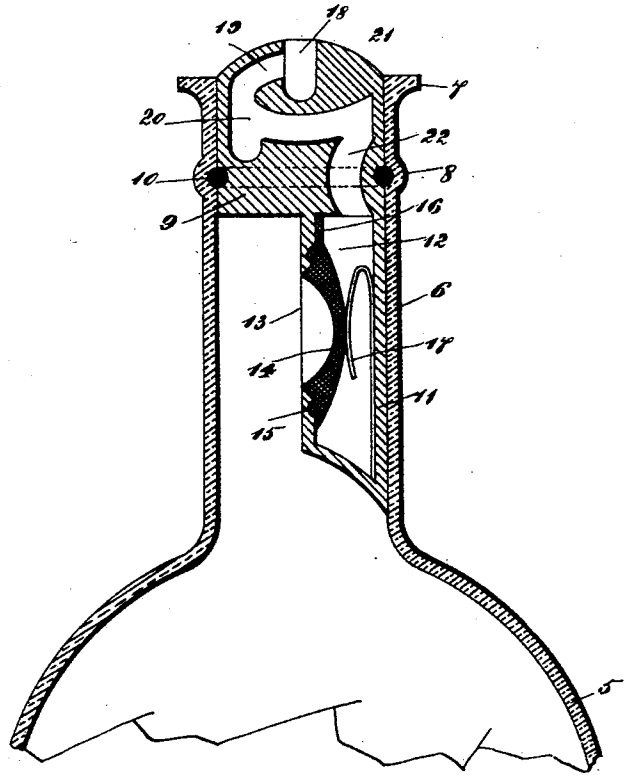
(No Model.)

C. P. BEHRENS.

SEALING DEVICE FOR BOTTLES.

No. 586,376 Patented July 13, 1897.



WITNESSES

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SEALING DEVICE FOR BOTTLES.

SPECIFICATION forming part of Letters Patent No. 586,376, dated July 13, 1897.

Application filed November 13, 1896. Serial No. 611,991. (No model.)

To all whom it may concern:

Be it known that I, CHARLES PAUL BEHRENS, a citizen of the United States, residing at Lindenhurst, in the county of Suffolk and State of New York, have invented certain new and useful Improvements in Sealing Devices for Bottles and other Vessels, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to bottles, jugs, jars, and similar vessels; and the object thereof is to provide a device of this class with a sealing attachment which is so constructed and arranged that when the vessel has been filled and the sealing attachment applied the vessel may be emptied of its contents, but cannot be refilled or reused.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, in which the separate parts of my improvement are designated by numerals of reference, said drawing being a central vertical section of the upper part of a bottle and the neck thereof provided with my improvement.

In the drawing forming part of this specification I have shown my improvement applied to a bottle, and in the practice of my invention, as shown in the drawing, I provide a bottle 5, having a neck 6, which is preferably provided at its upper end with the usual annular bead or shoulder 7, and within the inner walls of the neck at a predetermined distance below the top thereof is preferably formed an annular groove 8. I also provide a sealing attachment, which consists of a plug 9, which is adapted to be inserted into the upper end of the neck and to closely fit the same, and said plug is provided with an annular groove which corresponds with the annular groove 8 in the neck and in which is placed a ring 10, of any suitable packing material.

The plug 9 is provided at one side with a depending extension 11, in which is formed a vertical chamber 12, and formed in the inner wall of the chamber 12 is an opening 13, which is adapted to be closed by a valve 14, which is preferably concavo-convex in form, the convex side thereof being directed into the chamber 12.

The valve-seat around the opening 13 is preferably provided with an annular groove 15, and the perimeter of the valve 14 is correspondingly formed, and said valve is provided at its upper side with a flexible extension 16, by which it may be secured to the inner wall of the chamber 12, and mounted within the chamber 12 in any desired manner is a spring 17, which is adapted to bear upon the convex surface of the valve 14 and to hold it upon its seat.

The valve 14 and the spring 17 may be composed of any desired material, but in constructing these parts care should be taken to select material which will not corrode or be injuriously affected by fluids or acids.

Formed in the upper or outer end of the plug 9 is a vertical bore 18, which is closed at the bottom, and provided with a side port or passage 19, which communicates with a vertical passage 20 in the side of said plug opposite the chamber 12, and the vertical passage 20 communicates with a transverse passage 21, which communicates with a vertical or downwardly-directed passage 22, which communicates with the chamber 12, and the vertical passage 20 extends below the transverse passage 21, as clearly shown in the drawing.

The passages 19, 20, 21, and 22 form an irregular communication between the vertical bore 18 in the top of the plug and the chamber 12, and it will be understood that the plug 19 is in practice secured to the neck of the bottle in any desired manner, the only object in this connection being to secure said plug in said neck in such manner that it cannot be removed without breaking off the neck, and it will also be understood that before the plug or sealing attachment is secured in the neck of the bottle the latter must first be filled with the desired contents.

The vertical bore 18 in the plug 19 may be closed by a cork or stopper in the usual manner, and whenever it is desired to empty the bottle the said cork or stopper is removed and the bottle is inverted or tilted, in which operation that side of the neck adjacent to which is the extension 11, in which the chamber 12

is formed, is held downwardly, and in this position the valve 14 will be forced from its seat by the pressure of the liquids within the bottle, and the latter will flow out into the chamber 12 and through the irregular passage in the plug 8, as will be readily understood, and this operation may be continued or repeated until the bottle is entirely empty.

The spring 17 is of just sufficient strength to hold the valve seated under ordinary conditions or when the bottle is in an upright position, and any appreciable pressure of the liquids thereon will open the valve.

If an attempt be made to refill the bottle, the valve 14 will at once be reseated, this operation taking place as soon as the bottle is inverted, and the operation of the spring and the valve will be the same if an attempt be made to force liquids into the bottle, and it will therefore be apparent that when the bottle has once been emptied it cannot be refilled or reused.

The object of forming the irregular passage in the plug is to provide means to prevent the insertion of an instrument or tool in an attempt to interfere with the operation of the valve and spring, and the form of said passage is such as to effectually prevent an attempt of this kind.

It will be apparent that my improvement may be applied to any style of vessel having a suitable neck, and it is evident that changes in and modifications of the construction described may be made without departing from the spirit of my invention or sacrificing its advantages.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with a bottle or other vessel, provided with a neck, of a plug which is adapted to be secured therein, said plug being provided at one side with a downwardly-directed extension in which is formed a chamber, and with an irregular passage which communicates with said chamber, the inner wall of said chamber being also provided with an opening, and a spring-operated valve mounted in said chamber, and adapted to close said opening, said valve being adapted to be forced from its seat by the pressure of liquids within the bottle or vessel when the latter is inverted or tilted, substantially as shown and described.

2. The herein-described sealing device for bottles and other vessels, consisting of a plug which is adapted to be inserted into and secured in the neck of the vessel, said plug being provided at one side with a depending extension in which is formed a chamber which is in communication with an irregular passage formed in the plug, the upper end of which communicates with a vertical bore in the inner end of the plug, the inner wall of said chamber being also provided with an opening and a spring-operated valve which is mounted in said chamber and adapted to close said opening, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in the presence of the subscribing witnesses, this 9th day of November, 1896.

CHARLES PAUL BEHRENS.

Witnesses:
WILLIAM HIRSCH,
FREDERICK TORNS, Sr.