

J. C. KENNEDY.

Charging Beer or other Casks with Gas.

No. 154,681.

Patented Sept. 1, 1874.

Fig. 1.

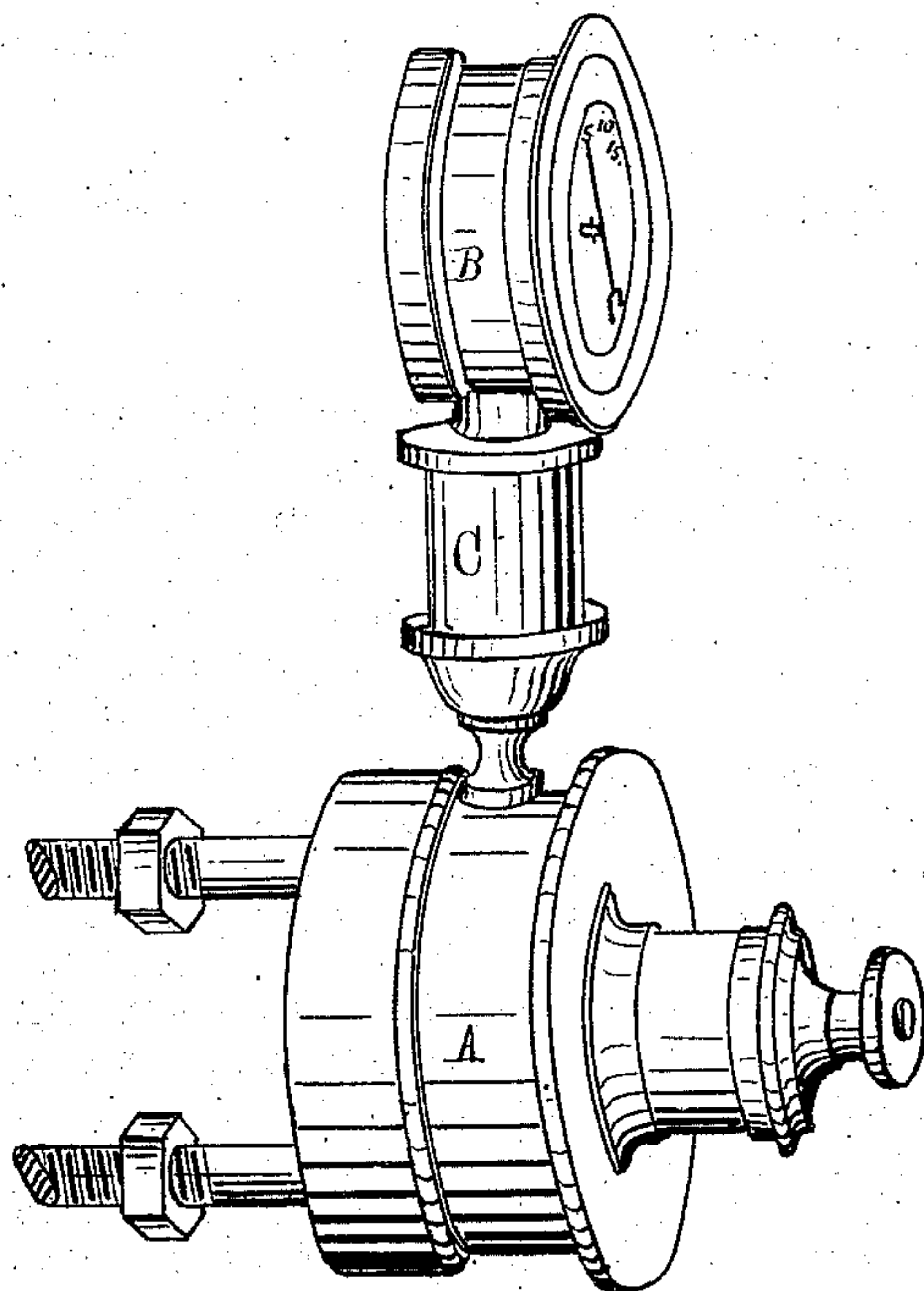


Fig. 3.

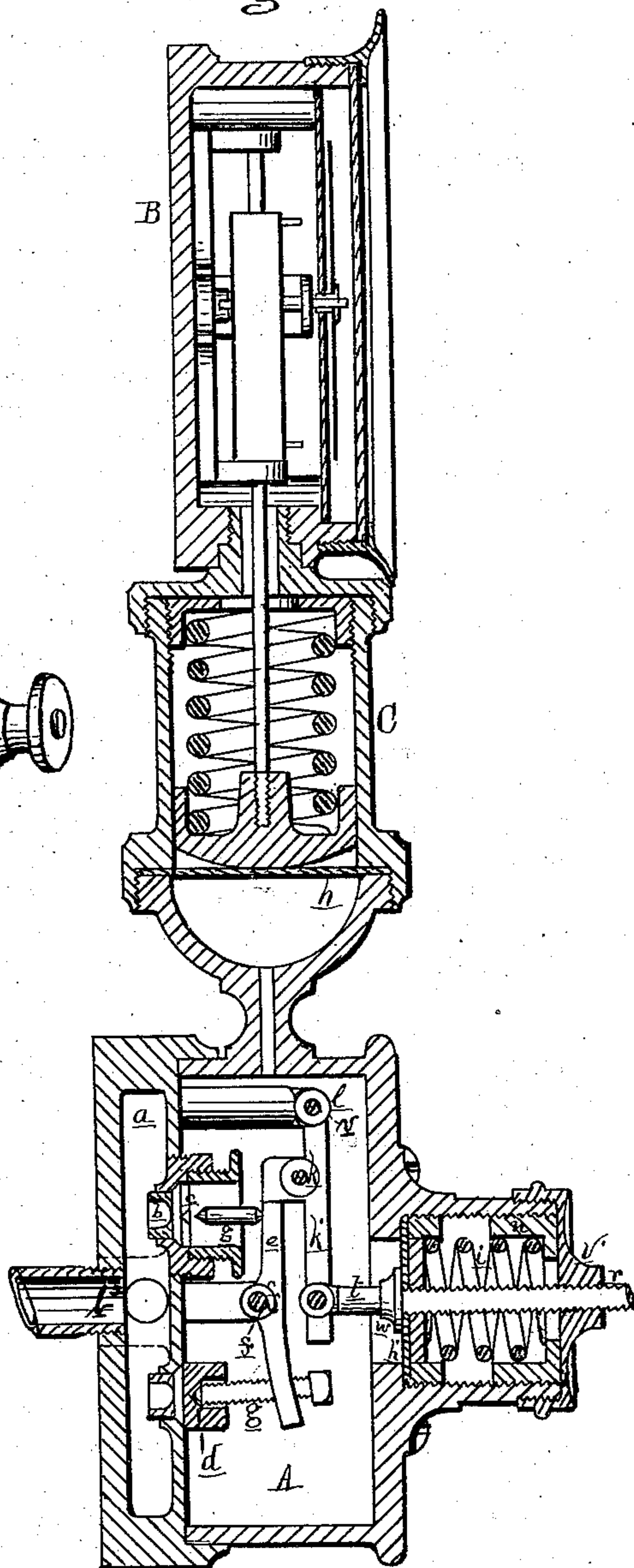
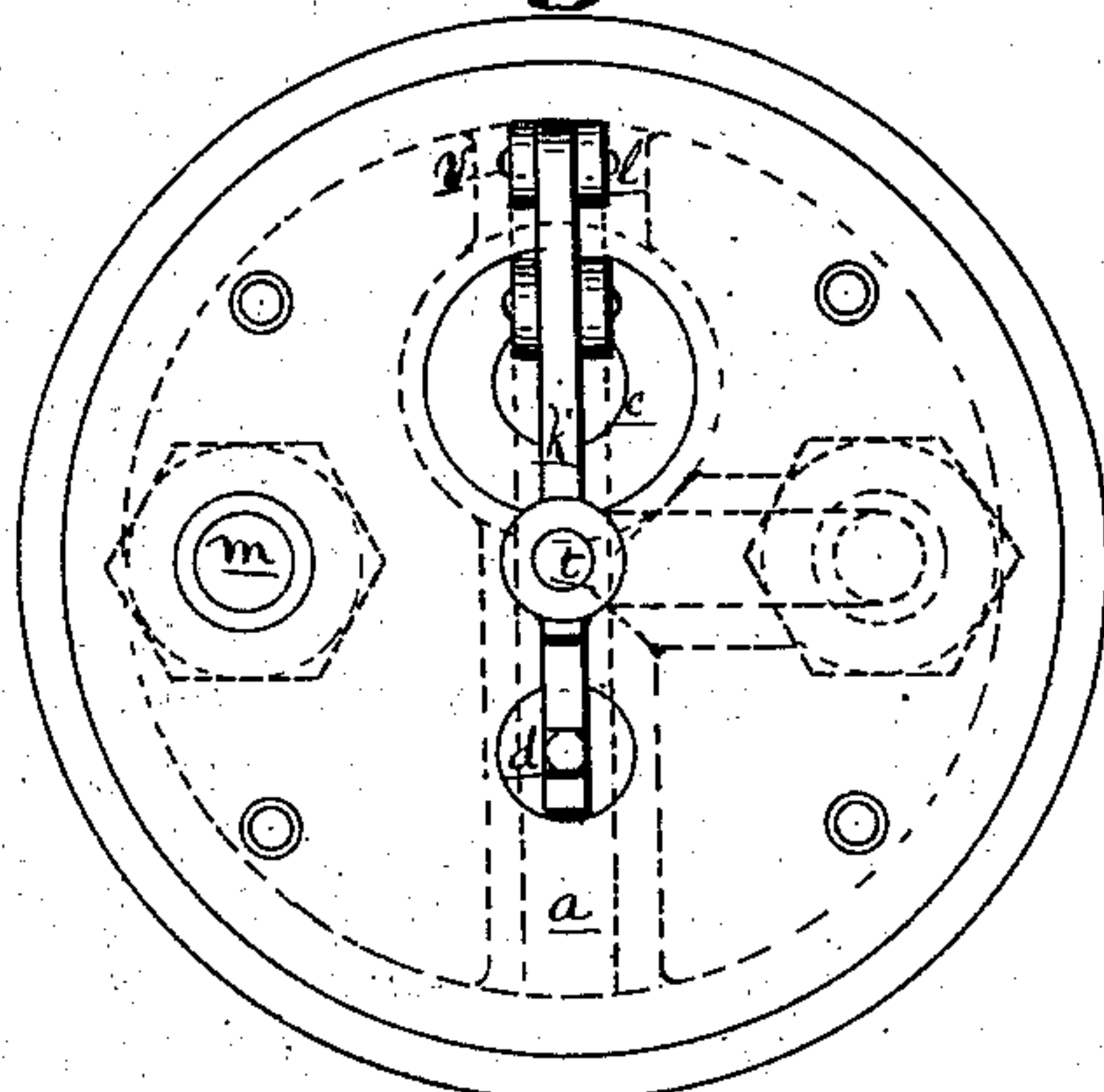


Fig. 2.



Attest:

J. V. Anderson  
Chas. J. Hunt

Inventor:  
John C. Kennedy  
per Attorney  
Thos. Sprague



# UNITED STATES PATENT OFFICE.

JOHN C. KENNEDY, OF GOSHEN, INDIANA, ASSIGNOR TO HIMSELF AND  
HENRY KILEY, OF TOLEDO, OHIO.

## IMPROVEMENT IN CHARGING BEER OR OTHER CASKS WITH GAS.

Specification forming part of Letters Patent No. **154,681**, dated September 1, 1874; application filed  
March 13, 1874.

*To all whom it may concern:*

Be it known that I, JOHN C. KENNEDY, of Goshen, in the county of Elkhart and State of Indiana, have invented an Improvement for Charging Beer or other Casks with Gas, of which the following is a specification:

The nature of this invention relates to certain improvements in devices for charging air or gas from a fountain or reservoir into a keg or cask at a lesser pressure in the keg or cask than in the fountain; and the object of the invention is to enable an equal pressure in the keg or cask, and compel its contents to discharge themselves.

It is well known that the escape of gases from beer-casks as the contents are gradually drawn out render the beer stale, flat, and unpalatable. By arranging an apparatus to keep the pressure of a suitable gas upon the beer, this waste is avoided, and the beer kept lively for an indefinite time.

In this invention an apparatus for this purpose is so constructed that the reservoir may have a pressure of air of several hundred pounds, while the pressure upon the cask may be so controlled that there will be but a few pounds; and the invention consists in the mechanism necessary to accomplish this result, and in its combination with a gage, by means of which the pressure in the cask is indicated.

Figure 1 is a perspective view of my apparatus, showing the pipes by means of which it is connected with the reservoir and cask, which are not shown. Fig. 2 is an elevation of the inner rear end of the equalizing-chamber. Fig. 3 is a horizontal section on the line *x x* in Fig. 1.

Like letters refer to like parts in each figure.

In the accompanying drawings, A represents a chamber, within which the mechanism for equalizing the pressure is placed. B is the gage, which may be of any of the known constructions, except that a rubber or flexible diaphragm, *h*, to prevent the air or gas from escaping from the equalizing-chamber, is placed in the connecting-pipe C, which connects said

chamber with the gage. *a* is a recess cast in the rear cap of the equalizing-chamber, and into which the compressed air or gas is admitted by means of a tube or pipe connecting with a fountain or reservoir, (not shown,) the pressure in this recess being the same as in the fountain. *b* is the opening through which the air or gas is admitted into the recess. *c* is a rubber diaphragm secured over the opening *b*, so that air or gas cannot pass through it, except when allowed to do so by valve *d*. *e* is a lever, fulcrumed at *f*, so as to rock as the pressure varies on the diaphragm or valve. *g* are valve-stems extending from the lever *e* to the diaphragm *c* and valve *d*—one on each side of the fulcrum *f*. *h'* is a diaphragm of rubber, to prevent the escape of gas through the neck *w* of the equalizing-chamber after the gas or air has been admitted into said chamber through the valve *d*. *i* is a spring pressing upon the diaphragm *h'*, and held in its place by an adjustable socket, *n*, which may be screwed up or down to regulate the pressure of the spring *i* upon the diaphragm. *k'* is a lever, one end of which is pivoted, at *l*, to the stud *v*, and also pivoted to the end of the lever *e* at *k*. The opposite end of this lever is pivoted to the screw-rod *t*, which passes through the diaphragm *h'*, spring *i*, and cap *v'*, and this rod is provided with a nut, *r*. *m* is the opening through which the air or gas passes from the chamber to the keg or cask, (not shown,) through a flexible tube or pipe.

A fountain or reservoir should be first charged with air or gas at a high pressure—say from two hundred to three hundred and fifty pounds to the square inch. To this fountain a pipe is attached connecting with the equalizing-chamber at *b*<sup>2</sup>, which admits the air or gas to the recess *a* at the same pressure as in the fountain.

To admit this air or gas to the keg or cask at a pressure of six to ten pounds is the object to be attained, and is accomplished in the following manner: The area of the diaphragm *c* being much larger than the area of the valve *d* would keep the valve closed so long as there is any pressure in the recess *a*, provided there



was nothing to overcome this inequality and render the action of the diaphragm and valve automatic. To accomplish this the spring *i* is used, and made adjustable so as to open the valve at any desired pressure of the gas or air in the chamber A. When the pressure becomes less than this the spring *i* forces the diaphragm *h'* down, pressing upon lever *k'*, which rests upon lever *e*, and presses upon the diaphragm *c* sufficiently hard to overcome the difference of the area between the diaphragm *c* and valve *d*, and allowing the valve to rise and admit air or gas from the fountain to the chamber until the pressure in the chamber is brought up to the required pressure, when the pressure acting upon the lower side of the diaphragm *h'* counteracts the pressure of the spring, and relieves its pressure from the lever *e*, thereby allowing the diaphragm *c* to close the valve *d* and stop the further inflow of air or gas to the chamber until the pressure is again reduced by the air or gas passing out through opening *m* to the keg or cask, when the same process will be repeated, and so kept up as long as the pressure in the fountain is more than the pressure required in the cask.

When the tube is to be changed from one keg to another, run the nut *r* on the rod *t* down tight. This will shut off the air or gas from

entering the equalizing-chamber. After the attachment is made, run the screw back, and the device is ready for use. The pressure in the equalizing-chamber will be indicated by the index and dial of the gage.

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

1. The combination of an equalizing-chamber, A, constructed substantially as described, with a pressure-gage, for the purposes set forth.

2. The diaphragm *h*, inserted in the connection between the equalizing-chamber and gage, for the purposes described.

3. The arrangement, in an equalizing-chamber, A, provided with recess *a*, of the levers *k'*, *e*, diaphragms *c*, *h'*, valve *d*, and openings *b*, *m*, when combined to operate substantially as and for the purposes specified.

4. The combination of the spring *i*, provided with adjusting-cap *v'*, the diaphragm *h'*, and rod *t* with the levers *k'* and *e*, the valve-stems *g*, valve *d*, diaphragm *c*, and openings *b* and *m*, the several parts constructed and arranged substantially as described and shown, and operating as specified.

JOHN C. KENNEDY.

Witnesses:

J. B. EVANS,

CHAS. McCABE.