

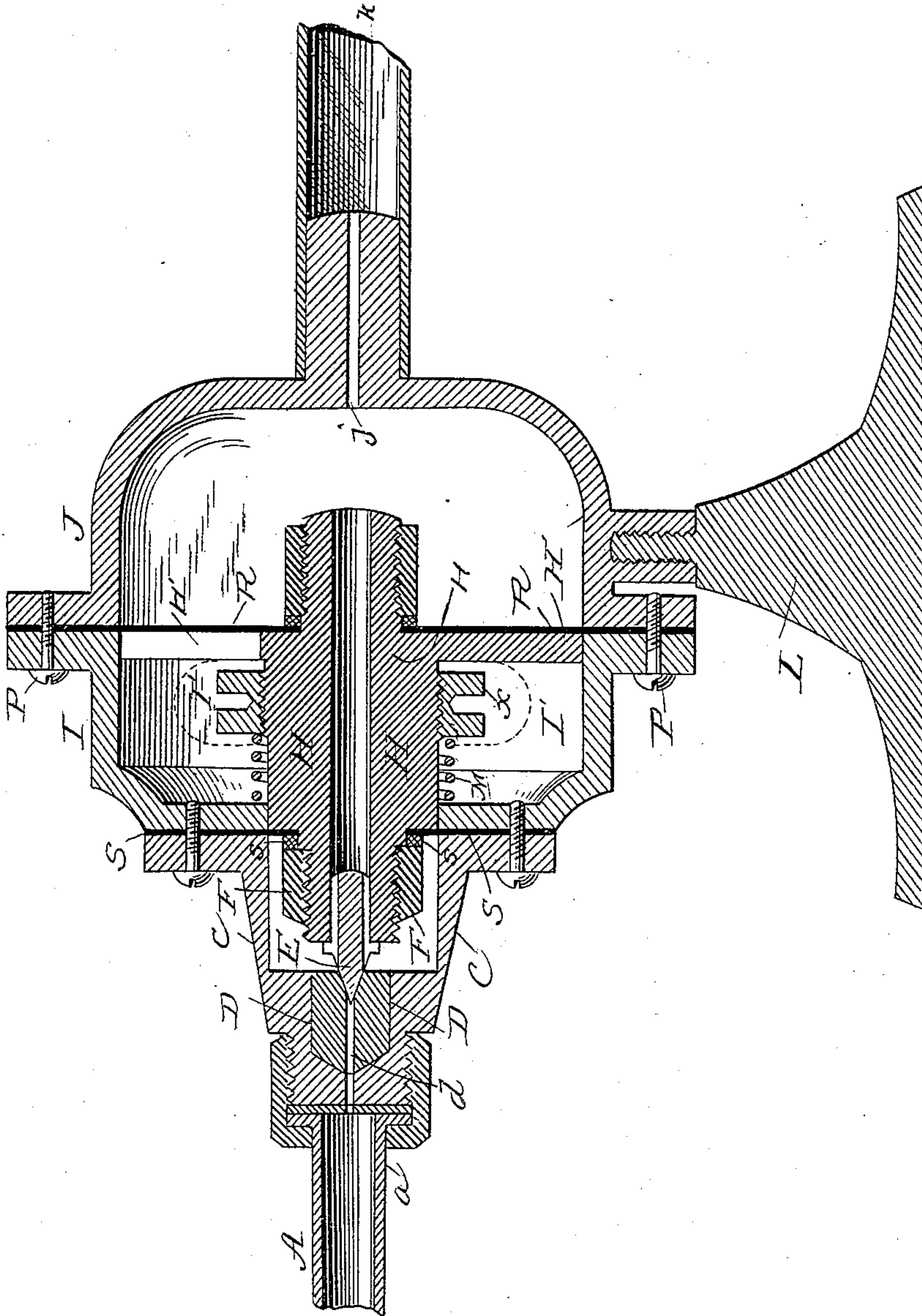
(No Model.)

J. D. HAZLET & W. R. BENNETT.

APPARATUS FOR THE PRESERVATION OF BEER.

No. 343,125.

Patented June 1, 1886.



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UNITED STATES PATENT OFFICE.

JOHN D. HAZLET AND WILLIAM R. BENNETT, OF MEADVILLE, PA.

APPARATUS FOR THE PRESERVATION OF BEER.

SPECIFICATION forming part of Letters Patent No. 343,125, dated June 1, 1886.

Application filed February 10, 1886. Serial No. 191,457. (No model.)

To all whom it may concern:

Be it known that we, JOHN D. HAZLET and WILLIAM R. BENNETT, of Meadville, in the county of Crawford and State of Pennsylvania, have invented a new and useful Improvement in Preservation of Beer; and we do hereby declare that the following is a full, clear, and exact description of the same.

Our invention relates to the preservation of beer, and is designed to keep the beer from getting "flat."

The object of the device is to supply carbonic-acid gas from liquid form of gas to the keg, so as to keep a constant pressure on the contents thereof, and to have this pressure automatically supply the gas and at the same time taking the place of the gas which escapes as the beer is drawn and displacement of beer occurs, and thus rendering the admission of air unnecessary to cause it to flow.

It is well known that if a keg is once tapped the air introduced takes the life from the liquid, and as soon as the natural gas emanated in brewing is exhausted the beer is unfit for use.

In the accompanying drawing, the figure represents a vertical longitudinal section of the invention.

In the drawing, A represents the tube or nozzle, which is connected at one end with the gas cylinder or bottle and at the other end to our improved governor. This governor is composed of a shell in two sections, I J, secured together by means of ordinary screws, P, having a flexible or rubber diaphragm secured between the two parts across the center of the chamber, having circular opening in the center, for the purpose hereinafter described. From the opposite end of the chamber J a rubber pipe with a stop-cock upon it leads to the beer-keg to which the pressure is to be applied. On the forward end of the chamber is secured a casting, C, which has a diaphragm, S, similar to the diaphragm R, secured between it and the chamber I, and this diaphragm extends across the opening in the front of the chamber I, having also a circular opening therein, as in the case of the diaphragm R. The pipe *a* is secured to the front end of the casting C by universal coupling, suitable washer being provided at the junc-

tion of the parts, to prevent leakage of the gas. The inner part of the casting C is cut out, as shown at D D, and filled with soft metal—such as block-tin, genuine, Babbitt metal, or copper—with a cone-shape opening therein, in which a valve, hereinafter described, is fitted. A passage, *d*, is made through this material and through the end of the casting C to the pipe *a*.

Between the diaphragms S and R is a casting, H, having projecting branches *H'* at one end, by which it is guided in its limited movement within the chamber I'. This casting carries a valve, E, which is pointed at its end and adapted to the cone-shape opening in the soft metal D, and closes the opening leading to the pipe *a*.

The casting H is held to the diaphragms, which are flexible; to the diaphragm S, by means of a nut, F, bearing against the washer *s*, the nut F being held on the threaded end of the casting H, which projects through the circular opening in the diaphragm S. The opposite end of the casting H is connected to the diaphragm R in a similar manner. A spring, M, is held on the periphery of the casting H, between the wall of the chamber I' and the nut *x* on the casting, which thus gives constant pressure upon the casting, and tends to force the said casting E against the diaphragm R, and as the valve E is carried by the said casting it is evident that it will move with it and normally be kept open.

The tension of the spring M may be adjusted by loosening or tightening the nut *x*, a suitable opening being made in the casting I, in order that a spanner or wrench may be applied to the said nut.

The valve E has peripheral grooves upon opposite sides, as shown in the detail sectional view, for the passage of the gas through the casting and the pipe leading to the keg to be supplied with gas.

The whole device is supported upon a suitable standard, L, which is secured upon the base. This standard may be secured upon an ice-box in which the keg is contained, or in any suitable position.

In the operation of the device, the valve E being open by reason of the spring M pressing the casting H, which carries said valve to

the right, the gas enters through the pipe *a* and through the opening in the front end of the casting *C*, passes through the grooves in the valve *E* to the chamber *J*, from whence it
 5 passes through the opening *j* to the pipe *k* and to the keg. As soon as sufficient gas has entered the keg from the cylinder or bottle containing liquid gas, the back-pressure upon the diaphragm *R* will overcome the tension of the
 10 spring *M* and force the valve *E* to its seat, thus closing the opening from the pipe *a* and stopping the flow of gas. As the beer is drawn, the pressure of the gas in the keg and against the diaphragm *R* is reduced, and as soon as
 15 this pressure gets below the amount required, and which has been determined upon, the spring *M* will again exert its force, reopen the valve, and admit more gas, and so on. The operation is continued indefinitely and in an
 20 automatic manner.

The details of construction may be changed indefinitely without departing from the spirit of our invention, and we do not limit ourselves to the precise parts specified and shown.

25 We claim as our invention—

1. The combination, in a device for automatically supplying gas to beer or like beverages, of a chamber interposed between the receptacle containing the beverage and the gas-
 30 tank, with connections between the same, a valve having passages through the same within the said chamber, carried upon a casting, a spring adapted to keep said valve normally open, whereby the gas is admitted through
 35 the passages in said valve to the chamber and the keg in connection therewith, a flexible diaphragm upon one side of the said casting, adapted to be acted upon by the back-pressure of the gas, and to close the valve when the
 40 pressure exceeds the amount determined upon, substantially as described.

2. In combination, a chamber and casting

carried therein, a valve carried by said casting, flexible diaphragms *R S* at the front of said casting, a spring adapted to keep said
 45 valve open, a diaphragm, *R*, at the opposite end of said casting, and passages through the valve to the opposite side of said diaphragm, whereby in its normal condition the valve is kept open by the pressure of the spring, but
 50 is closed by the pressure against the diaphragm *R*, substantially as described.

3. In combination, the regulating device interposed between the gas-supply and the beverage to which the gas is to be supplied, consisting of the chamber *I*, having flexible diaphragms *R S*, a casting located between the same and carrying the valve, said valve being kept normally open by a spring, and means
 55 for closing said valve automatically when sufficient pressure has been applied to the contents of the keg, substantially as described.

4. In combination, a chamber, *I*, connections with a gas-tank, connections with the keg to be supplied, a casting carrying a valve, a
 65 spring adapted to keep said valve open, peripheral grooves in said valve for the passage of the gas, and a diaphragm, *R*, the back-pressure of the gas operating upon the said diaphragm to move the casting and to close
 70 the valve, substantially as described.

5. In combination, the chamber *I*, the casting *H*, carrying the valve having openings therein, a spring adapted to keep said valve open, and the tension-regulating device for
 75 said spring, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN D. HAZLET.

WILLIAM R. BENNETT.

Witnesses:

A. H. SHEPPARD,

WIN S. ROSE.