D. G. SMITH.

BOTTLE-STOPPER.

No. 188,970. Patented March 27, 1877.

Fig. 1.

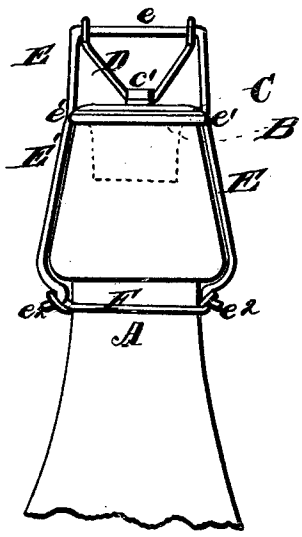


Fig. 2.

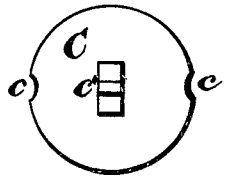
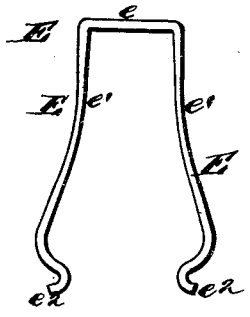


Fig. 3.



WITNESSES

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DAVID G. SMITH, OF CARBONDALE, ASSIGNOR OF ONE-HALF HIS RIGHT TO GEORGE B. SMITH, OF DUNMORE, PENNSYLVANIA.

IMPROVEMENT IN BOTTLE-STOPPERS.

Specification forming part of Letters Patent No. **188,970**, dated March 27, 1877; application filed February 24, 1877.

To all whom it may concern:

Be it known that I, DAVID G. SMITH, of Carbondale, in the county of Luzerne and State of Pennsylvania, have invented a new and valuable Improvement in Bottle-Stoppers; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side elevation of my bottle-stopper applied, and Fig. 2 is a plan view of the same. Fig. 3 is a side view of the bail.

This invention relates to bottle-stoppers, and to fastening devices therefor.

The nature of said invention consists, principally, in the construction and combination of a spring-yoke or clamping-bail and a notched plate, to which the stopper is attached.

In the annexed drawings, A designates the neck of a bottle, and B a rubber stopper inserted in the mouth of the same. Said stopper is secured to, and braced by, a disk-shaped plate, C, (shown in detail in Fig. 2,) which has two opposite notches, *c c*. Said plate is hung, by an eye, *c'*, to the middle of a metal stirrup, D, which is pivoted by its diverging upper ends to the cross-bar *e* of a spring-yoke or bail, E. The side pieces E′ of said yoke have considerable elasticity, and are inwardly bent at e^1 e^1, so as to be capable of springing into notches *c c* when brought opposite thereto by being turned upward into a vertical position. The lower ends of said side bars E′ are provided with hooks e^2 e^2, which catch into loops of a wire, F, wound around the said bottle-neck A. The construction, application, and use of said wire F are similar to those of wires in ordinary use for attaching the yokes or bails of bottle-stoppers. The normal shape of the yoke E is shown in detail in Fig. 3.

To stop the mouth of the bottle, stopper B is inserted therein, and yoke or bail E is turned into a vertical position, when the curves or bends e^1 e^1 set into notches or recesses *c c*, and with pressing stirrup D hold said stopper firmly against the expansive force of gases within said bottle and other causes of displacement. When said stopper is to be removed, the said yoke or bail is turned downward in either direction. The notches or recesses *c c* are rounded, or made oblique, so as not to offer too much resistance to this movement, and the pressure of flexible side bars E′ against the sides of said notches or recesses causes the said side bars to bend outward, as they are thus turned down, until they escape from said recesses or notches. The stopper is then easily removed, this removal being often assisted by the expansive force of gases within the bottle.

The above-described invention may be applied to fruit-jars, as well as to bottles; also to various other receptacles.

What I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a stopper for a bottle or fruit-jar, a yoke or bail, E, having spring-bars E′ E′, bent at e^1 e^1, a stirrup, D, and a plate, C, notched at *c c*, substantially as and for the purpose set forth.

2. The combination of the stopper B, bail E, and stirrup D, substantially as described, and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

DAVID G. SMITH.

Witnesses:
S. S. BENEDICT,
ALEXANDER DIACK.