Mead & Donn,

Air-Vent for Casks,

No. 27,230. Patented Feb. 21, 1860.

Fig. 1

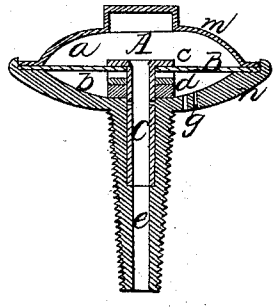
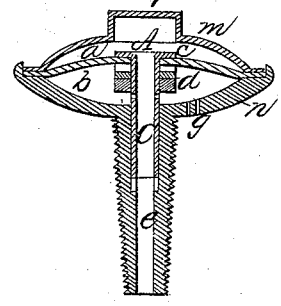


Fig. 2.



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UNITED STATES PATENT OFFICE.

H. W. DOPP AND WM. S. MEAD, OF BUFFALO, NEW YORK.

IMPROVED VENTILATING-VALVE FOR DELIVERY OF LIQUIDS.

Specification forming part of Letters Patent No. **27,230**, dated February 21, 1860.

To all whom it may concern:

Be it known that we, H. W. DOPP and W. S. MEAD, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Self-Acting Ventilators for Beer and other Barrels, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a vertical section of the ventilator, showing the position of the diaphragm within the air-chamber when the same is closed against the action of the atmosphere without. Fig. 2 represents the same, showing the position of the diaphragm when raised by the action of the atmosphere without to open the ventilator.

The object of my improvements in ventilators of this class is to admit of an atmospheric pressure on the contents of barrels and other vessels only when said contents are being drawn off; and my invention for effecting this object consists in the employment of an elastic diaphragm provided with a shut-off ventilating-tube, in combination with an air-chamber, within which said diaphragm is so arranged that it will be raised or lowered to open and shut off the ventilation by either the atmospheric pressure without or the pressure from gaseous liquids within.

By reference to the accompanying drawings, the nature and utility of my invention will be more clearly understood.

The air-chamber A is formed of two circular concave parts, *m n*, fitting closely together and secured by screws, between which an elastic diaphragm, B, is stretched, which makes the joint air-tight. Through the center of this diaphragm a tube, C, open at both ends, is inserted, the joint around which is made air-tight between the flange *c*, with which it is provided, and the packing *d*, which bears on the bottom of the lower plate, *b*, when the ventilation is cut off. The tube C corresponds in size with the opening *e* through the screw-plug D, into which it extends far enough to receive sufficient support, and is provided on either side with vent-holes *o o*, which open into the air-chamber when the diaphragm is raised, as seen at Fig. 2, and enter below the mouth of opening *e*, and are closed when the diaphragm is lowered, as seen at Fig. 1. The air-chamber, it will be seen, is divided by the diaphragm into two compartments, *a b*, the lower one only of which communicates with the external air through the vent-opening *g* when the ventilation is shut off.

All that is necessary in applying this device to the purpose for which it is designed is to insert the screw-plug D into the barrel or other vessel above the surface of the liquid which it contains. When used for gaseous liquids, the gas arising from the same will ascend through the opening *e* and tube *c* and collect within the upper compartment, *a*, of the air-chamber, and when the faucet or other opening through which the liquid is drawn off is closed the expansive force of the gas will be sufficient to overcome the atmospheric pressure without and keep the diaphragm down, as seen at Fig. 1, and the ventilating-tube below the mouth of the opening *e*, and consequently closed against the action of the air without or the liquid within. When the draft-opening in the barrel is unclosed, the expansive force of the gas in compartment *a*, which is sufficient to start the liquid to run, will be diminished as the liquid runs out, because it is thus accommodated with more space to occupy, and the elastic diaphragm will yield to the atmospheric pressure without and raise the tube C high enough to bring the vent-holes *o o* above the mouth of the opening *e* and into communication with compartment *b* of the air-chamber, as seen at Fig. 2, when the air will enter the barrel through the vent-holes and the liquid contents of the same are freely drawn off. When the draft-opening in the barrel is closed the gas within the air-chamber or the weight of the tube C will bring the diaphragm down and force the vent-holes below the mouth of opening *e* in the screw-plug, and thus shut off the ventilation.

When used for other than gaseous liquids, the pressure of air confined within compartment *a* of the air-chamber is sufficient to equal the atmospheric pressure without when the draft-opening in the barrel is closed, and the additional weight of the ventilating-tube on the diaphragm will close the vent-holes within the mouth of the opening through the screw-plug by the force of gravitation. Thus it will be observed that the action of atmosphere

without is effectually excluded from the liquid within the barrel when the draft-opening is closed.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The employment of an elastic diaphragm, B, provided with a ventilating-tube, C, in combination with an air-chamber, A, the whole being arranged and constructed substantially in the manner and for the purpose herein set forth.

H. WM. DOPP.
WM. S. MEAD.

In presence of—
GEO. M. NOYES,
C. M. ALEXANDER.