

No. 840,992.

PATENTED JAN. 8, 1907.

J. COHN.

SAFETY VENTING ATTACHMENT FOR RECEPTACLES.

APPLICATION FILED APR. 13, 1906.

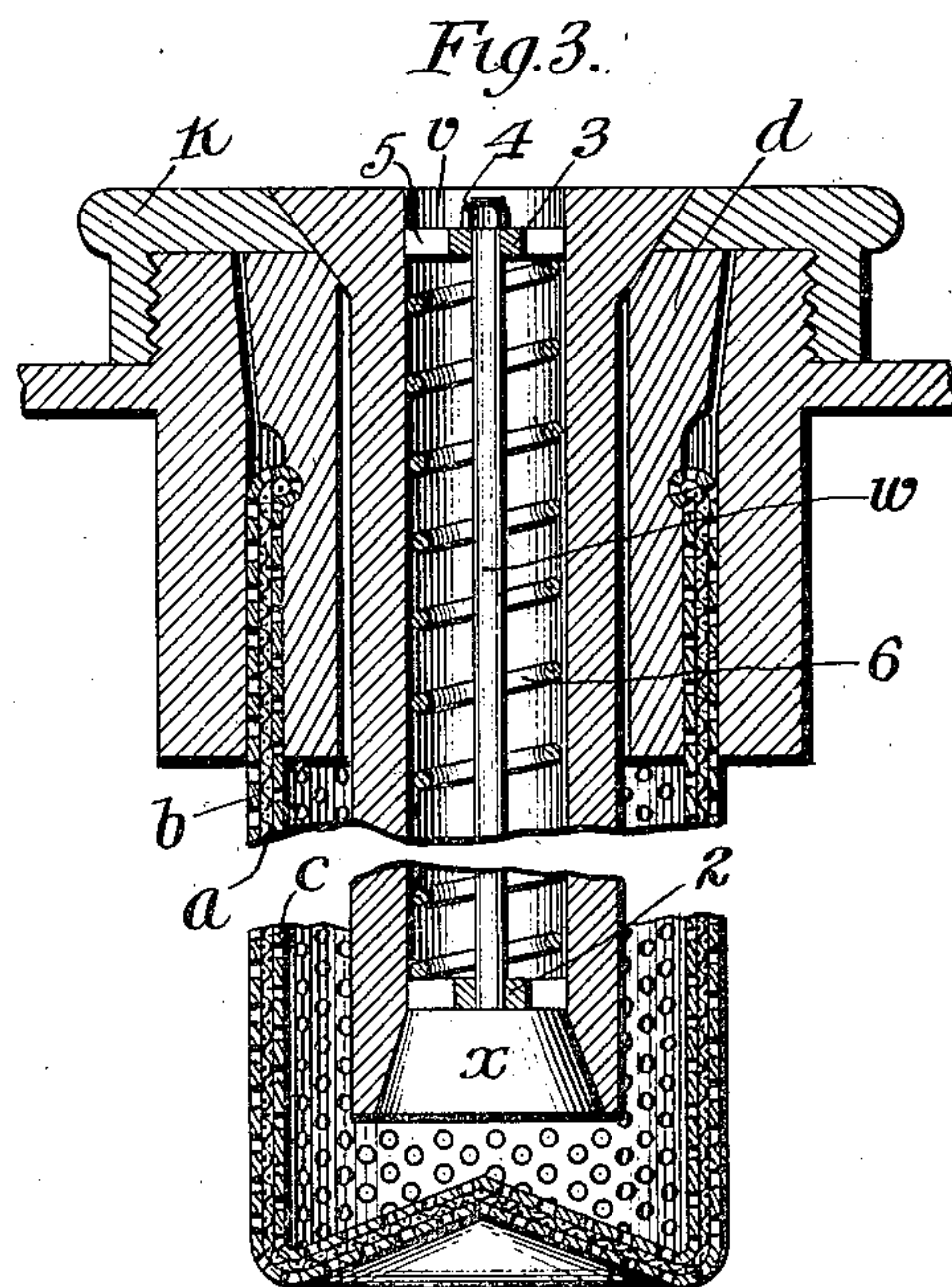
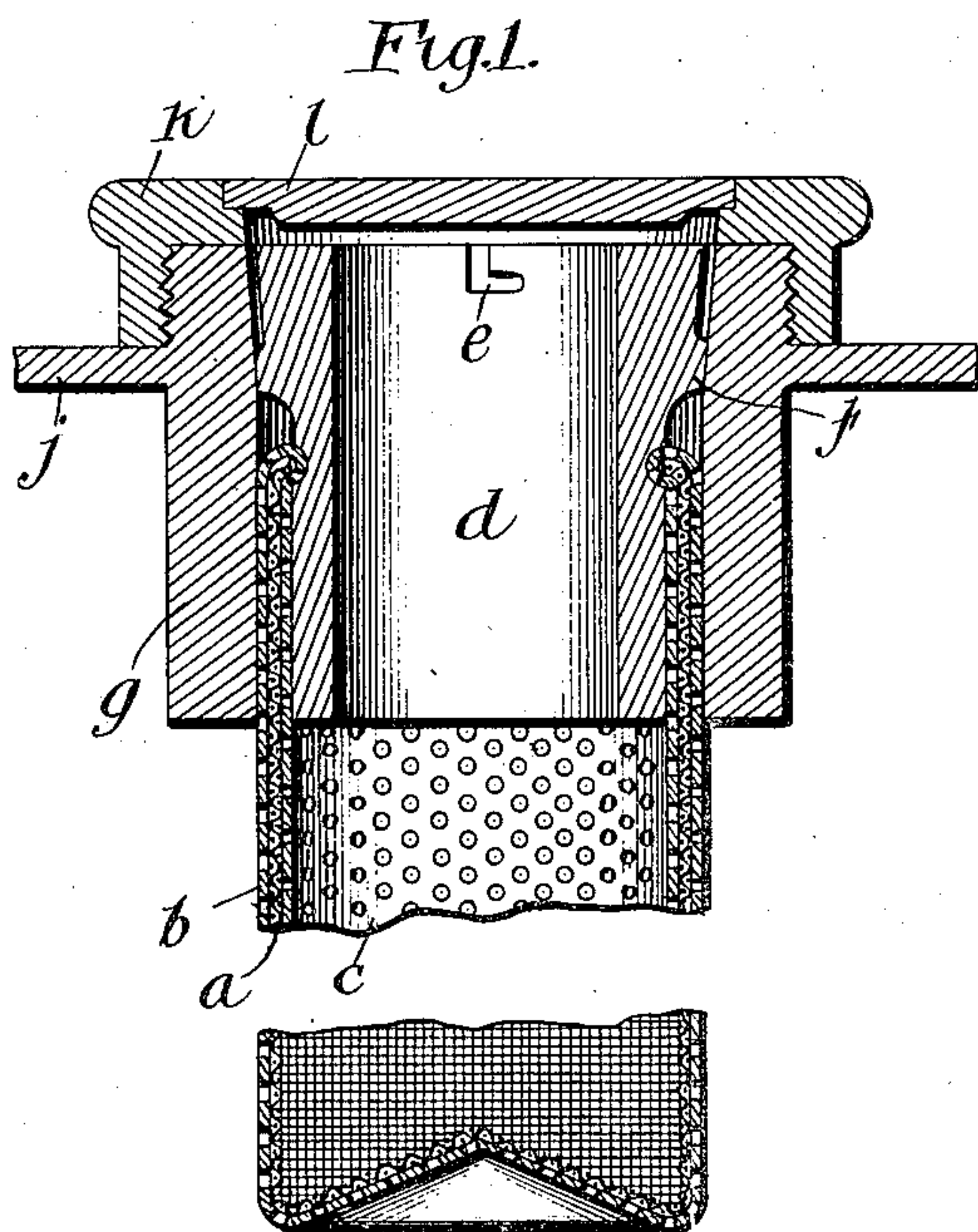
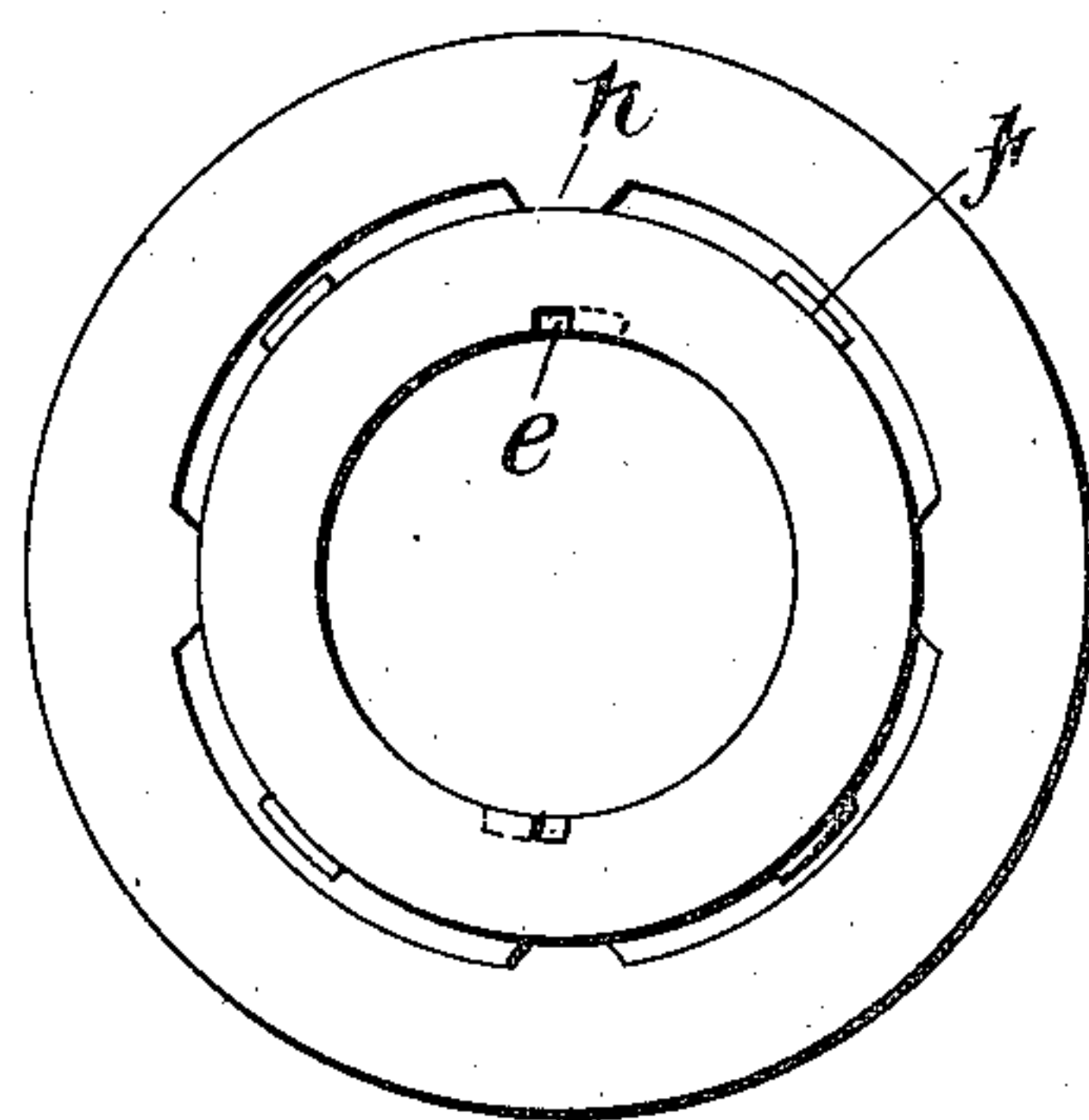


Fig. 2.



Witnesses

W. Map. Dural
Myron G. Clear

Inventor

Jacob Cohn.
By Wilkinson & Fisher
Attorneys.

UNITED STATES PATENT OFFICE.

JACOB COHN, OF LONDON, ENGLAND.

SAFETY VENTING ATTACHMENT FOR RECEPTACLES.

No. 840,992.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed April 13, 1906. Serial No. 311,480.

To all whom it may concern:

Be it known that I, JACOB COHN, a subject of the German Emperor, residing at 19 Ashchurch Grove, Shepherd's Bush, in the
5 county of London, England, have invented certain new and useful Improvements in and Relating to Safety Venting Attachments for Receptacles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to means for venting casks, cans, and other vessels in such a way
15 that the accidental explosion of their liquid contents when of an inflammable nature is efficiently prevented.

The apparatus forming the subject-matter of the invention may be so constructed
20 that when desirable it can be easily withdrawn and securely replaced, while at the same time ample provision is made for the escape of accumulated gases and when necessary for the passage of air to facilitate filling and emptying the vessel.

The apparatus consists, essentially, of a cylinder of wire-gauze preferably protected internally and externally by cylinders of perforated metal and so mounted that it can be
30 readily attached to an opening in the vessel—say the bung-hole in the case of a cask.

In order that my said invention may be understood, I will now proceed to describe the same with reference to the drawings accompanying this specification, which show various forms of apparatus constructed according to the invention and methods of applying same to various vessels.

Figure 1 is a sectional elevation of the
40 apparatus as applied to a hole in a vessel, such as the bung-hole of a cask, a manhole, or a hand-hole of a tank. Fig. 2 is a plan of Fig. 1 with the cap removed. Fig. 3 shows sectional elevation of a modified form of the apparatus hereinafter described.

The same letters and numerals of reference are employed to denote the same parts in all the views.

a is a cylinder of wire-gauze of suitable
50 mesh. *b* and *c* are perforated metal cylinders. These cylinders are provided at the bottom with bases or ends corresponding in mesh or perforation, as the case may be, to the cylinders themselves. These bases may
55 be of concave, as shown, or of convex form or of other suitable shape. That part of the

wall of the containing vessel in the immediate neighborhood of the bases of the cylinders is designed in such a manner that it will fit against the base of the outer cylinder. The
60 cylinders are soldered or suitably fastened to the lower part of a tube *d*. This tube *d* is provided on its upper inside edge with bayonet-slots *e*, or other means may be provided for the insertion of a key, key-wire, or finger-tips. The tube *d* is also beveled to form a counter, the lower parts of which are furnished with a series of projections or bosses
65 *f* to pass under and engage with a corresponding number of bosses *h*, projecting from the beveled or countersunk edge of another metal tube *g*, forming a seat for the counter *d*.
70

Air-vents are provided between the parts *d g h*, as will be seen from comparing Figs. 1 and 2.

The tube *g* is also provided with a flange *j*
75 for attachment by screws or other suitable means to the wall of a vessel to contain inflammable liquid. A cap *k* screws onto the tube *g* and is provided with a safety-vent and
80 plug *l*, which is secured to its seat by means of soft solder at a melting-point suited to the boiling-point of the liquid contents. Should the contents of a vessel fitted with the before-mentioned device become overheated,
85 the soft solder would melt and release the safety-plug, which would fly out, and thus open a vent for the accumulated gases, and should any flame reach the vent only that portion of the liquid in the cylinder would be
90 ignited, as the flame would be unable to pass through the gauze.

Referring to Fig. 3, which shows a modification of the device, in which the plug provided with soft solder is dispensed with,
95 the cap *k* is provided with a conical or beveled hole. *v* is a tube, which is provided with a beveled or conical edge corresponding with the conical hole in the cap *k*. The lower end of this tube *v* is also provided with a conical
100 hole. *w* is a rod carrying a valve *x*, which fits in the conical hole in the tube *v* as a seating. 3 is a sliding guide-piece which slides in the tube *v*, and 2 is a fixed guide-piece fixed in the said tube *v* and through
105 which the rod *w* passes. Both the guide pieces 3 and 2 are made so that air can pass them. For instance, they may be made with a central ring, through which the rod *v* passes. These rings are provided with
110 three or more arms 5. In the case of the lower guide-piece these arms are fixed to

the inside of the tube *v*, while in the case of the upper movable guide-piece the arms 5 and the ring carried thereby slide inside the tube *v*. Between the sliding guide-piece 3 and the fixed guide-piece 2 a helical spring 6 is placed in compression. 4 is a nut screwing onto the top of the rod *w*, so as to hold the sliding guide-piece 3 in position, and for regulating the pressure of the spring. A space is left between the outer wall of the tube *v* and the inner wall of the tube *d*. The inner tube *v* may extend nearly to the bottom of the cylinders *a b c* in the case of a small vessel, or where the apparatus is applied to a deep tank the tube *v*, while extending to a sufficient depth, may be considerably shorter than the tubes *a b c*.

The action of this form of the device is as follows: When gases accumulate within the tank or vessel, the tube *v*, which is simply held in its position in the conical hole in the cap *k* by gravity, is raised from its seating, and the inflammable gases can escape until the pressure is reduced. Should the gases become fired, the flame will be cut off and extinguished as soon as the tube *v* falls back upon its seating, and the flame will in any case be prevented by the gauze cylinder from passing to the body of the inflammable liquid, as in the form shown in Figs. 1 and 2. When it is required to admit air to the cask or the like for emptying, the partial vacuum formed by the egress of the liquid draws down the valve *x* and air passes down around the rod *w* and between the tube *v* and the valve *x*, and thus enters the cask or other vessel.

What I claim, and desire to secure by Letters Patent of the United States of America, is—

1. A safety device for vessels containing inflammable liquids comprising a perforated cylinder adapted to be projected within the vessel, a gas-outlet valve and an air-inlet valve within said cylinder, substantially as described.

2. A safety device for vessels containing inflammable liquids comprising a perforated cylinder adapted to be projected within the vessel, an automatic valve arranged within

said cylinder for the outlet of the gases, and an air-inlet valve within said gas-valve, substantially as described.

3. A safety device for vessels containing inflammable liquids comprising a perforated cylinder adapted to be projected within the vessel, an outlet-valve in said cylinder normally seated by gravity and adapted to be opened by the accumulating gases, and an air-inlet valve within said gas-valve, substantially as described.

4. A safety device for vessels containing inflammable liquids comprising a perforated cylinder adapted to be projected within the vessel, an inlet-valve in said cylinder normally seated by gravity and adapted to be opened by the accumulating gases, and a spring-controlled air-inlet valve within said gas-valve, substantially as described.

5. A safety device for vessels containing inflammable liquids comprising a gauze cylinder adapted to be projected within the vessel, perforated protecting layers arranged on the inside and outside of said cylinder, a gas-outlet valve and an air-inlet valve within said cylinder, substantially as described.

6. A safety device for vessels containing inflammable liquids comprising a perforated cylinder adapted to be projected within the vessel, a hollow cylindrical valve in said cylinder having a beveled top and adapted to be opened by the accumulating gases and an air-inlet valve located in the hollow part of said gas-valve, substantially as described.

7. A safety device for vessels, containing inflammable liquids comprising a perforated cylinder adapted to be projected within the vessel, a hollow cylindrical valve in said cylinder normally seated by gravity and adapted to be opened by the accumulating gases, and a spring-controlled air-inlet valve located in the hollow part of said gas-valve, substantially as described.

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

JACOB COHN.

Witnesses:

A. E. VIDAL,
A. NUTTING.