

(No Model.)

G. A. HOFFMAN.
BOTTLE STOPPER.

No. 572,704.

Patented Dec. 8, 1896.

Fig. 1

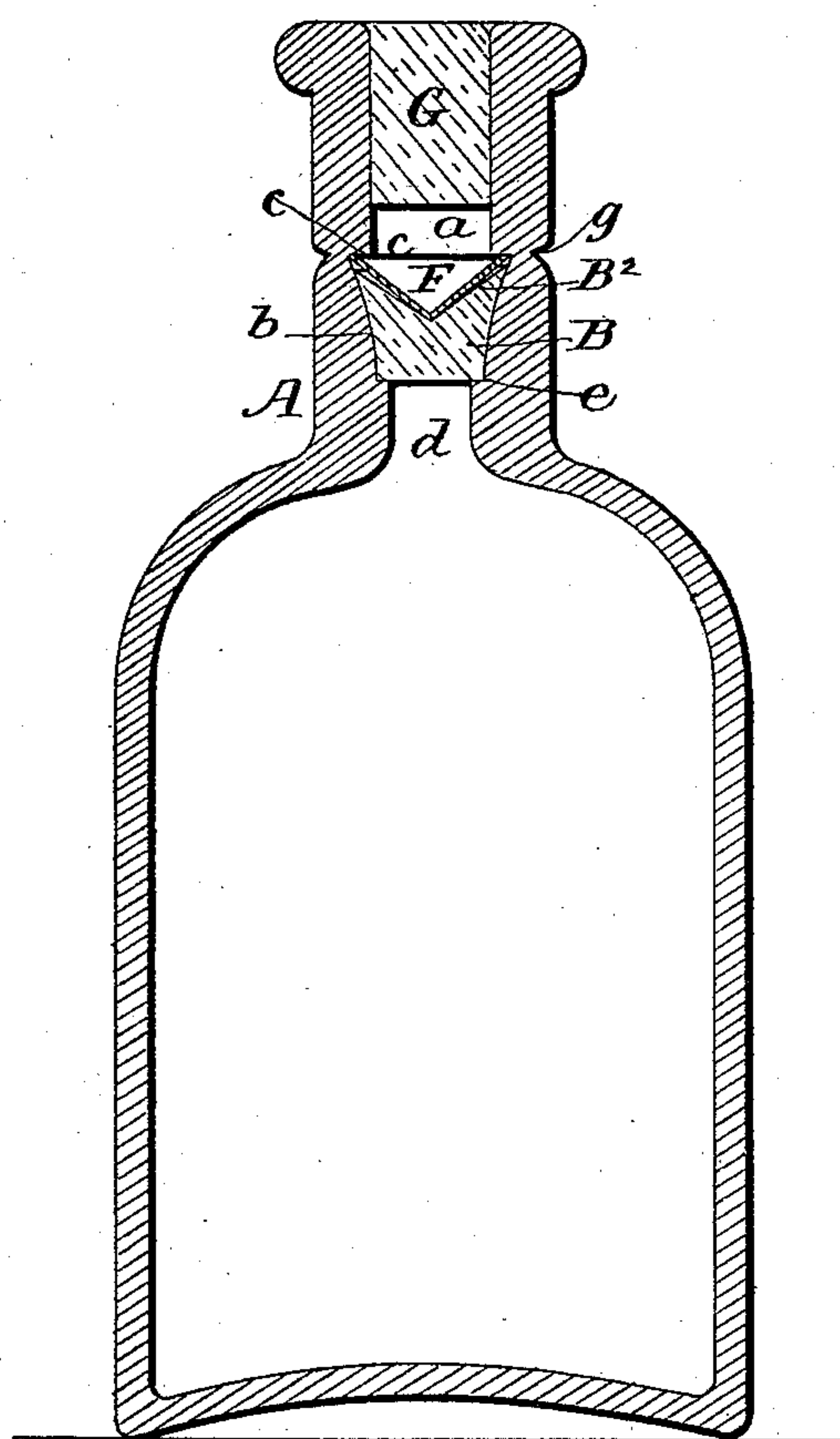


Fig. 2.

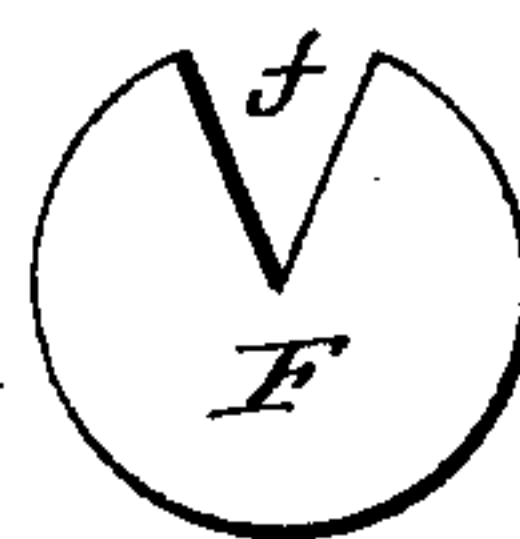
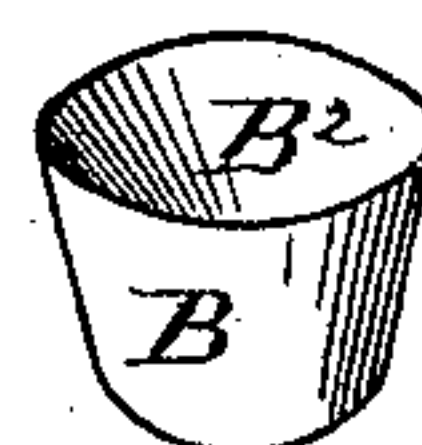


Fig. 3.



Fig. 4.



WITNESSES

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INVENTOR

George A. Hoffman
by E. E. Masson, Attorney.

UNITED STATES PATENT OFFICE.

GEORGE A. HOFFMAN, OF MILLERSBURG, PENNSYLVANIA, ASSIGNOR OF
ONE-HALF TO HARRY G. BOGAR, OF SAME PLACE.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 572,704, dated December 8, 1896.

Application filed April 15, 1896. Serial No. 587,651. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. HOFFMAN, a citizen of the United States, residing at Millersburg, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Bottle-Stoppers, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to bottles and stoppers therefor, in which a portion of the neck of the bottle must first be broken off before the stopper can be removed; and the objects of my invention are to provide simple and inexpensive means to prevent the removal of the clamped and locked cork of the stopper from the neck of the bottle either by attempting to force it down within the bottle or attempting to withdraw it through the mouth
15 of the bottle. I attain these objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a vertical central section of a bottle having its neck formed and closed in accordance with my invention. Fig. 2 is a top view of a thin sheet-metal notched disk forming a part of the bottle closure. Fig. 3 is a perspective view of the same disk bent in the form of a hollow cone. Fig. 4 is a perspective view of a cork having in its top a conical cavity to receive and support the sheet-metal hollow cone and force its edge in engagement with the neck of the bottle.

It is desired to obtain a bottle which is adapted to be filled and then closed tightly with a cork, and the latter sealed or locked so that it is impossible to gain access to the contents of the bottle without first breaking off the upper portion of the neck, and thereby preventing its future use with a cork locked therein. The object is accomplished by the constructions shown in the accompanying drawings, in which—

45 A represents the neck of the bottle, having in its upper portion a passage *a* substantially cylindrical, and under it a chamber *b*, the top of which is wider than the passage *a* to provide an annular shoulder *c* over said chamber. The chamber *b* is in the form of a truncated cone, the diameter of its lower end being slightly less than the diameter of

the passage *a*, and under it there is a still narrower passage *d*, that leads into the bottle, and thus an annular shelf *e* is obtained in the bottom of the chamber *b* to provide a seat for a portion of the bottom of a truncated conical cork B.

The width of the cork B is such as to tightly fit within the chamber *b*, the shelf *e* in the bottom of the latter being to increase the amount of surface contact with the cork and prevent the latter from being forced within the bottle. To retain the cork B upon its seat and against the walls of the neck of the bottle, its upper end is provided with a conical cavity B² to receive a conical cork-retainer F of resilient sheet metal, preferably sheet-steel, so that it cannot be pierced with an ordinary corkscrew. To obtain said retainer, a disk of metal is first cut, as shown at F in Fig. 2, with a segment removed that constitutes an angular notch *f* in its sides extended to its center, and said disk is bent, as shown in Figs. 1 and 3, in the form of a cone with the edges of the notch slightly overlapping each other. When thus prepared and bent the diameter of the cone is greater than the diameter of the passage *a*, but on account of its resilient nature and the notch *f* it can be forced, with a suitable tool or rod, through said passage and be caused to expand again with its edges against the bottom of the annular shoulder *c*. Its outer surface finds a seat in the conical cavity of the cork B and expands the upper edges of said cork against the walls of the chamber *b*, said edges of the cork having previously been compressed inwardly while being forced through the passage *a* of the mouth of the bottle.

In the periphery of the neck of the bottle there is a groove *g*, in the same horizontal plane as the groove formed under the shoulder *c* within said neck, to permit the upper portion of the neck of the bottle to be easily broken off and separated by striking it against a hard object and thereby release the cork-locking cone F, the latter receiving any small splinters of glass that may become detached from the neck of the bottle.

To provide additional protection against the escape of gas that may be within the bottle, if it is used to receive liquids containing

gases under pressure, an elastic cork G is forced within the cylindrical passage *a* of the mouth of the bottle, and said cork can be sealed in any well-known manner.

5 Having now fully described my invention, I claim—

1. The combination of the neck of a bottle provided with a groove *g* in its periphery and a cylindrical passage *a* in its upper end, and
10 under said passage a truncated conical chamber *b* having its wide upper end wider than the passage *a*, and under said chamber a passage *d* narrower than said chamber, an annular shelf *e* being between them, with a
15 truncated conical stopper B resting upon said shelf and having a conical cavity in its upper end, and an imperforated cone of resilient sheet metal having its sides resting within the cavity of the stopper B and its edge abutting
20 against the overhanging shoulder *c* of the chamber *b* substantially as described.

2. The combination of the neck of a bottle provided with a groove *g* in its periphery and a cylindrical passage *a* in its upper end, and
25 under said passage a truncated conical chamber *b* having its upper end wider than the passage *a*, and a shelf *e* in the lower end, with a truncated conical stopper B resting upon said shelf, and an imperforated cone of
30 resilient sheet metal resting upon said stopper B and having its edge abutting against the overhanging shoulder *c* of the chamber *b*, and an elastic cork G within the cylindrical passage *a* of the neck of the bottle
35 substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE A. HOFFMAN.

Witnesses:

SIMON S. BOWMAN,
EDMUND B. BOWMAN.