

B. F. Evans,

Air Vent.

No. 109813.

Patented Dec. 6. 1870.

Fig. 1.



Fig. 4.

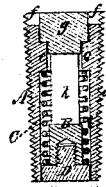


Fig. 2.

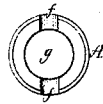


Fig. 5.



Fig. 3.

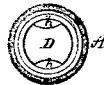
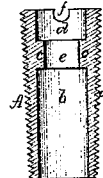


Fig. 6.



Witnesses  
S. N. Piper  
L. N. Keller

Benj. F. Evans  
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# United States Patent Office.

BENJAMIN FRANKLIN EVANS, OF NEWBURYPORT, MASSACHUSETTS.

Letters Patent No. 109,813, dated December 6, 1870.

## IMPROVEMENT IN BARREL SAFETY-VALVES OR VENTS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all persons to whom these presents may come:*

Be it known that I, BENJAMIN FRANKLIN EVANS, of Newburyport, of the county of Essex and State of Massachusetts, have invented a new and useful Barrel Safety-Valve or Vent; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 is a side elevation;

Figures 2 and 3, opposite end views; and

Figure 4, a longitudinal section of it.

Figure 5 is a side view of its plug.

Figure 6 is a longitudinal section of the body part of the vent.

The said body A has the form of a conic frustum having a male screw, *a*, cut on its outer surface, and also having a cylindrical bore, *b*, extending from its lesser end up to a transverse partition, *c*.

Above the said partition is a cylindrical chamber, *d*, open at top.

The partition has a hole or passage, *e*, extending through it axially and concentric with the bore *b*.

The larger end of the frustum A is nicked or grooved diametrically, as shown at *ff*, the grooves being to operate as escape-passages and to receive a screw-driver, when employed for screwing the body or frustum A into a barrel-head or stave, as the case may require.

A pin, B, provided with a cylindrical head or valve, *g*, to fit into the valve-seat chamber *d*, extends, through the passage *e*, into the bore *b*, and has a long slot, *h*, made through its shank.

A helical spring, C, arranged in the bore and about the shank of the pin, bears at its upper end against the partition *c*, and at its lower end against the cylindrical head of a screw, D, screwed endwise into the shank of the pin B.

The head of the said screw D is notched at its circumference, as seen at *h h*, such notches being to enable a gas or liquid to gain free access to the bore of the body A.

When the safety-vent is screwed into a barrel containing a liquor from which, by fermentation or otherwise, there may be generated a gas under pressure, which, were it not for the vent, would be liable to burst the barrel, the pressure of the gas as it may overcome the resistance of the spring of the vent, will elevate the valve-pin or plug B within the body A until the upper end of the slot of the shank of the plug may rise above the partition *c*, and the head of the pin or plug be raised, so that its bottom may rise above those of the nicks of the body.

The compressed gas will then more or less escape through the nicks, and as a consequence the barrel will be saved from being burst.

I claim the barrel safety-vent, as composed of the screw-body A, chambered and nicked as set forth, the notched screw D, the spring C, and the headed and slotted plug B, all constructed, arranged, and to operate together, as explained.

BENJAMIN FRANKLIN EVANS.

Witnesses:

R. H. EDDY,

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