

T. Grodjiński,

Gas Meter.

N^o 24,736.

Patented July 12, 1859.

Fig. 1.

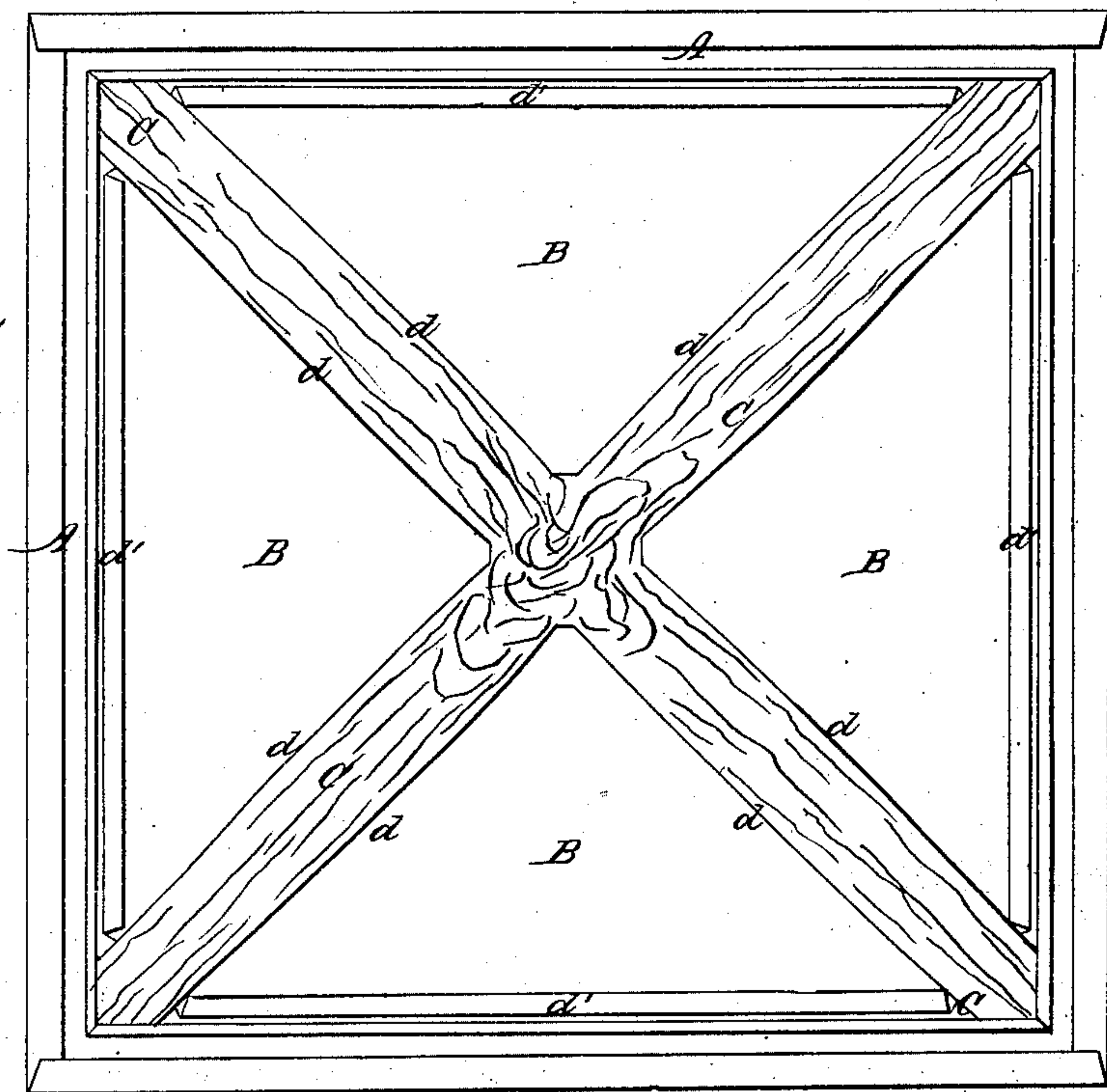


Fig. 2.

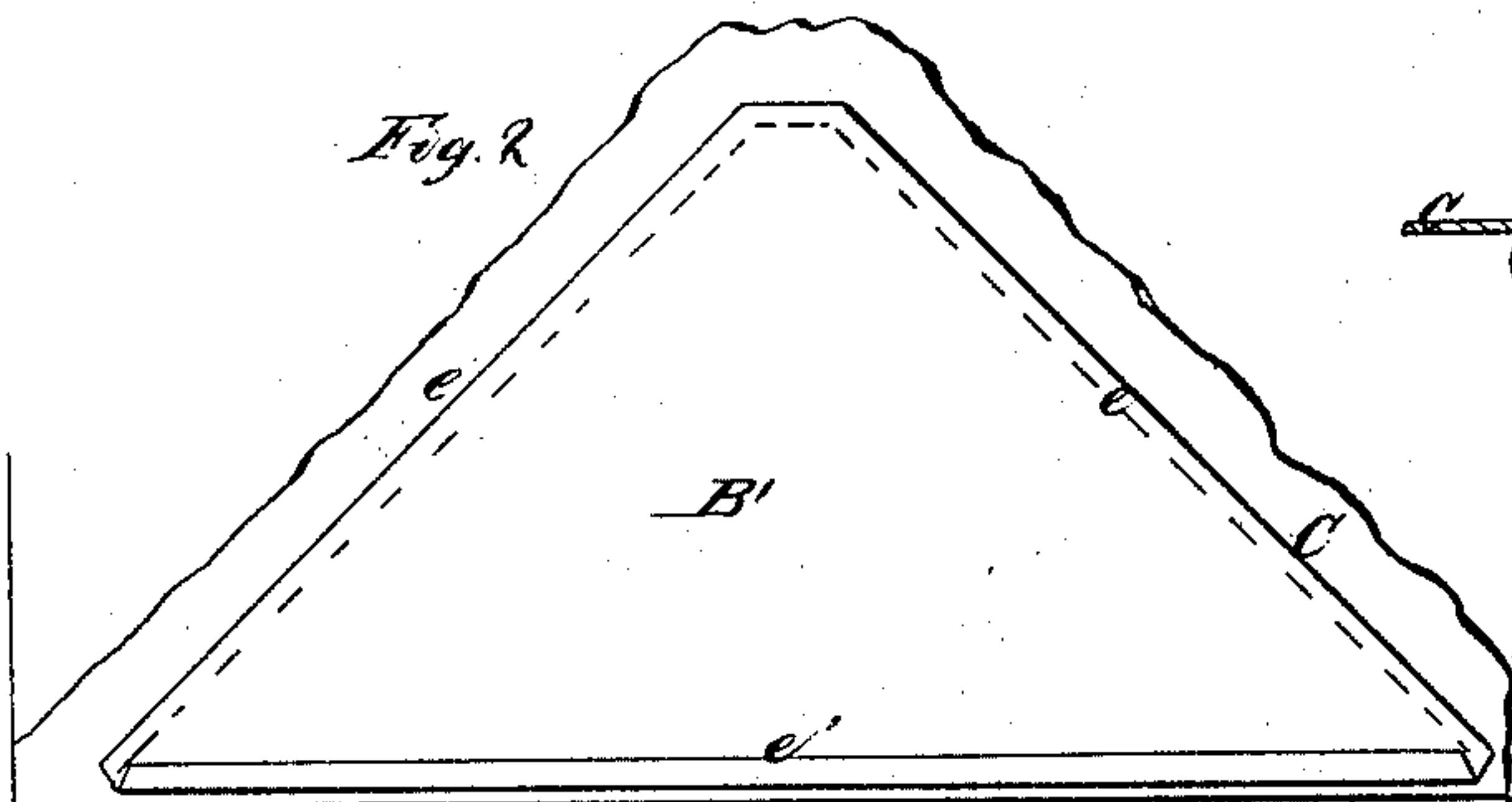
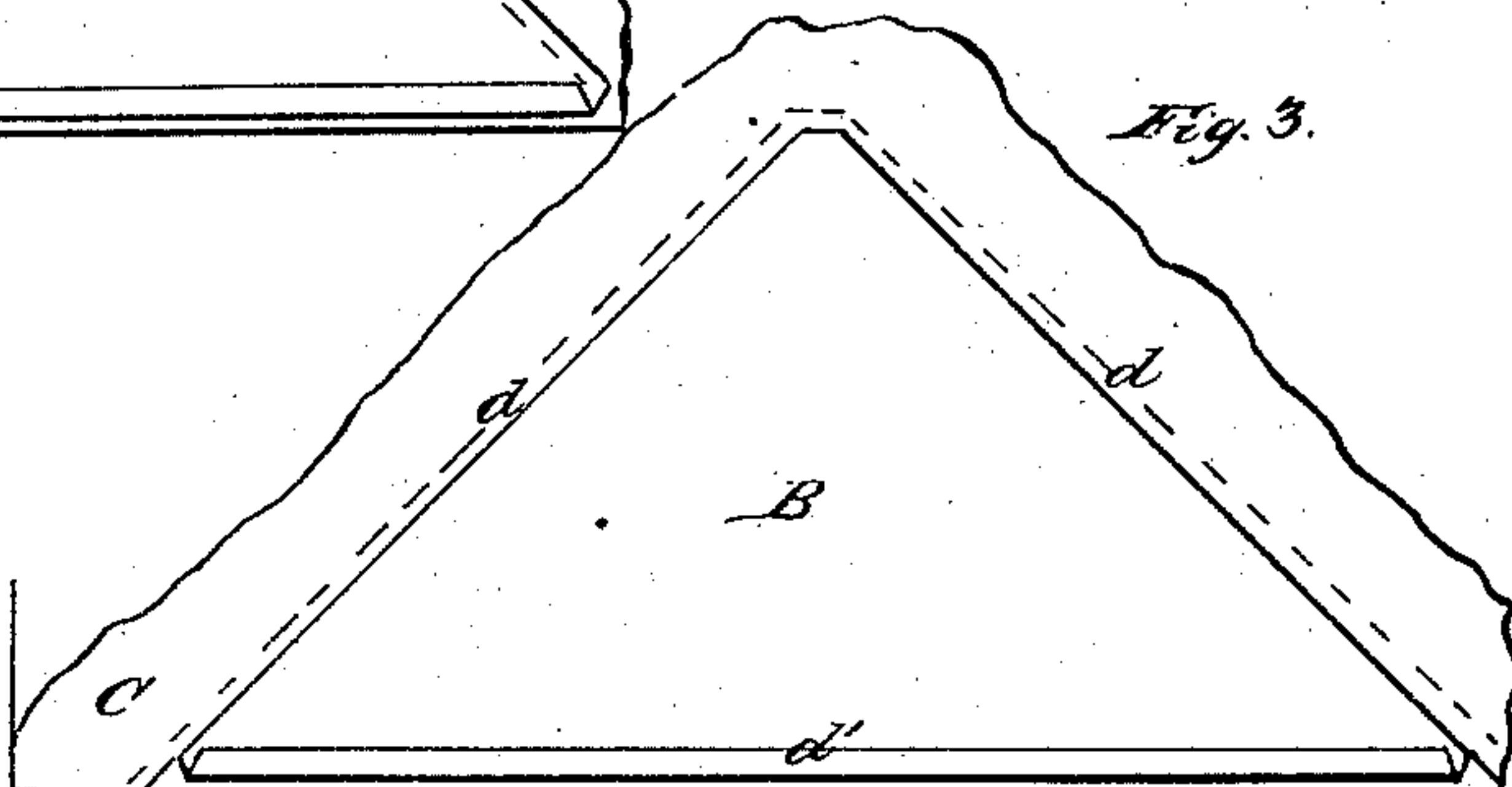


Fig. 3.



Witnesses.
Benjamin
Chas Low

Inventor.
Tobias Grodjiński

UNITED STATES PATENT OFFICE.

TOBIAS GRODJINSKI, OF NEW YORK, N. Y.

IMPROVEMENT IN DRY GAS-METERS.

Specification forming part of Letters Patent No. **24,736**, dated July 12, 1859.

To all whom it may concern:

Be it known that I, TOBIAS GRODJINSKI, of New York, in the county and State of New York, have invented a new and useful Improvement in the Mode of Constructing the Diaphragms of Dry Gas-Meters; and I do hereby declare that the following is a full and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 represents the one side of a diaphragm having the usual number and arrangement of the plates, the latter being each constructed or applied according to my improvement; and Figs. 2, 3, and 4, sectional parts of the same.

Like letters in the several figures indicate the same objects.

In the construction of the diaphragms of dry gas-meters the plates on the gas side of the flexible or yielding part of the said diaphragms have heretofore been secured thereto by first fastening a covering of leather over one side of each of the said plates, then gluing or otherwise cementing them thereby to the said side of the flexible part, and finally connecting them fast to respectively corresponding plates on the opposite side by means of leaden rivets through the said several thicknesses; and the principal objection to this mode of construction is that in a short time the adhesion of the cement to the leather is destroyed by the chemical action of the gas thereon or the absorption of oily matter therefrom by the leather, thus permitting the gas to escape through the rivet-holes, and consequently rendering the diaphragm inefficient and the substitution of a new one necessary.

My invention has for its chief object the removal of this objection; and it consists in attaching the plates to the said flexible part or leather of the diaphragm by folding the inner edges of the one plate over the corresponding edges of the other in such a manner as to embrace between them, substantially as hereinafter described, a sufficient portion of the said flexible part or leather to secure the combination of the whole together without perforating the leather for the purpose.

In the drawings, A represents the frame of the diaphragm, B and B' the plates, and C the flexible or leather part of the same.

The frame A is made, in the usual manner, of two thicknesses of tin-plate lapped over each other, with the boundary edges of the

leather, C, between them, in such a manner as to prevent the gas from passing between the plates, the said leather having been first stretched over a "former," so as to adapt it to the purpose of the diaphragm.

The plates B and B' are in this instance eight in number—four on each side of the leather, C—made of tin-plate and of a triangular form, and also placed in relation to the frame A in the usual manner, as shown in the drawings by Fig. 1; but instead of gluing or cementing and riveting them to the leather, as heretofore, I make one, B, of each pair about an eighth of an inch shorter along its inner sides, *d d*, than the opposite one, B', and (placing them in juxtaposition on opposite sides of the leather, C, with their longer sides, *d'* and *e'*, even with each other and at a sufficient distance from the frame A to allow the free motion required in the said flexible part C) turn the projecting edges *e e* of the other plate, B', with the leather at their edges, over and press them firmly down upon the edges *d d* of the said plate B, as shown, enlarged, in Fig. 4, thus firmly securing each pair of the said plates B and B' to the flexible part C of the diaphragm without perforating the said flexible part or leather, and so avoid the objectionable consequences peculiar to the former mode of attaching the plates, before described.

It is obvious that if either one or two pairs of trapezoidal plates are used, as is sometimes the case, instead of the four pairs of triangular ones shown, as a means of supporting the flexible part C of the said diaphragm, the same can be secured together, with the leather between, by overlaps precisely in the same manner. I therefore do not confine the application of this overlapping mode of fastening the plates and leather together to any particular form or number of pairs of plates in the construction of the said diaphragms; but,

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

Attaching each pair of the plates B and B', or their substantial equivalents, to the flexible part C of the diaphragms of dry gas-meters by overlapping parts of the one upon the other, substantially in the manner and for the purpose set forth and described.

TOBIAS GRODJINSKI.

Witnesses:

BENJ. MORISON,
THOS. LOW.