

J. E. OSMER.
PRESERVING APPARATUS.
APPLICATION FILED OCT. 1, 1912.

1,059,386.

Patented Apr. 22, 1913.

2 SHEETS-SHEET 1.

Fig. VII.

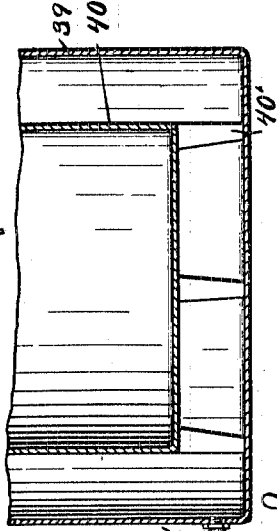


Fig. I.

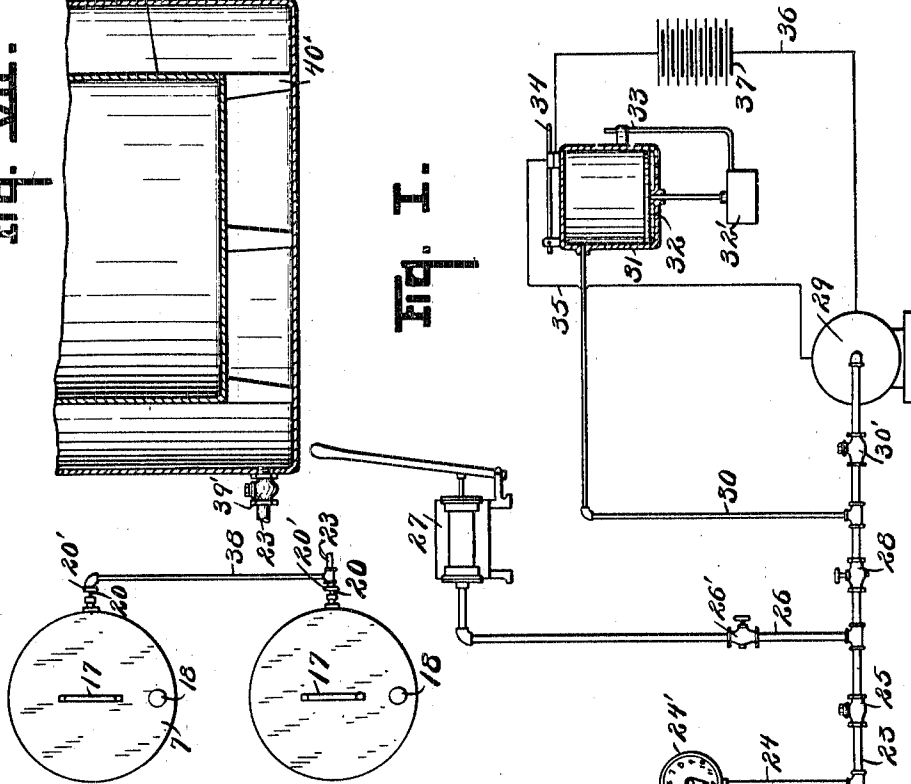


Fig. II.

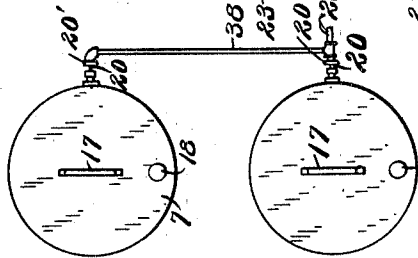
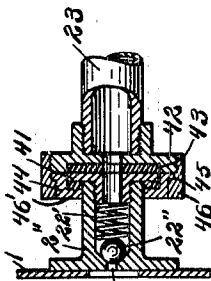


Fig. VI.



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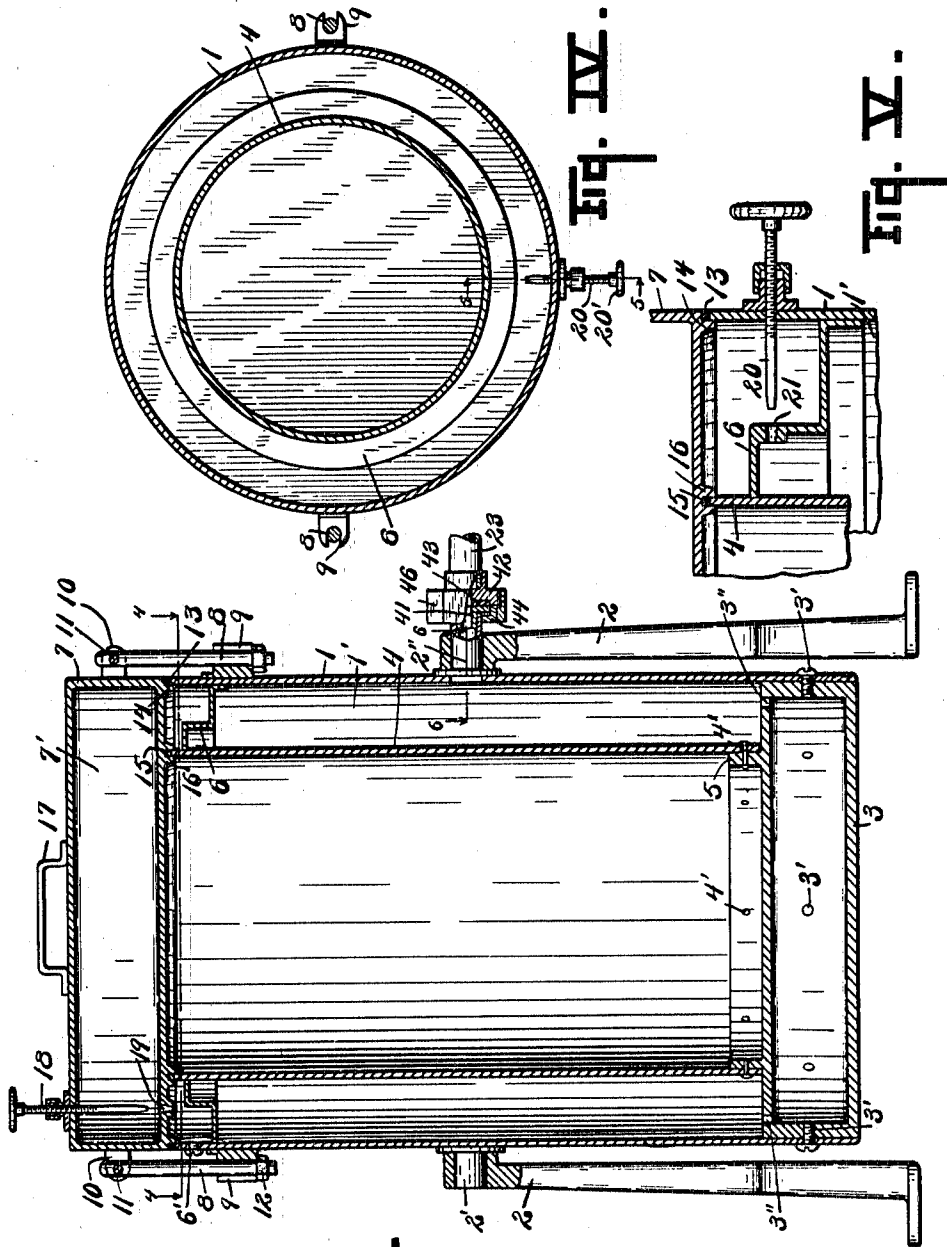
Attorneys

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2 SHEETS—SHEET 2.



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Fig. III.

Fig. IV.

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PRESERVING APPARATUS.

1,059,386.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN E. OSMER, a citizen of the United States, residing at Boone, Iowa, have invented certain new and useful Improvements in Preserving Apparatus, of which the following is a specification.

This invention relates to improvements in preserving apparatus.

- 10 The main objects of this invention are, first, to provide an improved preserving apparatus in which the container or storage receptacle is, when the cover is closed, entirely surrounded by a vacuum chamber.
- 15 Second, to provide an improved apparatus of the class described, in which the body of the receptacle is surrounded by a vacuum when the cover is removed. Third, to provide an improved apparatus of the class described, which may be revolved thereby, particularly adapting the same for the storage of eggs or other articles which, for best results, should not be left in one position.
- 20 Fourth, to provide an improved apparatus having these advantages, in which the vacuum is automatically maintained. Fifth, to provide an apparatus of the class described, which is simple in structure and operation.
- 30 Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is clearly illustrated in the accompanying drawing forming a part of this specification, in which:

Figure I is a side view of a structure embodying the features of my invention, the exhaust means being shown in conventional form, the governor device cylinder being shown in vertical section. Fig. II is a plan view showing two of the devices connected to a single exhaust pipe. Fig. III is a detail vertical section on a line corresponding to line 3—3 of Fig. I. Fig. IV is a horizontal section on a line corresponding to line 4—4 of Fig. III. Fig. V is a detail vertical section on a line corresponding to line 5—5 of Fig. IV. Fig. VI is a detail longitudinal section through the journal 2'',

and the coupling, taken on line 6—6 of Fig. III, showing the arrangement of the ball check valve in the journal and details of the coupling. Fig. VII is a detail vertical section showing the lower portion of a modified structure.

In the drawing similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, the outer casing or wall is preferably cylindrical and formed of sheet metal. The bottom 3 is chambered or made hollow and is preferably a casting cylindrical to fit within the lower end of the wall 1, the bottom being secured in place by means of the screws 3'. The top wall of the bottom 3 is provided with an upwardly projecting annular flange 5 for the receptacle or container wall 4. This wall 4 is also cylindrical and preferably formed of sheet metal. The wall 4 is secured to the flange 5 by means of the rivets 4'.

The space 1' between the walls 1 and 4 constitutes a vacuum chamber. The bottom 3 is provided with openings 3'' connecting the chamber of the bottom with the vacuum chamber 1'. At the upper end of the vacuum chamber 1' I provide a partition 6. The object of this partition is to provide a release chamber for the cover so that a vacuum may be maintained around the body of the receptacle when the cover is removed. This partition 6 is preferably shouldered or stepped as illustrated so that its inner edge is close to the upper end of the receptacle 4.

The cover 7 is provided with a chamber 7'. The cover is clamped in place by means of the bolts 8 which engage slotted ears 9 on the walls 1. The bolts 8 are supported on the ears 10 on the cover by means of the pivots 11. The clamping nuts 12 of the bolts 8 engage the under sides of the ears 9. The cover is provided with annular flanges 14 and 16 adapted to receive the upper ends of the walls 1 and 4 respectively. Gaskets 13 and 15 are provided for sealing these joints. The cover is provided with a handle 17. The cover is connected with the release chamber by the port 19 which is controlled by the valve 18. The vacuum chamber is connected to the port 21 which is controlled by the valve 20. A relief valve 6' 110

is provided for the cover release chamber. The valve 6' is a screw valve threaded into the wall of the casing. Any suitable valve might be used for this purpose. This type is shown as the structural details form no part of my present invention.

In use the valve 6' is closed and the valves 18 and 20 are opened. This connects the release chamber and the cover chamber with the vacuum chamber so that the storage receptacle is entirely surrounded by a vacuum. When it is desired to remove the cover, the valve 20 is closed and preferably also the valve 18 and the valve 6' opened. This releases the cover and it may be removed without admitting air to the vacuum chamber. By closing the valve 18, the vacuum is maintained in the cover so that when the cover is replaced, it is not necessary to again exhaust the same and it is only necessary to remove the amount of air corresponding to the capacity of the cover release chamber.

The structure illustrated is supported on the standards 2 by the journals 2' and 2''. The journal 2'' has a passage therein provided with a port 2''' communicating with the vacuum chamber. See Fig. VI. The inner end of the journal is adapted as a seat for the ball valve 22'', the ball being held on its seat by the spring 22'. The exhaust pipe 23 is connected to the motor pump 29 shown in conventional form in Fig. I. I also provide in the structure illustrated, a hand pump 27 which is connected to the pipe 23 by the pipe 26 having a stop cock 26' therein. The pipe 23 is provided with a check valve 25 in front of the connection for the pipe 26, and with a stop cock 28 between the pump 29 and the connection for the pipe 26. The pressure gage 24' is connected by the pipe 24 to the pipe 23 in front of the check valve 25.

I preferably provide an automatic governor device for the motor pump 29 consisting of the cylinder 31 having a plunger 32 therein. The cylinder 31 is connected by the pipe 30 to the exhaust pipe 23, the connection to the cylinder being on the inside of the plunger. The plunger is provided with a weight 32' against which it is lifted. The motor pump is shown connected to an electrical supply as the batteries 37 by the circuits 35 and 36 which are controlled by the switch 34. An arm 33 carried by the plunger is adapted to open the switch 34 when the plunger is raised by the vacuum, thus stopping the motor. A check valve 30' is arranged between the motor 29 and the connection for the cylinder 31 to the exhaust pipe 23. Where a plurality of devices are connected to a single exhaust means, the vacuum chambers are connected by pipes 38, the last one in the series being connected to the exhaust pipe 23. See Fig. II. The

exhaust pipe 23 is connected to the journal 2'' through a coupling 22 which permits a rotation of the journal. The details of this coupling are shown in Fig. VI. The journal 2'' is provided with a flange 41. The pipe 23 has a flanged collar 42. Between the flange of the collar 42 and the flange 41, is a gasket 43. A coupling member 44 is sleeved upon the journal 2'' and provided with a flange 45 with which the coupling sleeve 46 is engaged. This coupling sleeve 46 is threaded upon the coupling member 42. A gasket 46 is arranged between the member 44 and the flange 41.

In the modification shown in Fig. VII, the casing 39 is formed entirely of sheet metal as is also the container 40. The container 40 is supported in an elevated position above the bottom of the casing by the legs 40'. The pipe 23 is provided with a check valve 29' adjacent to the vacuum chamber.

My improved preserving devices are adapted for domestic use, cold storage plants, or refrigerator cars, and in fact, may be readily adapted for general use. I have shown the motor pump as connected to a source of electrical supply, but it is obvious that it might be driven through any suitable means, the power being controlled through the governor device.

I have illustrated and described my improvements in detail in a simple embodiment, I have not attempted to illustrate or describe various modifications which I contemplate as I believe that from the disclosure made, those skilled in the art to which my invention relates will be enabled to adapt the same as conditions or circumstances may require. I desire to be understood as claiming my improvements specifically in the form illustrated as well as broadly within the scope of the appended claims.

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

1. A preserving apparatus, comprising a cylindrical chambered bottom having an annular flange on its top wall; a cylindrical casing wall arranged upon and secured to said bottom; a cylindrical receptacle wall arranged upon and secured to said flange on said bottom, there being a vacuum chamber between said walls, the top wall of the bottom being provided with openings connecting said bottom chamber with said vacuum chamber; a partition across said vacuum chamber adjacent to the upper ends of said walls, said partition being provided with a valved opening; a chambered cover having annular flanges on its under side adapted to receive said casing and receptacle walls, there being a valved opening in the bottom wall of the cover connecting the cover

chamber with the chamber above said partition; and a relief valve for the chamber above said partition.

2. A preserving apparatus, comprising a
5 cylindrical chambered bottom having an annular flange on its top wall; a cylindrical casing wall arranged upon and secured to said bottom; a cylindrical receptacle wall arranged upon and secured to said flange on
10 said bottom, there being a vacuum chamber between said walls, the top wall of the bottom being provided with openings connecting said bottom chamber with said vacuum
15 chamber; a partition across said vacuum chamber adjacent to the upper ends of said walls, said partition being provided with a valved opening; a chambered cover there being a valved opening in the bottom wall of the cover connecting the cover chamber
20 with the chamber above said partition; and a relief valve for the chamber above said partition.

3. A preserving apparatus, comprising a cylindrical chambered bottom having an annular flange on its top wall; a cylindrical casing wall arranged upon and secured to said bottom; a cylindrical receptacle wall arranged upon and secured to said flange on
30 said bottom, there being a vacuum chamber between said walls, the top wall of the bottom being provided with openings connecting said bottom chamber with said vacuum chamber; a chambered cover, connections for said cover chamber to said vacuum
35 chamber.

4. A preserving apparatus, comprising a cylindrical chambered bottom having an annular flange on its top wall; a cylindrical casing wall arranged upon and secured to said bottom; a cylindrical receptacle wall arranged upon and secured to said flange on
40 said bottom, there being a vacuum chamber between said walls, the top wall of the bottom being provided with openings connecting said bottom chamber with said vacuum chamber; and a cover.

5. In a preserving apparatus, the combination of an outer casing and an inner storage receptacle, the space between the walls of said casing and receptacle constituting a vacuum chamber; a chambered
50 cover common to said casing and receptacle; a partition for said vacuum chamber adjacent to, but spaced from the cover to provide a cover release chamber; a valve connecting
55 said release chamber with said vacuum chamber; a valve connecting said cover chamber with said release chamber; and a relief valve for said release chamber.

6. In a preserving apparatus, the combination of an outer casing and an inner storage receptacle, the space between the walls of said casing and receptacle constituting a vacuum chamber; a chambered cover
60 common to said casing and receptacle; the

chamber of said cover constituting a vacuum chamber and extending over said storage receptacle vacuum chamber, connections whereby said cover chamber may be connected to or cut off from said vacuum
70 chamber.

7. In a preserving apparatus, the combination of an outer casing and an inner storage receptacle, the space between the walls of said casing and receptacle constituting a
75 vacuum chamber; a cover common to said casing and receptacle; a partition for said vacuum chamber adjacent to, but spaced from the cover to provide a cover release chamber; a valve connecting said release
80 chamber with said vacuum chamber; and a relief valve for said release chamber.

8. In a preserving apparatus, the combination of a vacuum chamber and a storage receptacle arranged therein; a chambered
85 cover for said vacuum chamber; a release chamber between said vacuum chamber and cover; a valve connecting said release chamber with said vacuum chamber; a valve connecting said cover chamber with said release
90 chamber, and a relief valve for said release chamber.

9. In a preserving apparatus, the combination of a vacuum chamber and a storage receptacle arranged therein; a chambered
95 cover for said vacuum chamber, the chamber of said cover constituting a vacuum chamber extending over said storage receptacle and vacuum chamber; and connections whereby said cover chamber may be connected to or cut off from said vacuum
100 chamber.

10. In a preserving apparatus, the combination of a vacuum chamber and a storage receptacle arranged therein; a cover for said
105 vacuum chamber; a cover release chamber between said vacuum chamber and cover; a valve connecting said release chamber with said vacuum chamber; and a relief valve for said cover release chamber.

11. In a preserving apparatus, the combination of an outer casing and an inner storage receptacle the space between the walls of said casing and receptacle constituting a
115 vacuum chamber; journals for said casing, one of the journals having a passage therein, communicating with said vacuum chamber and provided with a check valve; and an exhaust means connected to said journal.

12. In a preserving apparatus, the combination of an outer casing and an inner storage receptacle the space between the walls of said casing and receptacle constituting a vacuum chamber; journals for said
125 casing one of the journals having a passage therein communicating with said vacuum chamber and an exhaust means connected to said journal.

13. In a preserving apparatus, the combination of an outer casing and an inner
130

storage receptacle the space between the
walls of said casing and receptacle constitut-
ing a vacuum chamber; journals for said
casing, one of the journals having a passage
5 therein communicating with said vacuum
chamber; a ball check valve in said journal;
and an exhaust connected to said journal.

In witness whereof, I have hereunto set
my hand and seal in the presence of two
witnesses.

JOHN E. OSMER. [L. S.]

Witnesses:

WILLIAM E. DONER,
ARTHUR B. SILLIMAN.
