

No. 729,835.

PATENTED JUNE 2, 1903.

G. S. BARNES & S. RUFFIN.

BOTTLE STOPPER.

APPLICATION FILED OCT. 3, 1902.

NO MODEL.

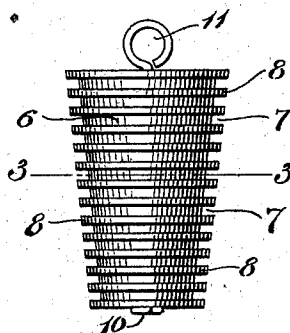


Fig-1-

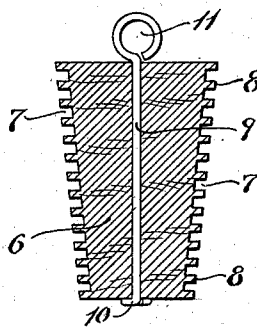


Fig-2-

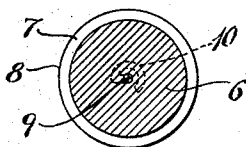


Fig-3-

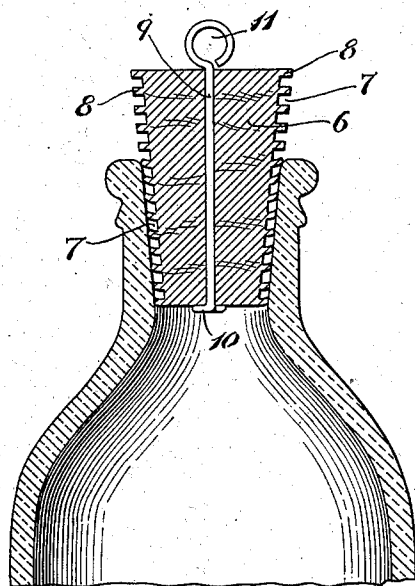


Fig-4-

WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE S. BARNES AND STANLEY RUFFIN, OF BOSTON, MASSACHUSETTS.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 729,835, dated June 2, 1903.

Application filed October 3, 1902. Serial No. 125,754. (No model.)

To all whom it may concern:

Be it known that we, GEORGE S. BARNES and STANLEY RUFFIN, citizens of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Bottle-Stoppers, of which the following is a specification.

The object of this invention is to provide a stopper for bottles and the like which shall be cheap and durable in construction and easily applied to or removed from a bottle.

The invention consists in a stopper formed of non-resilient material, the periphery of the stopper being provided with a series of annular grooves of sufficient depth and distance apart to render the periphery of said stopper resilient.

The invention again consists in a stopper formed of a single piece of wood with the grain of the wood running transversely of the length of the stopper, the periphery of the stopper being provided with a series of annular grooves of sufficient depth and distance apart to render the portion of the periphery of the stopper between said grooves resilient.

The invention further consists in a stopper of the combination and arrangement of parts set forth in the following specification, and particularly pointed out in the claims thereof.

Referring to the drawings, Figure 1 is a side elevation of a stopper constructed in accordance with our invention. Fig. 2 is a central longitudinal section thereof. Fig. 3 is a transverse section taken on line 3-3 of Fig. 1. Fig. 4 is a section similar to Fig. 2, showing the stopper inserted in the neck of a bottle, said bottle being broken away to save space in the drawings.

In the drawings, 6 is the body of the stopper.

7 7 are annular grooves arranged in parallel planes and of sufficient depth to leave therebetween flexible rings 8 8, said grooves and rings being rectangular in cross-section.

It will be understood that in our improved stopper the grain of the wood runs transversely of the length of the stopper, so that when the stopper is forced into the neck of the bottle the rings 8 8 will spring upwardly one after the other as the stopper is forced

into the neck of the bottle, as illustrated in Fig. 4, without cracking or breaking said rings from the main body 6 of the stopper. The grain of the wood running transversely of the stopper also fulfils another function—viz., it prevents the gases inclosed in a bottle from passing through the stopper, as would be the case if the stopper were made of wood with the grain running longitudinally thereof.

In stoppers which are not used for bottles containing gases under high pressure we prefer to provide a wire 9, which extends longitudinally through the center of the stopper and is turned over at the lower end, as at 10, to prevent the same being pulled out of the stopper. At the upper end of the wire an eye or loop 11 is formed, by means of which the stopper may be removed from the bottle by inserting through the eye a piece of wire or any convenient article and pulling thereon. In stoppers which are used for bottles containing gases under high pressure the wire 9 is omitted and the body of the stopper left solid.

To remove stoppers of this class from the neck of the bottle, an ordinary corkscrew may be inserted, as in stoppers of cork. The insertion of the corkscrew in the body of the stopper is rendered possible and practical by reason of the flexible rings 8 yielding sufficiently to allow the wood displaced by the corkscrew to be forced radially outward from the center of the stopper.

It will be understood that the stopper hereinbefore described is preferably made of soft wood.

In addition to the advantages hereinbefore set forth secured by making the stopper with the grain of the wood running transversely thereof it will be understood that stoppers constructed with the grain of the wood running transversely do not shrink or swell laterally.

It will be seen and understood that the stopper hereinbefore described is made from non-resilient material, said material being made resilient by introducing the annular grooves of sufficient number and depth to render the periphery of the stopper resilient, and while we prefer to use a wooden stopper with the grain running transversely thereof we do not

wish to be understood as limiting ourselves to this specific construction, as it is evident that a stopper made of non-resilient material and provided with annular grooves of sufficient
 5 depth and distance apart to render the periphery of the stopper resilient would not depart from the spirit of our invention.

Having thus described our invention, what we claim, and desire by Letters Patent to secure, is—

1. As an improved article of manufacture, a stopper formed of non-resilient material, said stopper provided upon its periphery with a series of annular grooves of sufficient
 15 depth and distance apart to render the periphery of said stopper resilient.

2. As an improved article of manufacture, a stopper formed of a single piece of wood, the grain of the wood extending transversely
 20 thereof, said stopper provided upon its periphery with a series of annular grooves of sufficient depth and distance apart to render the periphery of said stopper resilient.

3. As an improved article of manufacture, a stopper formed of a single piece of wood, the grain of the wood extending transversely
 25 thereof, said stopper provided upon its periphery with a series of annular grooves, said grooves of sufficient depth and distance apart
 30 to form flexible annular rings therebetween upon said periphery.

4. As an improved article of manufacture,

a stopper formed of a single piece of wood, the grain of the wood extending transversely thereof, said stopper provided upon its periphery with a series of annular grooves of
 35 uniform width and depth and of a sufficient distance apart to render the periphery of said stopper resilient.

5. As an improved article of manufacture, a stopper formed of a single piece of wood, the grain of the wood extending transversely thereof, said stopper provided upon its periphery with a series of annular rectangular
 40 grooves of sufficient distance apart to render the periphery of said stopper resilient.

6. As an improved article of manufacture, a stopper formed of a single piece of wood, the grain of the wood extending transversely thereof, said stopper provided upon its periphery with a series of annular grooves of
 50 sufficient depth and distance apart to render the periphery of said stopper resilient, and a wire extending longitudinally therethrough and projecting therebeyond at one end to form
 55 a handle.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

GEORGE S. BARNES.
 STANLEY RUFFIN.

Witnesses:

CHARLES S. GOODING,
 ANNIE J. DAILEY.