(No Model.)

C. F. MÖLLER.

BOTTLE STOPPER.

No. 517,958. Patented Apr. 10, 1894.

Fig. I.

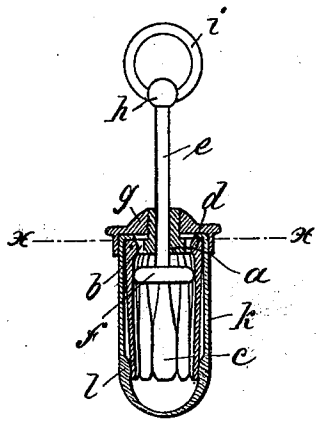


Fig. II.

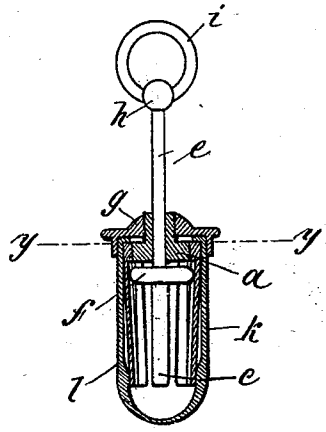


Fig. III.

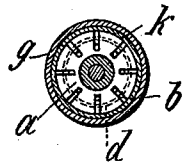


Fig. V.

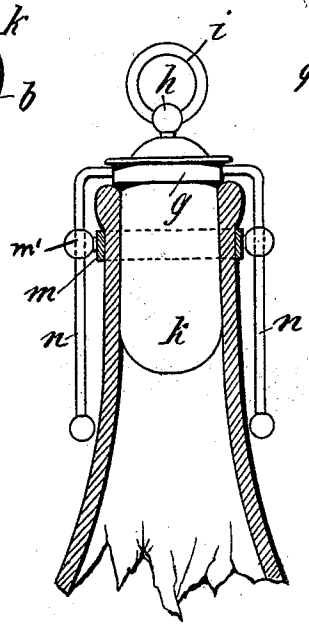


Fig. IV.



Attest

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CARL FREDRICK MÖLLER, OF BERLIN, GERMANY.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 517,958, dated April 10, 1894.

Application filed August 4, 1893. Serial No. 482,370. (No model.)

To all whom it may concern:

Be it known that I, CARL FREDRICK MÖLLER, of Berlin, Germany, have invented a new and useful Improvement in Bottle-Stoppers, of which the following is a specification.

This invention relates to a stopper or plug for hermetically closing bottles of all kinds, flasks and casks.

In the drawings: Figure 1, is a vertical section of the stopper. Fig. 2, shows, in section a modification of Fig. 1. Fig. 3, is a cross section on the line *x*—*x* Fig. 1. Fig. 4, is a cross section on the line *y*—*y* Fig. 2. Fig. 5, shows the stopper fitted in the neck of a bottle.

The stopper or plug consists of a disk *a*, which has a number of cuts *b* made in its circumference. In these cuts a number of wing-shaped thin metal plates *c* are fitted. A piece of wire *d* passes through holes in the upper ends of the plates and retains them in position. This wire is laid in a circular groove made in the disk. A hole is bored up through the center of the disk and through this hole is passed the rod *e* of the piston *f*. The rod *e* is made with a head *h* through which is passed a ring handle *i*. The disk *a* is made with an upwardly projecting part which is screwed externally and on this part is screwed a cap *g*. An india-rubber or other suitable flexible covering *k* is pushed over the plates *c* and disk *a* and is held in place by the flange on the under side of the cap *g*, when said cap is screwed down. The covering is, as shown, of conical shape, and has on its interior surface a ridge *l*.

The stopper is applied in the following manner:—After the stopper is inserted by hand into the bottle, the head *h* is pressed down so as to force downward the piston *f* and thereby spread out the wing plates *c* and cover *k*. In this manner the said cover *k* is pressed firmly against the interior surface of the bottle neck and closes it. The piston *f* passes down until it reaches the ring or ridge *l* which it expands so as to insure a perfectly air tight closure of the bottle. The use of a cover with a ridge or ring *l* enables it to be fitted in various sizes of bottles. To fix the stopper to the bottle a shackle is provided which is soldered to the cap *g*. The arms *n* of the shackle slide through holes in ball joints *m'* fitted to the ring *m* on the bottle.

The stopper shown at Fig. 2, has the leaves or plates *c* made in one with a ring screwed on to the disk *a*, or it may be made with the disk itself. In this case the leaves or plates are made of thin spring metal.

The new stopper is much superior to those hitherto used, in simplicity of construction, handiness, neatness, durability and in its action on the interior surface of the bottle.

The stopper, when inserted, will resist the strongest internal pressure, while, at the same time it can be taken out of the bottle with the greatest ease.

The pressure of the gases within the bottle renders the stoppering more secure as the pressure acts on the rubber cover *k* and tends to press or bulge it out laterally against the surface of the bottle neck.

Having now described and ascertained my said invention, what I claim is—

1. A stopper for bottles and the like consisting of an inclosing cover of flexible material, a series of leaves pivoted at their upper ends to a supporting disk within the cover and a vertically movable piston encircled by the leaves, substantially as described.

2. The india-rubber cover *k*, with its internal ring or ridge *l* combined with the leaves and piston, said cover entirely inclosing said leaves and piston substantially as described.

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

CARL FREDRICK MÖLLER.

Witnesses:

W. HAUPT,

T. EDWARDS.