

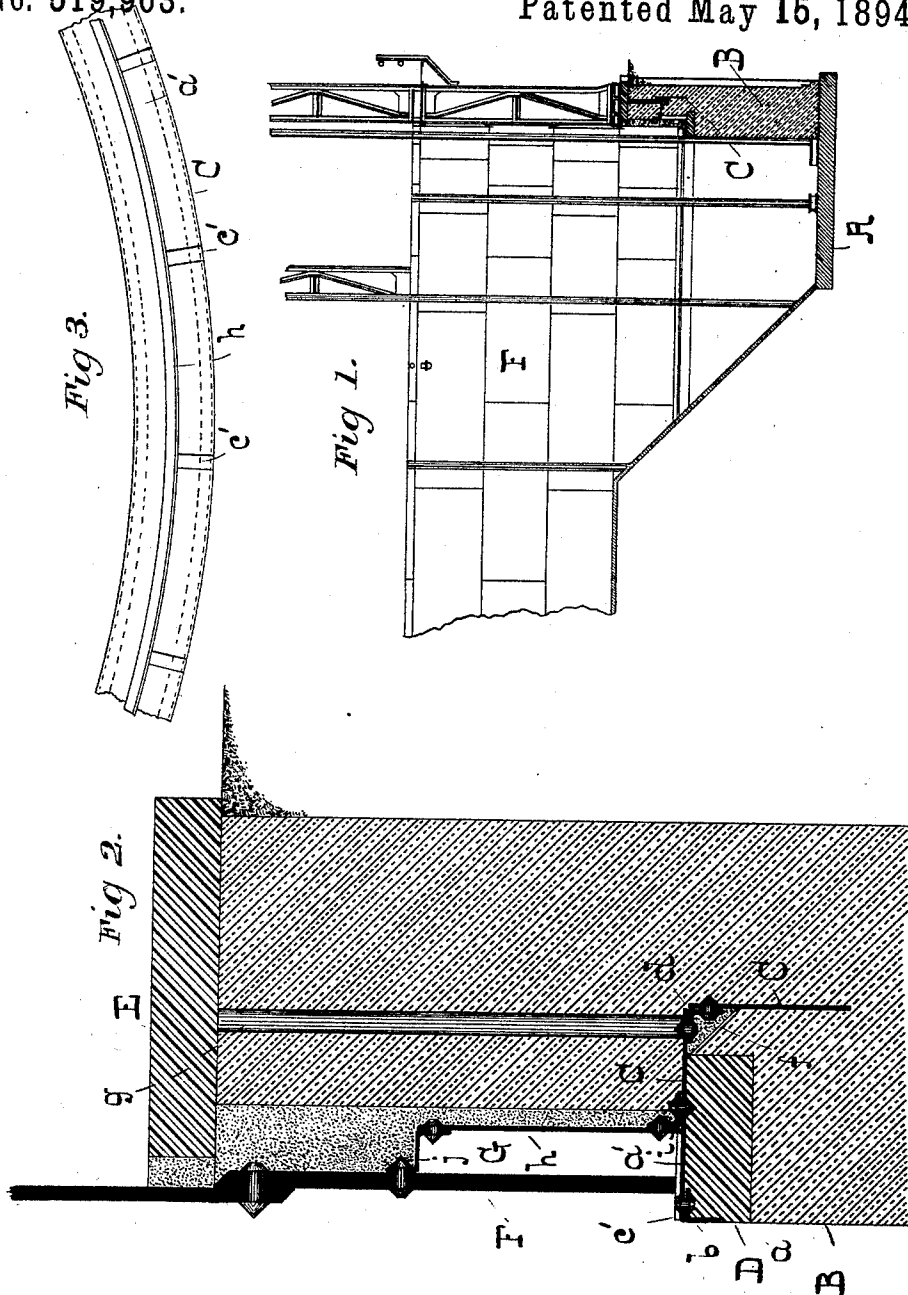
(No Model.)

3 Sheets—Sheet 1.

F. MAYER.
GAS HOLDER TANK.

No. 519,963.

Patented May 15, 1894.



WITNESSES:

Dan'l Fisher
George Hemsley

INVENTOR

Frederick Mayer
BY *Wm. H. T. Rhoads,*
ATTORNEYS.

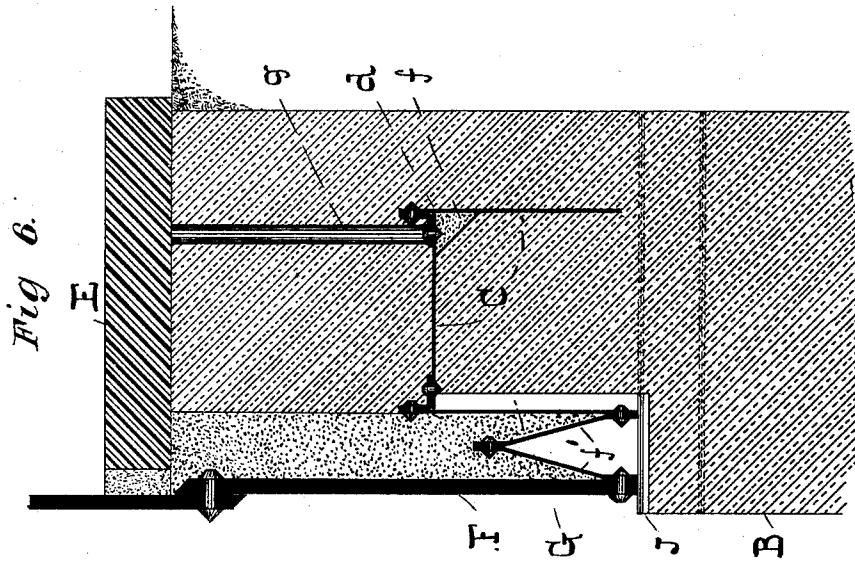
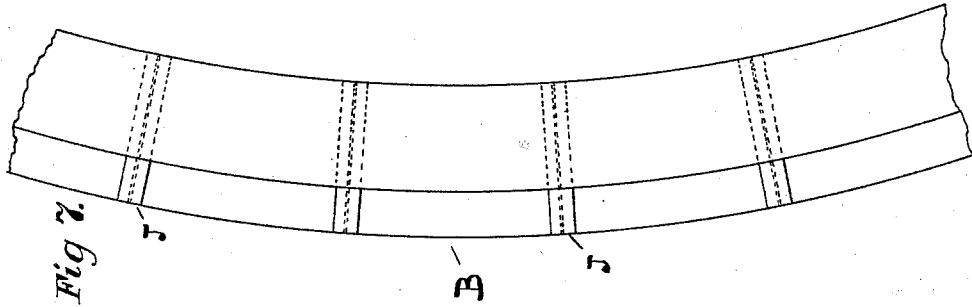
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Dan'l Fisher
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INVENTOR

Fredrick Mayer,
BY *W. H. T. Moore*,
ATTORNEYS.

UNITED STATES PATENT OFFICE.

FREDERICK MAYER, OF BALTIMORE, MARYLAND.

GAS-HOLDER TANK.

SPECIFICATION forming part of Letters Patent No. 519,963, dated May 15, 1894.

Application filed December 30, 1893. Serial No. 495,185. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK MAYER, of the city of Baltimore and State of Maryland, have invented certain Improvements in Gas-Holder Tanks, of which the following is a specification.

This invention relates to improvements in combined metal and masonry tanks; and particularly to the formation of an expansion joint or flexible connection between the lower edge of the shell of the gas holder tank, and the devices which are employed to make a water tight joint between the said shell and the brick wall or concrete masonry which surrounds the lower part of the tank, as will hereinafter fully appear.

In the description of the said invention which follows reference is made to the accompanying drawings, forming a part hereof, and in which—

Figure 1 is a sectional elevation of a portion of a gas holder tank embodying the present invention. Fig. 2 is an enlarged section of a portion of the tank showing the same arrangement of parts as that illustrated in Fig. 1. Fig. 3 is a plan of a portion of the invention on a somewhat reduced scale. Figs. 4, 5 and 6 illustrate the invention in slightly modified forms, as hereinafter described. Fig. 7 is a plan, on a reduced scale, of certain parts shown in Fig. 6.

Referring to Figs. 1, 2 and 3 of the drawings, A represents the concrete bottom of the tank, and B a circular brick wall erected on the concrete bottom. The concrete bottom is shown only in Fig. 1.

C is an annular plate of angular cross section, embedded or built in the wall B. Its horizontal member a' is partially supported by a stone coping D, the inner edge of which is in alignment with the inner face of the wall B. The said inner edge of the annular plate C has an angle iron rim b which bears against the inner face a of the stone coping D. The portion of the brick wall directly under the corner d of the plate C is cut away to an angle of, say forty-five degrees, whereby a space f is formed. This space is filled with grouting to make a tight joint, through the medium of the stand pipes g which register with holes, not shown, in the horizontal member a' of the

plate C, and are covered by the stone coping E which is placed in position after the completion of the filling operation.

F is the shell of the gas holder tank, resting on radial strips c' on the member a' of the plate C. By the shell F resting on the strips c' instead of on the surface of the member a' of the plate C, a reduced surface is exposed to the edge of the tank, and the movement of the shell caused by its expansion and contraction, is not resisted to the same extent. It is necessary that the shell F should be connected practically water tight, to the plate C, and equally necessary that the connection should be of such character that the shell may have a slight movement independently of the said plate, so that in the expansion and contraction of the shell of the tank, the plate C may not be disturbed, or the brick wall injured. To admit of this, I employ a flexible connection between the shell and the plate C, consisting of a vertical rim h the lower edge of which is united to the plate C by an angle iron ring i and its upper edge secured to the shell by a suitable ring j . The rim h is situated at a suitable distance from the wall B, and in the expansion and contraction of the shell, the upper edge of the rim h is carried with it or sprung out of its original position, the lower edge serving as a hinge, which remains stationary. The space between the shell and the wall, exterior of the rim h , is filled with asphaltum or some other substance susceptible of a slight compression and expansion, to compensate for the movement of the shell. The space G is filled or partially filled with water from the interior of the tank.

In Fig. 4 the rim h is dependent from the annular plate, C and is attached to the lower edge of the shell F by a plate d' but the effect of the expansion joint thereby formed is the same.

In Fig. 5 the connection between the shell and the rim h is by means of a curved annular plate e' which is susceptible of being slightly opened and closed, and thus gives less movement to the rim h .

In Fig. 6 the connecting plate instead of being curved is formed of two inclined sections f' riveted together, the effect, however, is similar to that found in Fig. 5, as regards reducing the movement of the rim h .

In Fig. 6 instead of a stone coping D, I employ a series of radial iron girders J which are built in the wall B, and serve as supports for the shell F. A plan of these girders is shown 5 in Fig. 7 and it will be understood that they combine the offices of the stone coping D and the strips c' shown in Figs. 2 and 3.

I claim as my invention—

10 In combination with the lower end of the shell of a composite gas holder tank, and a fixed plate situated in the foundation wall or

masonry portion of the same, and exteriorly of the shell, a flexible connection between the said parts, whereby the shell may expand or contract in diameter without placing on the 15 said plate, or the wall or masonry, any undue strain, substantially as specified.

FREDERICK MAYER.

Witnesses:

GEO. E. TAYLOR,

WM. T. HOWARD.