

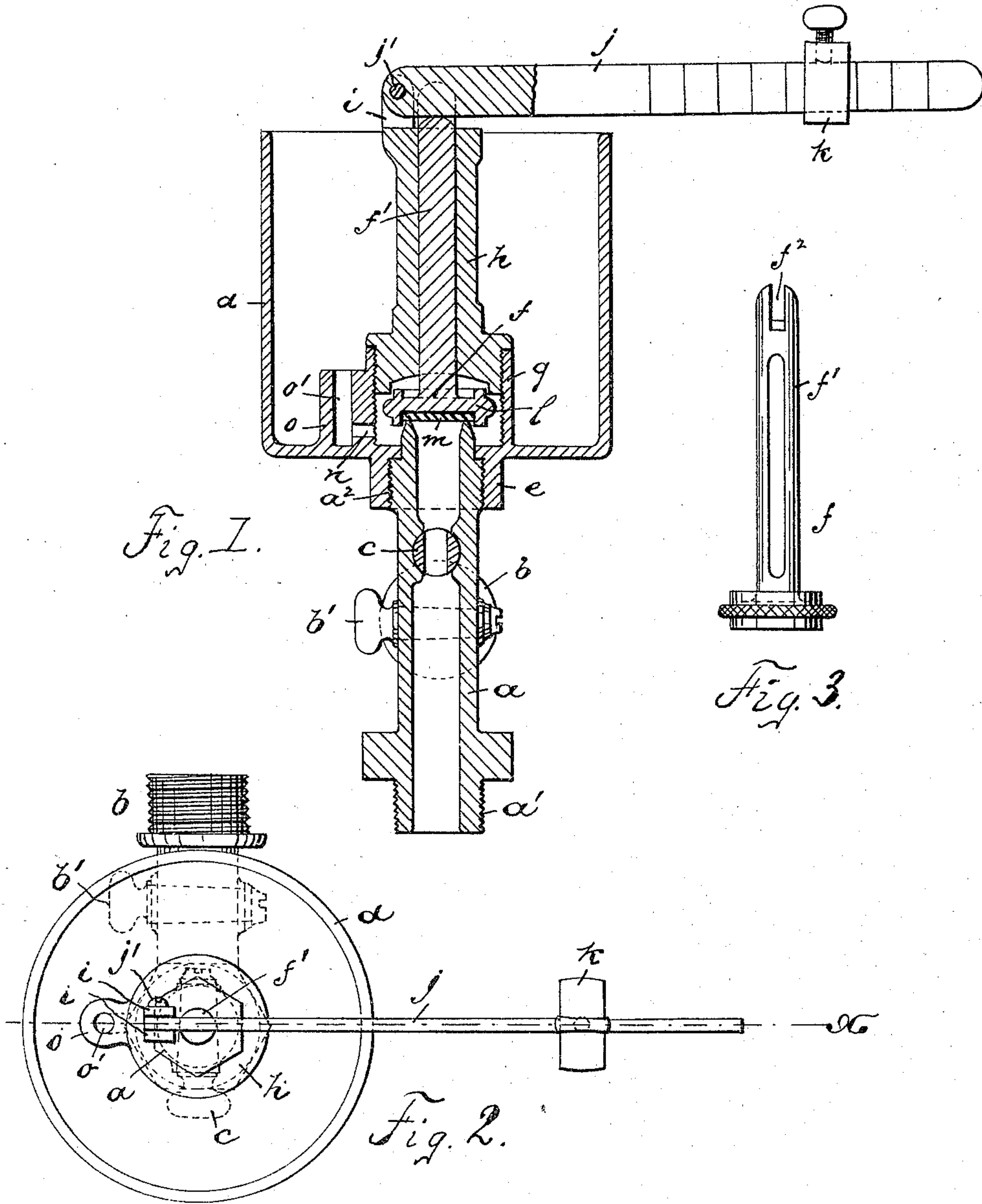
No. 641,120.

Patented Jan. 9, 1900.

G. KETTENRING.
PRESSURE REGULATING VALVE.

(Application filed Apr. 29, 1899.)

(No Model.)



WITNESSES:

A. R. Krouse.

Russell M. Everett.

INVENTOR

George Kettenring

BY

Drake & Co.
ATTORNEYS

UNITED STATES PATENT OFFICE.

GEORGE KETTENRING, OF NEWARK, NEW JERSEY.

PRESSURE-REGULATING VALVE.

SPECIFICATION forming part of Letters Patent No. 641,120, dated January 9, 1900.

Application filed April 29, 1899. Serial No. 714,967. (No model.)

To all whom it may concern:

Be it known that I, GEORGE KETTENRING, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Pressure-Regulating Valves; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The objects of this invention are to provide a convenient, simple, and effective apparatus for automatically testing, regulating, and determining the pressure exerted by the gases in casks of beer or other similar liquid during fermentation, to provide such a device that may be conveniently and effectively used in admitting air to the casks when it is desired to do so in racking off the beer or other liquid, and to secure other advantages and results, some of which may be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved pressure-regulating valve and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several views, Figure 1 is a central vertical section of my improved apparatus, taken on line *x*, Fig. 2. Fig. 2 is a plan of the same, and Fig. 3 is a detail view of a certain valve.

In said drawings, *a* indicates a stand-pipe threaded at its lower end, as at *a'*, to screw into a suitable bushing in the cask or to be otherwise secured thereto. At a higher point said stand-pipe is provided with a side branch or tube *b*, having a stop-cock *b'*, by means of which air may be admitted to the cask when necessary in racking. Above the said branch tube *b* the vertical stand-pipe *a* is provided with a stop-cock *c*, by which communication with the upper parts, to be hereinafter de-

scribed, may be cut off. Near its upper end the stand-pipe is exteriorly threaded, as at *a²*, to receive a cup-shaped casting *d*, said casting *d* being provided at its bottom with a tubular projection *e*, correspondingly threaded to screw upon the stand-pipe. The bottom of the cup-like casting *d* is perforated concentric with the extension *e*, and through said perforation the upper end of the stand-pipe *a* projects into the cup *d* a short distance, being provided at the extremity with knife-like edges, forming a seat for a valve *f*.

The cup-like casting *d* provides a more or less large receptacle for water or other valve-lubricating fluid, and interiorly said cup-like receptacle has an integral upward projection *g*, which is tubular, concentric with the outer and lower extension *e*, and interiorly threaded to receive the correspondingly-threaded lower end of an upright post *h*. Said post is centrally and longitudinally bored to receive the stem *f'* of the valve *f* and provides a slide-way therefor, and at its top, which projects above the plane of the top of the cup *d*, said post has at one side parallel ears *i i*, adapted to receive between themselves the end of a lever *j*, a pin *j'* being passed through said ears *i* and end of the lever to serve as a pivot. The upper end of the valve-stem *f'* projects above the top of the post *h* and is slotted or forked, as at *f²*, to receive the lever *j*, adjacent to its fulcrumal point, said lever extending outward over the edges of the cup *d* to any desired distance and being provided at its side with graduating-marks and having a movable weight *k*.

The valve *f* is provided at the lower end with a disk-shaped end *l*, recessed at its under surface to receive a gasket *m*, of rubber or the like. This rubber-faced disk is adapted to be pressed against the upper end of the stand-pipe *a* by the lever *j* and effect a closure of said upper end. When, however, the pressure of gas in the cask becomes sufficiently strong, it will raise the lever *j* and open the valve *f*, permitting an escape of the gas, as will be understood. To provide for the escape of said gas, there is preferably formed in the walls of the tubular valve-incasement *g* and near its bottom a perforation *n*, said perforation opening into a vertical

passage *o'*, formed in an integral addition *o*, cast at the side of the valve-incasement *g*. These openings and passages described thus allow the gas to escape and bubble up through the liquid in the cup *d*, and, furthermore, permit the lubricating fluid in said cup to reach the valve to prevent its becoming gummed with saccharine matter, as usual.

Having thus described the invention, what I claim as new is—

1. In a pressure-regulating valve, the combination of a stand-pipe, a cup-like casting, open at its top, supported upon said stand-pipe and having its bottom perforated and receiving the end of said stand-pipe, a valve closing the end of said stand-pipe and having a stem extending upward, an integral valve-chamber projecting upward from the bottom of the cup-like casting and surrounding the said end of the stand-pipe and the valve therefor, a post extending upward from the top of said chamber and being centrally hollow to receive the valve-stem, and means for normally holding said valve closed, substantially as set forth.

2. In a pressure-regulating valve, the combination of a connecting-pipe exteriorly threaded near its end and having a stop-cock back of said threaded end, a cup-like casting having its bottom perforated and interiorly threaded to screw upon said pipe, a valve-chamber projecting integrally upward from the floor of said cup-like receptacle and having an opening through one side, a tubular post secured at its lower end to the top of said valve-chamber, and a valve comprising a stem working in said tubular post and a lower end

adapted to close the entrance to the connecting-pipe, substantially as set forth.

3. In a pressure-regulating valve, the combination of the stand-pipe *a*, cup *d*, having an interior valve-incasement perforated at one side, a tubular center post screwed into said valve-incasement, the lever *j*, and valve *f*, having a disk-like lower end adapted to close the passage into the stand-pipe and an upright stem working in said center post, substantially as set forth.

4. In a pressure-regulating valve, the combination of a connecting-pipe exteriorly threaded near its end, a cup-like casting having its bottom exteriorly provided with an annular extension interiorly threaded to screw upon said pipe, the bottom of said cup being perforated and the end of the pipe projecting therethrough, an interior valve-incasement projecting integrally upward from the floor of said cup-like receptacle and having a passage through one side, a tubular post screwed at its lower end into the top of said valve-incasement, a weighted lever fulcrumed at the upper end of said post, and a valve comprising a stem working in said tubular post and a disk-like lower end recessed at the under side to receive a gasket and adapted to close the end of the connecting-pipe, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 20th day of April, 1899.

GEORGE KETTENRING.

Witnesses:

CHARLES H. PELL,
C. B. PITNEY.