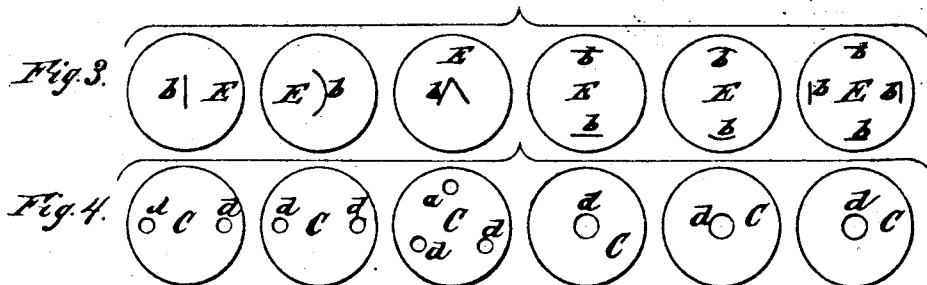
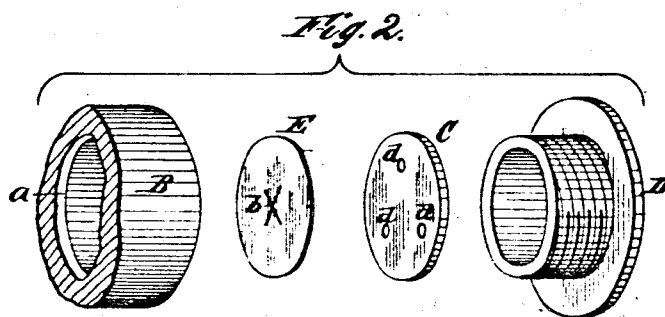
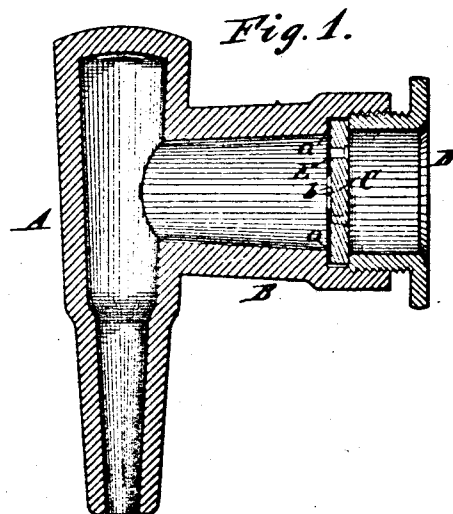


(No Model.)

F. A. RENTON.
Vent Plug.

No. 236,719.

Patented Jan. 18, 1881.



Witnesses:
Charles R. Searle
A. M. Piene.

F. A. Renton,
Inventor:
By North & Wagon,
Attorney.

UNITED STATES PATENT OFFICE.

FERGUS A. RENTON, OF GREEN POINT, NEW YORK.

VENT-PLUG.

SPECIFICATION forming part of Letters Patent No. 236,719, dated January 18, 1881.

Application filed June 24, 1880. (No model.)

To all whom it may concern:

Be it known that I, FERGUS A. RENTON, of Green Point, county of Kings and State of New York, have invented certain new and useful Improvements in Vent-Plugs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings and to the letters of reference marked thereon.

My invention has relation to that class of devices employed for the purpose of admitting an inflow of air to a cask or other vessel without permitting any of the gases or air to escape from within. Such devices are most commonly employed in connection with beer-kegs, wherein it is desired to retain the gases as long as possible, and when they are exhausted to admit air, so that the remaining contents of the keg may be easily withdrawn. These devices are ordinarily denominated "vents" or "vent-plugs" or "vacuum-valves."

The object of my invention is to simplify and improve the construction of such devices, to render them more effective than heretofore in preventing escape of air or gases from the keg or vessel, (more sensitive in admitting air from the exterior,) to reduce the cost of construction, and to make them less liable than formerly to get out of order, as well as to render them easy to be repaired when necessary. To accomplish all of this the invention involves certain novel and useful peculiarities of construction or relative arrangements or combinations of parts, all of which will be hereinafter first fully described and then pointed out in the claim.

In the drawings, Figure 1 is a vertical section showing my improved apparatus with the several parts assembled in place for use. Fig. 2 is a perspective view showing the different parts as separated from each other, but ready to be assembled. Fig. 3 represents, in plan, several elastic disks, in which the cuts or openings for the admission of air vary in form; and Fig. 4 is a similar representation of several rigid plates perforated to correspond with the peculiarly located and arranged cuts in the elastic disks shown in Fig. 3.

Like letters of reference wherever they occur indicate corresponding parts in all the figures.

Heretofore in this class of devices, employing rubber or other elastic material to form the valve, it has been customary to employ an elongated tube, slitted on one side, said tube being attached to a neck upon the metallic plate closing the outer opening in the vent-plug. These elongated tubes are liable to become detached after long usage and are not easily replaced. They necessitate an expensive construction of the metallic plate, as well as the addition of a separate washer or packing between the plate and its seat in order to secure an air and gas-tight joint at this point; and, besides all this, they require an elongated neck for the vent-plug, in order to afford space for the tube, all of which features are disadvantageous, and are obviated by my improved construction.

In the accompanying drawings, A is the main tube of the vent-plug, intended to be driven through the bung of the cask or otherwise connected with the interior thereof in the usual manner.

B is the hollow neck joined with A and adapted to conduct air thereto. This neck may be made as short as desired. It is usually somewhat larger than tube A, and is shouldered, as at *a*, for the reception of the packing-gasket, which is necessary to be used to prevent the passage of air or gases except through the valve-opening.

C is a rigid plate, of glass, hard rubber, metal, or other suitable material, guarding the mouth or neck B, perforated for the admission of air; and D is a hollow thumb-screw, made to fit the screw-threaded portion of neck B and to jam and hold the plate C and packing-gasket firmly against the shoulder *a*.

The valve-disk E is a thin, flat piece of rubber or equivalent elastic material, bearing against the inner face of plate C, and of such size as to enable it to be clamped between shoulder *a* and plate C, so that it will itself form the packing-gasket, and thus dispense with the separate gasket usually employed. This disk has a simple slit or knife-cut through it, as at *b*, which slit should be removed from the location of the perforations in the holding-plate C.

The rigid plate C is perforated, as at *d d*, with the opening in the hollow screw-plug D, and the parts are intended to be assembled for use as indicated in Fig. 1. When in this posi-

tion and in use in connection with a cask or other vessel the operation is as follows: Any pressure from within compresses the elastic disk tightly against the inner face of the perforated plate C, and effectually prevents the escape of any gases. When the pressure from within the cask ceases and the further withdrawal of liquor requires an admission of air, this air finds its way in through perforations in plate C, and through the slit in the valve-disk, the elasticity of the disk offering little or no resistance to the desired inflow.

The slit in the valve-disk is preferably made in its center in the form of a cross, as at Fig. 2, and the rigid plate C preferably has its perforations well removed from the center thereof; but it is obvious that these positions may be reversed and the same results accomplished, or the valve-disk may be slitted in a variety of ways, as plainly indicated at Fig. 3, the holding plate being correspondingly perforated. The form shown in Fig. 2 is preferred, because by its use the disk and plate may be dropped in place, and cannot fail to form the required valve; whereas in other forms care must be taken to locate the disk upon the plate in such manner that the slit will not register with either of the perforations in the plate. The perforations in plate C may be made cylin-

drical, though I prefer to enlarge them slightly on the exterior by reaming or otherwise.

The improved device may be employed in connection with casks or vessels containing beer or any other kind of liquor, as well as in any situation wherein its cheapness and obvious advantages will recommend it for use.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The herein-described vent or vent-plug, composed of the vent-tube, the short neck connected therewith, a flat elastic valve-disk slitted, as explained, a perforated removable plate covering said valve-disk, and a hollow screw-plug adapted to crowd the disk and plate against the shoulder provided in the material of the neck, the disk operating as a packing-gasket, and the vent-tube being arranged to be driven, all in the manner shown and described.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of two witnesses.

FERGUS A. RENTON.

Witnesses:

CHAS. A. PAYNTER,
JOHN W. FRASER.