

UNITED STATES PATENT OFFICE.

ANDREW FULTON, OF ALBANY, NEW YORK.

IMPROVEMENT IN PURIFIERS, CONDENSERS, &c., FOR GAS-WORKS.

Specification forming part of Letters Patent No. **111,737**, dated February 14, 1871.

To all whom it may concern:

Be it known that I, ANDREW FULTON, of the city and county of Albany, State of New York, have invented or discovered a new and Improved Mode of Constructing Covers for Purifying-Boxes, Gas-Receivers, Center-Seals, and the like, whereby the portion of the cover to be submerged in water will be longer preserved; and I do hereby declare that the following is a description or specification thereof.

Figure 1 is a perspective view of a section of a purifying-box, with a portion cut away, showing the part improved. Fig. 2 is a side elevation through the box and cover and embodying the improvement.

Persons acquainted with the art of making gas for illuminating cities, villages, &c., are well aware that those portions of the covers of purifying-boxes, center-seals, condensers, and other vessels and apparatuses required to be sunken into water, rust out quickly—that is to say, in a few years—on account of the iron used oxidizing or rusting away. This being the case, great vigilance is required to watch the said covers after they have been used for a time, and when it is discovered that the said covers leak considerable expense is involved in repairing the same, especially where the gas-works are in a place remote from places where such work is done.

My invention relates to the substitution of lead for iron in the construction of the rims of such covers with or without the addition of rubber, which, if used, is placed on the outer side. Although when lead alone is used the duration of its surface will be of a much longer period than when constructed of iron, yet, when sheet-rubber is used in connection with said lead on the portions of the rim outside the cover and which is submerged, the duration of its service will be longer; and though the application of lead or lead and rubber would, at first construction, be greater than when made of iron, yet the certainty of longer service, the consequent saving of expense, and the great convenience attending repairs, makes this invention of great utility.

In the drawings, A represents a purifying-box, constructed in the usual manner and of the usual material, (cast-iron.)

B is the usual cover, consisting of the cover-top *a*, made of light boiler or stack-pipe iron,

and the sides or rim *b*, made of sheet-lead. This cover B is made on a frame of angle-iron, *c*, as usual, the plate-iron *a* being riveted together and to the said angle-iron frame. The sheet-lead *b* is also secured to the said frame and bound thereto by strips of iron *d* with rivets or bolts.

C is the water-space surrounding the box A, into which the rim or sides *b* dip or sink when in use. When the gas is being purified, it rises up inside the box A, Fig. 1, and exerts a pressure against the water *w* in the water-space C, and tends to force it up in the said water-space on the outside of the rim *b*, as shown in Fig. 2. The portion of the said rim *b*, when made of iron, rusts very rapidly where submerged. By the use of the sheet-lead the rim at that place is made more durable, yet to make it still more lasting I cover a portion of the said lead forming the said rim *b* with sheet-rubber *e*, and secure it to the lead by strips held by bolts or rivets. As the sheet-lead would not of itself be stiff enough to support the weight of the entire cover, I would use at the corners, and also between the same, a suitable number of stiff metal legs, *f*, Fig. 2, to support the cover, and would properly secure by bolts or rivets the sheet-lead rim to the same. It is not the intention to use in all cases the rubber *e* with the lead, although such use would be of advantage, and even rubber itself without the lead would, when properly secured, be more lasting than the iron now used.

As this invention can be applied with advantage in a variety of modified forms to the several and many apparatuses used in the manufacture of gas, and as such modifications of this invention would needs be determined by the nature and use of such apparatuses, I do not confine myself to the manner of attaching the sheet-lead or the rubber, or to the extent of its application in surface, or to their particular combinations one with another or to other materials. They may be used with advantage in combination or singly with such gas apparatuses so long as the lead and rubber are used, either singly or in combination, in lieu of the usual iron now used.

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

1. In the construction of covers for gas-pu-

rifying boxes, center-seals, condensers, and the like, sheet-lead rims, as described, for the purpose set forth.

2. In the construction of the above-mentioned articles, rubber, as described, for the purpose set forth.

3. The combination of lead and rubber in the construction of covers of purifying-boxes,

center-seals, condensers, and the like, used in the manufacture of gas, substantially as and for the purpose set forth.

ANDREW FULTON.

Witnesses:

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