

(No Model.)

C. H. WILCOX.  
ACETYLENE GAS GENERATOR.

No. 578,847.

Patented Mar. 16, 1897.

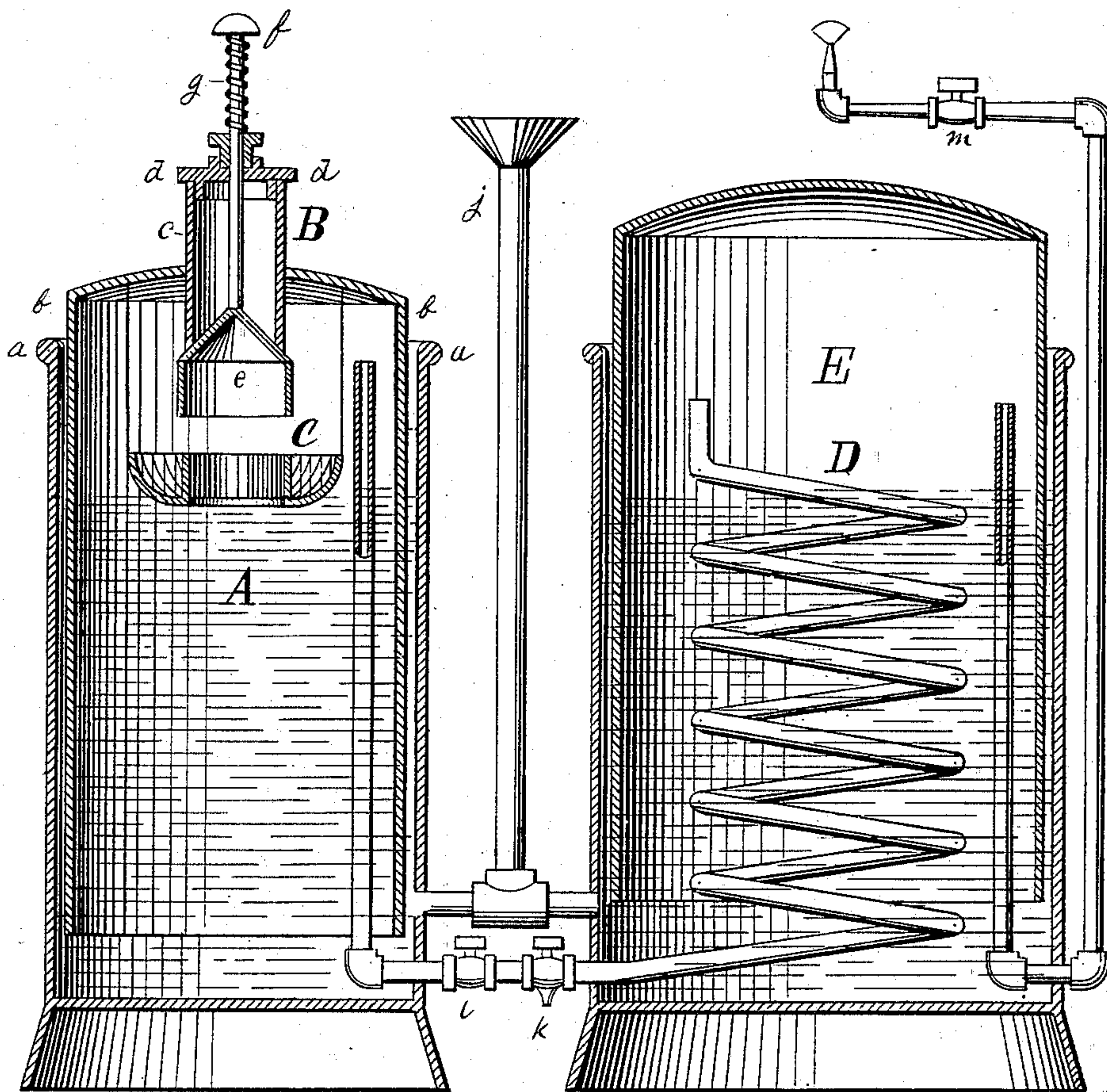


Fig. 1-

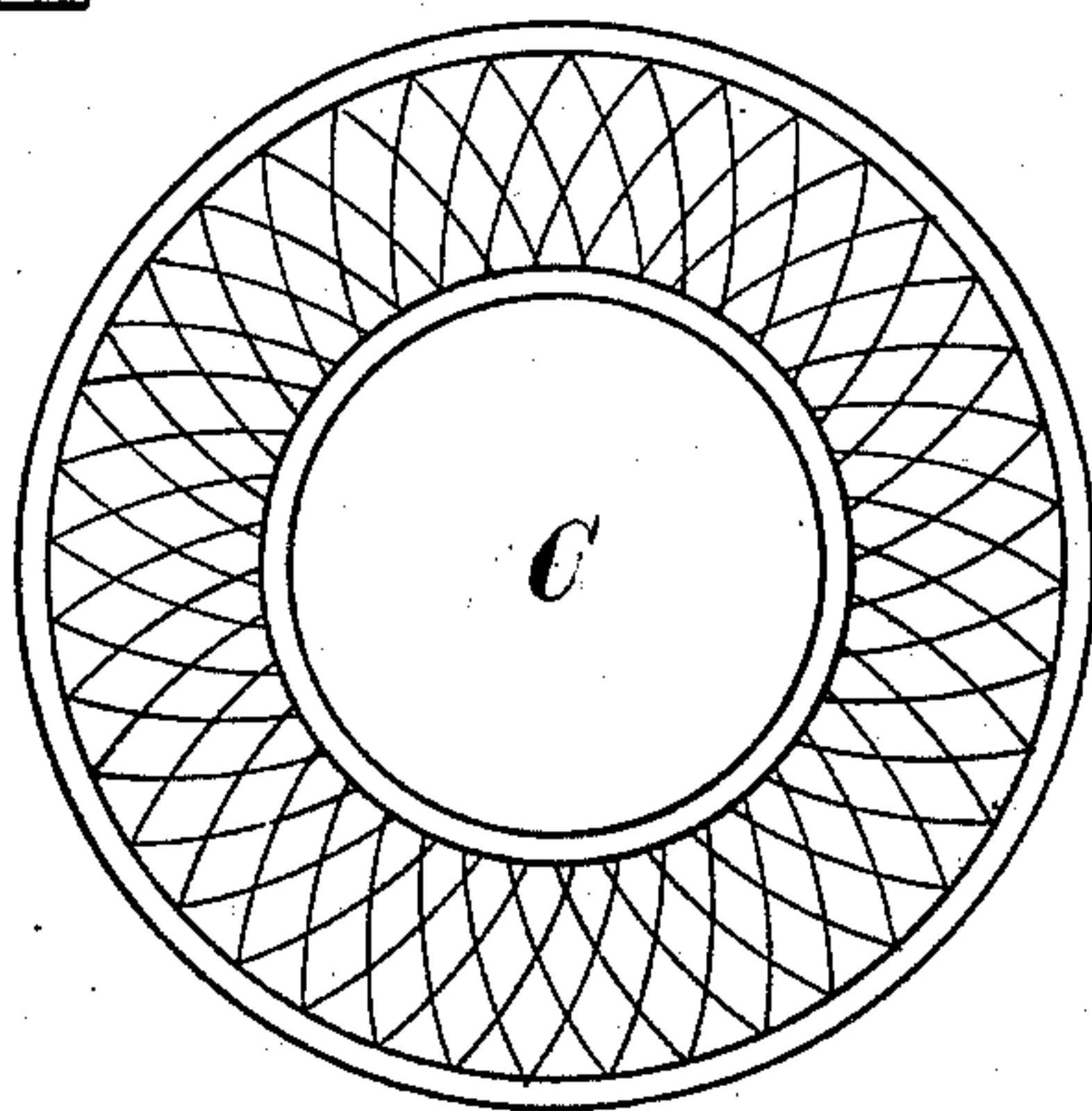


Fig. 2-

WITNESSES

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## ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 578,847, dated March 16, 1897.

Application filed December 5, 1896. Serial No. 614,594. (No model.)

*To all whom it may concern:*

Be it known that I, CLEMENTINA HOBART WILCOX, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented a new and useful Improvement in Gas-Generators, of which the following is a specification.

The objects of my invention are, first, to provide an automatic generator for the production of acetylene or other gas; second, to provide means for supplying to such generator while in use calcium carbide or other gas-generating material without permitting the gas therein to escape; third, to provide a suitable basket or receptacle for the calcium carbide during the process of generating gas; fourth, to provide means for condensing and drawing off the water carried by the gas, and, fifth, to provide a suitable holder for storing and controlling the pressure of the accumulated gas.

To these ends my invention consists, first, of a generator wherein I produce acetylene gas; second, a calcium-carbide charger; third, a calcium-carbide basket or holder; fourth, a condensing-coil, and, fifth, a telescope gas-holder.

In the accompanying drawings, which form a part of this specification, Figure 1 is a transverse vertical section of my generator, and Fig. 2 is a top view of the calcium-carbide basket on a larger scale.

Similar letters refer to similar parts.

A is the generator; B, the calcium-carbide charger; C, the calcium-carbide basket; D, the condensing-coil, and E the gas-receiver.

The generator A consists of the tank *a*, (preferably cylindrical,) open at its upper end and closed at its lower end, and the inverted case *b*, (also cylindrical,) closed at its upper end and open at its lower end.

The charger B consists of the vertical cylinder *c*, its cover *d*, its bottom *e*, a polished rod *f*, and a spring-coil *g*. The cylinder *c* is open at both ends and is rigidly affixed in the crown or cover of the inverted case *b*. The cover *d* is centrally pierced and provided with a stuffing-box. It rests upon and closes the upper end of the cylinder *c*.

The bottom *e* is conical and fits into and closes the lower end of the cylinder *c*. The

polished rod *f* is rigidly secured to the apex of the bottom *e*, passes through the stuffing-box of the cover *d*, through the spring-coil *g*, and terminates in a knob or button.

The calcium-carbide basket C may be made of woven wire or of perforated sheet metal. It is supported from the dome or cover of the inverted case *b*. I prefer to make the basket C annular, but do not confine myself to any particular form.

The condensing-coil D is not unlike those in general use, and therefore needs no description herein. The gas-holder E likewise is common, and therefore needs no description.

*j* is a stand-pipe through which I supply the generator A and the gas-holder E with water both for sealing and for generating.

*k* is a valve through which I draw off the water condensed in the coil D. *l* is another valve with which I shut off the gas between the generator A and the gas-holder E, and *m* is still another valve by means of which I shut off the gas from the burners.

The operation of my generator is as follows: I first raise the cover *d* of the charger B (by compressing the spring-coil *g*) and drop calcium carbide (broken into small pieces) into the cylinder *c*, when by the recoil of the spring *g* the cover *d* is forced down and held in place upon the upper end of the cylinder *c*. I next drop the conical bottom *e* of the charger B by forcing down the polished rod *f*, (thus again compressing the spring-coil *g*,) thereby allowing the calcium carbide to drop into the basket C, when by the recoil of the spring *g* the conical bottom *e* is forced up and held in place against the lower end of the cylinder *c*. It will thus be seen that the cover *d* and the bottom *e* are both held in place by the spring-coil *g*, and that when the cover *d* is raised the bottom *e* must remain in place, and vice versa. When the bottom *e* is lowered, the cover *d* must remain in place. Hence no gas can escape from the generator while recharging the same. I now let water into the generator A and gas-holder E through the stand-pipe *j* until it rises to and saturates the calcium carbide suspended in the basket C, when the generating of acetylene gas will at once begin and will (by its expansive force) raise the inverted case *b* of the generator A,



and in so doing will raise the calcium-carbid basket, with its contents, out of the water, when the further generating of gas will be suspended until (through the consumption of the accumulated gas and the consequent lowering of the inverted case *b*) the basket C shall again be submerged and the calcium carbide therein saturated, when the generating of gas will be resumed. It will thus be seen that my generator is automatic in its operation.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a gas-generator, the combination with a liquid-holding tank open at its upper end and closed at its lower end, of an inverted case closed at its upper end and open at its lower end, located in said liquid-holding tank; a charger set into the dome or cover of said inverted case; said charger embodying a vertical cylinder, open at both ends, a centrally-pierced cover, and a conical bottom for said vertical cylinder, a rod extending from the apex of said conical bottom and through the said cover, and a spring-coil in-

closing the said rod and bearing upon the said cover; and a basket suspended from the dome or roof of the said inverted case; substantially as shown, and for the purpose specified.

2. In a gas-generator, the combination of the liquid-holding tank, the rising-and-falling gas-holding case, located in said liquid-holding tank and provided with a basket for holding a gas-generating material, the charger opening into and carried by the gas-holding case in its up-and-down movement, and provided with a centrally-pierced cover, a conical bottom, a rod extending from the said conical bottom and through the said pierced cover, and a spring-coil inclosing the said rod and pressing upon said cover, whereby the said cover may be raised upon the said rod for filling the said charger, and the said bottom may be forced downward by the said rod for emptying the said charger, substantially as shown and for the purposes specified.

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Witnesses:

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