No. 619,510. Patented Feb. 14, 1899.

H. C. SERGEANT.

GAS HOLDER.

(Application filed June 20, 1898.)

(No Model.)

Fig. 1.

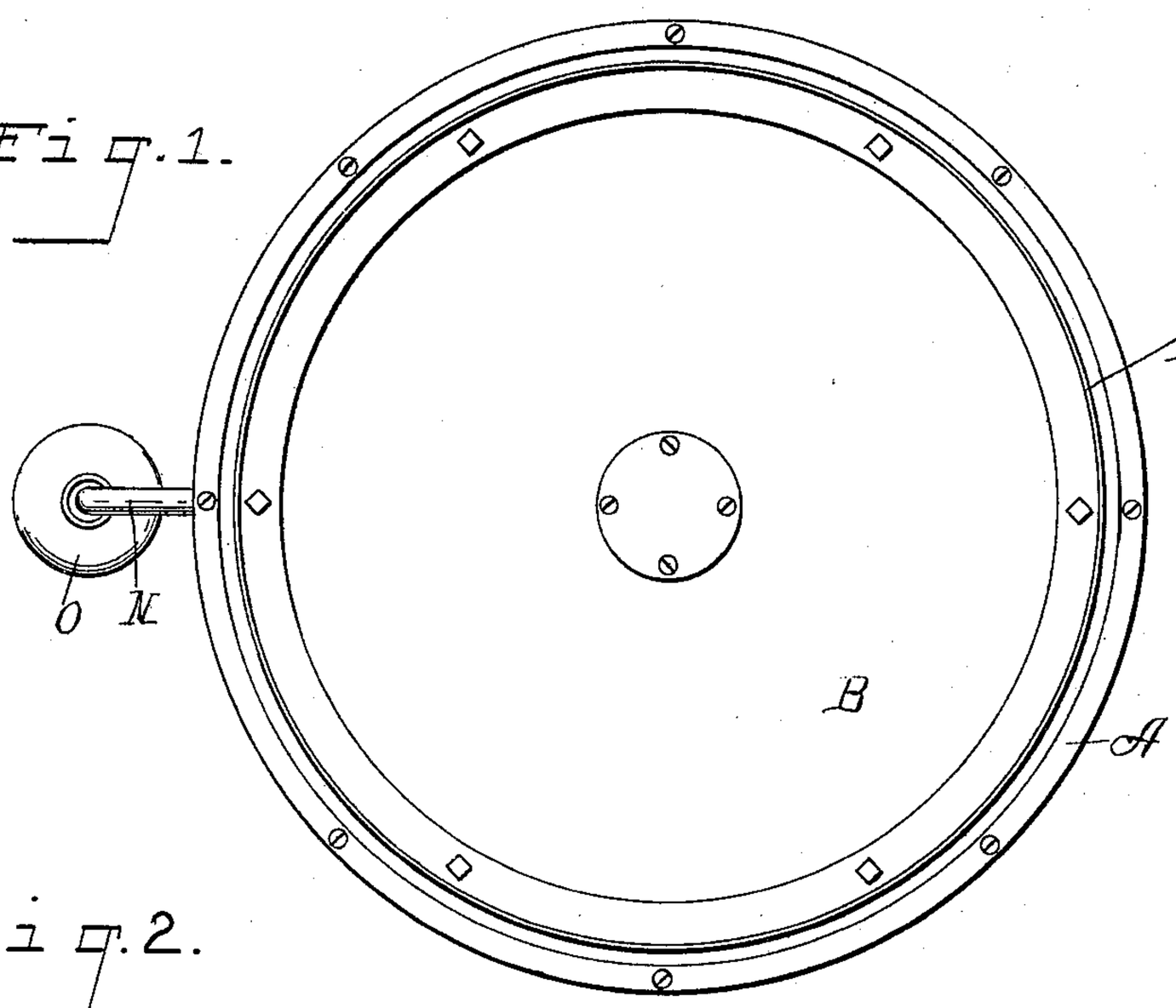
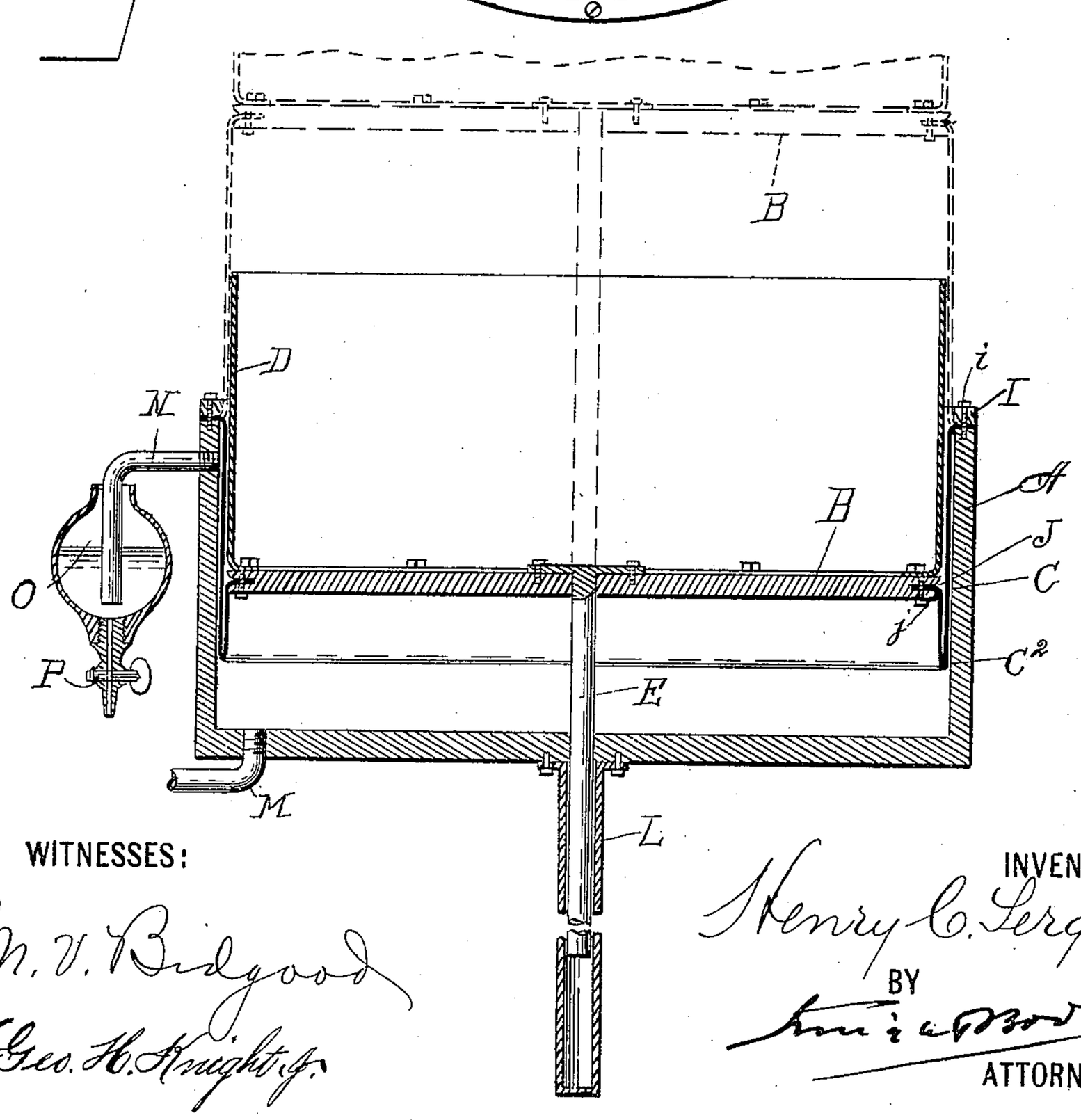


Fig. 2.



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GAS-HOLDER.

SPECIFICATION forming part of Letters Patent No. 619,510, dated February 14, 1899.

Application filed June 20, 1898. Serial No. 683,904. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. SERGEANT, a citizen of the United States, residing at Westfield, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Gas-Holders, of which the following is a specification.

This invention relates to improvements in gas-holders such as are intended particularly for the reception, storage, and delivery at a substantially constant pressure of acetylene gas.

My improved gas-holder consists of a fixed portion and a flexible portion which telescopes into the fixed portion in a special and novel manner, whereby a very compact and efficient construction is obtained.

Referring to the accompanying drawings, which form a part of this specification, Figure 1 is a plan view of the gas-holder embodying my invention. Fig. 2 is a vertical section thereof.

A represents a box constituting the fixed portion of the gas-holder, of cylindrical or other suitable shape and open at the top. The flexible portion of the gas-holder consists of a plate or disk B, corresponding in shape to the inside of box A, but somewhat smaller, so as to be capable of passing down inside of said box. A flexible annular web or curtain C is connected at one edge to the top rim of box A and at the other edge to the periphery of disk or plate B, so as to close the space between said box and plate, and thus render the gas-holder air and gas tight, while permitting of relative vertical movement of said box and plate. To guide the plate in such vertical movement, I provide a post or guide-rod E, which is attached to plate B and slides in a socket or guide-tube L, which is attached to the bottom of box B and is closed at its lower end.

D is a cylindrical shell, preferably of sheet metal, fastened to top of disk B and extending vertically substantially in line with the circumference of said disk. This shell acts as a support or guide for the flexible web, preventing same from buckling in. Thus when the disk is in the position shown in Fig. 2 and is ascending the web C would be liable to bend in somewhat and to crumble and fold above the cap, thus clogging the movement of same. The shell B, however, holds the web from inward crumpling or buckling and enables it to be unrolled or turned up in an even uniform manner.

The flexible web C may consist of any gas-tight material which is sufficiently flexible to allow of the required movements, and is capable of withstanding the changes of temperature to which the apparatus is liable in many cases in keeping the gas-holder out of doors or at least in a comparatively exposed location. Thus the said web may consist of a cloth or silk fabric coated or filled with a flexible waterproofing varnish or cement, such as rubber cement or a slow-drying oil-varnish. One edge of this web being placed over the top rim of box A, it is held in place by a clamping-ring I, fastened to the said rim by screws *i*. The other edge of said web is inserted in a groove or slit in the periphery of disk or plate B, being clamped therein by screws *j*. The edges of top rim of box A of ring I and of the groove J in disk B are rounded or beveled, so as to allow the web to bend more freely and gradually at these points.

M represents the inlet or gas-supply tube, and N a safety outlet-tube leading to the open air. The outlet N is provided with a safety-valve, consisting, for example, of a chamber O, containing glycerin, into which the outlet-pipe N dips, so as to permit gas to flow out only when it has an excessive pressure.

Fig. 2 shows in dotted lines the position of the web C when the gas-holder is in its most extended condition, the cover or plate B being raised to the fullest extent. As the gas is drawn off this cover gradually falls by gravity, the web C at the same time bending, with its outer part folding down against the inside of the box, as indicated in full lines, until the plate B reaches the bottom of the box, when the cover and web will lie so close to the inside of the box at all points that but little gas will be left in the holder. When a new supply of gas is passed in through inlet M, it raises the cover-plate B, which as it passes up strips the web C from the inside of box A, folding it, as indicated at C^2, the shell D serving during this operation to keep the web from buckling and enabling it to be stripped in an even and uniform manner, thus

obviating danger of clogging the motion of the disk B.

The chamber O may be provided with a cock P for drawing off the glycerin therefrom.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. A gas-holder comprising a box open at the top, a plate conforming to, but smaller than, the inside of said box, and a flexible web connecting the top rim of said box with the periphery of said plate, said plate being provided with a support for the flexible web, extending up from the circumference thereof to prevent buckling of said web.

2. A gas-holder consisting of an open-topped box, a plate conforming to, but smaller than the inside of said box, a flexible annular web connecting the top rim of said box with the periphery of said plate, and means for guiding the plate in a vertical direction, said plate being provided with a support for the flexible web, extending up from the circumference thereof to prevent buckling of said web.

3. A gas-holder consisting of an open-topped box, a plate conforming to but smaller than the inside of said box, a flexible annular web connecting the top rim of said box with the periphery of said plate, means for guiding the plate vertically, and a shell fastened to the top of said plate and forming a support for the flexible web to prevent same from buckling.

4. The combination with box A, plate B and flexible web C, of shell D fastened to said plate B.

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Witnesses:

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