

(No Model.)

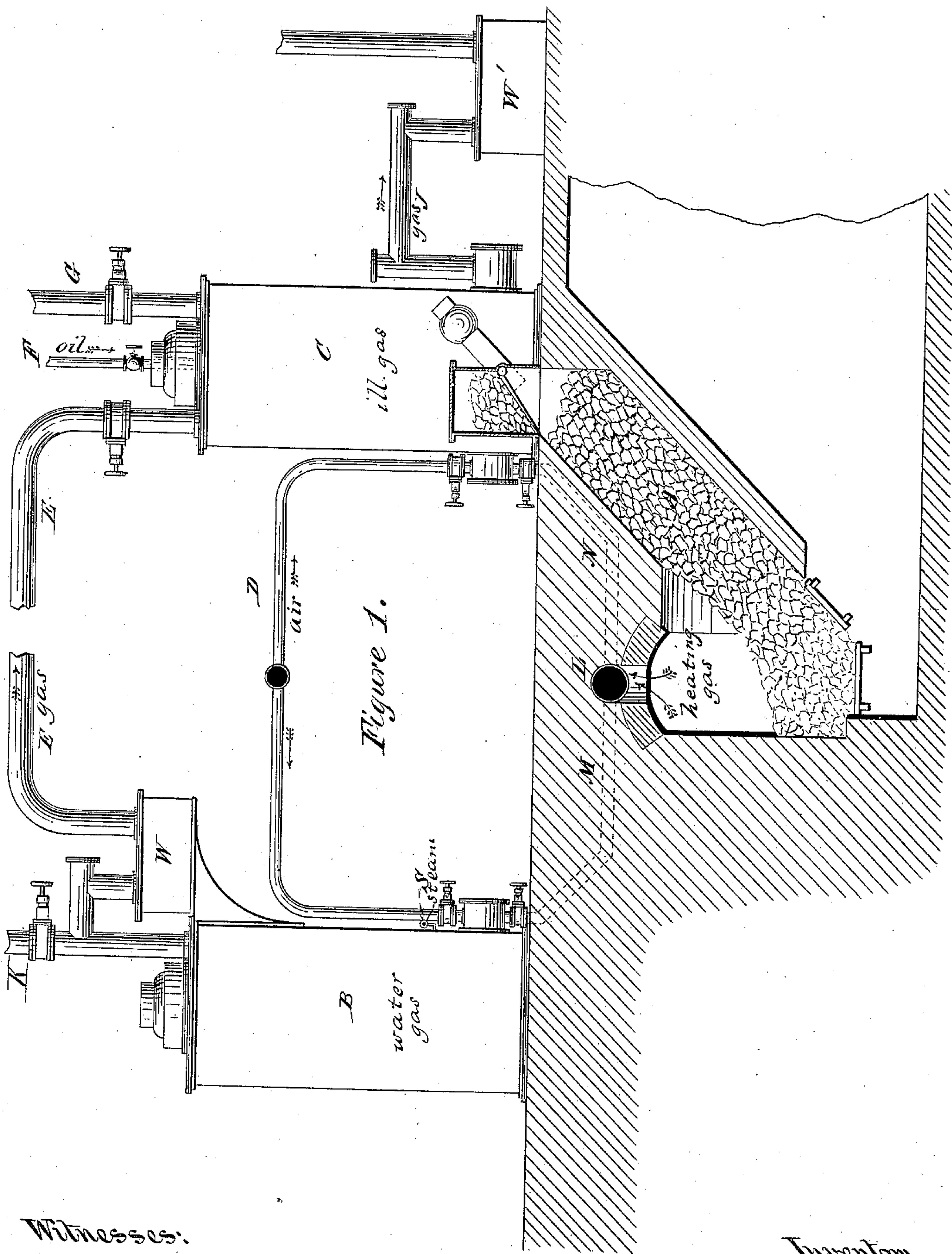
E. J. JERZMANOWSKI.

2 Sheets—Sheet 1.

GAS APPARATUS.

No. 343,995.

Patented June 22, 1886.



Witnesses:

Geo. H. Miatt
Anthony Grefj

Inventor:

E. J. Jerzmanowski
By his attorney
E. N. Dickerson

(No Model.)

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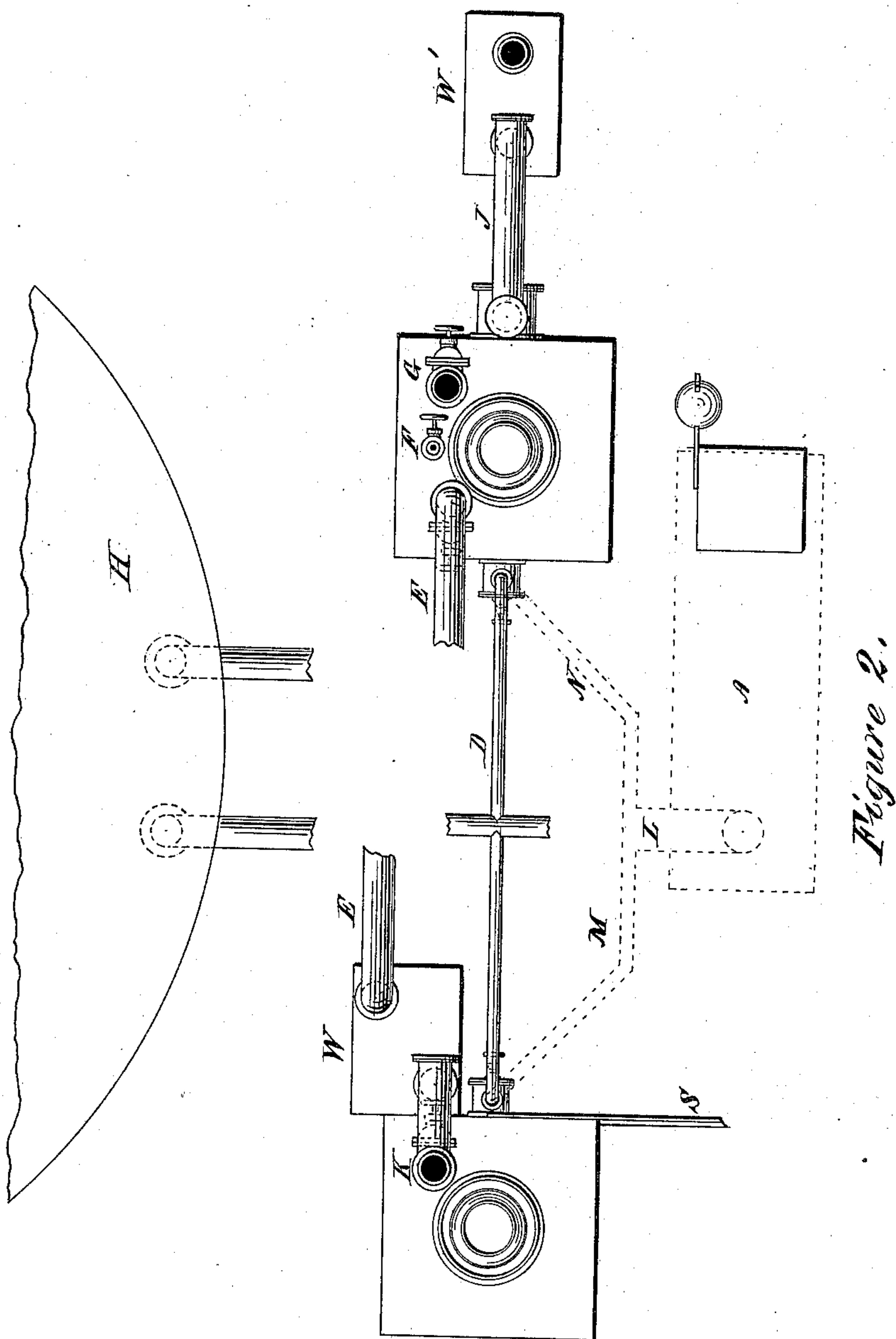


Figure 2.

Witnesses:
Geo. W. Mott
Anthony Gref

Inventor:
Eugen J. Jerzmanowski
By his attorney
E. W. Dickerson

UNITED STATES PATENT OFFICE.

ERAZM J. JERZMANOWSKI, OF NEW YORK, N. Y.

GAS APPARATUS.

SPECIFICATION forming part of Letters Patent No. 343,995, dated June 22, 1886.

Application filed March 31, 1882. Serial No. 56,935. (No model.)

To all whom it may concern:

Be it known that I, ERAZM J. JERZMANOWSKI, of the city, county, and State of New York, have invented a new and useful Improvement in Gas Apparatus, of which the following is a full, true, and exact description, reference being had to the accompanying drawings.

Figure 1 represents a side elevation, partly in section, of my improved gas apparatus. Fig. 2 represents a plan view thereof.

My invention relates to apparatus for heating cupolas, and to means for producing enriched water-gas, and will be readily understood from the accompanying drawings.

A represents a furnace in which coal or similar fuel is partly consumed, producing carbonic-oxide and other combustible gases. As shown, it is of the Siemens type; but it may be of any other form, and may be located either below or on the same level with the rest of the apparatus.

B represents a cupola for producing water-gas, and C a cupola for enriching the same. The furnace A communicates by pipes L, M, and N with said cupolas B and C, respectively.

D represents a pipe by which air, which may, if desired, be heated, is injected into cupolas B and C, respectively.

K represents the chimney or escape-pipe from cupola B.

E represents a pipe connected with the governing-holder H and with the cupola C.

G represents the chimney or escape-pipe from said cupola C.

J represents the gas-pipe through which the finished gas escapes.

W W' represent washers.

F represents a pipe for supplying liquid hydrocarbon to the converting-cupola C.

The operation of my apparatus can now be readily understood. A fire having been produced in the furnace A, the carbonic-oxide and combustible gases are led through pipes L and M to water-gas cupola B; thence passing upward they escape through the chimney K, being thoroughly consumed in said cupola by the supply of air injected through the pipe D. The pipe M being then closed and the pipe N opened and the valve of pipe K closed, steam is injected through the pipe S into the cupola B, making water-gas by its contact with the hot coal therein, which water-gas passes into the governing-holder H. The carbonic

oxide from furnace A meanwhile passes into the cupola C, which may contain fire-brick or anthracite and other coal, meeting there the air from the pipe D. The hot gases are fully consumed in the cupola C, thereby heating its contents. The products of combustion escape upward by the chimney G. After the contents of the cupola C have been thoroughly heated the operation is again reversed and the cupola B is heated. Then the water-gas from the holder H is allowed to pass downward through the cupola C, and the proper supply of hydrocarbon is admitted through the pipe F. The hydrocarbon is thereby vaporized, mingled with the gas passing through the cupola C, and is converted into a fixed gas. By this arrangement the gases produced in furnace A may be constantly used either in heating B or C, and by reason of the governing-holder H a uniform supply of gas is caused to flow constantly through the enriching-cupola C.

The manipulation of the various valves will be readily apparent to any gas-engineer.

I am aware that it is not new to connect a gas-generator with a superheater to which naphtha is admitted from a holder, and then to pass the combined vapors of water and naphtha to a converting-furnace; also, that it is not new to conduct steam from a boiler to a decomposing-cupola containing incandescent carbon, then to pass the gases to a condenser, thence to a gas-holder, thence to a carburetor containing hydrocarbons in shallow pans, and from thence to a retort.

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

1. The combination of a water-gas generator, a converting and enriching cupola, with a heating and gas-generating furnace, and with a gas-holder and the pipes and connections shown, whereby said furnace may be used to heat the water-gas generator and the converting-cupola alternately, and whereby the gas from the holder may be passed to the enriching-cupola after the latter is heated and while the generating-cupola is being heated, substantially as described.

2. The combination of a water-gas generator, a converting-cupola, a pipe for admitting hydrocarbon to the latter, a furnace and pipes connecting it directly with both the water-gas generator and converting-cupola, and suitable devices whereby the same may be heated al-

ternately, substantially as and for the purpose set forth.

3. The combination of a water-gas generator, a converting-cupola, a furnace provided
5 with pipes and valves for delivering carbonic oxide alternately to the generator and the converting-cupola, a governing-holder connected to receive the products from the generator and deliver them to the converting-cupola, and air-

supply pipes and valves connected to said 10 water-gas generator and converting-cupola and delivering air alternately thereto, substantially as and for the purpose set forth.

ERAZM J. JERZMANOWSKI.

Witnesses:

ANTHONY GREF, Jr.,
GEO. H. EVANS.