No. 796,803.

PATENTED AUG. 8, 1905.

A. BRUCE.

GAZOGENE.

APPLICATION FILED SEPT. 22, 1904.

2 SHEETS—SHEET 1.

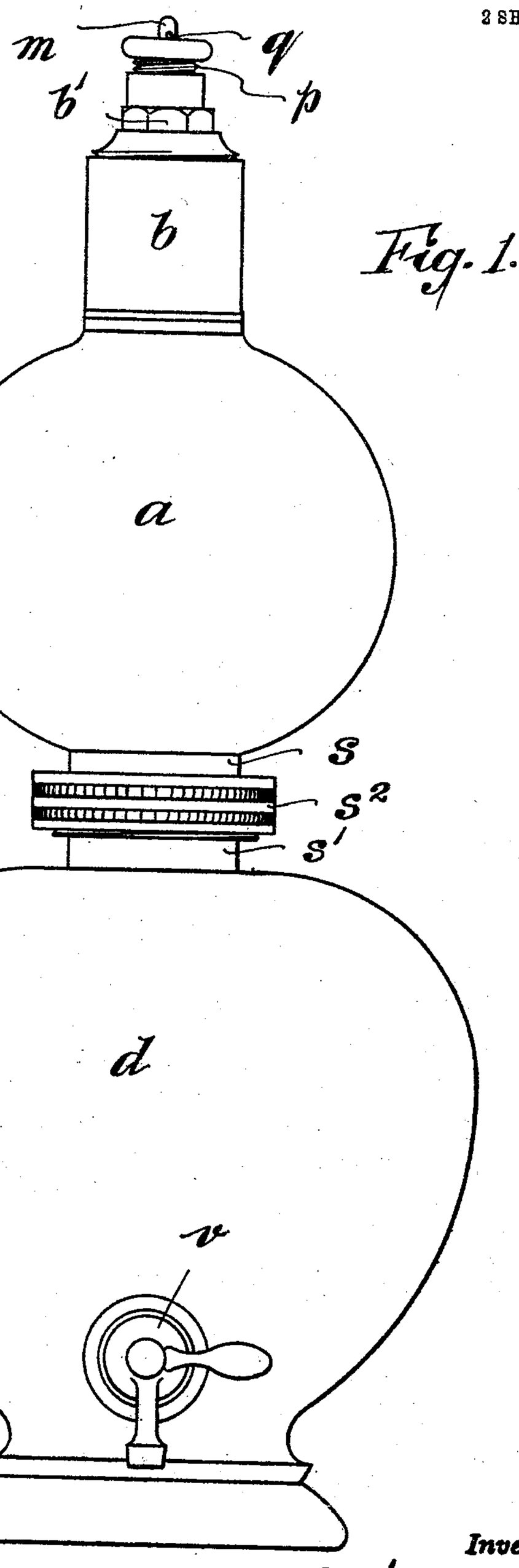

Fig. 1.

Witnesses.
P. Peters
Fenny Shiner

Inventor
Archibald Bruce
by B. Singer atty.

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2 SHEETS—SHEET 2.

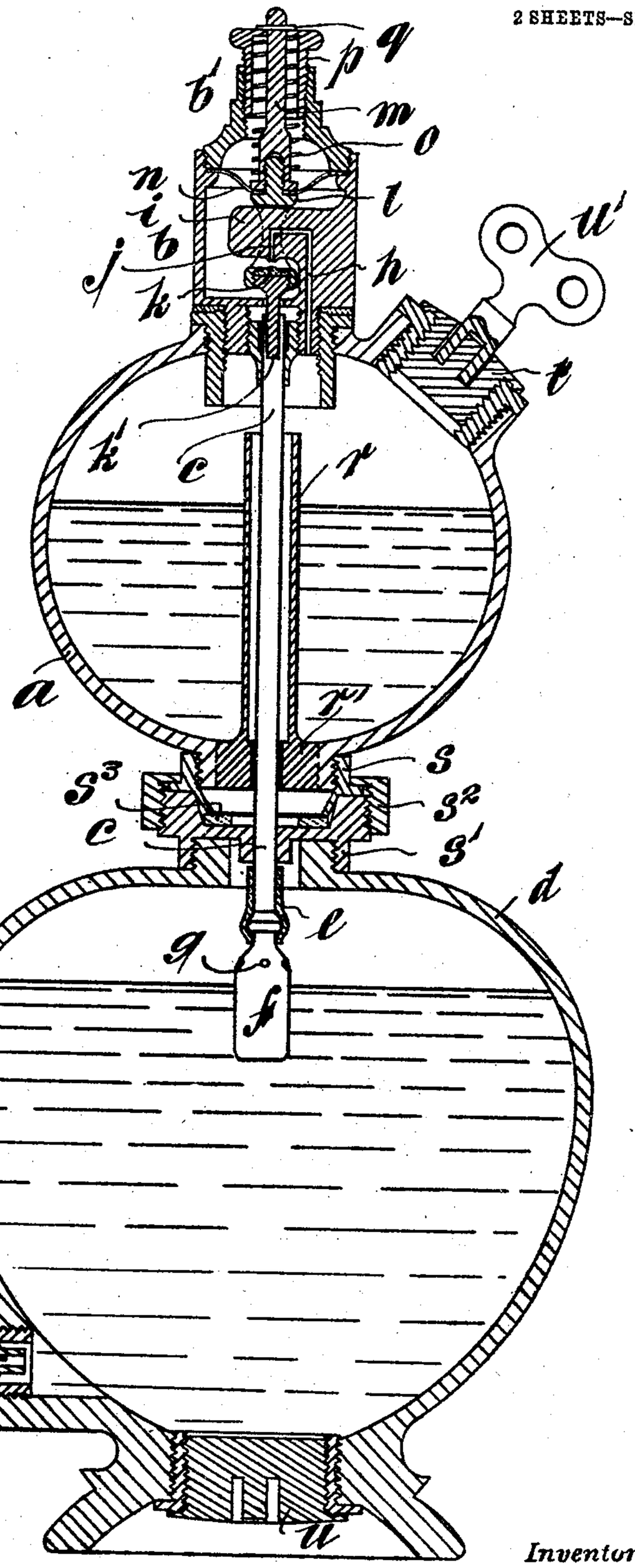

Fig. 2.

Witnesses.

F. Hellen.

Jno. Shea.

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UNITED STATES PATENT OFFICE.

ARCHIBALD BRUCE, OF GLASGOW, SCOTLAND.

GAZOGENE.

No. 796,803. Specification of Letters Patent. Patented Aug. 8, 1905.

Application filed September 22, 1904. Serial No. 225,472.

To all whom it may concern:

Be it known that I, ARCHIBALD BRUCE, plumber, a subject of the King of Great Britain, and a resident of 194 Buchanan street, Glasgow, Scotland, have invented certain new and useful Improvements in Gazogenes and the Like, of which the following is a specification.

This invention relates to gazogenes and such like vessels as used for holding aerated and carbonated waters, beer, whisky, &c., and whether of glass or earthenware. It has been found that the lower large globular vessel which holds the liquid is very liable to burst, especially when the gazogene is made of earthenware; and the object of my present invention is to provide a simple arrangement whereby the pressure in the lower vessel can be automatically regulated.

In order that my said invention may be properly understood, I have hereunto appended two explanatory sheets of drawings, whereon—

Figure 1 is an outside view, and Fig. 2 a vertical section, of a gazogene as constructed under my invention.

In carrying out my invention I provide the upper vessel or gas-generator *a* with a valve-chamber *b*, which is preferably screwed into place, as shown. This valve-chamber *b* is provided with a tube *c*, which extends down into the lower or liquor vessel *d*. The lower end of the tube *c* has preferably fitted to it by means of a piece of flexible tube *e* or the like a small vessel *f*, provided with perforations *g*. This vessel *f* is for the purpose of collecting any condensed gas which may pass down the tube *c* and which otherwise would mix with the liquor being aerated and have a detrimental effect on same. A passage *h* extends, preferably, up through the wall of the chamber and is provided with an opening *j*, which can be closed by means of a valve or the like *k*. The valve *k*, which is provided with arms *l*, (or stirrup,) which pass round the projection *i*, has a spindle *m* connected with it on which is a diaphragm *n* and also a spring *o*, which is capable of depressing the valve-spindle *m* and keeping the valve *k* open against the action of the gas which gains access to the chamber *b* by the passage *h* and presses on the diaphragm *n*. The tension of the spring *o* can be regulated by means of a screw-cap or the like *p*, arranged in the cover *b'* of the valve-chamber *b*. The cover *b'* screws into the upper end of the valve-chamber *b* and when screwed into place retains the diaphragm *n* in position. A pin *q* may be passed through the spindle *m* in order to prevent the tension-regulating screw-cap *p* being screwed back too far.

k' is a guide-spindle at the under side of the valve.

The upper vessel or gas-generator *a* is provided with a glass, clay, or other tube *r*, which projects up to a point near the top of the generator, its lower end *r'* being suitably secured in the bottom of the generator. This tube, which surrounds the tube *c*, preserves the latter and prevents it being corroded or acted on by the liquid in the generator *a*.

The two vessels *a d* may be joined together in any suitable manner; but I prefer to connect them by means of the arrangement of coupling illustrated on the drawings. This coupling consists of two screwed sleeves *s s'*, which are suitably secured to the lower and upper ends of the vessels *a d*, respectively. A coupling-ring s^2 unites the sleeves *s s'*, and in order to make a tight joint a suitable washer or the like s^3 is inserted between the two sleeves. The vessels *a d* may be readily taken apart by unscrewing the ring s^2.

The generator *a* is provided with a filling-plug *t*, and the liquor vessel *d* preferably has at its lower end a cleaning-plug *u*. These plugs may be inserted or withdrawn by means of a key or the like *u'*.

A tap *v*, which may be of any desired construction, is inserted in the liquor vessel *d* to enable the aerated liquor contained therein to be readily withdrawn.

The arrangement of the apparatus is such that the gas generated in the generator *a* can pass into the valve-chamber *b* by the passage *h* and down into the lower or liquor vessel *d* by means of the tube *c* so long as the valve *k* remains open. The valve *k* is arranged to close automatically at a certain predetermined point by the pressure in the valve-chamber *b* acting on the diaphragm *n* so as to overcome the spring *o* and close the valve, thereby preventing further gas gaining access to the liquor vessel *d*. By regulating the tension of the spring *o* the closing point or pressure for the valve *k* can be adjusted to a nicety. Of course the valve *k* opens again immediately the pressure in the valve-chamber *b* and the liquor vessel *d* falls below the predetermined point, as the action of the spring *o* then overcomes the action of the diaphragm *n*.

The small vessel *f* for collecting the mois-

ture running down the tube *c* is very important. When this vessel is nearly full, it can be withdrawn from the chamber *d* and emptied and then reinserted in place. The vessel should be emptied at regular intervals.

It is very important with gazogenes made of earthenware that the pressure in the large vessel should not rise above a certain point, as the walls of the chamber are not capable of resisting a great pressure.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A gazogene comprising a generating-chamber and a liquor-chamber, a valve-chamber provided with a port communicating at one end with said generating-chamber and terminating at its other end in a valve-seat, a valve-closure for said seat, means normally holding said closure away from said seat, means adapted to seat said valve-closure against the resistance of said opening means, to close said port and means for collecting the drippings of condensed gases.

2. A gazogene comprising a generating-chamber and a liquor-chamber, a valve-chamber provided with a port communicating at one end with said generating-chamber and terminating at its other end in a valve-seat, a valve-closure for said seat, a spring normally holding said closure away from said seat, a diaphragm connected with said closure and adapted to close the same upon its seat against the resistance of said spring, a tube connecting said valve-chamber and liquor-chamber thereby effecting communication between said generating and liquor chambers, and a drip-collecting vessel secured to one end of said tube and located within said liquor-chamber, said vessel having apertures for the passage of gas from said tube to said liquor-chamber.

3. A gazogene comprising a generating-chamber and a liquor-chamber, a valve-chamber in communication with said generating-chamber, means for connecting said valve and liquor chambers, means for cutting off communication between said valve and generating chambers, and means for preventing condensed gas-drippings from reaching said liquor-chamber.

4. A gazogene comprising a generating-chamber and a liquor-chamber, means connecting said chambers, and means preventing condensed gas-drippings of said generating-chamber from reaching the contents of the liquor-chamber.

5. A gazogene comprising, in combination, a liquor-chamber, a gas-chamber, means for connecting the chambers together, a valve-chamber, a valve therein, a tube leading from the valve-chamber to the liquor-chamber and means connected with the tube for collecting drips of condensed gas from the tube, substantially as described.

Signed at Glasgow, Scotland, this 14th day of July, 1904.

ARCHIBALD BRUCE.

Witnesses:

JAMES AIKEN,

MARGARET F. YOUNG.