

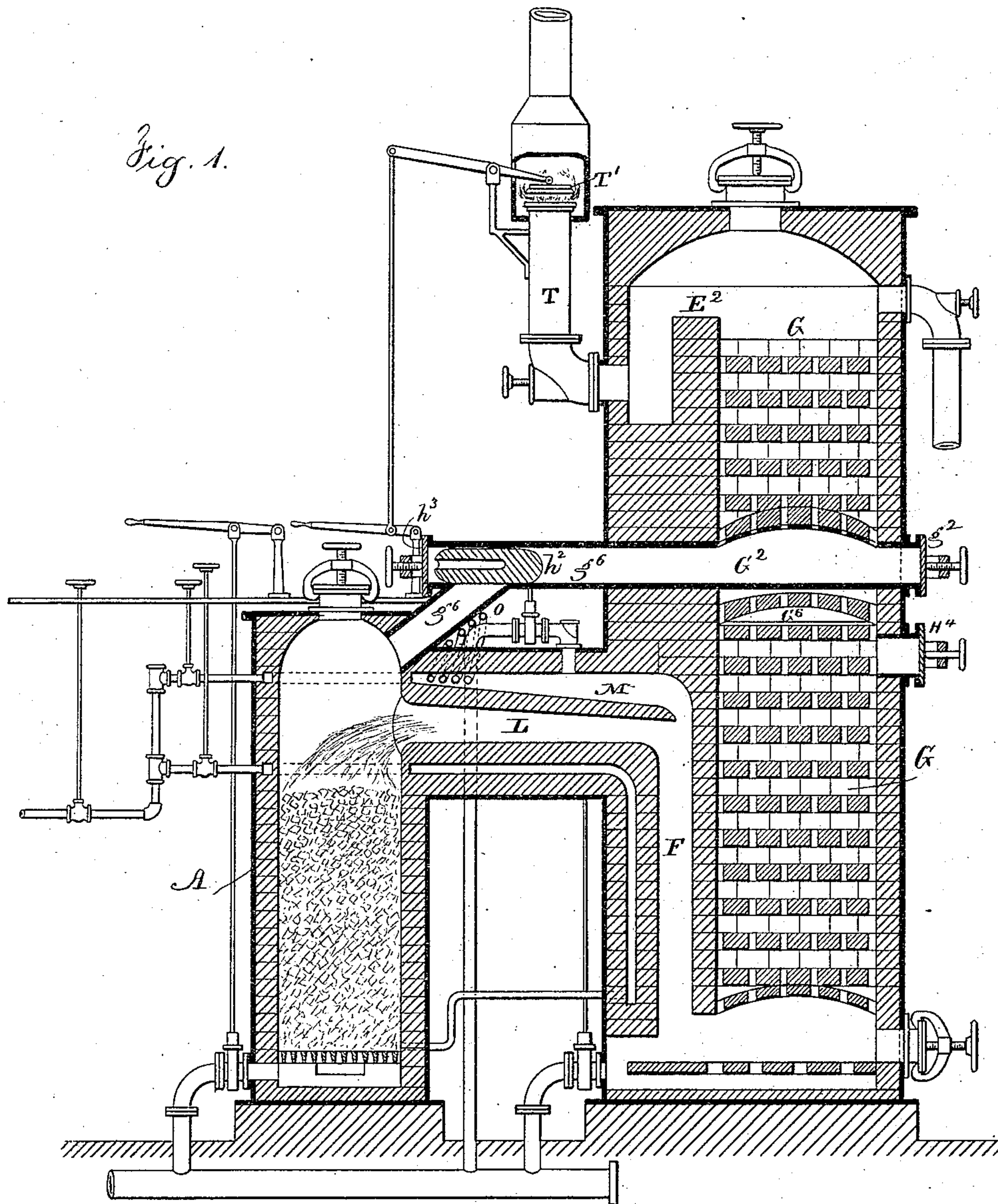
(No Model.)

2 Sheets—Sheet 1.

T. F. MARTIN.  
GAS MAKING APPARATUS.

No. 334,127.

Patented Jan. 12, 1886.



Witnesses

Chas H. Smith

J. Staley

Inventor

Thomas F. Martin  
per Lemuel W. Ferrell atty

(No Model.)

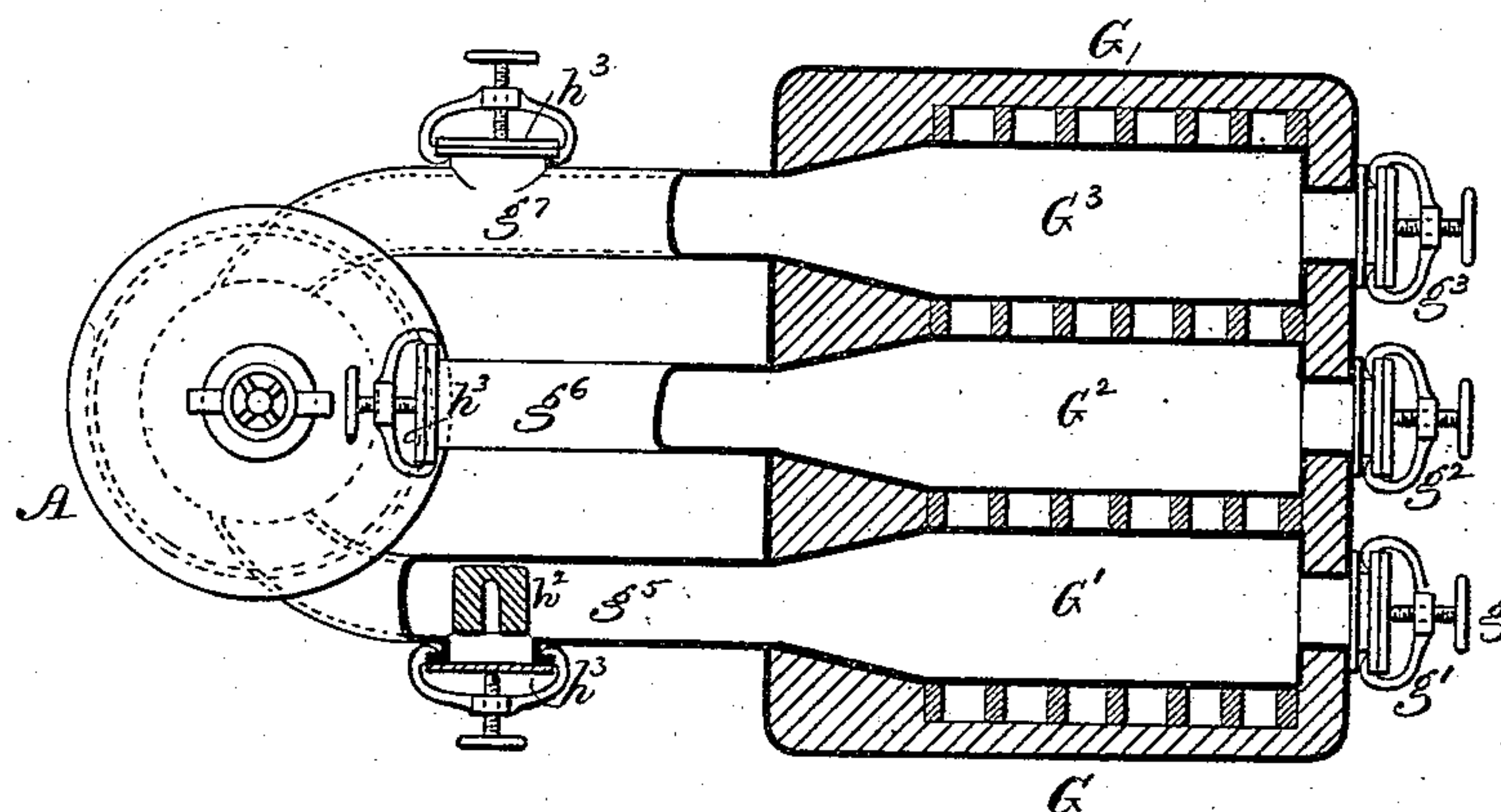
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T. F. MARTIN.  
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Fig. 2



Witnesses

Chas. N. Smith

J. Staley

Inventor

Thomas F. Martin

per Lemuel W. Perrell.

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# UNITED STATES PATENT OFFICE.

THOMAS F. MARTIN, OF NEWBURG, ASSIGNOR TO THE MARTIN MANUFACTURING COMPANY, OF NEW YORK, N. Y.

## GAS-MAKING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 334,127, dated January 12, 1886.

Application filed June 4, 1885. Serial No. 167,570. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS F. MARTIN, of Newburg, in the county of Orange and State of New York, have invented an Improvement in Gas-Making Apparatus, of which the following is a specification.

This invention is an improvement on the apparatus set forth in my application, No. 159,011, filed March 16, 1885, and relates to the combination, with the same, of retorts in which soft coal is converted into coke previous to being passed into the generator, the said retorts being within the superheating-chamber so that the process of coking is gradual, and the gases developed in the said coking are consumed in heating up the apparatus when the chimney is open, or else they pass off with the gas while being made.

In the drawings, Figure 1 is a vertical section of the apparatus complete, and Fig. 2 is a sectional plan of the generator and superheater.

A reference is hereby made to my aforesaid application for a description of the generator A, flues L F, superheater G, bridge-wall E<sup>2</sup>, chimney T, damper T', the inclined table M, upon which oil is supplied by the tubes O, and for the various pipes and cocks connected with the respective parts, as these devices correspond substantially with those set forth in my aforesaid application, with the exception that the superheater and the upper part of the generator are modified for the reception of the coking-retorts next described. Across the superheater I introduce two or more retorts, G' G<sup>2</sup> G<sup>3</sup>. These retorts are made with the ordinary supply-mouths and removable covers g' g<sup>2</sup> g<sup>3</sup>, and the back ends of the retorts are contracted and form throats g<sup>5</sup> g<sup>6</sup> g<sup>7</sup>, that lead into the generator A, near the top thereof. These retorts are so introduced in the superheater that the heat passes freely around them; and with this object in view it is preferable to form a perforated arch of brick-work at G<sup>6</sup>, beneath the retorts, and to introduce bricks between the retorts, with openings or flues between the bricks; as seen in Fig. 2. I provide openings in the upper parts of the retorts for the gases to pass off from the coal as the same is converted into

coke by the action of the heat. Into the throats of the retorts I insert dampers to close these throats during the time that the soft coal is being coked in the retorts. These dampers are made of fire-bricks, as at h<sup>2</sup>. These dampers may be moved for opening the throats in any convenient manner. Where the throats are provided with downward extensions or chutes leading into the generator A, as seen in Fig. 1, the end of the chute is provided with a movable cover, h<sup>3</sup>, so that the fire-brick damper may be slid along to uncover the chute when the movable cover has been taken off; but when the throats passing from the retorts into the generator are level, or nearly so, the covers h<sup>3</sup> are to be at one side of each throat, so that by opening these covers the fire-brick dampers can be withdrawn laterally.

It is now to be understood that this improvement is especially available in places where soft coal is the cheapest fuel, and that in starting the apparatus coke is to be introduced into the generator A, and the apparatus is worked in the manner described in my aforesaid application, with the exception that the retorts G' G<sup>2</sup> G<sup>3</sup> are charged in succession with soft coal. It is preferable to charge one retort at the time the gas-making is suspended and the superheater is being heated up, so that the vapors first passing off from the soft coal go into the upper part of the superheater and are partially or wholly consumed and intensify the heat in the upper part of the superheater.

When the apparatus is fully in work, it is preferable to open the charging-door of one retort, and also the damper in the throat of that retort, and force the coke from said retort through the throat into the generator immediately on suspending the gas-making operation, and then to charge that retort and to close the damper in the throat and the charging-door, so that the aforesaid operations may be performed each time the gas-making operation is suspended and the gas-making apparatus heated up.

During the gas-making operation the gases evolved in coking the soft coal pass off into the superheater and commingle with the water-gas to enrich the same.



Beneath the retorts an opening and removable door may be provided in one side of the superheater, as at H<sup>4</sup>, to give access to the interior of the superheater for repairs that  
5 may be required below the retorts.

I do not herein claim the inclined table, the oil-supply pipes, or the flues, as these are set forth in my Patent No. 320,078, granted June 16, 1885; neither do I claim a coking-retort or  
10 a superheater with which that coking-retort is connected.

I claim as my invention--

1. The combination, with the superheater and the generator and their connecting-flues,  
15 of a horizontal coking-retort passing through the superheater and provided with a damper and throat leading to the generator, and having openings in the top of such retort for the gases as generated to pass directly into the  
20 superheater, substantially as specified.

2. The combination, with the superheater and generator, of coking-retorts passing

through the superheater and having throats that extend into the generator, fire-brick dampers within such throats, and removable  
25 covers to give access to the dampers, substantially as specified.

3. The combination, with the generator and superheater with which it is connected, of one or more horizontal coking-retorts passing  
30 through the superheater and having openings for the escape of the gases from the retorts directly into the superheater, to commingle with the gases passing from the generator, discharge-throats from the retorts into the gen-  
35 erators, and dampers therein, so that the coke can be passed from the retorts into the generator, substantially as specified.

Signed by me this 25th day of May, A. D. 1885.

THOMAS F. MARTIN.

Witnesses:

BENJ. J. MACDONALD,  
EDWARD J. TRUST.