

R. H. SMITH & J. GOLDTHORP.

Flexible Gas-Holders.

No. 155,768.

Patented Oct. 6, 1874.

Fig. 1.

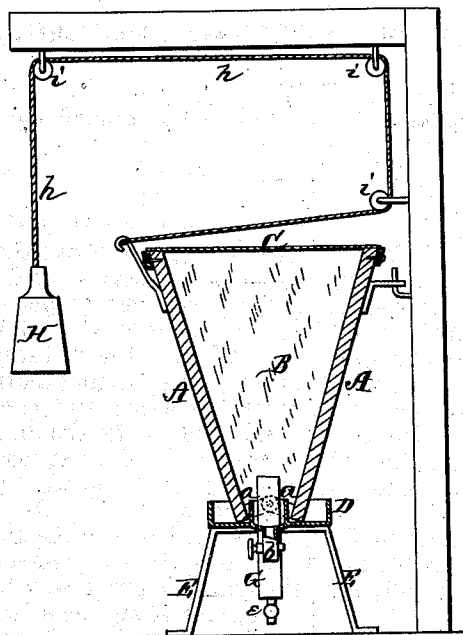


Fig. 2.

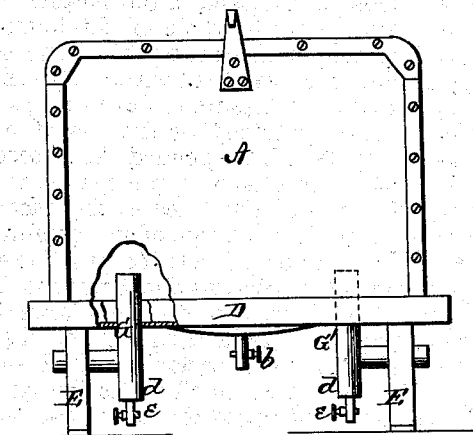
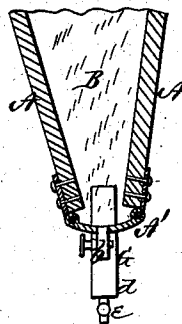


Fig. 3.



WITNESSES

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ROLAND H. SMITH AND JOSHUA GOLDTHORP, OF PITTSBURG, PA.

IMPROVEMENT IN FLEXIBLE GAS-HOLDERS.

Specification forming part of Letters Patent No. **155,768**, dated October 6, 1874; application filed September 5, 1874.

To all whom it may concern:

Be it known that we, ROLAND H. SMITH and JOSHUA GOLDTHORP, of city of Pittsburg, in the county of Allegheny and in the State of Pennsylvania, have invented certain new and useful Improvements in Gas-Holders for the storing of illuminating-gas; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification:

The nature of our invention consists in the construction and arrangement of a flexible gas-holder, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which our invention appertains to make and use the same, we will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a transverse section of our gas-holder. Fig. 2 is a front elevation of the same. Fig. 3 shows a modification in the construction of the bottom of the gas-holder.

The general form of our gas-holder is wedge-shaped, and placed in a vertical position. The sides A A of the wedge may be made of wood, sheet-iron, tin, paper, or any substance found most suitable or economical, and the ends B B, as well as top C, which form the flexible parts of the gas-holder, may be made of either leather, rubber, cloth, felt, paper, or any suitable material that will allow of an expansion and contraction of the gas-holder, and retain the gas. The sides A A of the gas-holder are hinged together at each end by means of arms *a a*, as shown in Fig. 1, leaving the entire bottom of the gas-holder open. This gas-holder sits in a seal, D, made by a box having upright flanges of a height sufficient to contain a column of water or other suitable liquid more than equal to the pressure put upon the gas. The interior of the bottom of the box D slopes toward the center, as shown in Fig. 2. By means of this slope the drippings and deposits of the gas are accumulated near the cock *b*, fixed below the center of the box, and by which they can, from time to time, be removed. The box D is elevated on legs E E, so as to allow of the insertion of the sup-

ply and exit pipes G G', one at each end. These pipes rise above the level of the edges of the box or seal D, and enter some distance into the receiver or gas-holder. Below the box the pipes G G' extend some distance lower than the elbows through which the gas passes, thus forming a drip, *d*, on each, to receive the waste, and each drip is provided with a cock, *e*, for the discharge of the same.

This form of constructing the gas-holder admits of the removal of the upper portion of for repairs, cleaning, &c., without any breakage of the joints in the pipe.

In the form of gas-holder shown in Fig. 2, the holder is provided with a metallic bottom, A', hinged along the sides A A, and provided with the supply and exit pipes, cocks, &c., substantially as above described, entering therein. These pipes may, in this case, be either loose, or fastened in the bottom of the gas holder; and the whole of this lower portion could be made gas-tight, or else sealed by placing in a box filled with proper liquid.

The required pressure to force the gas into the pipes is obtained by the use of one or more weights, H, suspended from cords or chains *h*, which pass over pulleys *i*, and connect with one of the sides A, the other side being fastened to the side of any building.

By this method of holding gas there is a great saving in cost, as the holder is above ground, and there is no need of a large water-tank sunk in the ground, as in the old manner. It is, besides, much easier cleansed and repaired. Further, in small works there is much less space required, as the holder can be fastened to the side of a house or barn.

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

1. The gas-holder herein described, consisting of the solid sides A A, hinged at the bottom, and the flexible end pieces B B and flexible top C, substantially as and for the purposes herein set forth.

2. The box or seal D, constructed as described, and provided with the cock *b*, inlet-pipe G, and outlet-pipe G', in combination with a flexible gas-holder, A B C, having its lower end placed in said box, all substantially as and for the purposes herein set forth.

3. The drip *d* with cock *e* formed in the inlet and outlet pipes of a flexible gas-holder, for the purposes herein set forth.

4. The combination of the flexible gas-holder A B C, seal D, with cock *b* and pipe G G', and one or more weights, H, connected with one side of the holder, all substantially as and for the purposes herein set forth.

In testimony that we claim the foregoing we have hereunto set our hands and seals this 24th day of August, 1874.

ROLAND H. SMITH.

[L. S.]

JOSHUA GOLDTHORP.

[L. S.]

Witnesses:

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