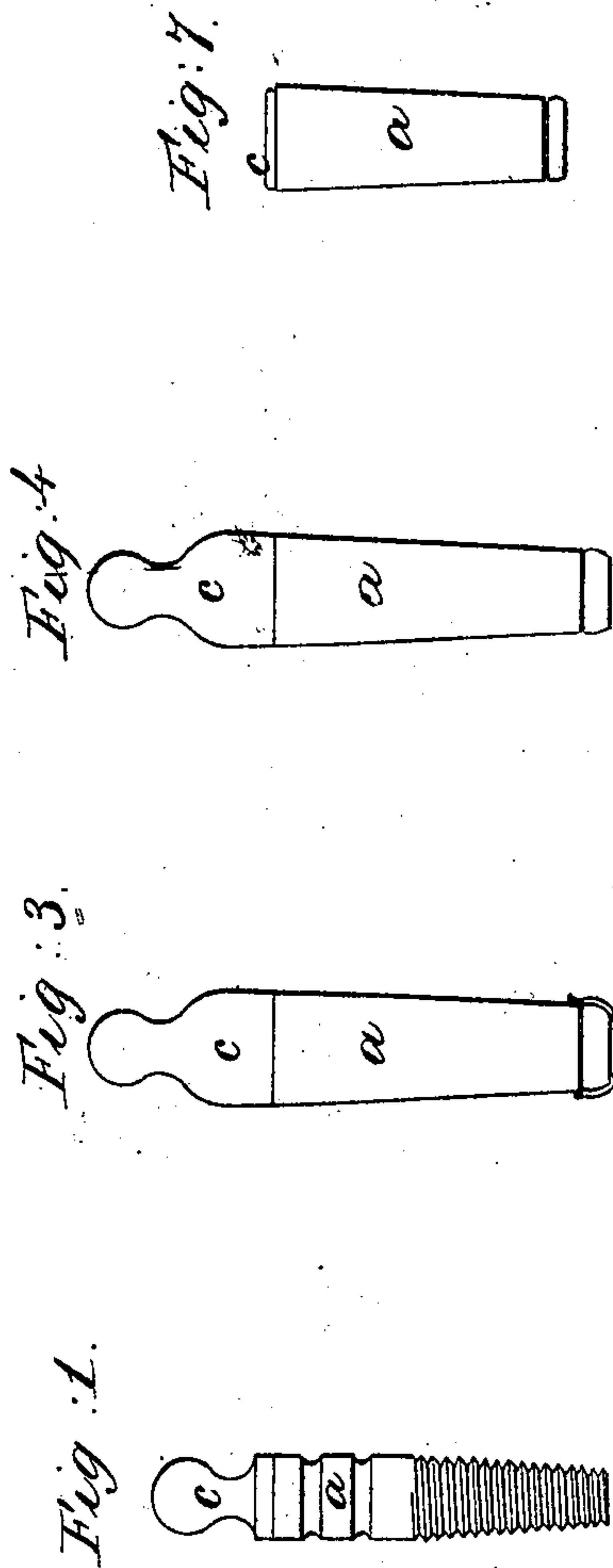
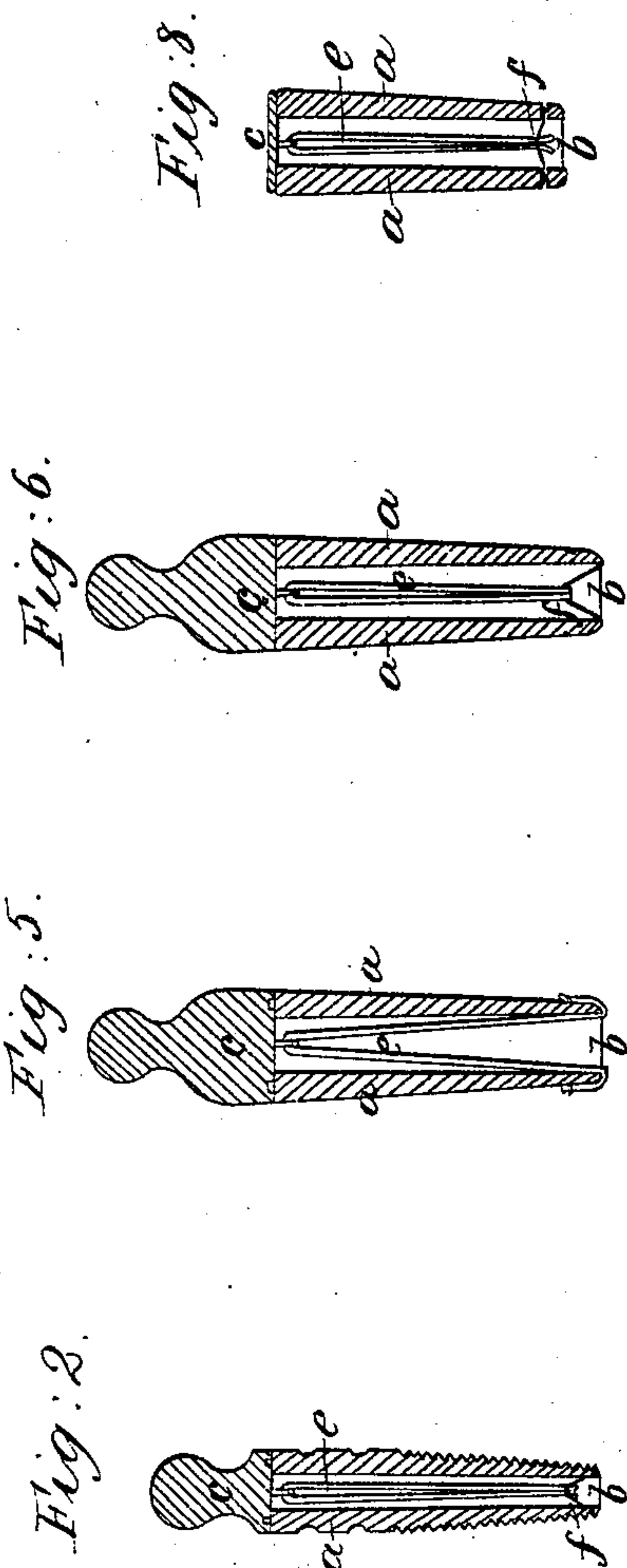


M. Vassar,
Bottle Stopper,
N^o 4,605. *Patented June 27 1846.*



UNITED STATES PATENT OFFICE.

MATTHEW VASSAR, OF POUGHKEEPSIE, NEW YORK.

IMPROVEMENT IN VENT-PLUGS.

Specification forming part of Letters Patent No. 4,605, dated June 27, 1846.

To all whom it may concern:

Be it known that I, M. VASSAR, of Poughkeepsie, in the county of Dutchess and State of New York, have invented a new and useful Improvement in Stoppers and Vent-Plugs for Vessels Containing Fermenting Liquors; and I do hereby declare that the following is a full, clear, and exact description of the principle or character thereof which distinguishes it from all other things before known, and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is an elevation of a screw vent-plug, and Fig. 2 a vertical section of the same; Figs. 3 and 4, elevations, and Figs. 5 and 6 vertical sections, of modifications of the vent-plug; and Figs. 7 and 8, an elevation and vertical section of a stopper.

The same letters indicate like parts in all the figures.

It is known that vessels containing fermenting liquors frequently burst from the great pressure of the gases generated by the fermentation within, and with the view to prevent this I have invented a vent plug or stopper (to be applied to all such vessels) provided with a cap that covers the aperture or vent, which cap is connected and held down by means of a strip or strips or threads of india-rubber attached to the lower end of the plug or stopper and passing up through the aperture thereof, so that the vent is kept airtight by the tension of the india-rubber until the pressure of the gases within becomes so great as to endanger the safety of the vessel, and superior to the tension of the india-rubber, when the cap is lifted by the escaping gases to relieve the vessel and then closed again; and as the cap cannot be opened until the pressure of the gases becomes greater than that of the atmosphere, added to the tension

of the india-rubber, it is evident that atmospheric air cannot enter to vitiate the liquid.

In the accompanying drawings, *a* represents the body of the vent plug or stopper, which can be made of any form or size desired, to suit all kinds of vessels, and of metal, wood, or other material, as this must be regulated in accordance with the chemical qualities of the contained liquor or gases generated. That part which enters the vessel should be slightly conical and tapped or smoothed to admit of insertion by screwing or driving. It is pierced with a hole, *b*, of sufficient capacity to permit the escape of the gases in such quantities as will effectually relieve the vessel. The upper end is covered with a cap, *c*; of any desired shape, fitting air-tight when drawn down by a strip or thread of india-rubber, *e*, which passes through a loop attached to its under face, the two ends thereof being properly secured to the lower end of the plug by a ligature of wire, *f*, or other means. The size of this strip or thread of india-rubber and the tension under which it is secured must be adapted to the pressure which the vessel will sustain.

The kind of india-rubber which I have essayed and intend to use is that known as the "metallic" rubber, as it has much more elasticity and tenacity than the india-rubber in its natural state. It will be obvious from the foregoing that other springs may be substituted for the india-rubber, but not with the same advantage.

What I claim as my invention, and desire to secure by Letters Patent, is—

The spring-cap, in combination with the vent plug or stopper, as herein described.

MATTHEW VASSAR.

Witnesses:

A. PERKINS,
WARREN SKINNER.