

(No Model.)

2 Sheets—Sheet 1.

G. A. GESSNER.

BOTTLE STOPPER.

No. 368,712.

Patented Aug. 23, 1887.

Fig. 1.

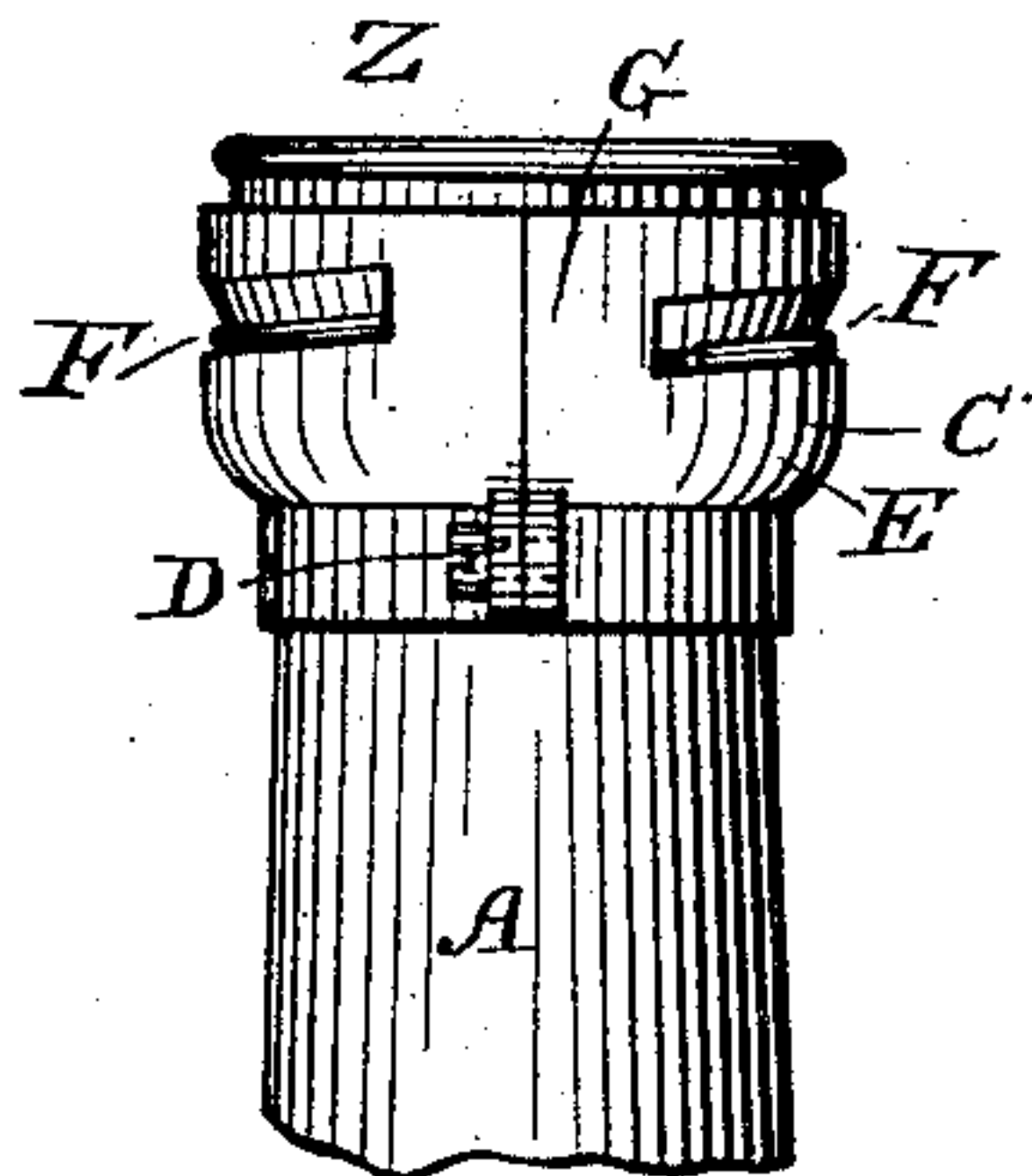


Fig. 2.

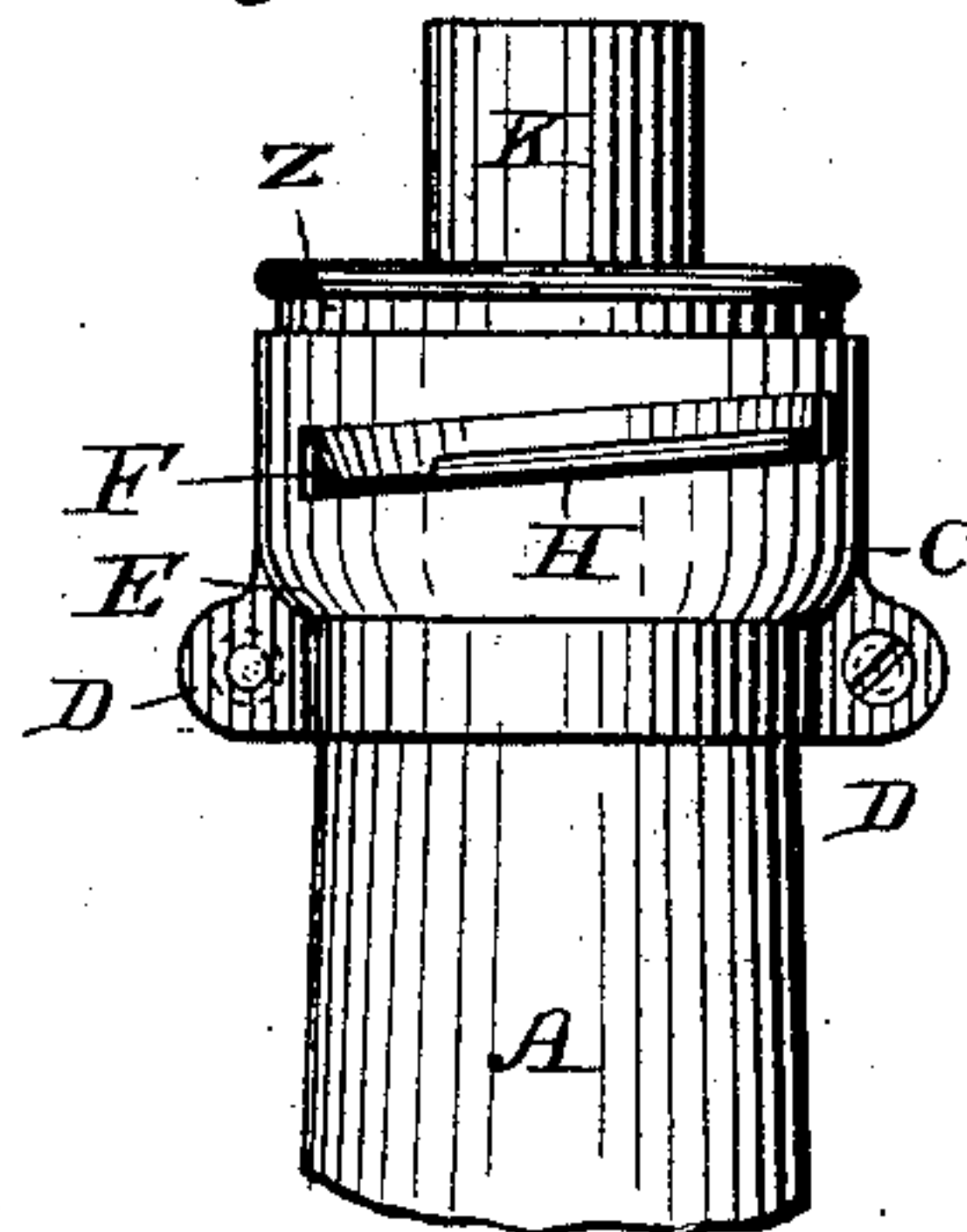


Fig. 3.

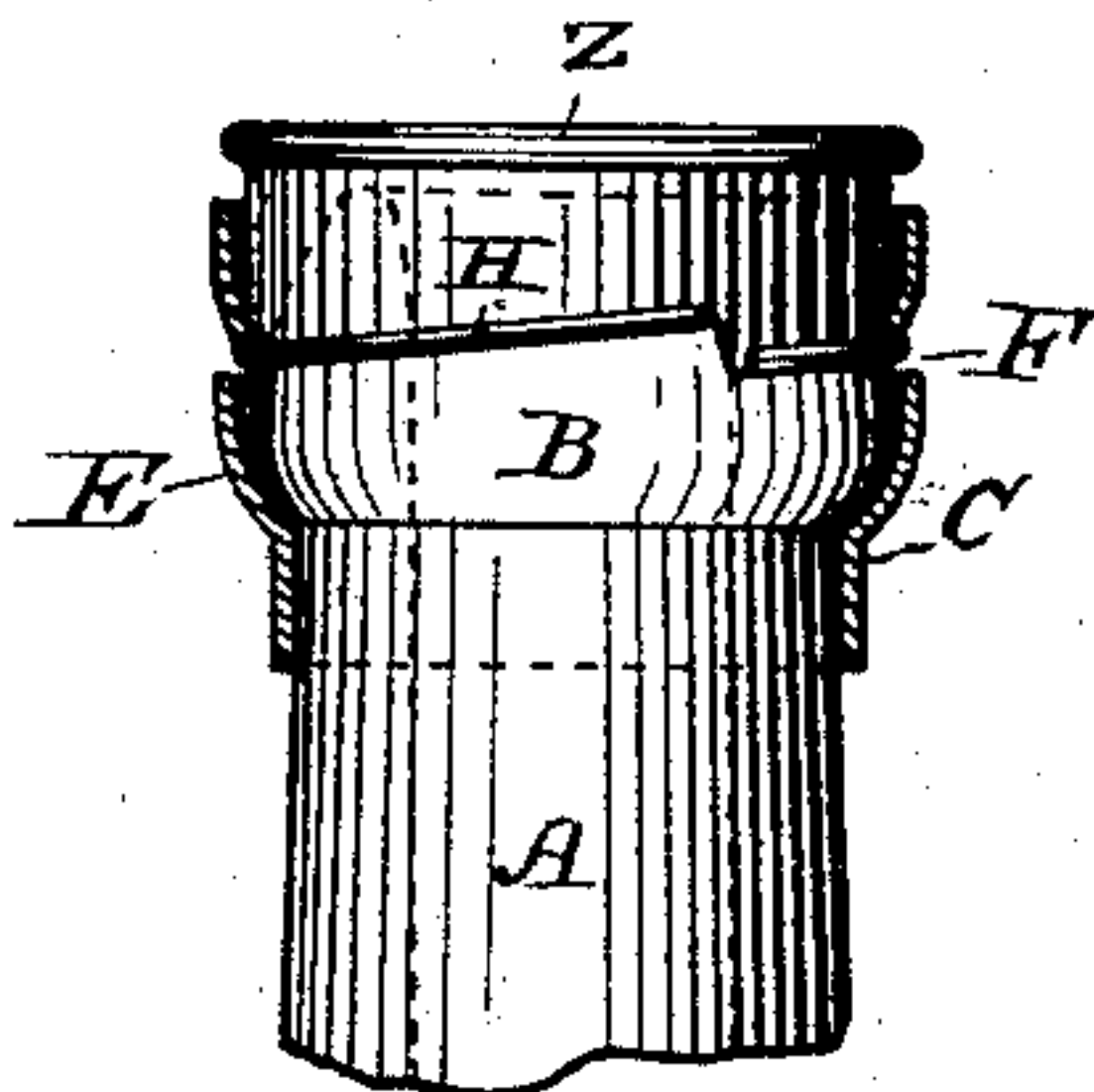


Fig. 4.

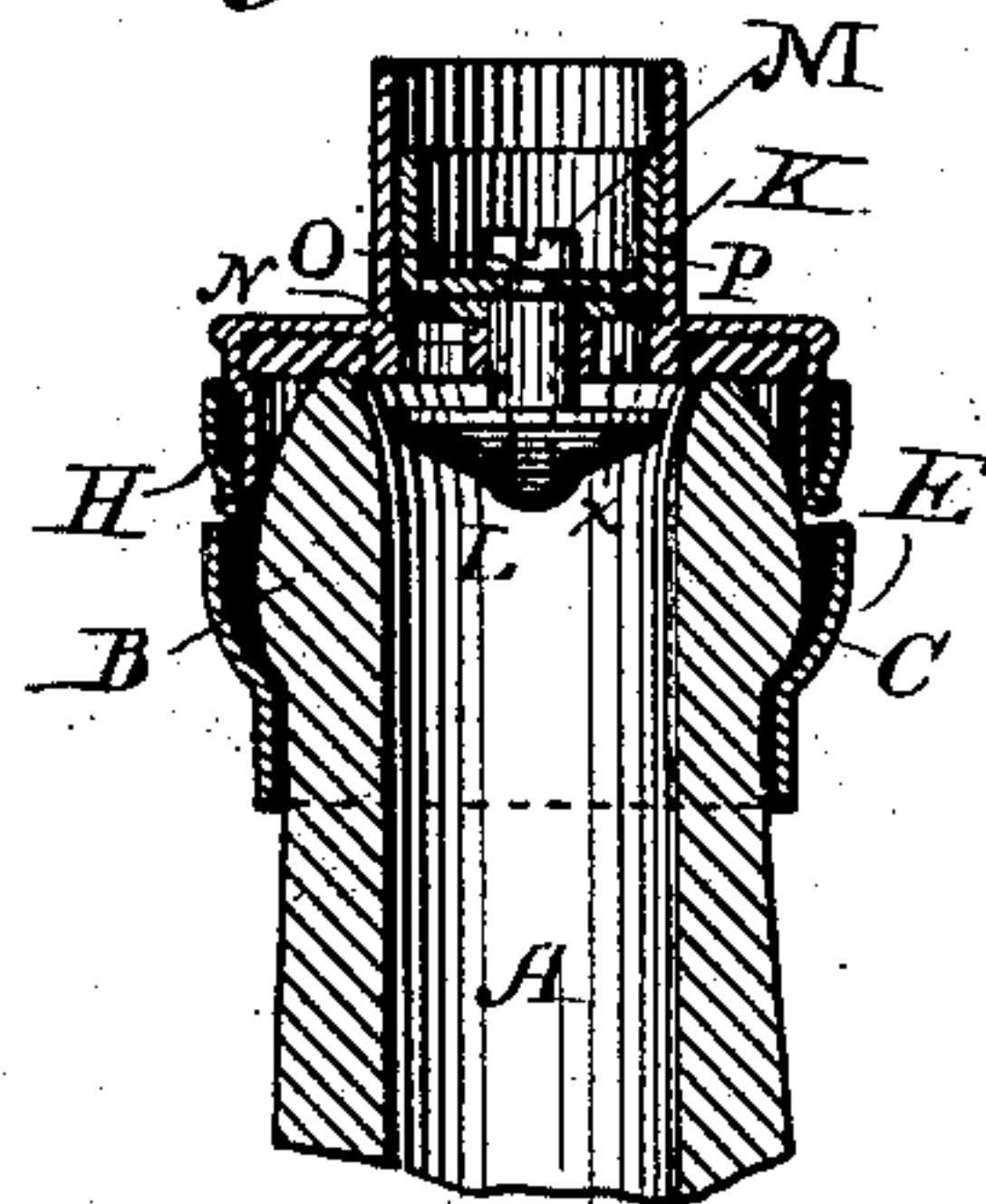
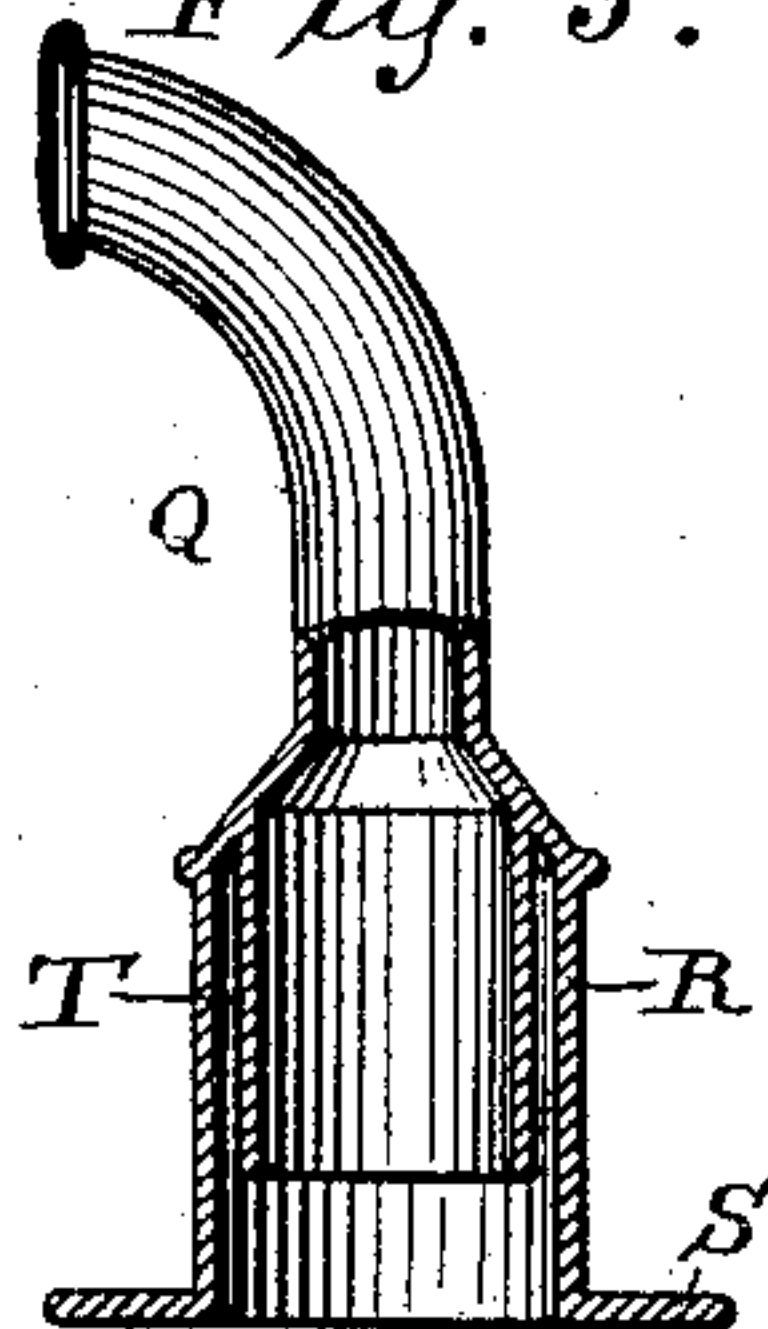


Fig. 5.



WITNESSES

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Fig. 6.

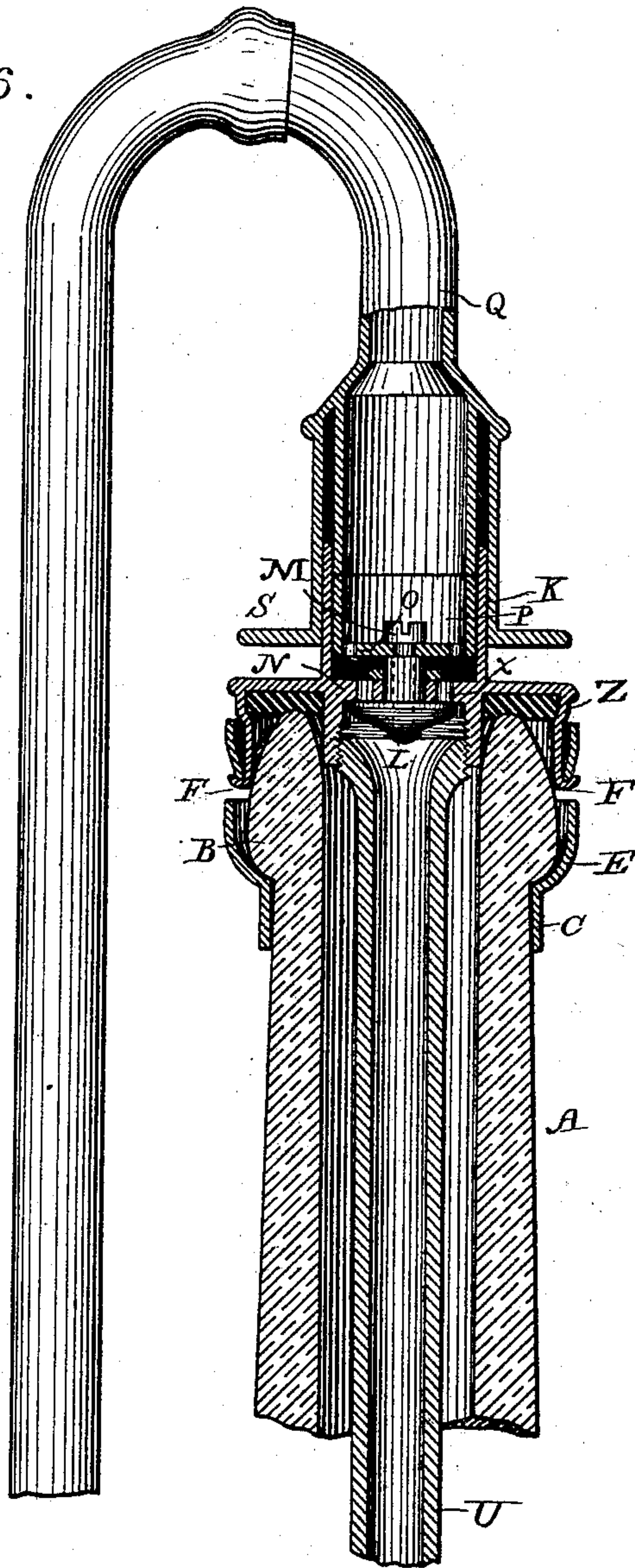
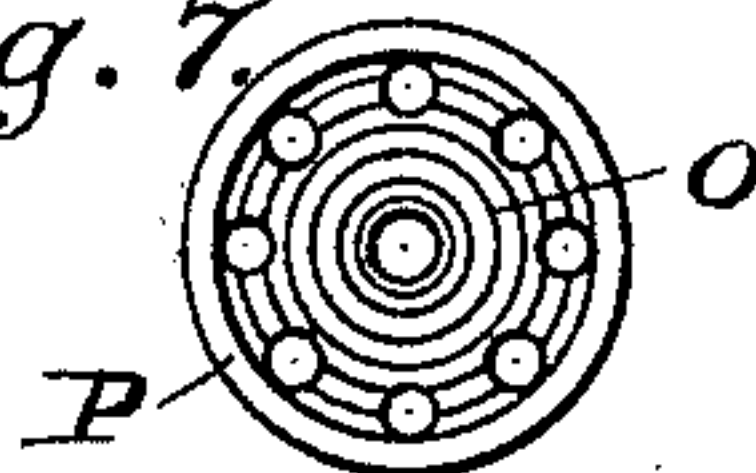


Fig. 7.



WITNESSES

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# UNITED STATES PATENT OFFICE.

GUSTAVUS A. GESSNER, OF FREMONT, OHIO.

## BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 368,712, dated August 23, 1887.

Application filed May 22, 1886. Serial No. 203,017. (No model.)

*To all whom it may concern:*

Be it known that I, GUSTAVUS A. GESSNER, of Fremont, in the county of Sandusky and State of Ohio, have invented a certain Improved Bottle-Stopping Mechanism, of which the following is a specification, reference being had to the accompanying drawings.

The object of my invention is to provide an improved stopper mechanism of that class adapted to be applied to bottles, as ordinarily made, with a lip, annular flange, or projection around the top of the neck at the mouth of the bottle, the lip in all cases serving as a stop or bearing to resist or encounter the force applied to press the stopper down to place for sealing the bottle. In this class of bottle-stoppers the cap or stopper is forced down to place in or over the mouth of the bottle perpendicularly without rotating it, by which injury to the stopper-packing is avoided.

In the accompanying drawings, illustrating my invention, Figure 1 is a side view of an ordinary bottle-neck with part of my improvements applied. Fig. 2 is a side view taken at right angles to that of Fig. 1, and showing an open instead of a closed cap, as in Fig. 1. Fig. 3 shows a side view, partly in section. Fig. 4 shows a vertical diametrical section of the bottle-neck with my improvements applied, the cap being open and provided with my improved valve mechanism. Fig. 5 shows the telescopic nozzle detached and partly in section, disclosing the valve-operating structure. Fig. 6 shows an addition, not belonging to my invention, by which what is called a "siphon-bottle" is conveniently produced when my invention is employed. Fig. 7 is a bottom plan view of the sliding cylinder, showing its perforations.

Referring to the letters upon the drawings, A indicates an ordinary jar or bottle having the usual annular lip, flange, or projection, B, around its neck at its mouth.

C indicates a rotary ring fitting loosely around the neck beneath and bearing against the lip B, and provided with thumb-lugs D, or the like, for turning it. This ring may be made of one piece of plate metal bent and united at its end, or of two semicircular pieces united. In this instance I form my loose ring larger at the top than at the bottom, with a ledge, E, between the two parts, and extend

its enlarged upper part up around the lip, leaving a small annular space between it and the lip. I also provide two or more inclined threads, F, upon the inside of the enlarged upper part of the ring, with spaces or plain surfaces G between them. These threads are preferably formed by cutting inclined slots in the ring and bending in the upper edge of the cut, as illustrated.

My cap or stopper Z is formed with coincident inclines or threads H, projecting outward and adapted to engage with the inclines or threads of the ring. This cap is provided with any suitable packing, and is placed within the enlarged upper part of the ring, which latter is then turned, when the threads or inclines slide upon each other in the usual way to draw down the cap perpendicularly without turning it to seal the bottle.

I may employ either a closed cap, as represented in Fig. 1, for beer-bottles, &c., or an open cap, as shown in Fig. 2, for stopping bottles containing aerated liquids, or liquids charged with gas. When my stopper is used for the latter purpose, I form an opening through its top and secure a tube, K, around it. Beneath the cap I provide a valve, L, the stem M of which, being preferably a screw, as shown, passes through the guide N and through the perforated bottom O of a sliding cylinder P within the tube K, which also acts as a guide. The parts are so adjusted that the valve-stem and cylinder P have a little vertical play, so as to open and close the valve.

When the bottle is empty, the valve will normally be open—that is, it will drop down by force of gravity so as to open. When the bottle is filled with aerated liquid under pressure, it will press up the valve and close it, the guide N having openings  $\alpha$  on either side of it of greater area than the perforations in the bottom of the sliding cylinder P, which dispenses with the use of a spring to operate the valve.

I provide for opening the valve when it is filled and for thus unstopping the bottle by means of a telescopic nozzle, Q, which is composed of an external pipe, R, having a flange or any suitable projection or thumb-piece, S, around its base, and an internal push-tube, T, adapted to enter within tube K and bear against the upper end of the cylinder P. By



pressing down upon the flange or thump-piece  
 S the valve will be pressed down within the  
 bottle-neck enough to open it, when the con-  
 tents of the bottle will spout out of the nozzle  
 5 under pressure in the usual way. The instant  
 the pressure is relieved from the thumb-piece  
 S the valve will automatically close, unless the  
 bottle is emptied, and seal the bottle, the same  
 as in devices where a spring is employed to  
 10 close the valve. The nozzle can be readily de-  
 tached, as, in fact, can all of the stopper mech-  
 anism and all of its parts, which renders it very  
 convenient for transportation, repairs, or trans-  
 fer in case of breakage of a bottle.

15 If desired, a tube, as indicated at U, Fig. 6,  
 can be attached to the cap around the valve,  
 and extend to near the bottom of the bottle,  
 and the nozzle can be given a half-turn, as in-  
 dicated in Fig. 6. This will produce what is  
 20 known as a "siphon-bottle," which can be  
 emptied without turning it down. In this man-  
 ner, by using my improvements, an ordinary  
 bottle for ale, beer, or other liquid under press-  
 ure can readily be converted into a siphon-  
 25 bottle.

My improved stopper has all of the well-  
 known advantages of this class of stoppers in  
 addition to those peculiar to its specially-im-  
 proved construction, rendering it simple, eco-  
 30 nomical, durable, and effective. The valve  
 structure, by which I secure an automatic clos-  
 ing of the valve whenever the bottle is not en-  
 tirely empty, without employing a spring, is  
 of great practical importance, as there are

many objections to the use of a spring for work- 35  
 ing the valve. All the parts can be readily  
 stamped out of sheet metal, and are light and  
 inexpensive.

Any suitable packing can be used with my  
 improved stopping mechanism, both in the 40  
 cap and upon the valve; but my improved  
 seal, consisting of combined rubber and par-  
 affine paper, for which I have applied for Let-  
 ters Patent of the United States, is preferable.

What I claim is—

1. In combination with an ordinary bottle- 45  
 neck having a lip, B, the ring C and cap Z,  
 adapted to fit within the upper enlarged part  
 of the ring and engage therewith by screw-  
 threads, substantially as set forth. 50

2. In a valve mechanism for a bottle-stop-  
 per, the combination, with a valve having a  
 stem attached to a hollow sliding cylinder with  
 a perforated bottom, of the cap provided with  
 a guide, N, and openings about it of greater 55  
 area than the perforations of the sliding cyl-  
 inder, substantially as set forth.

3. In combination with the cap Z, the guide  
 N, tube K, valve L, stem M, sliding cylinder  
 P, and telescopic nozzle adapted to be pushed 60  
 down to open the valve, substantially as set  
 forth.

In testimony whereof I have hereunto sub-  
 scribed my name.

GUSTAVUS A. GESSNER.

Witnesses:

M. S. HOPKINS,  
 D. DAVIDSON.