No. 630,992. Patented Aug. 15, 1899.

A. SHACKLETON.

NON-REFILLABLE VESSEL

(Application filed Dec. 20, 1898.)

(No Model.)

FIG. 1

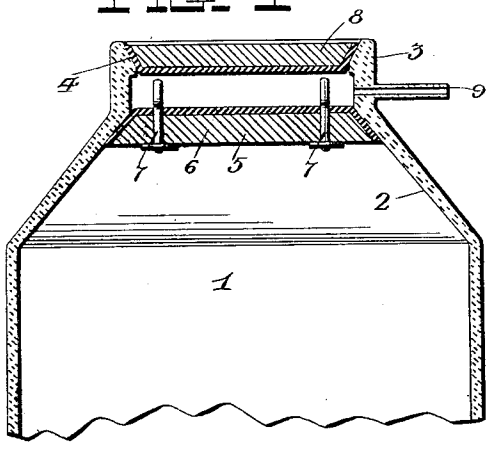


FIG. 2

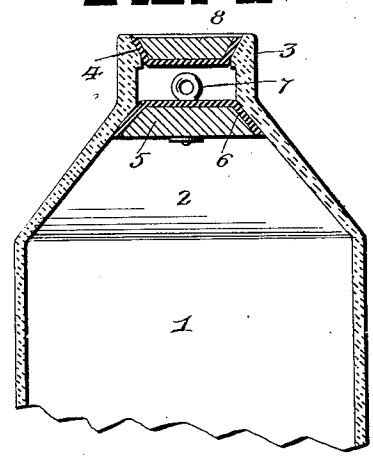


FIG. 4

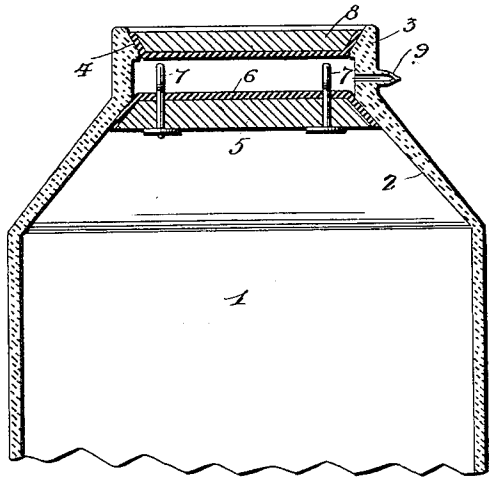
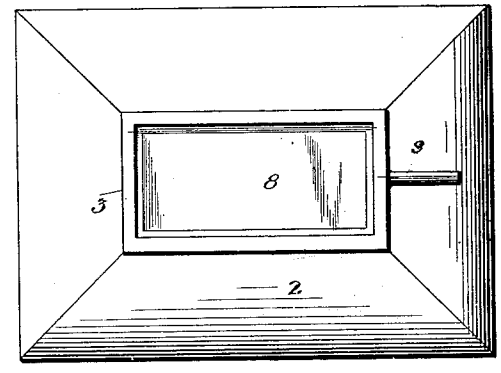


FIG. 3



Witnesses
J. L. Jennings
A. Willson

Inventor
Alfred Shackleton,
by
A. Willson & Co
Attorneys

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

UNITED STATES PATENT OFFICE.

ALFRED SHACKLETON, OF CHICAGO, ILLINOIS.

NON-REFILLABLE VESSEL.

SPECIFICATION forming part of Letters Patent No. 630,992, dated August 15, 1899.

Application filed December 20, 1898. Serial No. 699,821. (No model.)

To all whom it may concern:

Be it known that I, ALFRED SHACKLETON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Non-Refillable Vessels; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention has relation to non-refillable vessels; and the object is to provide a vessel of this character which cannot be opened and refilled and sold as an original package without detection.

With this object in view the invention consists, broadly, in holding the stoppers in place by a vacuum, and specifically in certain features of construction and combination of parts, which will be hereinafter fully set forth.

In the drawings, Figure 1 is a vertical sectional view of a vessel which may be in the form of a jar or bottle. Fig. 2 is a similar view taken at right angles to Fig. 1. Fig. 3 is a top plan view. Fig. 4 is a view similar to Fig. 1 after a vacuum has been produced and the tube sealed to maintain the vacuum.

In the drawings, 1 denotes the body of the vessel, which may be of any desired construction.

2 denotes the tapering neck, which is preferably rectangular, and 3 denotes the mouth, which is also rectangular and is provided with a beveled internal shoulder 4.

5 denotes a stopper which may be formed of wood and is lined with a strip of rubber 6. This stopper conforms in outline to the neck 2 and can only be inserted into the bottle endwise. It is also provided with staples 7 or other means capable of being engaged by a hook or tool for the purpose of drawing the stopper up in engagement with the inclined walls of the neck. 8 denotes the upper stopper, which is preferably formed of the same material as the lower stopper and is lined in a similar manner. This stopper conforms in outline to the internal shoulder with which it engages. These two stoppers when in place leave an intervening space in the mouth of the vessel, which space I will term a "vacuum-chamber."

9 denotes a tube integral with the mouth of the vessel and communicating with the vacuum-chamber.

After the vessel has been filled the stopper 5 is inserted endwise into the vessel and is drawn up into position shown in Figs. 1 and 2 by a hook or other tool engaging the staples. Owing to its rubber lining an air-tight joint will be formed between the stopper and the neck of the bottle. The stopper 8 is now forced into position and also has an air-tight connection with the mouth of the vessel. An exhaust-pump is attached, with its flexible pipe, to the integral tube of the vessel and the air is exhausted from said chamber. After the vacuum has been established and while the pump is in operation I apply a blowpipe to the tube and close it near its point of connection with the neck and then break the remainder off, leaving a very short length of tube remaining. The vacuum having been established, the stoppers will be held in place, the upper one by external atmospheric pressure and the inner one by the air contained within the vessel.

Should force be used to remove the upper stopper without first breaking the vacuum, the vessel could not again be refilled and sold as an original package without giving evidence to the public, for there would be no way of creating a vacuum in the vacuum-chamber. The only way by which the corks can be removed is to break the short end of the tube, and after this has been done it will be impossible for a vacuum to be again created in the chamber.

While I have shown the preferred form of my invention, I would have it distinctly understood that I do not wish to be restricted to any particular shape or configuration, but reserve to myself the right to make such changes in the construction and arrangement of parts which fall within the scope of my invention as expressed in the claims.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. The combination with a vessel, of stoppers fitted therein and spaced apart to form a vacuum-chamber between the said stoppers for retaining them in position, said chamber having an exhaust-opening communicating therewith, substantially as and for the purpose set forth.

2. The combination with a vessel, of stoppers fitted therein and spaced apart to form a vacuum-chamber for retaining them in position, and a frangible tube for removing the air and adapted to be sealed after the air has been exhausted from said chamber, substantially as shown and described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ALFRED SHACKLETON.

Witnesses:
E. B. HUTCHINSON,
WM. LOUIS WILSON.