

No. 666,598.

Patented Jan 22, 1901.

T. A. BRYAN.
GAS HOLDER.

(Application filed June 5, 1900.)

(No Model.)

Fig. 1.

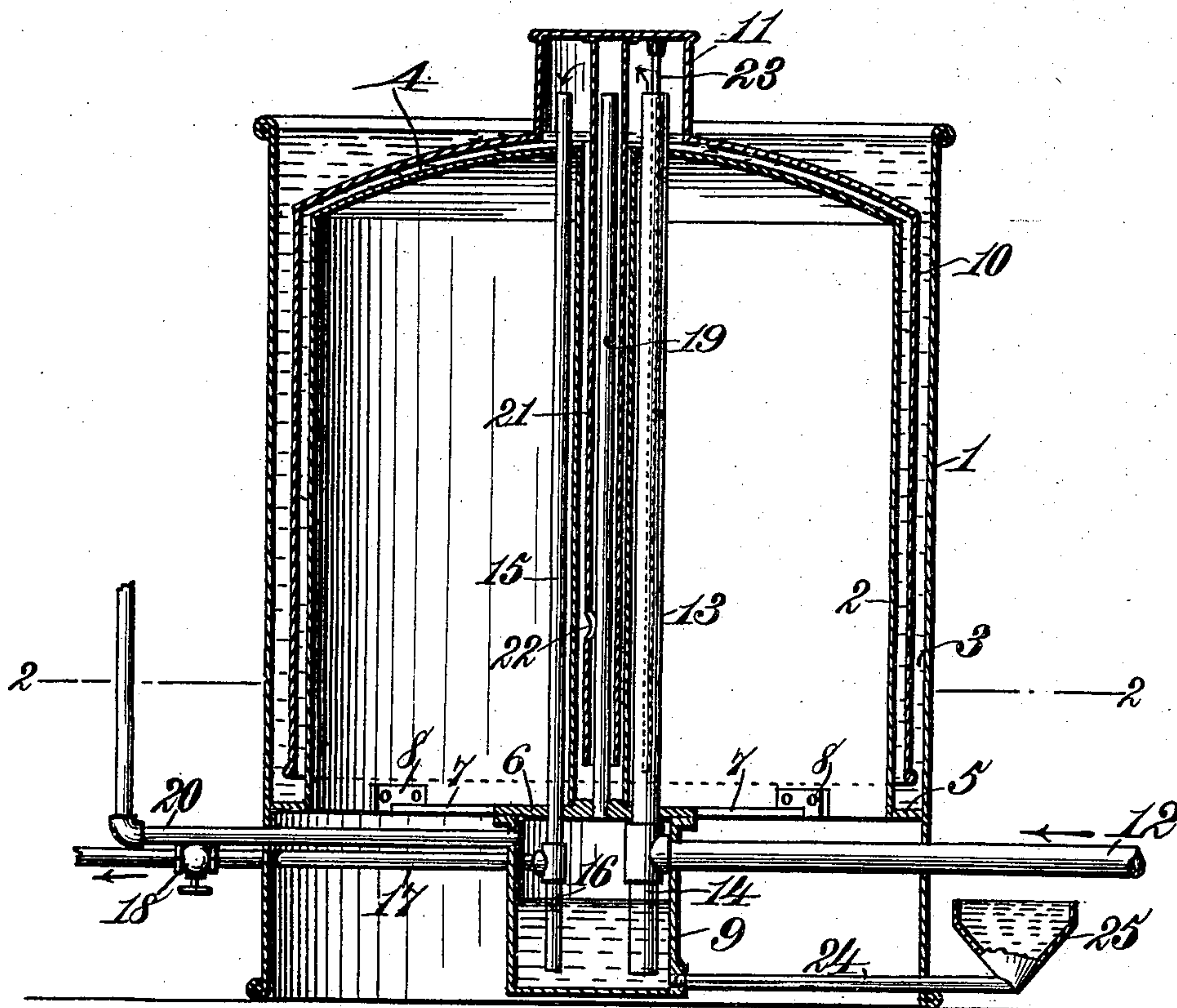
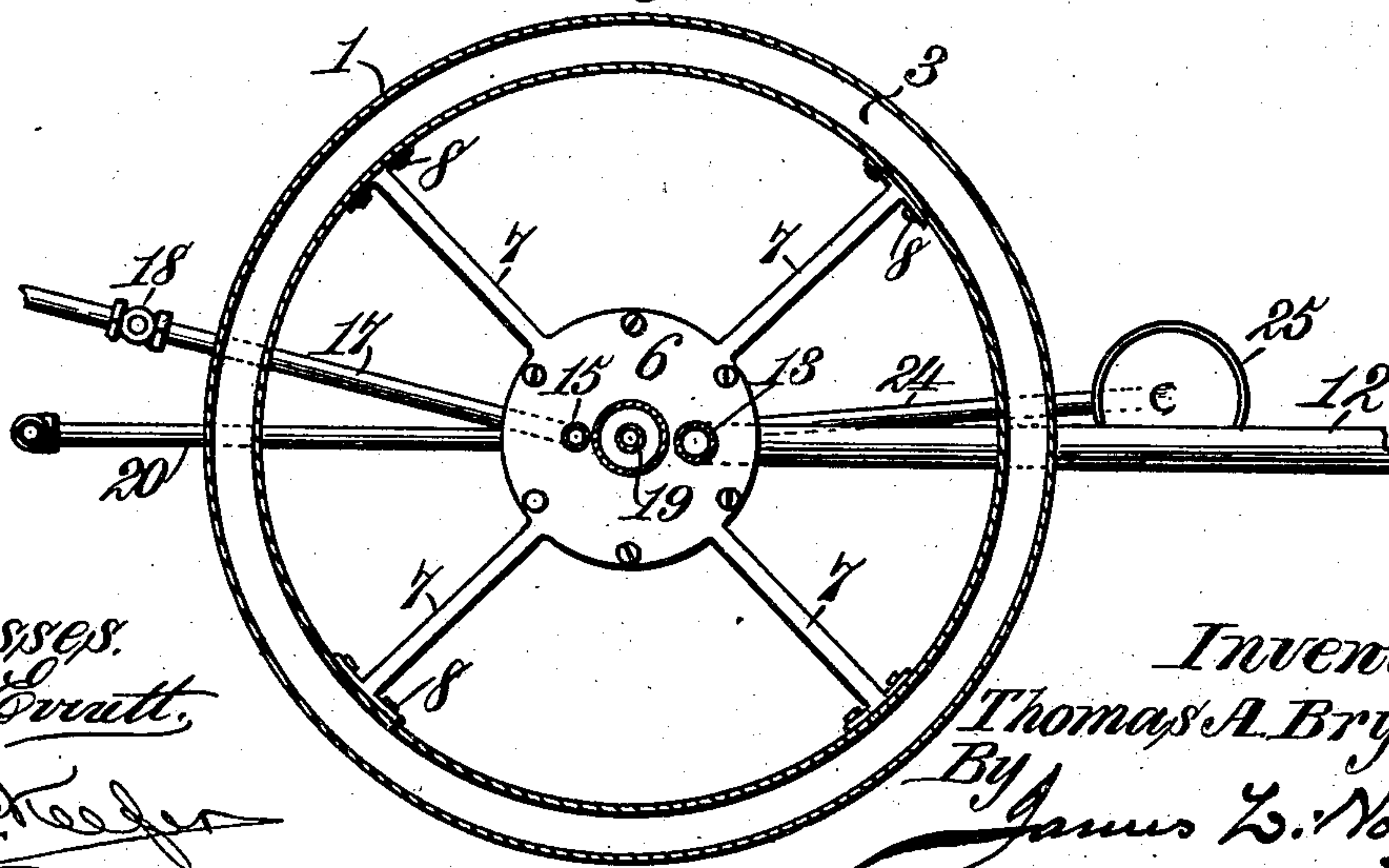


Fig. 2.



Witnesses.
Robert E. Pratt,
J. B. Keefe

Inventor,
Thomas A. Bryan,
By James L. Norris,
Atty.

UNITED STATES PATENT OFFICE.

THOMAS A. BRYAN, OF BALTIMORE, MARYLAND.

GAS-HOLDER.

SPECIFICATION forming part of Letters Patent No. 666,598, dated January 22, 1901.

Application filed June 5, 1900. Serial No. 19,160. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. BRYAN, a citizen of the United States, residing at Baltimore city, in the State of Maryland, have
5 invented new and useful Improvements in Gas-Holders, of which the following is a specification.

This invention relates to an improved gas-holder for use in connection with an acetylene-gas generator, and has for one of its objects to provide a gas-holder wherein only a small body of liquid need be employed for forming the seal and to provide an improved means for supporting the inlet, outlet, and
15 escape pipes in the gas-holder and for supporting a condensation or drip chamber for the lower ends of the inlet and outlet pipes.

Other objects of the invention relate to certain details of construction and the combinations of parts, which will hereinafter be fully described, and particularly pointed out in the claims.

I have illustrated my invention in the accompanying drawings, in which—

25 Figure 1 is a sectional elevation of my improved gas-holder; and Fig. 2 is a sectional plan view of the same on the line 2 2 of Fig. 1, the bell being removed.

30 The numeral 1 indicates the outer casing of the gas-holder, said casing being open at its top and bottom.

The numeral 2 indicates a hollow drum, which is arranged within the casing 1 concentric thereto and in such manner as to leave
35 a space 3 to afford a liquid seal. This drum is provided with a top 4 and is open at its lower end, being secured at its lower edge to the wall of the casing 1. This drum 2 is designed to occupy the space which is ordinarily
40 filled with water in gas-holders as generally constructed and is of such a height that when the casing 1 is filled with liquid the liquid will extend slightly above the top of the same. By providing this drum 2 it will be seen that
45 a comparatively small quantity of liquid will be required to fill the sealing-chamber 3 and to extend over the top of the drum 2. Owing to the small quantity of liquid required for this purpose I preferably employ oil as the
50 sealing agent, and I thereby provide against liability to accidents or to imperfect operation due to the sealing agent freezing. The

bottom of the liquid-seal chamber 3 is closed by means of an annular flanged portion 5, extending outward at right angles to the drum 55 2 at the lower edge thereof, by which means the said drum is also secured to the wall of the outer casing 1.

The numeral 6 indicates a disk, extending outward from which are a series of radial 60 arms 7, which at their outer ends are secured to the lower edge of the drum 2, as indicated at 8. Secured to the under side of this disk by rivets or the like is a cylindrical chamber 9, which is designed to hold water. 65 The disk 6 is apertured to permit the several pipes leading into the gas-holder, and heretofore referred to, to pass through and fit snugly in the same.

The numeral 10 indicates the bell of the 70 gas-holder, which works in the seal 3, as usual. Said bell is provided with a small cylindrical dome 11, which is adapted to receive the upper ends of the inlet, outlet, and escape pipes, to be later described, and which extends above 75 the normal level of the oil in the casing 1. The remaining portion or top of the bell, however, will be covered by the oil in the gas-holder when the bell is in its lowest position, as indicated in Fig. 1. 80

The numeral 12 indicates the pipe leading from the gas-generator. This pipe passes through the wall of the casing 1 and the wall of the condensation-chamber 9 and is there provided with an upper extension 13 and a 85 downward extension 14, the lower end portion of which latter is submerged in the water of the chamber 9.

The numeral 15 indicates the outlet-pipe from the gas-holder and is for supplying the 90 gas to the burners or other place of consumption. This pipe is also provided with a downward extension 16, having its lower end portion submerged in the water of the chamber 9. A horizontal pipe 17 leads from the pipe 15 95 through the wall of the chamber 9 and of the casing 1 to the place of consumption. The pipe 17 is provided with a valve 18.

From the construction thus far described it will be seen that any moisture passing through 100 the pipe 12 can trickle down the lower extension 14 into the drip-chamber 9, and likewise any moisture carried downward through the pipe 15 can trickle down the extension 16 into

said chamber. Thus the gas will pass from the gas-holder in a practically dry state.

The numeral 19 indicates the escape-pipe from the gas-holder, which pipe is supported 5 in position by having its lower end screw-threaded and screwed into engagement with the disk 6, in such manner, however, as to communicate with the chamber 9.

The numeral 20 indicates a pipe which is 10 tapped into the wall of the chamber 9 to communicate with the interior thereof, and passes thence through the wall of the casing 1 to the outer air.

Extending downward from the under side 15 of the top of the dome 11 is a sleeve 21, which fits over the pipe 19 and at a point some distance removed from its lower end is provided with one or more apertures 22. As indicated, the purpose of this construction is to provide 20 for the escape of gas, owing to excessive generation, as it will be seen that if the bell should rise too high the apertures 22 would be carried above the oil in the casing 1 and the gas would at once pass through said apertures to the pipe 19 and into the chamber 9 and thence through the pipe 20 to the outer air. The bell 10 is guided by means of a rod 23, extending downward from the top of the dome 11 and working within the inlet-pipe 13.

The numeral 24 indicates a pipe which is 30 tapped into the bottom of the chamber 9 and extending through the wall of the casing 1 is provided at its outer end with a funnel 25, whereby the chamber 9 may be supplied with 35 water and the height of the water therein can be readily ascertained.

The pipes 13 and 15 and the sleeve 21 all extend through openings in the top of the drum 2, and suitable packing may be provided to 40 prevent leakage of the oil at these points.

The drum 2 by lessening the amount of liquid ordinarily required in the gasometer prevents to a great extent the waste of gas by absorption, which has been demonstrated to 45 amount in the aggregate to a great deal.

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

1. A gas-holder comprising an outer cylindrical casing, a drum secured therein concentrically to said casing and at a distance 50 from the wall thereof, whereby to afford a liquid-seal chamber, and having its lower end open, an apertured disk located centrally of said drum at the lower edge thereof and supporting a water-chamber and having a series 55 of radial arms extending outward therefrom and secured at their ends to the lower edge portion of said drum, and inlet and outlet pipes passing through the apertures in said disk and through the top of said drum, and having downward extensions submerged in the water of said chamber, and a bell working in said liquid seal, substantially as described. 65

2. A gas-holder comprising an outer cylindrical casing, a drum secured therein concentrically to said casing and at a distance 70 from the wall thereof whereby to afford a liquid-seal chamber, and having its lower end open, a bell working in said liquid-seal chamber, a disk having a centrally screw-threaded aperture and provided with radial arms secured at their outer ends to the lower edge 75 portion of said drum, a casing 9 supported from the lower side of said disk and adapted to contain water, inlet and outlet pipes leading upward through said disk and through the top of said drum and having downward extensions submerged in the water of said casing 9, a pipe communicating with said casing 9 and leading to the outer air, a pipe extending upward through the said drum and having its lower end screwed into said disk and communicating with the interior of the 85 casing 9, a sleeve carried by the bell and working over said last-named pipe, and provided toward its lower end with apertures, and means for supplying water to the casing 9.

In testimony whereof I have hereunto set 90 my hand in presence of two subscribing witnesses.

THOMAS A. BRYAN.

Witnesses:

M. H. BARNEY,

CHARLES HUMPHREY BOONE.