

No. 751,397.

PATENTED FEB. 2, 1904.

W. HUCKS, JR.

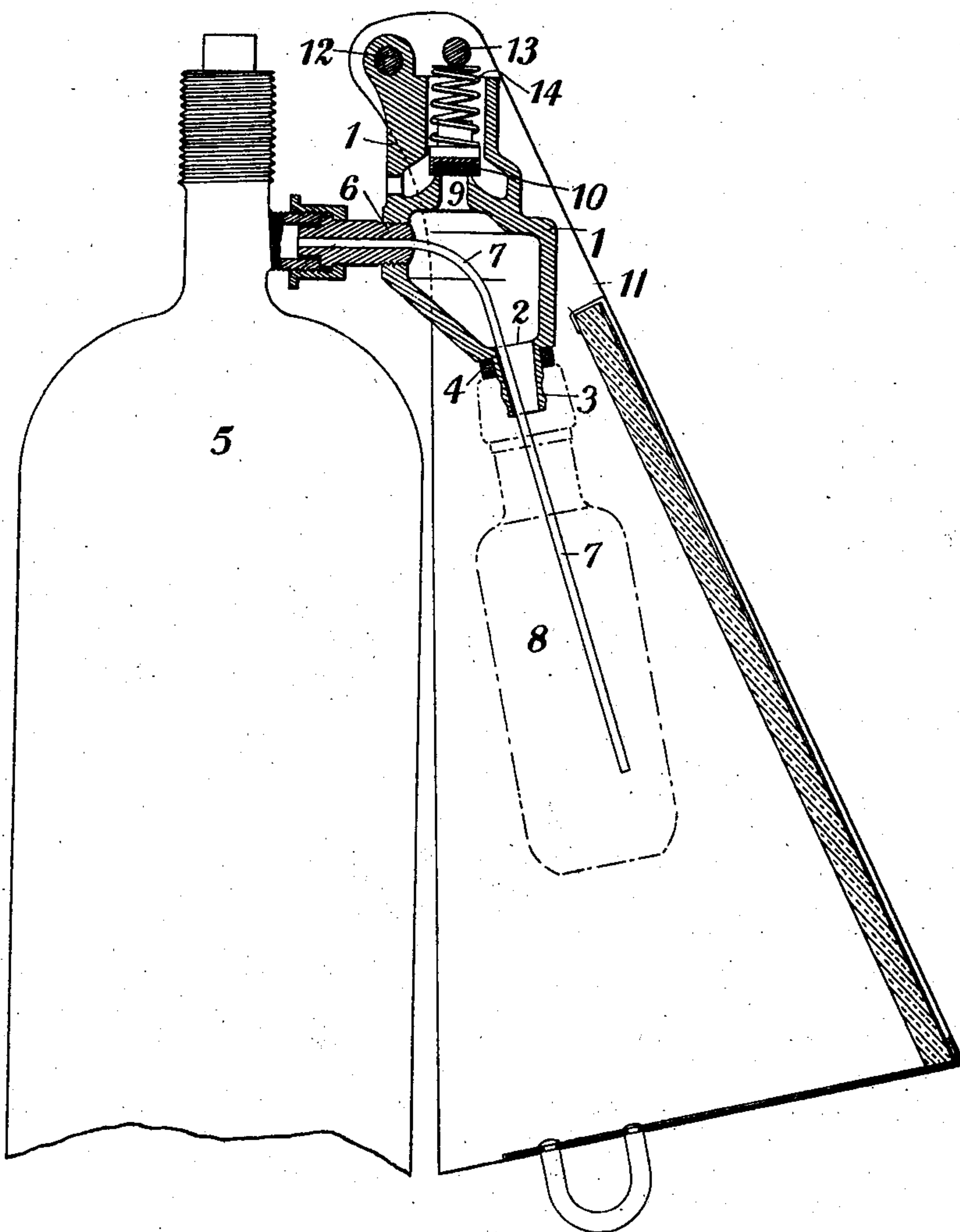
APPARATUS FOR AERATING LIQUIDS OR CHARGING THEM WITH GAS.

APPLICATION FILED DEC. 8, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:
P. W. Wright.
E. W. Collins

INVENTOR
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BY Howson and Howson
HIS ATTORNEYS.

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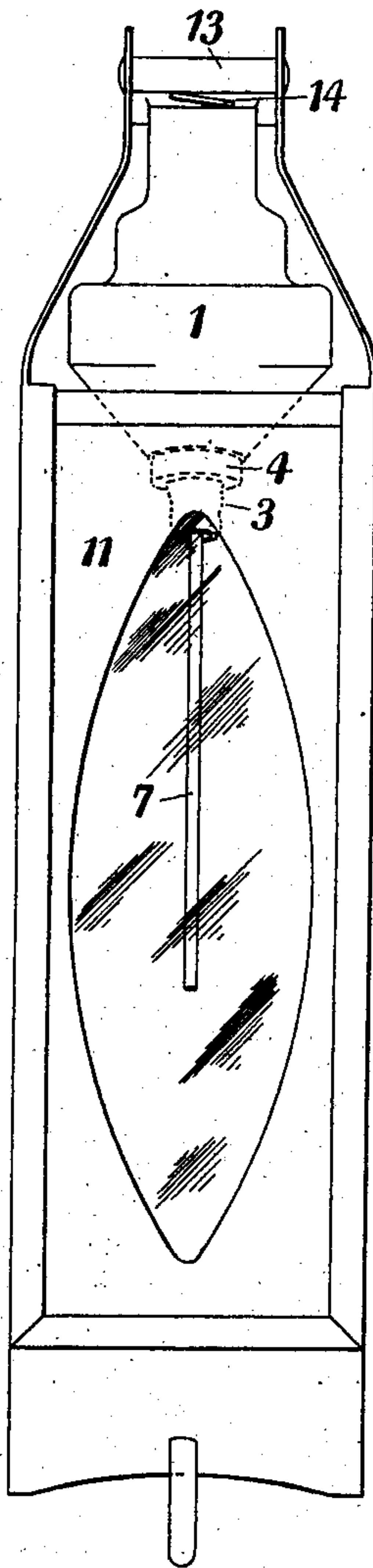
APPARATUS FOR AERATING LIQUIDS OR CHARGING THEM WITH GAS.

APPLICATION FILED DEC. 8, 1903.

NO MODEL.

2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM HUCKS, JR., OF CAMDEN-TOWN, LONDON, ENGLAND.

APPARATUS FOR AERATING LIQUIDS OR CHARGING THEM WITH GAS.

SPECIFICATION forming part of Letters Patent No. 751,397, dated February 2, 1904.

Application filed December 8, 1903. Serial No. 184,342. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HUCKS, Jr., engineer, a subject of the King of Great Britain and Ireland, residing at James street, Camden-Town, in the county of London, England, have invented certain new and useful Improvements in Apparatus for Aerating Liquids or Charging Them With Gas, of which the following is a specification.

The object of this invention is to provide a simple and inexpensive apparatus by means of which liquids can be aerated or charged with gas, the apparatus being more especially designed for aerating or charging with gas small quantities of liquid for domestic consumption or for sale at refreshment-bars and the like.

I will presume for the purposes of description that the apparatus is to be used for charging water with carbonic-acid gas for making what is known as "aerated water," although it is to be understood that the apparatus is not limited to that particular use, as it can be used for aerating or charging with gas other liquids, such as wine, beer, and the like. The said apparatus is intended to be employed in connection with containers or cylinders of compressed or liquefied carbonic-acid gas, so that bottles or other vessels (I will presume in the following description that bottles are to be used) containing the required amount of water can be readily put in place and the water therein be efficiently, rapidly, and economically charged with gas from the said container or cylinder, the apparatus being so arranged that gas is admitted to the water in the bottle and allowed to escape in such a manner that the water is thoroughly agitated by and rapidly and efficiently saturated with the gas.

The accompanying drawings illustrate a construction of apparatus in accordance with this invention, Figure 1 being a vertical section, and Fig. 2 a front elevation.

The said apparatus consists of a casing 1, provided with an opening 2 and means for receiving and making a sufficiently tight joint around the mouth of the bottle, the said means being shown as consisting of a screwed nozzle 3, onto which an ordinary screw-stopper bot-

tle can be screwed, and an elastic pad or seating 4.

Above the outlet-valve of the container or cylinder 5 of compressed or liquefied carbonic-acid gas is secured (by an ordinary gas connection or otherwise) the attachment 6, with an opening through it in which is inserted a tube 7, projecting downward sufficiently to enter the water in the bottle, as illustrated in Fig. 1, the said tube passing through the opening 2, by which the inside of the casing or casting 1 communicates with the interior of the bottle 8 above the water therein, and there is an outlet-passage 9, provided with a valve 10 (adjustable to open at any desired pressure) to allow some of the gas admitted to escape after it has passed through the water in the bottle 8. The desired pressure of gas in the bottle is shown as being obtained by the weighting of the valve 10 by the cage or guard 11, (shown as having a glass front,) turning on a center at 12 and provided with a projection or cross-bar 13, which bears on the spring 14, which in turn bears on the valve 10. The weight of the cage or guard 11 on the spring 14, which in turn bears on the valve 10, may be such as to be in itself sufficient to prevent any flow of gas past the valve 10 until the pressure within the bottle 8 has attained the desired degree, or the cage or guard 11 may be lighter and the desired degree of pressure may be obtained by the added weight of the operator's hand on the said cage or guard 11 or by other similar means. Compression of the spring 14 beyond a predetermined amount is prevented by the projection or cross-bar 13 coming into contact with the top of the casing or casting 1 when the maximum permissible compression of the said spring 14 is reached. Of course the spring 14 can be dispensed with and the bar 13 be made to bear on a projection from the back of the valve in which the use of the spring 14 is preferred, as whatever pressure necessary to raise the valve 10 from its seating when the projection or cross-bar 13 is in contact with the casing or casting 1 such gas-pressure cannot increase, however hard the operator may bear upon the cage or guard,

whereas if the spring be not used there is a risk that the operator may by inadvertence obstruct the lifting of the valve 10 by bearing upon the cage or guard, and thus create
5 an unsafe pressure within the bottle.

Water having been introduced to the requisite height into the bottle 8, the upper end of the said bottle is screwed onto the nozzle 3, so that the mouth of the bottle is closed by
10 the elastic pad or seating 4, and then the valve of the container or cylinder 5 is opened and gas is admitted from the said container or cylinder and passes down the tube 7 into the water in the bottle 8, and the said gas rises through
15 the said water into the space above until the pressure of gas in the bottle 8 and casing or casting 1 exceeds the pressure at which the valve 10 is adjusted to open. The excess of pressure opens the valve 10, and as the excess
20 pressure is maintained by the supply of gas admitted from the container or cylinder 5 the valve 10 is kept open thereby and a stream of gas passes from the container or cylinder 5 down the pipe 7 into the water in the bottle
25 8 and up through the said water and out through the valve 10, the gas in its passage through the said water agitating it more or less, according to the speed at which the gas is admitted to the bottle 8 by the manipulation of the outlet-valve of the container or
30 cylinder 5. This agitation of the water under the pressure of the gas (determined by the adjustment of the valve 10) quickly and efficiently saturates the water with gas.

35 The aforesaid cage or guard 11 is shown arranged so as to protect the operator from injury should the bottle accidentally burst. While the said cage or guard is raised, there is no weight on the valve 10, and consequently
40 although the gas may be admitted to the bottle while the cage or guard is in this position there will be no pressure in the bottle beyond that allowed by the weight of the valve itself, and, further, a bottle of water after having
45 been charged with gas cannot be removed from the machine without first raising the cage or guard, so that the pressure of surplus gas in the bottle and casing is liberated before the bottle can be removed.

50 Although the bottle 8 is shown as being provided with a screw to be screwed onto a screw on the nipple 3, other means for hold-

ing the bottle in place against the pad or seating 4 may be used. For example, the opening 2 may be made with a cup-shaped termination containing the pad or seating 4 and the
55 mouth of the bottle be inserted in the said termination and be held against the pad or seating 4 by a lever, which may be provided with a catch to hold the bottle in position. The
60 bottle may be itself covered by a guard, or the guard or cage may be fixed to the casing or casting 1 instead of being used to weight the valve 10, as hereinbefore described.

Having now particularly described and as-
65 certain the nature of the said invention and in what manner the same is to be performed, I declare that what I claim is—

1. An apparatus for aerating liquids, or charging them with gas; the said apparatus
70 consisting of a casing, or casting, provided with means for connecting it to a cylinder, or container, of compressed, or liquefied, gas, and with passages one of such passages consisting of a tube for the admission of gas into the
75 liquid in the bottle, or the like, this tube passing through another of the passages provided with means for making a joint around the mouth of the bottle, or the like, the third passage being provided with a valve weighted,
80 or controlled, so as to open at the desired pressure, substantially as hereinbefore described.

2. An apparatus for aerating liquids, or charging them with gas, the said apparatus
85 consisting of a casing, or casting, provided with means for connecting it to a cylinder, or container, of compressed, or liquefied, gas, and with passages one of such passages consisting of a tube for the admission of gas into
90 the liquid in the bottle, or the like; the said tube passing through another of the passages provided with means for making a joint around the mouth of the bottle, or the like; the third passage being provided with a valve
95 upon which the desired pressure is exerted by a centered cage, or guard; substantially as hereinbefore described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM HUCKS, JR.

Witnesses:

A. S. CARVER,

WILLIAM GERALD REYNOLDS.