(No Model.)

E. H. BARTLEY & W. F. CAMPBELL.

PACKAGE FOR LIQUID FOODS, &c.

No. 456,934. Patented Aug. 4, 1891.

Fig. 1.

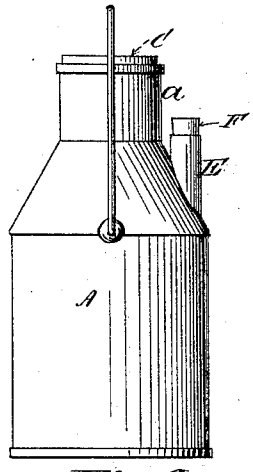


Fig. 4.

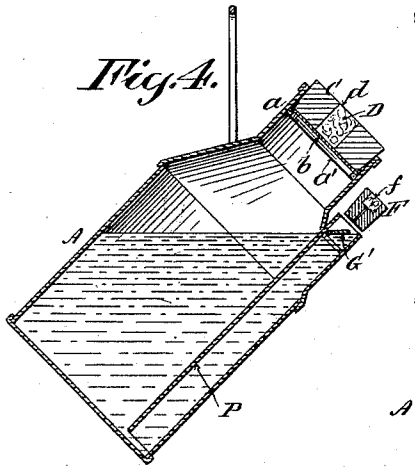


Fig. 2.

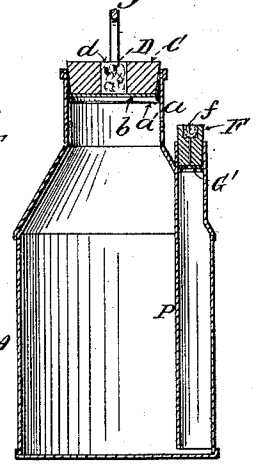


Fig. 5.

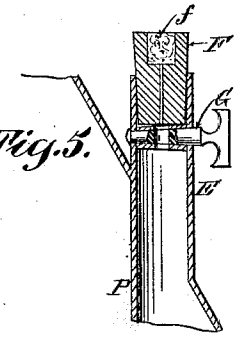
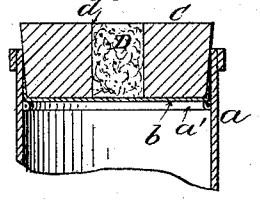


Fig. 3.



Witnesses:
D. W. Gardner
G. T. Miatt

Inventors:
Elias H. Bartley
William F. Campbell
By their attorney
Geo. H. Miatt

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ELIAS H. BARTLEY AND WILLIAM FRANCIS CAMPBELL, OF BROOKLYN, NEW YORK.

PACKAGE FOR LIQUID FOODS, &c.

SPECIFICATION forming part of Letters Patent No. 456,934, dated August 4, 1891.

Application filed July 31, 1890. Serial No. 360,515. (No model.)

To all whom it may concern:

Be it known that we, ELIAS H. BARTLEY and WILLIAM FRANCIS CAMPBELL, citizens of the United States, residing in the city of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Packages for Liquid Foods, &c., of which the following is a description sufficient to enable others skilled in the art to which the invention appertains to make and use the same.

Our invention relates to the class of receptacles for liquid food in which provision is made for admitting only filtered air to take the place of the liquid as withdrawn from the package for the purpose of preventing the contamination of the remaining liquid by atmospheric germs, &c.

We are aware that vessels have heretofore been provided on a large scale with vents into which the air could only enter after passing through an exterior filtering medium, and we do not seek a broad claim for a filtering-vent.

Our main object is to afford a cheap practical construction and arrangement of parts which shall be adapted to the requirements of comparatively small packages suitable for domestic purposes, more especially for the delivery of milk to families in small quantities daily; and our invention consists in the special construction and arrangement of the parts hereinafter described and claimed.

A leading feature of the invention consists in forming an ordinary cork or plug, such as is commonly used, with a simple perforation in which an air-filtering material is interposed and in closing the lower end of said perforation by an air and moisture proof cap surrounding the lower end of the cork or plug, which cap is made of a material which may be conveniently punctured by a pin or other sharp-pointed implement inserted through the filtering material in the vent in the cork, in order to permit of the entrance of the filtered air to displace the liquid contents of the package when it is required to withdraw the same.

Another feature of our invention consists in forming the package with a discharge-passage, which extends down almost to the floor of the package, so as to provide for the discharge of all the contents of the package, while maintaining a liquid seal between the outer end of said discharge-passage to the interior compartment of the package, thus excluding the air from the main body of the liquid contents during the operation of withdrawing a portion thereof.

In the accompanying drawings, Figure 1 is an elevation of a package made according to our invention; Fig. 2, a central vertical section thereof; Fig. 3, an enlarged sectional view of the neck of the package. Fig. 4 is a sectional view of the package inclined to illustrate the action of the flap-valve; Fig. 5, an enlarged sectional view of the discharge-spout provided with a stop-cock.

We have herein shown our invention as designed for use in connection with milk, the idea being to sterilize the milk while in the package, which is then sealed while the milk is hot, thus affording an original package of perfectly pure milk which is adapted for transportation and use as required, the purity and safety of the milk being insured and maintained so long as it remains either in whole or in part in the package; but our invention is obviously equally applicable for use in connection with unsterilized milk or with any liquid from which it is desirable to exclude atmospheric germs, dust, &c., although its greater sanitary value lies in the protection and preservation of liquid foods from bacteria, especially of milk, &c., designed for the use of infants and invalids.

The body A of the package may be of any desired configuration, that shown representing a milk-can suitable for containing a supply of sterilized milk for domestic purposes.

The neck *a* of the can A is formed with an internal bead or shoulder *a'*, against which the edges of the cap *b* rest when in place, the paper cap *b* being held down against the seat thus provided by the cork C. This cap *b* is preferably made of tough water and air proof paper or other suitable material, and is used mainly for the purpose of protecting the filtering material D in the cavity or passage *d*, formed in the cork C, from contact

with the liquid contents of the can during transportation, &c., and until the milk or other liquid is desired for immediate use, when the cap *b* is perforated by passing a needle or pin through it by way of the passage *d*. This cap *b* is obviously indispensable to the practical utility of our invention, since it affords a convenient and efficient means of keeping the filtering material dry, while also rendering the sealing of the neck of the can more perfect and reliable. The discharge-spout E of the can is also closed, preferably by a perforated cork F, provided with a cavity containing filtering material *f*, through which air must pass to gain access to the spout when closed. However, the hermetical sealing of the spout E is of secondary importance as compared with the method of closing the mouth *a* of the can with a filtering-vent.

Any desired form of cock or valve G may be used in the spout E, either alone or in conjunction with the perforated cork C, as the plug-valve shown in Fig. 5 or a flap-valve G′ shown in Figs. 2 and 4, in which latter case the valve closes as the liquid recedes down the spout, thus automatically cutting off contact with the air, while in the case of the plug-cock G it is necessary to turn the plug and close the passage while the liquid is still flowing in order to exclude the air. The spout E is extended downward internally to nearly the bottom of the can by means of the wall or partition P, by which the package is virtually divided into two compartments, so that any air entering the spout through carelessness of manipulation will be confined in a small space and have access only to a comparatively small area of liquid surface and will be immediately displaced at the next pouring out of the liquid.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination of the package for liquid foods having an independent discharge-passage, a cork fitting the inlet-passage or neck of said package and formed with a perforation in which is interposed an air-filtering material, and an air and liquid proof cap fitting over the inner end of the cork and between the cork and the sides of the mouth of the package, said cap being formed of a material which may be perforated for the admission of air, substantially in the manner and for the purpose described.

2. The combination of the package for liquid foods having an independent discharge-passage, and having an inlet-passage or neck formed with an interior annular shoulder, a cork fitting in the said neck and formed with a perforation in which is interposed an air-filtering material, and an air and liquid proof cap fitting over the inner end of the said cork and between the cork and said annular shoulder, substantially in the manner and for the purpose described.

3. A package for liquid foods closed by a cork having a perforation containing a filtering material and by an air and liquid proof cap, and a material easily punctured fitting over the lower end of said cork and between it and the neck of the package, said package being formed with an independent discharge-passage extending downward nearly to its bottom, for the purpose and substantially in the manner described.

ELIAS H. BARTLEY.
WILLIAM FRANCIS CAMPBELL.

Witnesses:
D. W. GARDNER,
GEO. W. MIATT.