operatively connected to one of the levers, means for exhausting air from the chamber, a closure applying chuck within one section, a stationary jar support within the other section, a piston motor for actuating the chuck, and means for applying vacuum to said piston motors in timed relation to the exhaust of air from the vacuum chamber.

11. In combination, a jar receiving chamber comprising separable sleeve-like sections, a stationary jar support within one of said sections, vacuum operated mechanism for causing relative movement of the sections to alternately open and close the chamber including levers individual to the sections, means connecting the levers and providing for adjustment of the angular relation between said levers, and a piston motor operatively connected to one of the levers, means for exhausting air from the chamber, means whereby the position of one of said sections at least in part controls and regulates the exhausting of air from the chamber, and a chuck within the chamber adapted to apply closures to jars.

12. In combination, a jar receiving chamber comprising vertically separable sleeve-like sections, means for moving the sections to thereby alternately open and close the chamber including levers individual to the sections, means connecting the levers and providing for adjustment of the angular relation between said levers, and a piston motor operatively connected to one of the levers, a stationary jar support within the lower section, means for exhausting air from the chamber after the latter has been closed, closure applying means disposed in part within and in part above the upper section chamber and including a vertical cylinder, a vacuum operated piston therein, and a chuck suspended from the piston and disposed within the chamber.

13. Apparatus for vacuumizing and sealing containers comprising a stationary support for the containers, a closure applying chuck disposed above the support, a sectional chamber adapted at times to enclose both the support and chuck, means for moving the sections of the chamber relative to each other and the support and chuck to thereby expose or enclose the container resting on the support, means for exhausting air from the chamber while enclosing a container, and means for actuating the chuck, said air exhausting means including a port alternately opened and closed by one of the chamber sections.

14. Apparatus for vacuumizing and sealing containers comprising a stationary support for the containers, a chamber adapted to enclose or expose a container resting on the support, means for moving the chamber relative to the support, means for exhausting air from the chamber while enclosing a container, and means operable within the chamber to apply closures to the containers, said air exhausting means including a vacuum port alternately opened and closed by the chamber.

15. Apparatus for vacuumizing and sealing containers comprising a stationary container support, a pair of superposed separable sections movable relative to each other to expose or completely enclose a container resting upon said support, means for moving the sections, closure applying means within the upper section, a stationary holder in which the upper section is slidingly supported, said holder having a vacuum passageway therein and a port providing communication between said passageway and the interior of the sections when the latter are closed about the container, and means for applying vacuum to said passageway.

LEONARD D. SOUBIER.