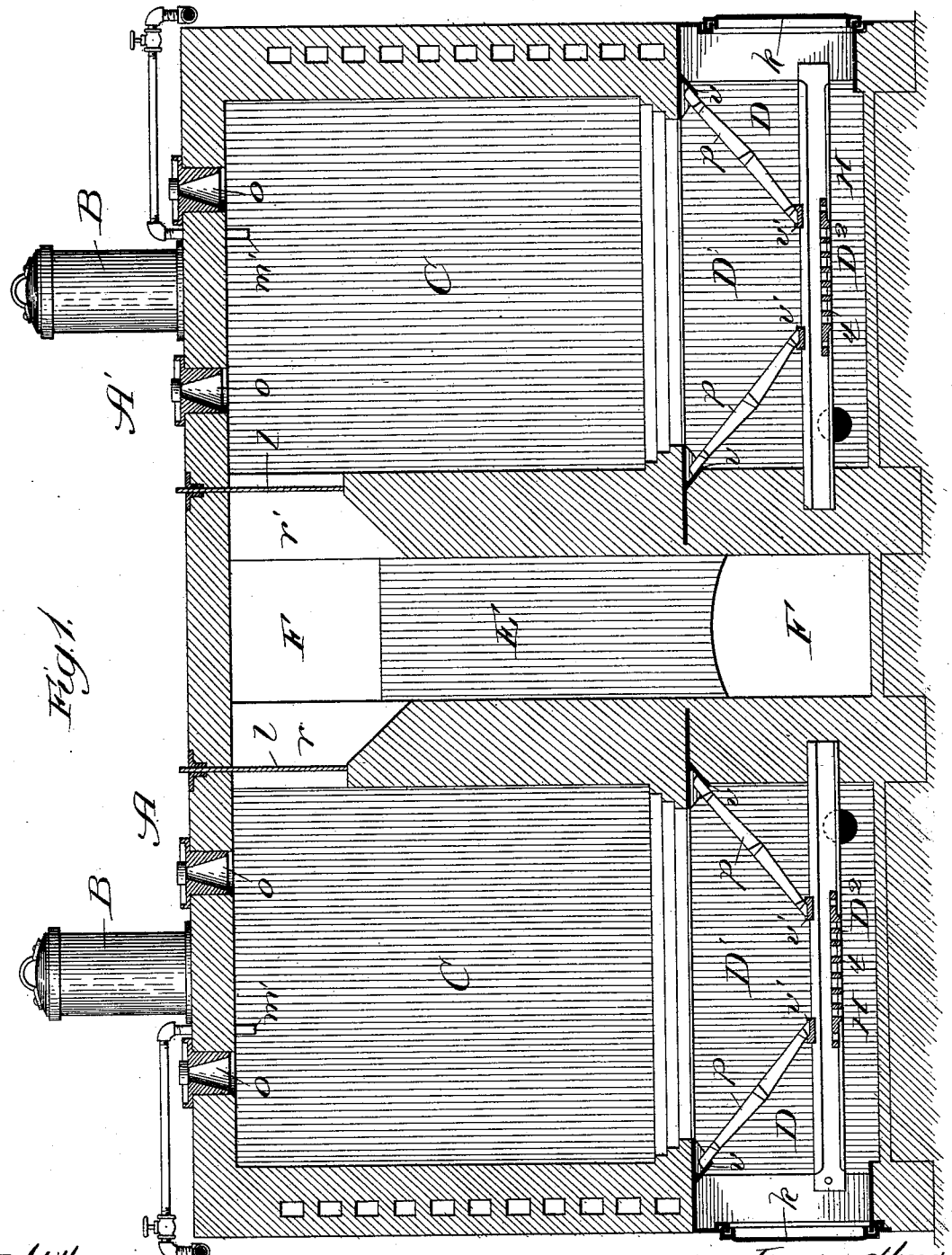
(No Model.) 3 Sheets—Sheet 1.

W. A. KONEMAN.

GAS PRODUCER.

No. 484,596. Patented Oct. 18, 1892.



Witnesses:
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(No Model.) 3 Sheets—Sheet 2.

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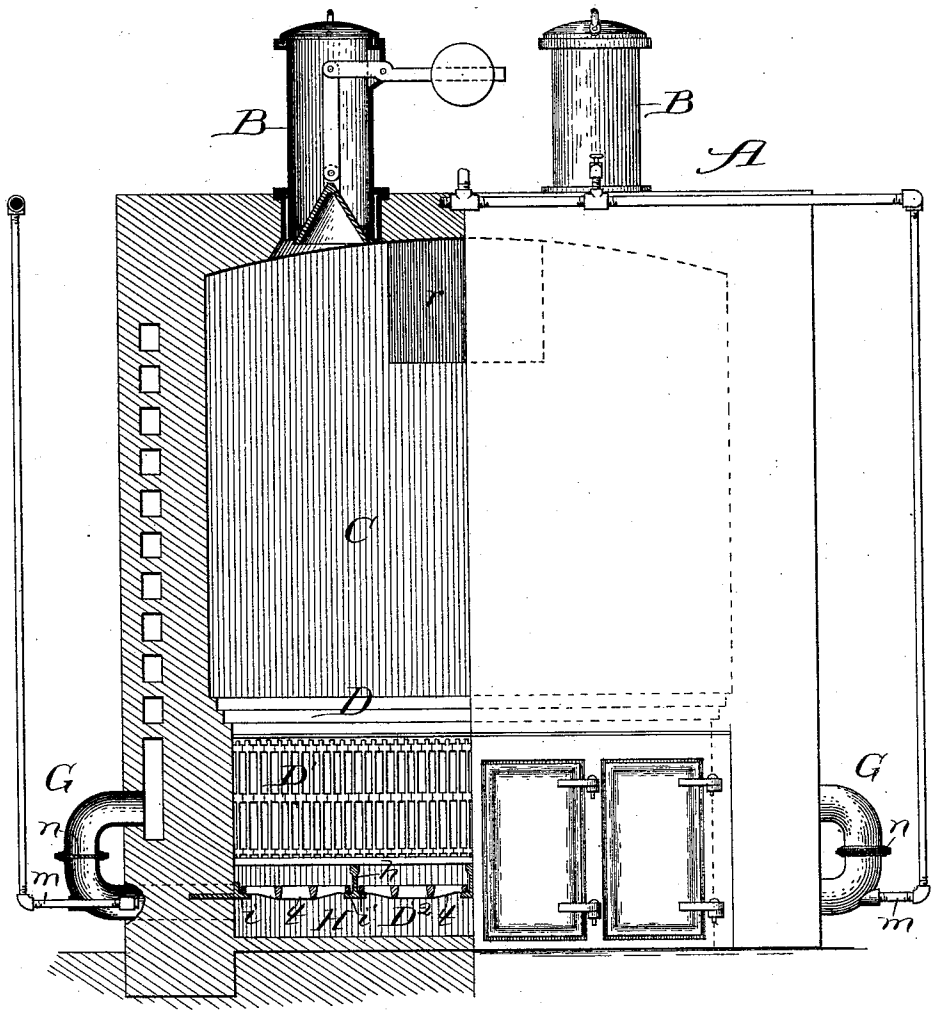
Fig. 2.



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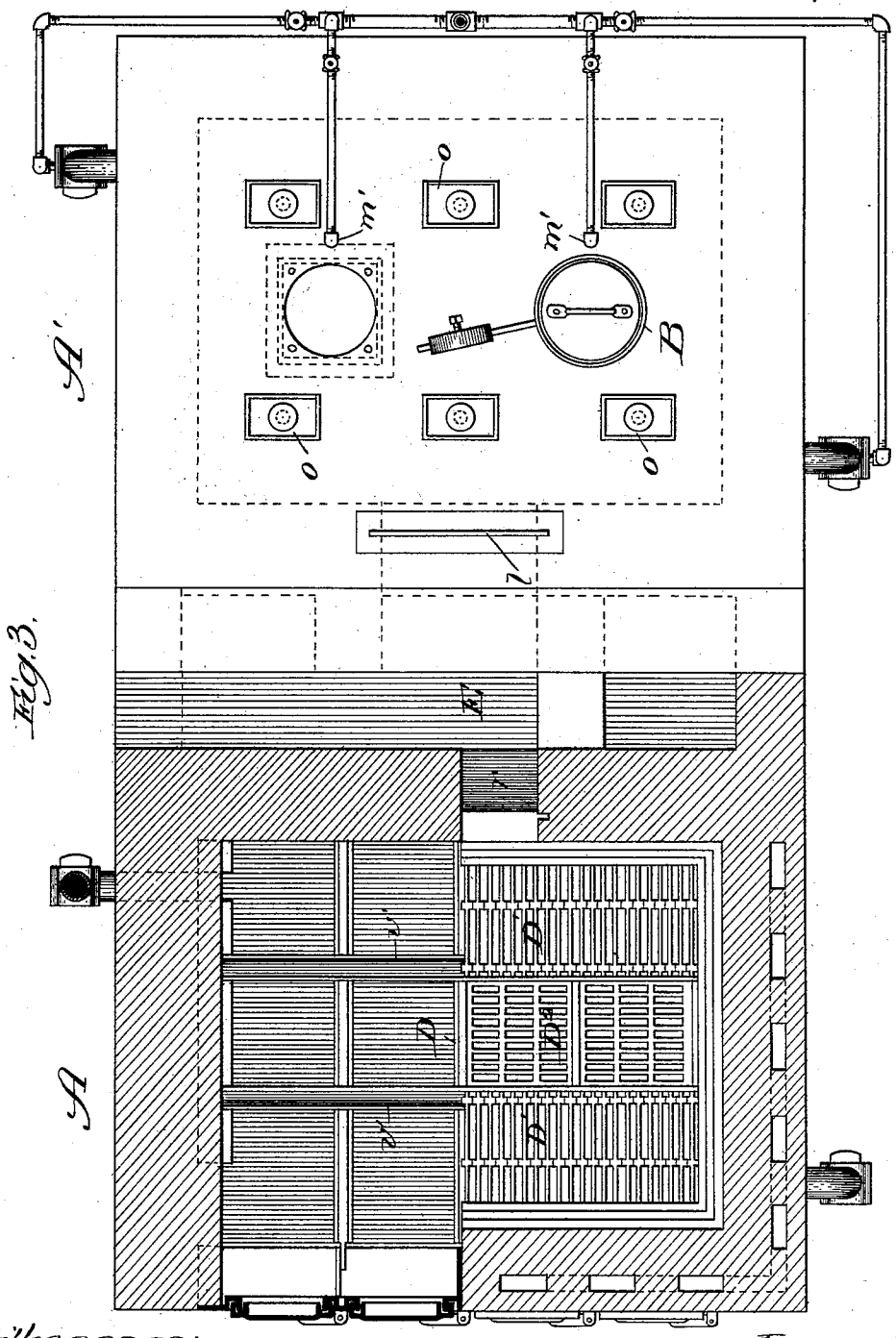

Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM A. KONEMAN, OF CHICAGO, ILLINOIS.

GAS-PRODUCER.

SPECIFICATION forming part of Letters Patent No. 484,596, dated October 18, 1892.

Application filed September 18, 1891. Serial No. 406,112. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. KONEMAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Gas-Producers, of which the following is a specification.

My invention relates to an improvement in gas-producers, and more particularly to the kind for generating fuel-gas.

Referring to the accompanying drawings, Figure 1 is a vertical transverse section showing a "twin" form of gas-generating apparatus provided with my improvement. Fig. 2 is a view showing the same partly in longitudinal section and partly in front end elevation. Fig. 3 is a plan view of the same, partly in horizontal section, one half of the section being taken above the level of the doors and showing the grate in place and the other half of the section being taken through the doors below the grate.

A and A′ are gas-generators, each involving a preferably-rectangular shell of brick, the interior of which forms a generating-chamber C, having a grate D at its base, the walls having air-spaces, as shown, and a well-known or any suitable form of feed-hoppers B being provided in the roof. Between the two generators and housed between them is a gas-distributing receiver E, common to both and with which at opposite sides the generators communicate through outlet-passages r and r', preferably near their upper ends, and the receiver E is provided at any desired number of points and preferably, at least, from two points at opposite sides of the receiver with passages F, through which to lead off the gas directly to as many points, whatever their relative locations, as desired. The roof of each generator is also provided, as usual, with a number of openings o, through which to stoke and examine the condition of the fire, and which are provided with convenient closing means, as indicated.

Each opening r and r' for the outlet into the distributing-receiver E of the gas as it is generated in the respective producers is provided with a vertically-adjustable gate-valve l for closing and opening at will the communication and enabling the apparatus to be used single or double.

G is an air-conduit, one of which should be provided at each of two sides of each generator, as shown. It leads from the air-space in the wall, near its base, outside the generator and returns into the same below the grate D to feed heated air for the blast, and I lead into each conduit G, which may contain a horizontal sliding damper n for controlling the supply of air to the blast, a steam-pipe m for introducing steam with the air-blast and which, employed in the relation shown with the air-conduit, serves as an injector for the air-supply. If the apparatus is used, as it may be, for carrying out the gas-making process set forth in my Letters Patent, No. 469,858, issued March 1, 1892, a branch pipe m' of each steam-pipe m is led through the roof of each generator to introduce steam against the fuel from above.

To operate the apparatus, a coal-fire is made in each generator and blasted with air from below, and steam is introduced through the pipes m, the supply thereof being preferably continued throughout the operation, and the gas thus generated escapes through the outlets r and r' into the distributing-receiver E, whence it is taken through a passage F or any number thereof for use. If steam from the pipes m' is introduced, the supply is continued, by preference, uninterruptedly throughout the operation to cool the surface of the incandescent bed of fuel and impinge against the fresh deposits of coal introduced from time to time for the purpose of retarding distillation of the hydrocarbon vapors of the fuel, all as set forth in my aforesaid Letters Patent.

As shown, each of the generators is provided in one side near its base with a double set of tight-closing doors k, leading to the ash-pit H and grate D.

The illustrated construction of the grate D is one of the forms thereof set forth and claimed in my concurrent application for Letters Patent, Serial No. 406,111, filed September 18, 1891, and which I desire to claim specifically herein, whether employed with the twin form of generator described and shown or other form thereof. I form the grate D in two parts D′ and D^2, the former being stationary and of "basket" shape, comprising grate-bars p, supported at their upper ends on

ledges v at opposite sides of the fuel-chamber and inclining thence downward toward a common center, being sustained at their lower ends on supports v'. The part D^2 of the grate is horizontal and formed in movable sections t. The sections t are supported along the sides of the fire-chamber on ledges i and intermediately thereof on the ledges i', afforded by the heads of T-metal supports h, extending in proper positions lengthwise of the base of the fire-chamber.

The foregoing construction of grate is convenient in a gas-producer in the way of enabling the ash accumulations to be dumped into the ash-pit without detriment to the bed of incandescent fuel. The sections t of the part D^2 are adapted to be slid on their supporting-ledges i i', so that when it is desired to remove the ashes the door k in front of one grate-section D^2 at a time may be opened and the section drawn out, thus enabling the ash accumulation upon it to fall into the pit, when the section is returned to its place, and the ashes may from time to time be withdrawn from the pit. A rod (not shown) with a hook on one end may be used for engaging a grate-section t to slide it in and out; furthermore, and particularly, the space between the horizontal and sliding parts of the grate is sufficiently wide to enable ashes and clinkers to be raked out through it without requiring the sliding base of the grate to be withdrawn, which then need only be done to remove very large clinkers.

What I claim as new, and desire to secure by Letters Patent, is—

In a gas-generator having a shell containing a generating-chamber provided with an outlet for the resultant gas, a feeding device B, an air-blast, and doors k, a grate D for supporting the fuel-bed, said grate being formed in parts D' and D^2, the former comprising bars p, supported to incline downward toward a common center, and the latter comprising horizontal sliding sections t, supported below and forming a bottom for the open base of the part D' and movable by sliding on their support in and out through the said doors, the parts D' and D^2 having ample space between them for the removal of ashes and clinkers without disturbing the sliding bottom, substantially as described.

WILLIAM A. KONEMAN.

In presence of—
J. W. DYRENFORTH,
M. J. FROST.