

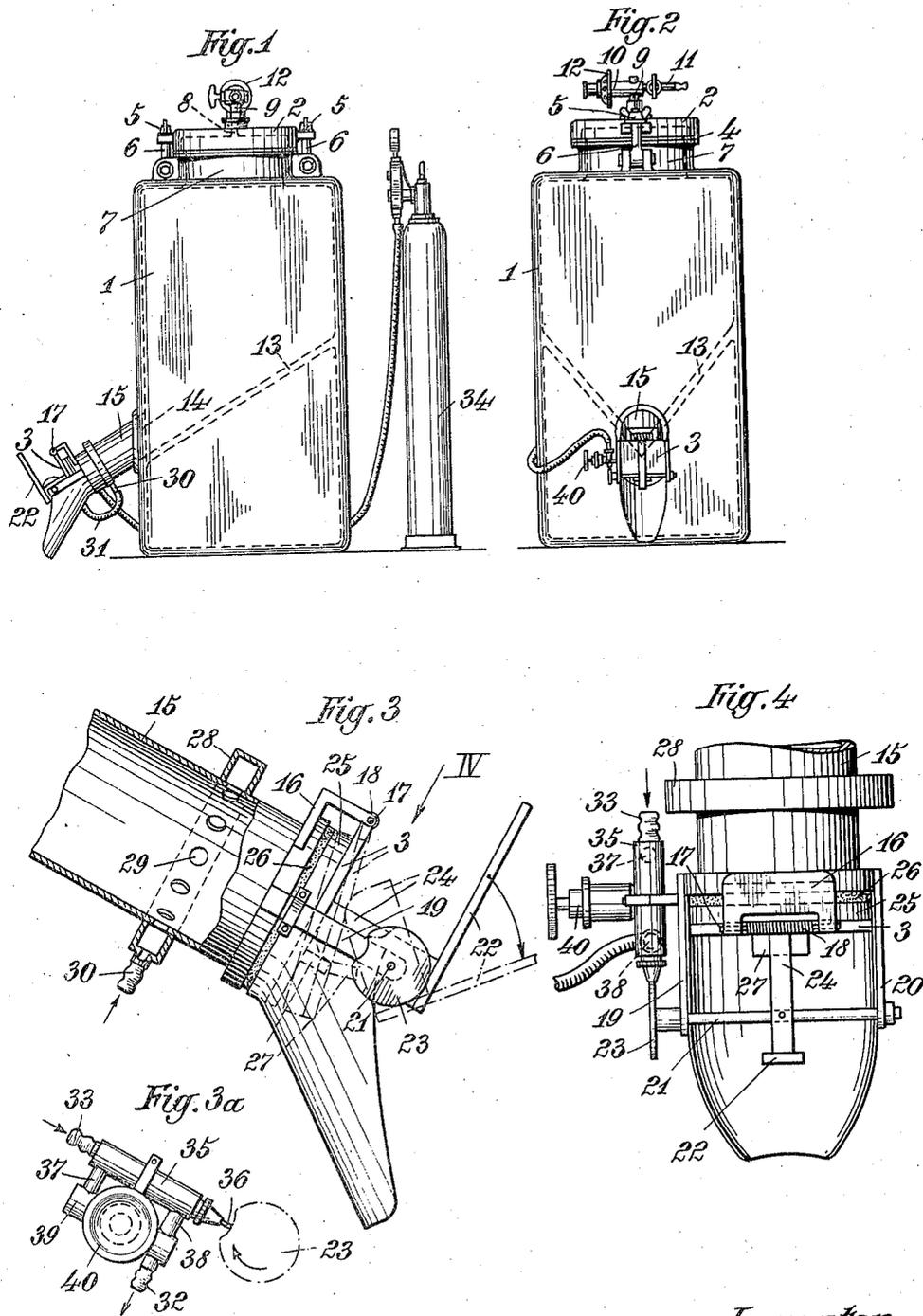
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O. BECKER

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CONTAINER FOR PRESERVING AND DISPENSING ROASTING COFFEE

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Inventor  
*O. Becker*

## UNITED STATES PATENT OFFICE

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## CONTAINER FOR PRESERVING AND DISPENSING ROASTED COFFEE

Otto Becker, Berlin, Germany

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4 Claims. (Cl. 99-236)

The invention relates to a container for storing non-liquid goods, especially roasted coffee, under a cover of an atmosphere of inert gas, such as nitrogen. The object of the invention is to withdraw goods which are perishable under the action of oxygen and atmospheric elements, such as humidity, at any time and in any desired quantities from such containers and to maintain the existing atmospheric condition in such containers.

The main feature of the invention consists in the fact that an adequate current of an inert gas is suitably supplied under pressure by means of a mechanically or hand-actuated valve into the interior of the container after it is filled and the air is removed. A new supply of gas is effected each time the said container is opened for the purpose of withdrawing any required quantity of roasted coffee. The supply of gas is effected near the exit of the container, whereby the current of gas will not only compensate the reduction of volume within the container, but will also prevent the admission of air. The mentioned valve is suitably actuated in such a manner that the supply of gas is controlled according to the opening and closing of the exit or of a tap.

It is, moreover, of advantage to provide the lid or cover of the container with a second valve, which will blow off when an over-pressure of gas exists within the container. This lid or cover will prevent the air from entering the container when a vacuum occurs.

The invention offers—compared with the hitherto known containers for the withdrawal of roasted coffee, in which the air is evacuated—the great advantage that no volatile aromatic substances flow into the vacuum, as would otherwise be unavoidable.

The accompanying drawing illustrates a mechanical device according to the invention, as applied to a container for roasted coffee.

Fig. 1 is a side elevation and Fig. 2 a front elevation of the container. Fig. 3 shows the discharging device and the closing flap on an enlarged scale, wherein the open position of the closing flap is indicated by dot-and-dash lines. The valve-arrangement has been omitted for the sake of clearness and is specially illustrated in Fig. 3a. Fig. 4 shows a top view of the discharging device seen in the direction of the arrow IV in Fig. 3.

The upper part of the container 1 is filled with roasted coffee-beans while the lid 2 is opened and the closing flap 3 closed. Then the lid 2 and the packing ring 4 is tightly compressed upon the neck

7 of the container 1 by screwing down the winged nuts 5 on the screw-bolts 6.

The lid 2 is provided with a boring 8 and leads 9, 10 and 11 carrying a gas-tap. The conduit 10 is combined with a valve 12, which will blow off if the pressure in the container is too high, and will prevent the entrance of air if a vacuum is within the container. The coffee is stored in the upper part of the container, the bottom 13 of which is in an inclined position. The lower portion of the container is empty and the sides thereof serve as a stand.

A circular opening 14 surrounded by a branch 15 is provided in the wall of the upper portion of the container at the lowest point of the bottom 13. At the end of that branch a frame 16 is provided carrying a closing flap 3 in its upper part which is pivotable under the influence of a spring 18 upon a hinge 17. The supports 19 and 20 on each side of the frame carry the shaft 21, which is so arranged as to rotate by means of the lever 22 with the disc 23. When the said lever 22 is moved forwards and downwards, the eccentric 24 connected with it will turn upwards, the flap 3 is released and opened by means of the spring 18, until the said flap coincides with the inclined eccentric 24. The coffee-beans now have a free passage towards the outside through the scoop-like device. When the lever 22 is again moved upwards the eccentric 24 will close the flap 3 by forcing its annular section 25 against the rubber packing 26, while the eccentric 24 touches upon the nose of the flap 3.

The branch 15 is fitted with a hollow ring 28 near the front end, the inner side of which is open underneath. The branch 15 is perforated with about twelve borings 29 each with a diameter of about one millimetre. The annular ring 28 is provided with a hose connection 30 which together with the hose 31 and the pipe 32 forms a gas-conduit. The inert gas is supplied from the gas container 34 and is emitted at 32, entering the tube 33 by means of a hose connected at 33. The tube 33 is secured to the gas valve 35 which is opened and closed by means of the movable valve pin 36. When the flap 3 is closed, the pin 36 rests in the groove of the disc 23, releasing the spring in the valve 35 and compressing the closing cone inside the valve 35. When the flap 3 is opened, the disc 23 rotates and the pin 36, leaving the groove, is thereupon pressed down. It will thus exert a pressure by means of a thin rubber-disc upon a resilient part of the valve, opening the valve 35. The gas flows with an over-pressure through the pipe 33,

the tube 32, the hose 31, the tube 30 and the holes 29 into the interior of the branch 15. It compensates not only the loss of volume amounting to about 1¼ litres per pound of coffee withdrawn, but moreover by means of an increased supply of gas through the holes 29 it will prevent the admission of air thanks to an exit of gas flowing out with the coffee-beans passing under the opened flap 3.

10 Prior to discharging coffee, the upper portion of the container holding the coffee, is evacuated while the flap 3 is closed and then filled with an inert gas. This is effected in such a manner that the tap at 11 on the lid 2 is opened, as is also the closed tap 40. The gas, entering by means of the tube 33, flows through the pipes 37 and 39, the tube 32 and the above mentioned connection, through the holes 29 and into the interior of the container.

20 The passage of about one hundred litres of inert gas at a pressure of ½ atmosphere will suffice to remove the air from a container with a volume of about 50 litres, filled with 40 pounds of roasted coffee beans, and to fill the container with an inert gas such as nitrogen. The overpressure will then be removed either by means of the valve 12 or at a later opening of the flap 3. When the operation is finished, the taps 40 and 11 must be closed again.

30 The maintenance of the atmosphere of inert gas within the container, however often coffee be extracted therefrom, is effected entirely automatically by the slightest opening of the flap 3 and the closing thereof, after the gas pressure required for this purpose and the quantity of gas intended to pass through the perforations 29 per minute have been adjusted.

I claim:

40 1. Container for dispensing any desired quantities of goods, in particular roasted coffee, kept in an atmosphere of an inert gas under the ex-

clusion of the outside air, comprising an opening for the material at the lower part of the container closed by means of a flap; a valve controlling the entrance of inert gas into the container; and an arrangement for bringing into unison the working of the valve with the movement of the flap.

2. Container for dispensing any desired quantities of goods, in particular roasted coffee, kept in atmosphere of an inert gas under the exclusion of the outside air, comprising an opening for the material at the lower part of the container closed by means of a flap which opens under the influence of a spring as soon as the flap is released by means of a driven lever; a valve controlling the entrance of inert gas into the container; and an arrangement for bringing into unison the working of the valve with the movement of the flap.

3. Container for dispensing any desired quantities of goods, comprising an opening for the material at the lower part of the container closed by means of a flap; a valve controlling the entrance of inert gas into the container by means of a hollow ring surrounding the outlet branch into which the gas passes through openings; and an arrangement for bringing into unison the working of the valve with the movement of the flap.

4. Container for dispensing any desired quantities of goods, comprising an opening for the material at the lower part of the container closed by means of a flap through a lever on an axle; a valve controlling the entrance of inert gas into the container; and an arrangement for bringing into unison the working of the valve with the movement of the flap, the said arrangement consisting of a disc on the axle of the closing lever of the flap, this disc moving a valve body for controlling the gas supply.

OTTO BECKER.