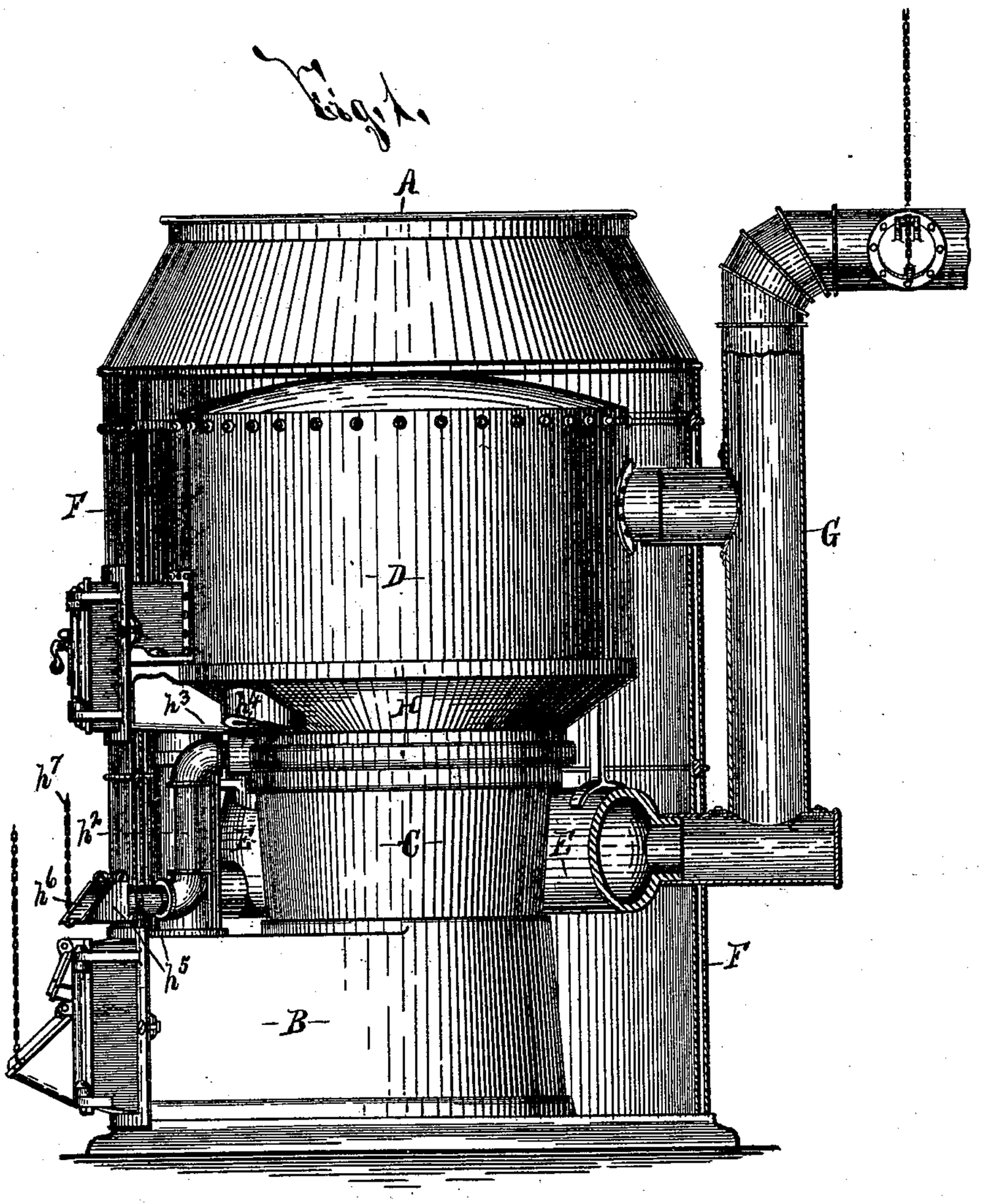
(No Model.) 2 Sheets—Sheet 1.

J. F. PEASE.

GENERATOR.

No. 554,456. Patented Feb. 11, 1896.

Fig. 1.



WITNESSES:

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

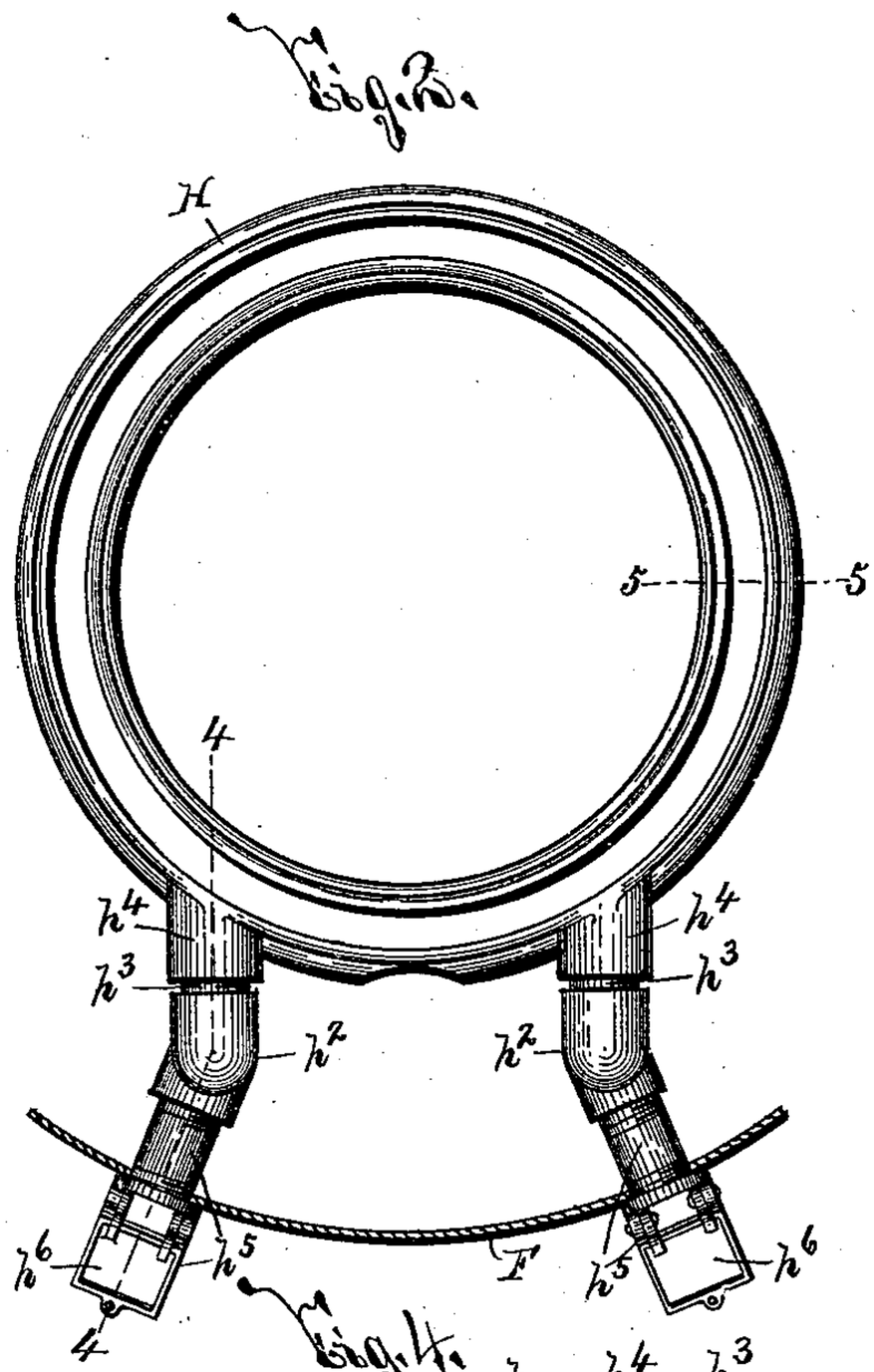


Fig. 4.

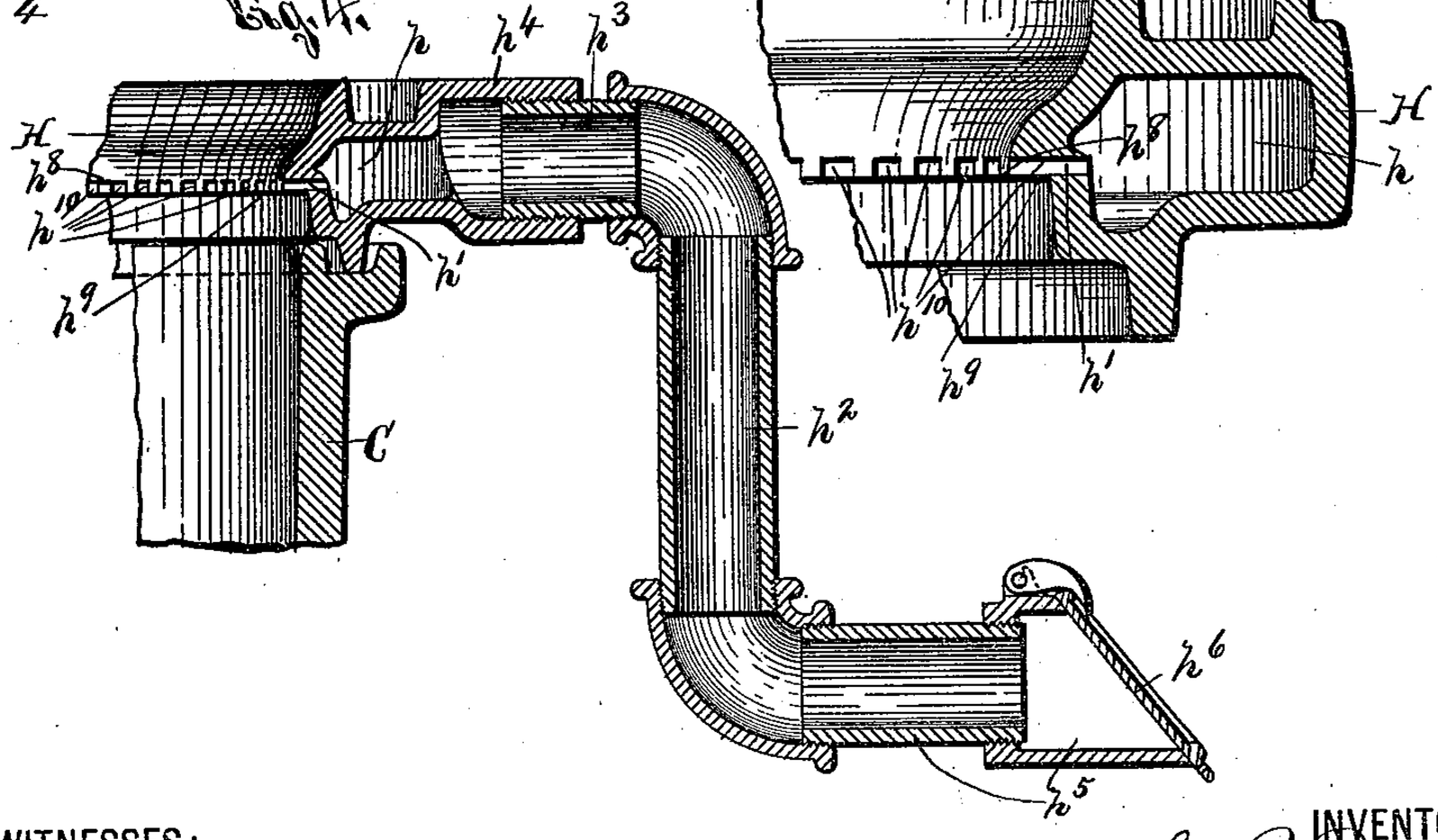
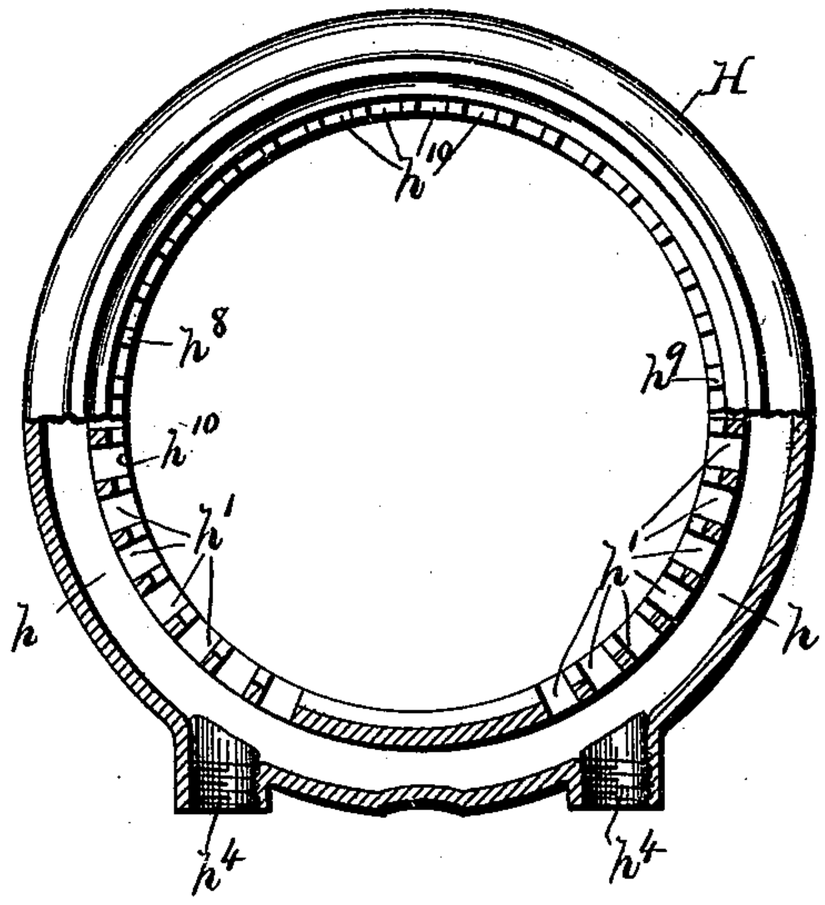


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN F. PEASE, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE J. F. PEASE FURNACE COMPANY, OF SAME PLACE.

GENERATOR.

SPECIFICATION forming part of Letters Patent No. 554,456, dated February 11, 1896.

Application filed October 30, 1894. Serial No. 527,426. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. PEASE, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Generators, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to improvements in generators, and particularly to gas-rings therefor, and has for its object the production of a simple and practical device which reduces to a minimum the escape of unconsumed fuel with the products of combustion, is not liable to become clogged with soot, ashes, &c., and is particularly practical and effective in operation; and to this end it consists, essentially, in a ring provided with an air-chamber and a series of apertures of greater length than width opening from the air-chamber and discharging above the fuel in the generator.

It also consists in an annular projecting shoulder on the inner wall of the gas-ring formed with cut-outs aligned with said apertures and in the general construction and arrangement of the component parts, all as hereinafter more particularly described, and pointed out in the claims.

In describing this invention reference is had to the accompanying drawings, forming a part of this specification, in which like letters indicate corresponding parts in all the views.

Figure 1 is an elevation of a generator provided with a gas-ring constructed in accordance with my invention, parts of the generator being broken away for more clearly illustrating the gas-ring. Fig. 2 is a top plan view of the detached gas-ring, the air-inlet pipes connected thereto, and a portion of the outer shell of the generator. Fig. 3 is an inverted plan view, partly broken away, of the detached gas-ring. Fig. 4 is a detail vertical sectional view taken on line 4 4, Fig. 2, a portion of the fire-pot being also illustrated; and Fig. 5 is a detail sectional view taken on line 5 5, Fig. 2.

It is well known that in all generators there is more or less waste of fuel, owing to the escape of unconsumed carbon with the products of combustion, and to obviate this undesirable result various devices have been constructed for discharging air, steam, &c., in suitable proximity to the burning fuel.

My invention is designed to accomplish this end by forcing thin sheets of air directly above the fuel, and is so constructed that the liability of ashes, dust, &c., preventing its operation is reduced to a minimum.

A represents a generator, which is of any desirable form, size, and construction, and is provided with an ash-box B, a fire-pot C, a combustion-chamber D above the fire-pot, a radiator E surrounding the fire-pot, an outer shell F, and a smoke or exit pipe G, connected to the combustion-chamber D and the radiator E. The construction of these parts forms no part of my present invention, and it is, therefore, unnecessary to further illustrate or describe the same.

My improved gas-ring H is interposed between the fire-pot G and the combustion-chamber D and is formed with an internal air-chamber h. Its inner wall is formed with a series of apertures h' opening from the chamber h and discharging above the burning fuel. These apertures h', as clearly seen at Figs. 3, 4, and 5, are preferably substantially rectangular, and are formed of greater length than width for discharging the air in thin sheets or bodies, and thereby greatly facilitating its union with the heated gases. It is evident, however, that the apertures h' may be formed oval instead of rectangular.

The air is conducted to the chamber h by suitable inlet-pipes h^2, having their upper ends provided with lateral inwardly-extending branches h^3 connected to inlet-openings h^4 in the front side of the gas-ring H, and their lower ends provided with lateral outwardly-extending branches h^5. The outer ends of the branches h^5 project beyond the outer shell of the generator, as seen at Figs. 1 and 2, and are provided with inlet-doors h^6, which may be operated by chains h^7.

The inner wall of the gas-ring H is formed with an annular projecting shoulder h^8 having a substantially flat lower face h^9 and a downwardly-inclining upper face. The lower edge of the shoulder h^8 is formed with a series of cut-outs h^{10} aligned with the apertures h', and formed of substantially the same length and width as said apertures. In the prefer-

able form of my invention the lower face or edge h^9 of the shoulder h^8 is aligned with the lower walls of the apertures h', and the cut-outs h^{10} in the shoulder h^8 extend upwardly from its lower face; but it is obvious that the lower face h^9 of the shoulder h^8 may be depressed beneath the plane of the lower faces of the apertures h', and that the shoulder h^8 may then be formed with apertures instead of cut-outs aligned with the apertures h'.

The operation of my invention will be readily perceived upon reference to the foregoing description and the accompanying drawings, and it is obvious to one skilled in the art that the discharge of thin sheets of air at the top of the burning fuel greatly accelerates its combustion, and that the projecting shoulder having its lower edge arranged in proximity to said apertures and provided with cut-outs or apertures aligned therewith reduces to a minimum all liability of the entrance of ashes, dust, &c., within the air-chamber, and the consequent clogging thereof.

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

1. A gas-ring for generators provided with an internal air-chamber and having its inner wall provided with an annular projecting shoulder formed with cut-outs therein, and formed with a series of apertures opening from the air-chamber and aligned with said cut-outs and discharging therethrough, substantially as and for the purpose described.

2. A gas-ring for generators provided with an internal air-chamber and having its inner wall provided with an annular projecting shoulder formed with cut-outs extending upwardly from its inner edge and formed of greater length than width, said inner wall being formed with a series of apertures of greater length than width opening from the air-chamber and aligned with the cut-outs and discharging therethrough, substantially as and for the purpose specified.

3. A gas-ring for generators provided with an internal air-chamber and having its inner wall provided with an annular projecting shoulder formed with a substantially flat lower face and a downwardly-inclined upper face, and formed with a series of apertures opening from the air-chamber and arranged in proximity to the lower edge of the shoulder, substantially as and for the purpose described.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 26th day of October, 1894.

JOHN F. PEASE.

Witnesses:
CLARK H. NORTON,
E. A. WEISBURG.