

No. 621,564.

Patented Mar. 21, 1899.

F. J. GUSTINE.
ACETYLENE GAS GENERATOR.

(Application filed Mar. 18, 1898.)

(No Model.)

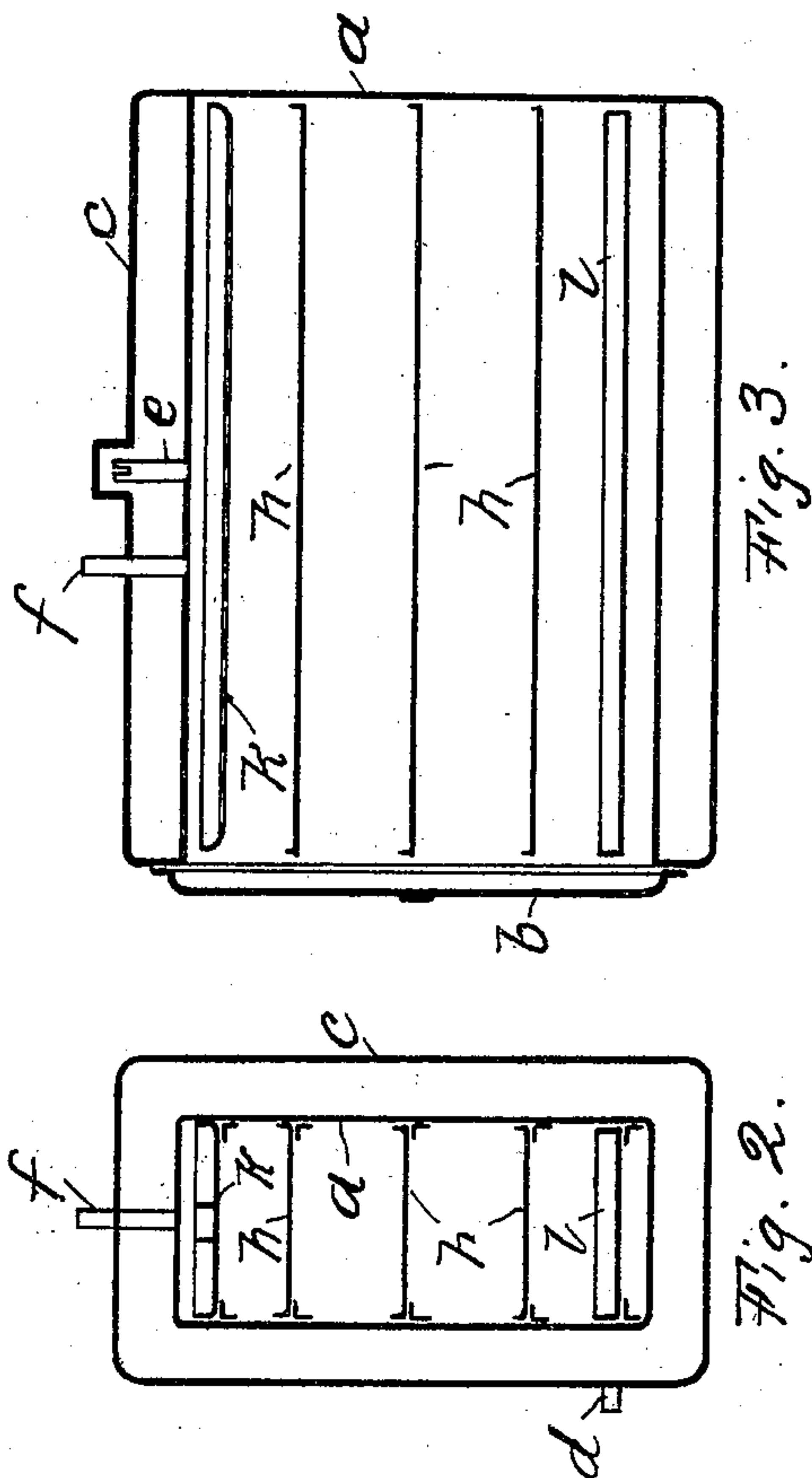


Fig. 3.

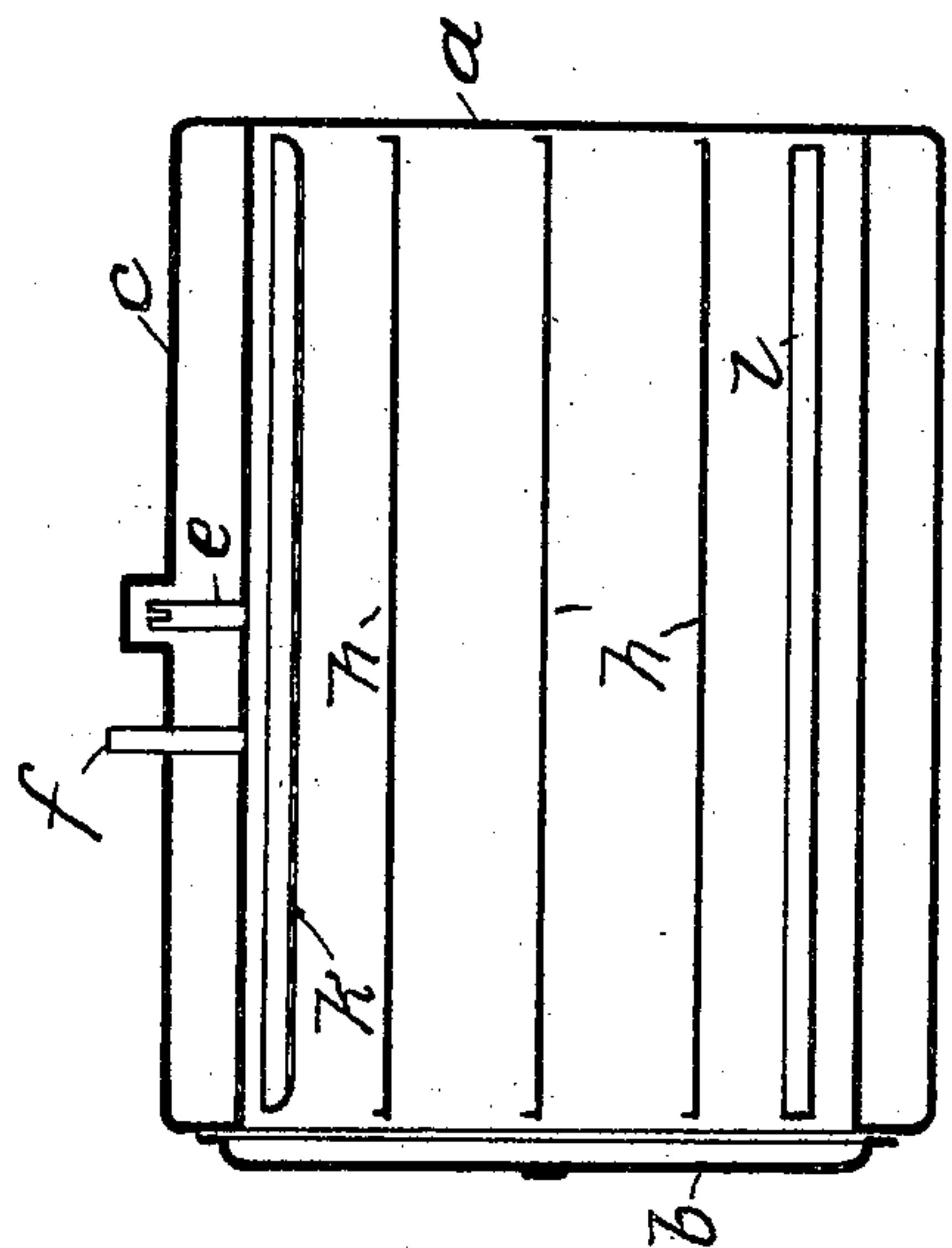


Fig. 2.

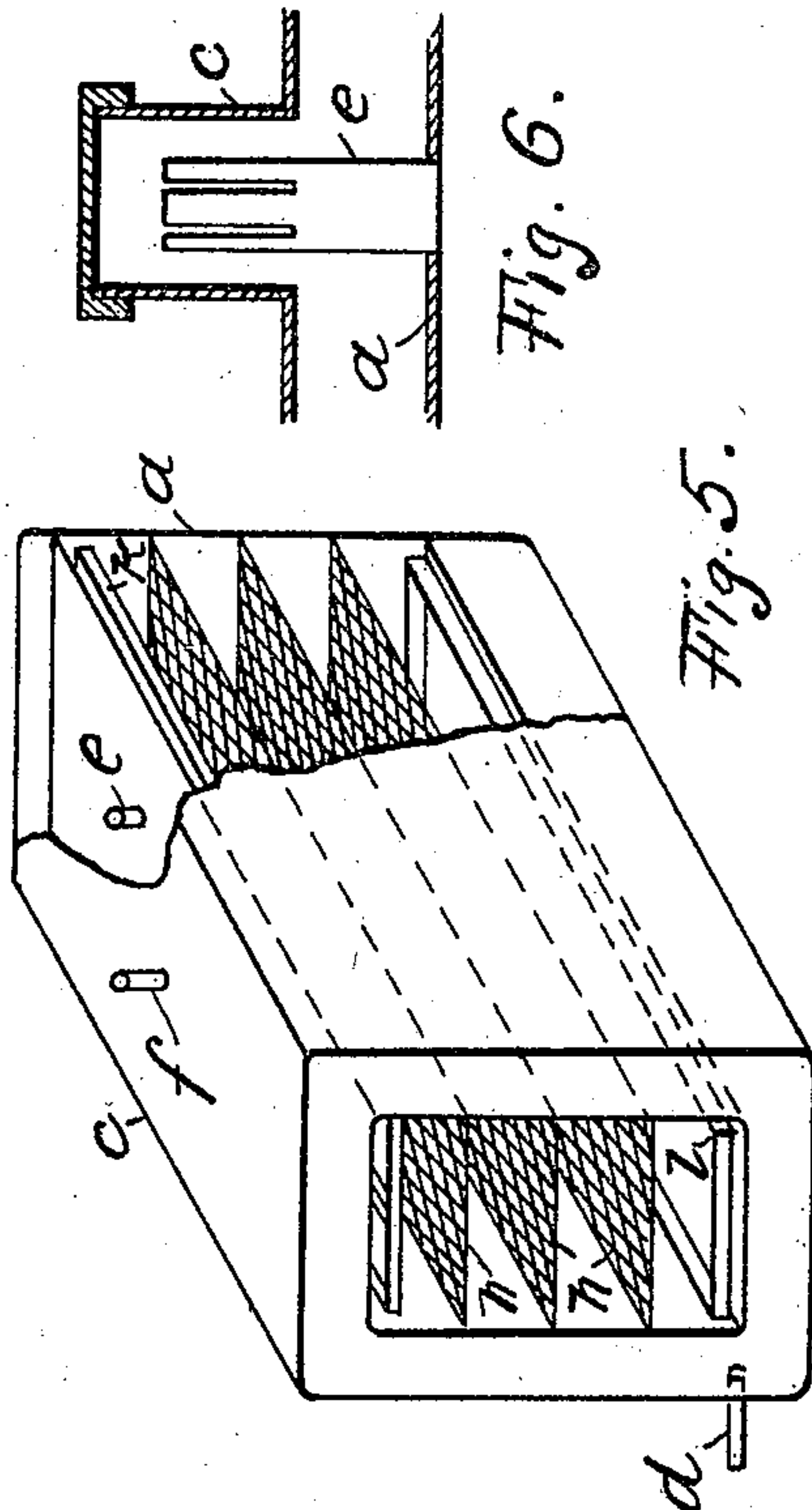


Fig. 6.

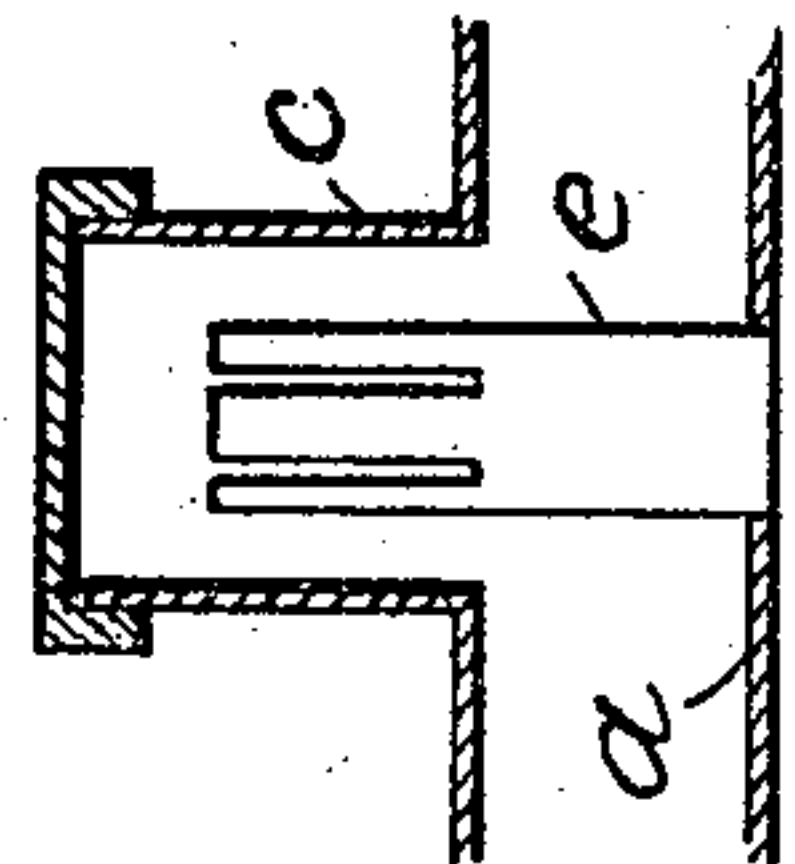


Fig. 5.

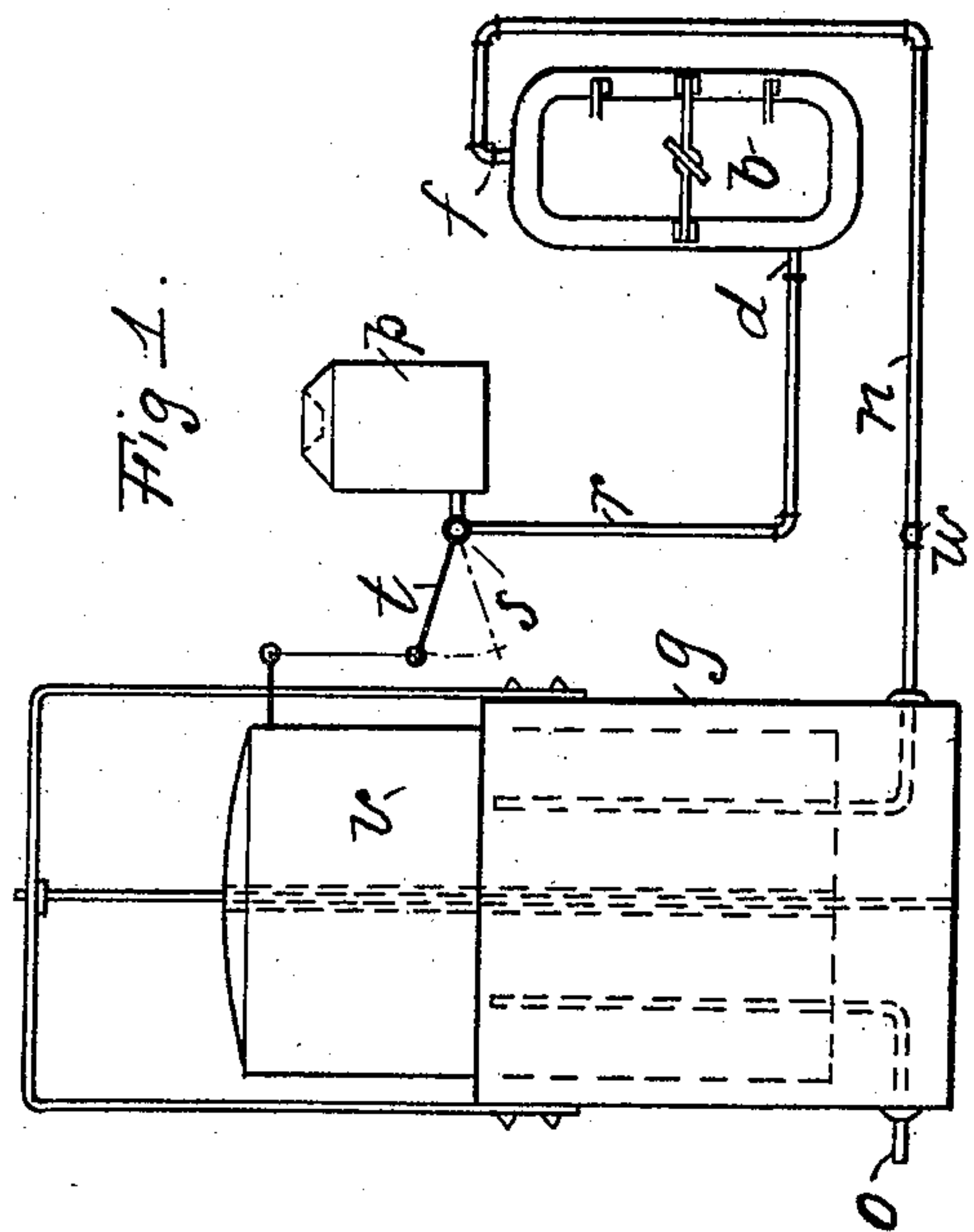


Fig. 1.

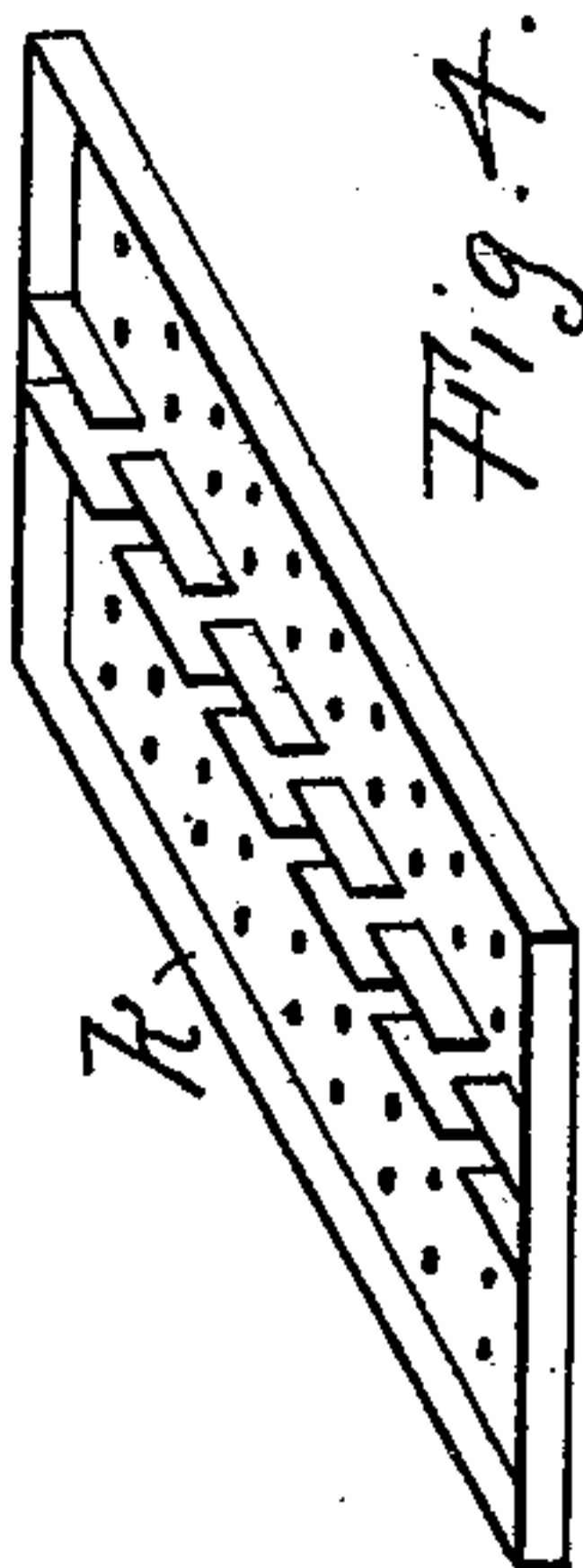


Fig. 4.

WITNESS:

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FRANKLIN J. GUSTINE, OF NEW ORLEANS, LOUISIANA, ASSIGNOR TO THE
STANDARD ACETYLENE GAS COMPANY, LIMITED, OF SAME PLACE.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 621,564, dated March 21, 1899.

Application filed March 18, 1898. Serial No. 674,352. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN J. GUSTINE, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and useful Improvement in Acetylene-Gas Generators, of which the following is a specification.

My invention relates to the production of illuminating-gas from calcium carbide, this being accomplished by bringing jets of water into contact with the carbide in a gas-tight receptacle; and the object of my invention is to construct a generator in which the water is uniformly supplied to the carbide and in which the quantity of water entering the generator for that purpose is regulated automatically and is externally controllable. I attain these objects by the device shown in the accompanying drawings, in which—

Figure 1 is a general elevation of a generator with gasometer and water-tank, forming a complete gas-producing plant. Fig. 2 is a vertical cross-section of the generator. Fig. 3 is a longitudinal section of the same. Fig. 4 is a perspective view of the dripping-plate *k*. Fig. 5 is a perspective view of the generator, having a portion of the outer casing broken away to show the interior construction. Fig. 6 is a section through the interior water-nozzle *e*.

The generator consists, essentially, of an oblong box of suitable metal *a*, having one of its ends closed, and a removable door *b*, which is clamped against the opening in the other end, so as to make a gas-tight receptacle.

As shown by Figs. 2, 3, and 5, the box *a* is provided with an outer jacket *c*, completely surrounding the box on the two sides and at the top and bottom. A nozzle *d* allows the water to fill the space inside of the jacket *c*, and an interior slotted nozzle *e* conducts the water from the water-space to the interior of the box *a*. A nozzle *f* conducts the gas from the interior of the box *a* and passes through the jacket *c* to the outside, where connection is made with the gasometer *g*. The interior of the box is provided with a series of removable shelves of wire-gauze *h*, upon which is spread commercial calcium carbide. Above

the top shelf is placed the dripping-plate *k*, (shown in detail by Fig. 4,) this consisting of a perforated plate with a vertical flange all around its edges and a slotted gutter at the middle, which uniformly distributes the water entering at the nozzle *e* to the perforated surface of the plate, whence it falls to the carbide upon the upper shelf, the excess of water dripping to the next shelf below, and so on to the lower shelf, the unconsumed water falling into the dripping-pan *l*, which is removable. The gas resulting from the combination of the water with the carbide issues at the nozzle *f*, thence being conducted through the pipe into the gasometer *g*, from which it is drawn at the nozzle *o*. The nozzle *d* connects with the water-tank *p* by the pipe *r*, in which is placed a cock *s*, the opening and closing of which are regulated by a lever *t*, actuated by the floating cylinder *v*. As the gasometer is filled with gas from the generator the cylinder *v* rises and gradually closes the cock *s*, this resulting in a diminution of the quantity of water supplied to the generator and a consequent lessening of the amount of gas produced, a downward movement of the cylinder producing an increased quantity of gas. The water in passing through the water-space inside of the jacket serves the additional purpose of regulating the temperature of the generator. By referring to Fig. 6 the action of the inlet *e* is clearly illustrated, this nozzle projecting into a closed dome in the jacket *c*, the slots in the pipe extending downward to the level of the jacket, and as the quantity of water in the dome is very small the least variation in the water-supply causes an instant change in the level of the water in the dome and a consequent lessening of the supply to the carbide. The gas is prevented from escaping through the nozzle *e* by the location of the water-supply pipe *r* at the bottom of the jacket, and as a certain quantity of water remains in the tank this prevents the escape of gas. A check-valve *w* in the pipe *n* prevents the gas from escaping from the gasometer when the door *b* of the generator is opened. As is evident, the production of gas is altogether automatically accomplished, the only attention necessary

being the charging of the generator with carbid at the beginning and the removal of the residuum after the carbid has been entirely consumed.

5 What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a gas-generator of the character described the combination of a gas-tight box having a suitable door permitting access to
10 the interior thereof, said box being provided with removable shelves of wire-gauze arranged in horizontal tiers across the inside of box, with a removable dripping-plate situated
15 above top shelf, said dripping-plate consisting of a flat plate with a vertical flange all around edges, a slotted gutter being provided at middle of plate for distributing water from
20 nozzle in top of box to the perforated surface of plate, said perforations distributing the water uniformly to the carbid on the shelves

below dripping-plate substantially as described.

2. In a gas-generator of the character described, the combination of a gas-tight box, having a jacket completely surrounding the
25 outer sides of box, with a water-inlet attached to the top of said box inside of jacket, vertical slots being provided in the tube and extending downward from the upper extremity
30 of tube to a level with surface of jacket, said pipe being surrounded by a pipe of slightly larger diameter, extending slightly above the
upper end of inner pipe, said outer pipe being attached to jacket, and being closed by
35 a cap at its upper end: substantially as described.

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Witnesses:

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