

(No Model.)

4 Sheets—Sheet 1.

F. MAYER.
GAS HOLDER TANK.

No. 505,629.

Patented Sept. 26, 1893.

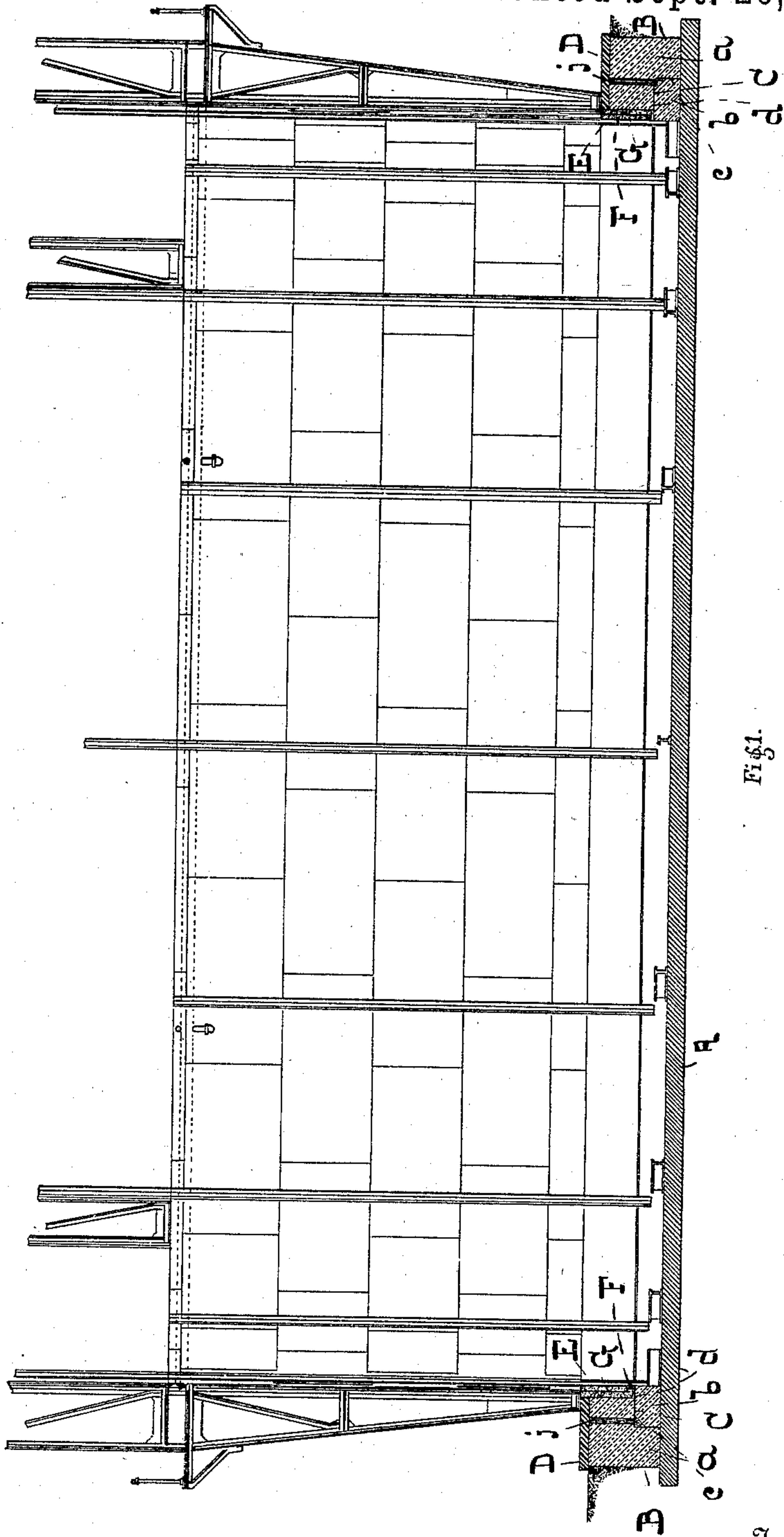


Fig. 1.

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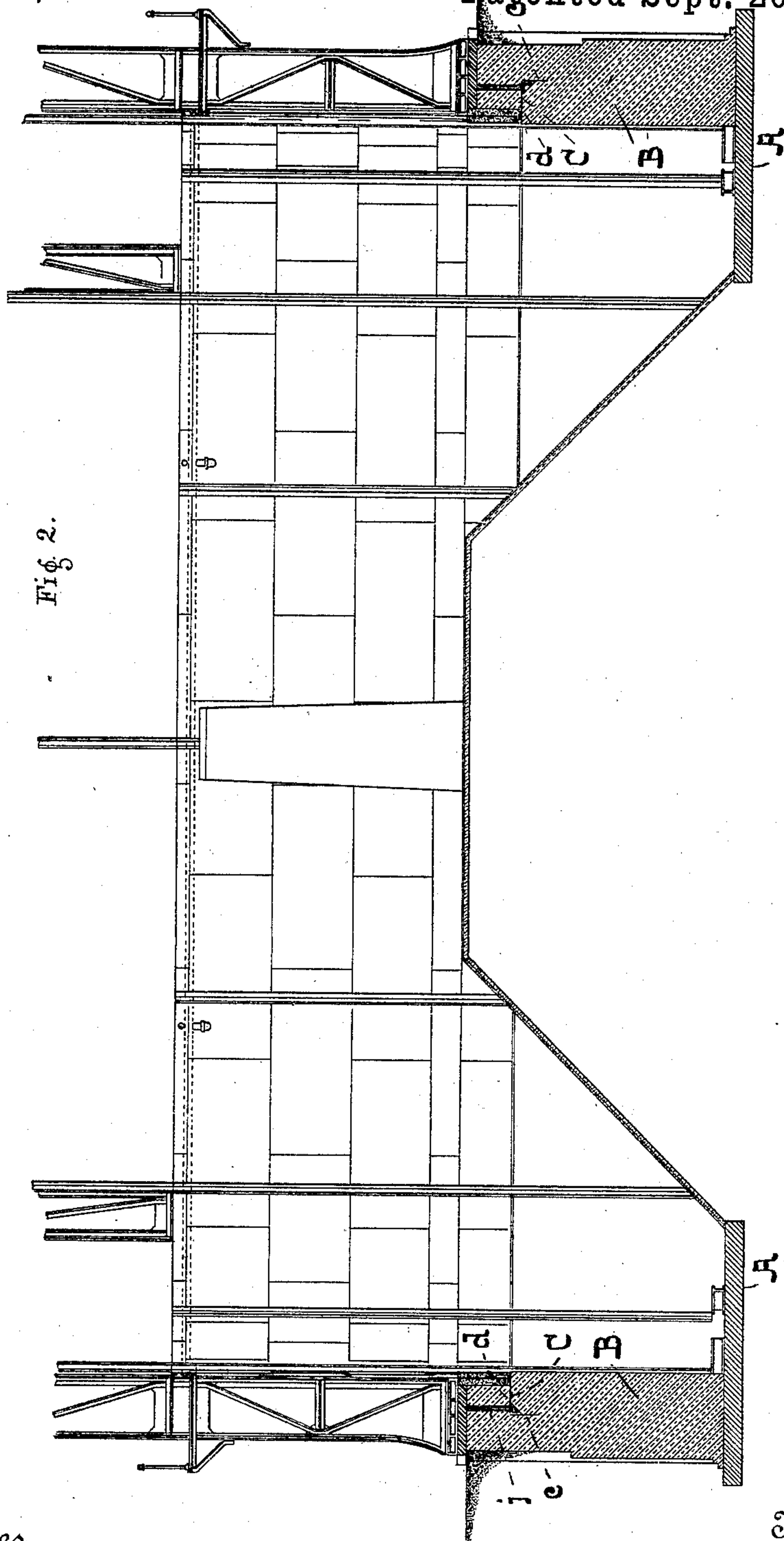


Fig. 2.

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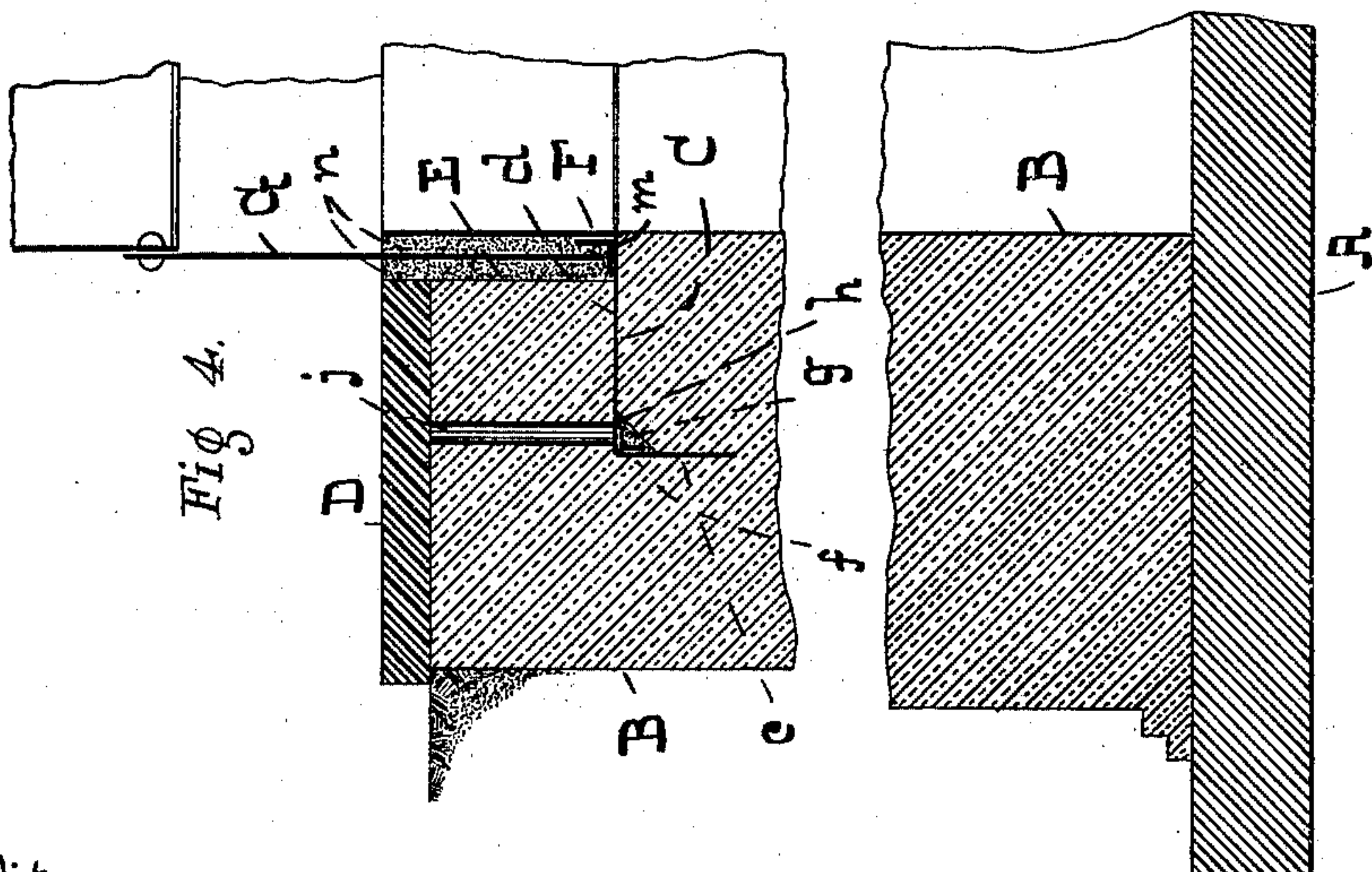
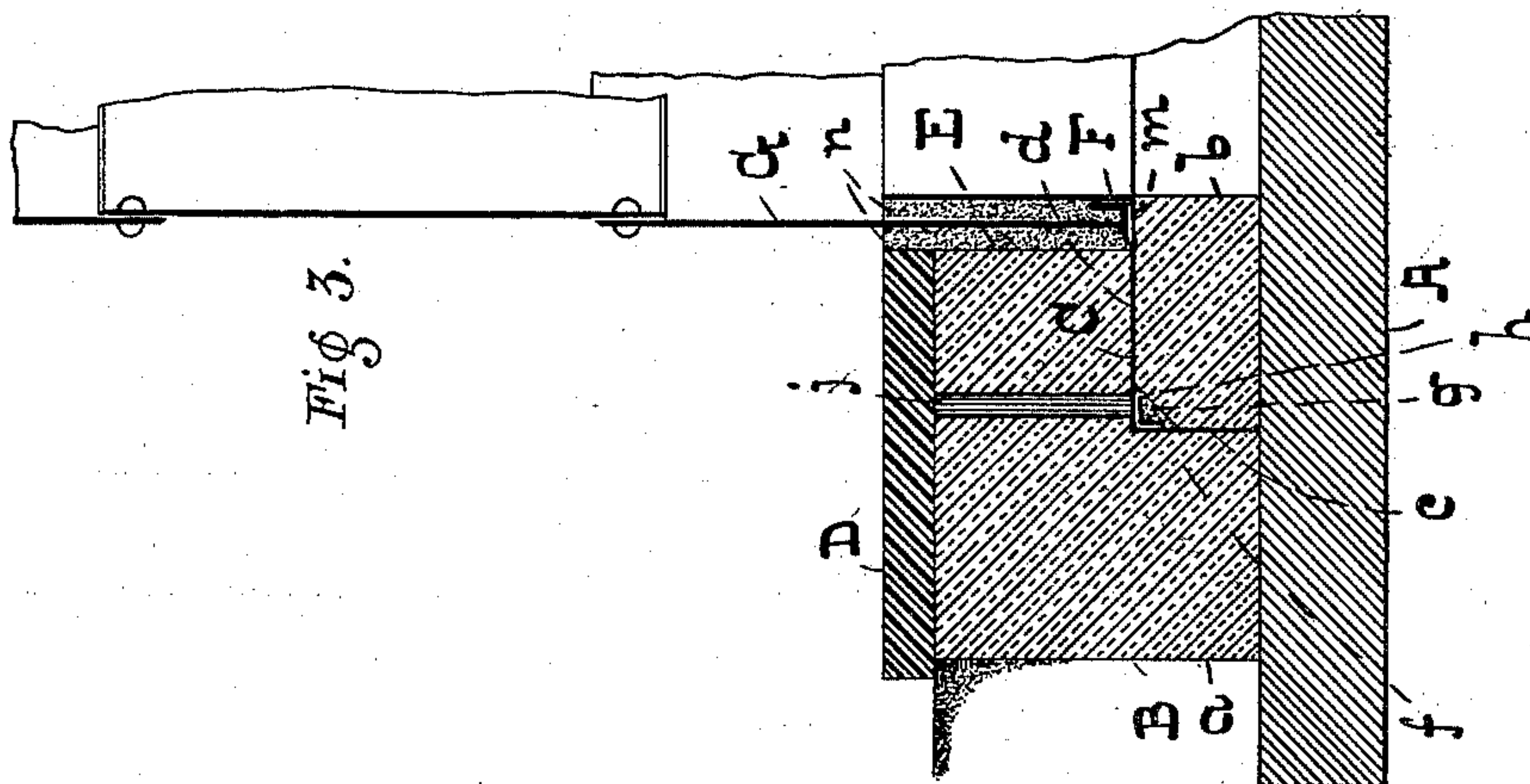
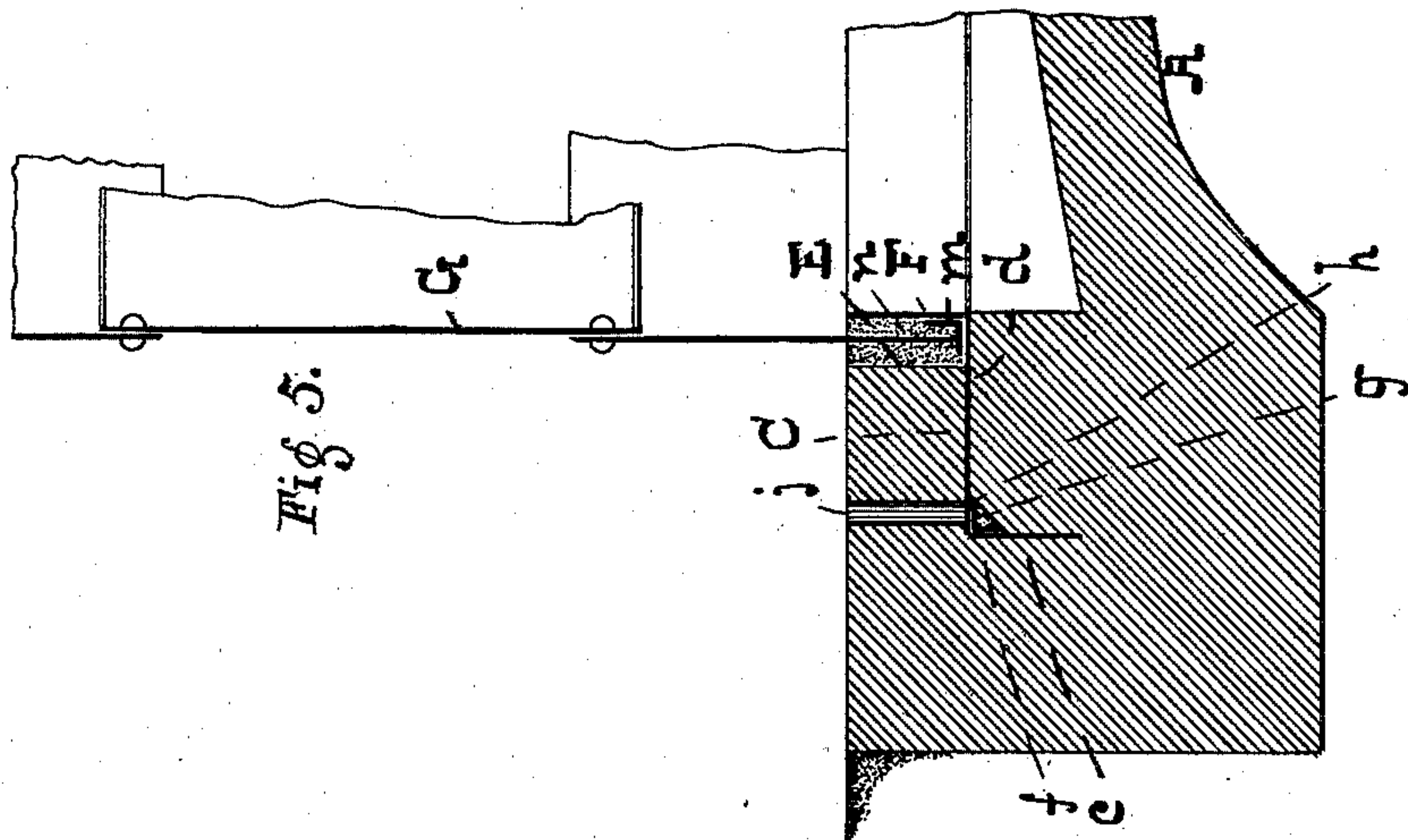
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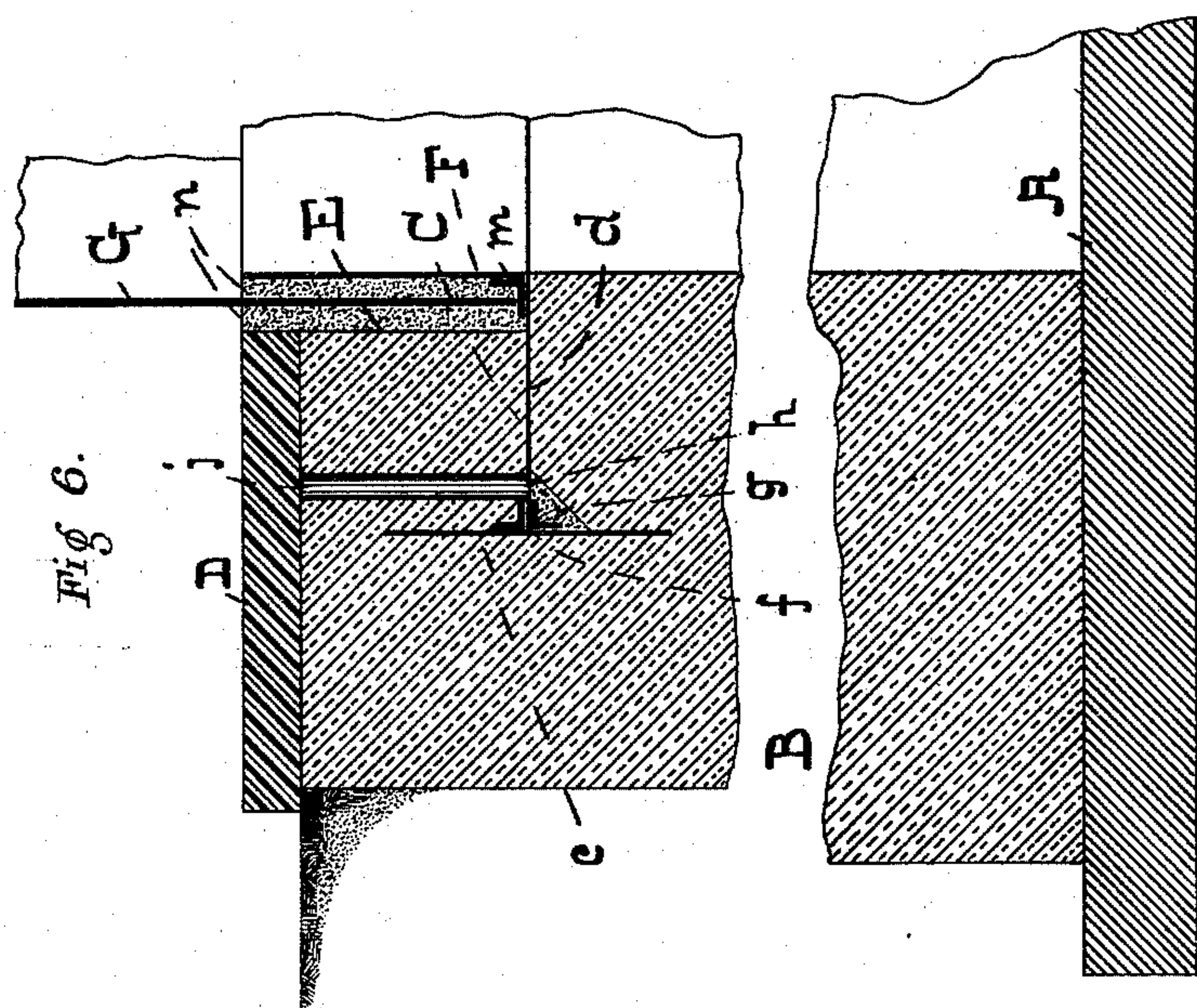
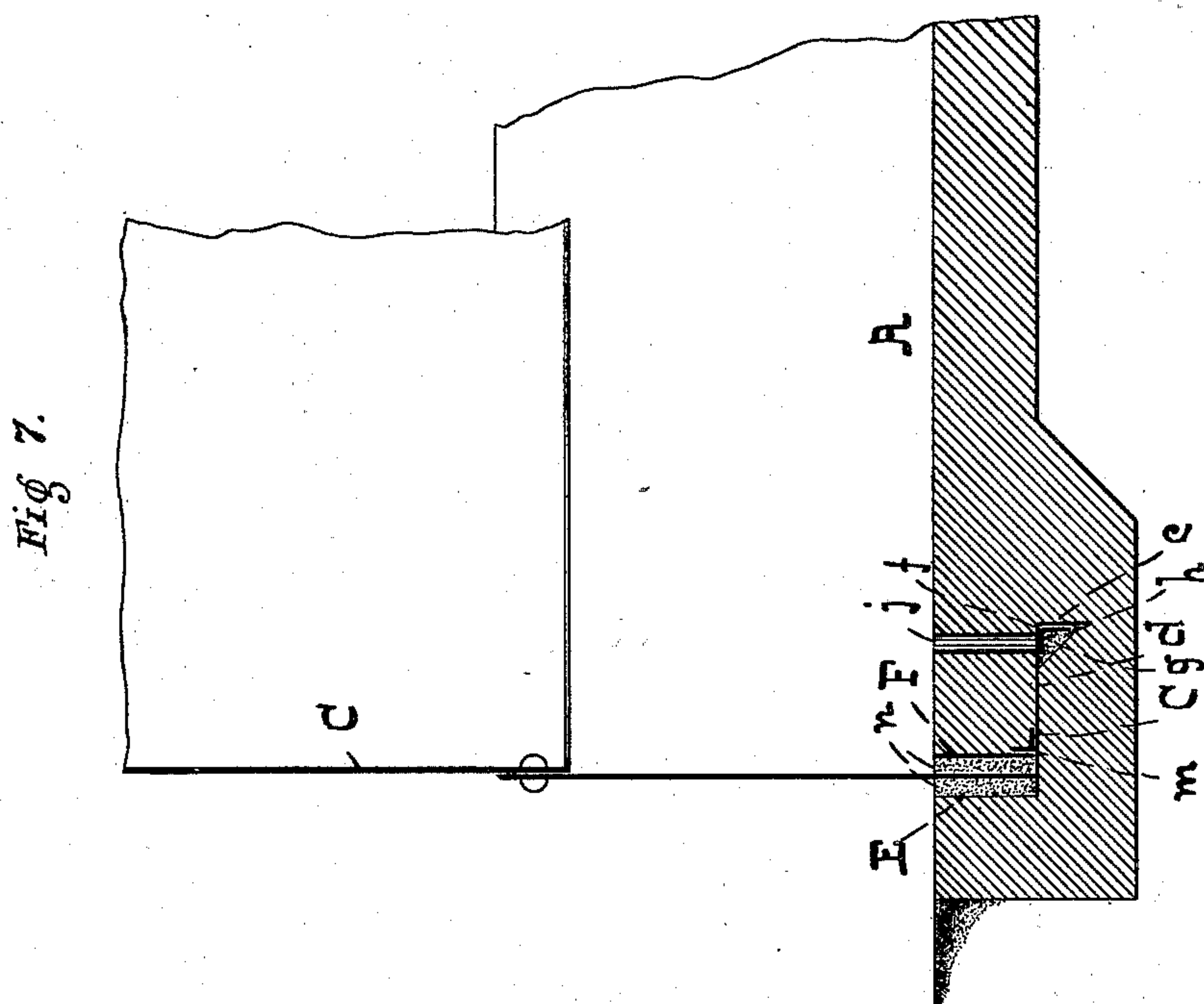
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4 Sheets—Sheet 4.

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UNITED STATES PATENT OFFICE.

FREDERICK MAYER, OF BALTIMORE, MARYLAND.

GAS-HOLDER TANK.

SPECIFICATION forming part of Letters Patent No. 505,629, dated September 26, 1893.

Application filed May 6, 1893. Serial No. 473,238. (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.

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 gas holder tank embodying the present invention, and Fig. 2 is a similar view of a tank illustrating the invention in a modified form. Fig. 3 is an enlarged detail of Fig. 1, and Fig. 4, a similar detail of Fig. 2. Figs. 5, 6 and 7 are details illustrating further modifications hereinafter described.

Referring to Figs. 1, 2, 3, 4 and 6 of the drawings, A represents the circular concrete bottom of the tank, and B a circular brick wall erected on the concrete bottom.

In Figs. 1 and 3 the brick wall B is only of sufficient height to effect a proper tight connection between the shell of the tank and the concrete bottom, as hereinafter described, while in Figs. 2, 4 and 6 the wall is much higher and constitutes, practically, one-half of the tank in height.

In Figs. 1 and 3, the wall B consists of two sections *a* and *b*, and over the latter is placed the metallic annular covering C formed of the plates *c* and *d* secured together by the angle iron ring *f*. The outside corner of the section *b* is flattened to produce the space *g* of angular cross section. The plate *d* and the upper flange of the angle iron ring have holes *h* which register one with the other, the said holes being placed, say ten feet apart; and extending from these holes to the top of the wall B are pipes *j* which together with the wall are covered with the coping D.

E is a recess or rabbet formed in the inner side of the section *a* of the wall B.

F is a plate iron cylinder secured by an angle iron ring *m* to the inner circumference of the plate *d* and extending from the bottom of the wall B to the top of the coping D.

G represents the plate iron shell of the tank, the lower rim of which is seated on the angle iron ring *m*, which is situated at the bottom of the recess or rabbet.

In building the tank shown in Figs. 1 and 3, the concrete bottom A is first prepared. The section *b* of the wall B is next built, and the covering C having the cylinder F, placed over it. The pipes *j* are then erected over the holes *h*, after which the section *a* of the wall B is built. The plate iron shell of the tank is now erected, and after its completion, or partial completion, cement grouting *n* is poured around both sides of the lower rim of the plate iron shell. Grouting is also poured into the pipes *j* so as to fill the space *g*, and also, all vacant spaces below the plate *d*, in order that the grouting may entirely fill the said spaces, temporary extension pipes are screwed onto the ones *j* to give a good head. The last step in the construction of the connection between the plate iron shell and the concrete bottom, consists in placing the coping D, in place.

In building the tank shown in Figs. 2 and 4, in which the brick wall constitutes about one-half of the tank in height, the various steps described are practically the same, the only essential difference being that the wall B is not constructed in two distinct sections. The placing of the annular covering C is, however, about the same, the portion of the wall covered by it, being of course, constructed first.

In the tank shown in Fig. 5, all brick work is dispensed with, and the bottom and foundation for the plate iron shell formed entirely of concrete. The grouting is applied as before described.

In Fig. 6, the plate *c* is extended above the plate *d*. This construction is only necessary in tanks of large diameter and is for the purpose of resisting any expansion of the tank shell caused by atmospheric changes, by binding the entire brickwork surrounding the tank shell.

In Fig. 7, the top of the concrete bottom is level with the ground, and the plate *d* extends inward from the tank shell instead of outward.

I claim as my invention—

1. In a tank for a gas holder, the combination of a plate shell, a concrete bottom, a brick wall erected on the said bottom, having a recess or rabbet in its inner face, an annular plate iron covering for a portion of the wall

having an angular cross section, with an inner rim secured thereto, a plate iron shell with its lower end seated in the recess or rabbet and resting on the horizontal annular plate of the plate iron covering, and suitable grouting situated between the said rim and the shell, and between the shell and the inner side of brick wall, substantially as specified.

2. In a tank for a gas holder, the combination of a plate iron shell the lower end of which rests on a horizontal plate inclosed partially in brickwork or concrete, a cylindrical plate situated at the outer periphery of the said horizontal plate, and a body of cement grouting situated at the junction of the two plates and under the same, whereby the joint between the said plates is made tight, substantially as specified.

3. In a plate metal tank for a gas holder, the means of connection between the bottom and the shell, consisting of a wall having a rabbet formed in the inner face of it, a horizontal plate built in the wall and forming the bottom of the said rabbet, an inner rim attached to the inner edge of the said annular

plate and a cylindrical plate attached to the outer periphery of the said plate, and at the junction of the cylindrical and horizontal plates and below them, a space extending around the entire shell, and pipes built in the brick wall and made to register with holes in the said horizontal plate, whereby grouting may be introduced into the annular space, substantially as specified.

4. In a tank for a gas holder, the combination of a concrete bottom having thereon a wall with a rabbet in its inner surface, an annular plate extending from the inner face of the wall, a cylindrical plate extending downward from the outer edge of the annular plate with a grouting joint at the angle, pipes leading from holes in the annular plate to the top of the wall, and a plate iron shell seated in the rabbet and provided at both sides with grouting whereby a water joint is effected, substantially as specified.

FREDERICK MAYER.

Witnesses:

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