(No Model.) 2 Sheets—Sheet 1.

F. H. HAMBLETON.

GAS MAKING APPARATUS.

No. 361,820. Patented Apr. 26, 1887.

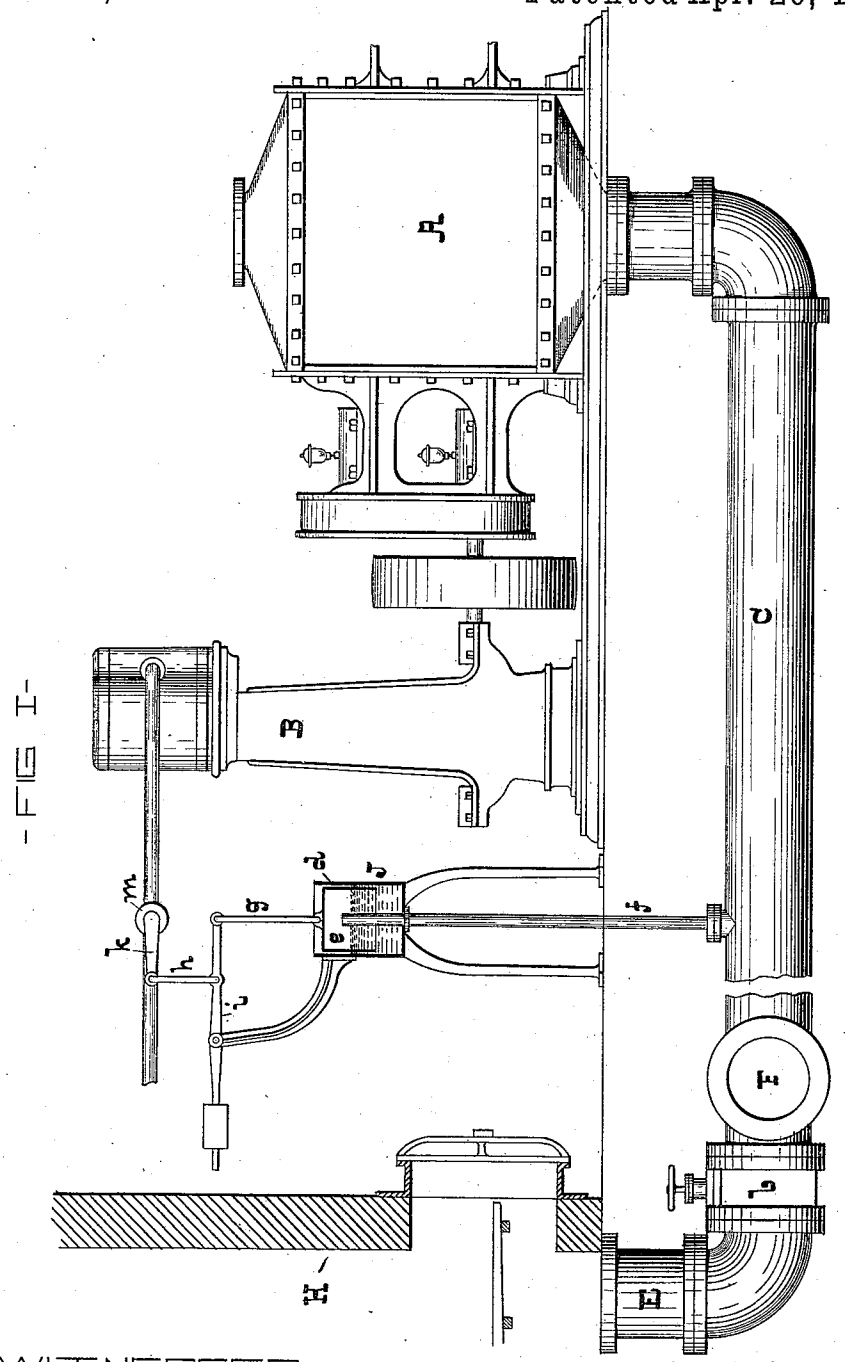


FIG. 1.

WITNESSES

Dan'l Fisher

Warren Ross

INVENTOR

Francis H. Hambleton,

by G. H. W. Howard,

atty.

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.)

2 Sheets—Sheet 2.

F. H. HAMBLETON.

GAS MAKING APPARATUS.

No. 361,820. Patented Apr. 26, 1887.

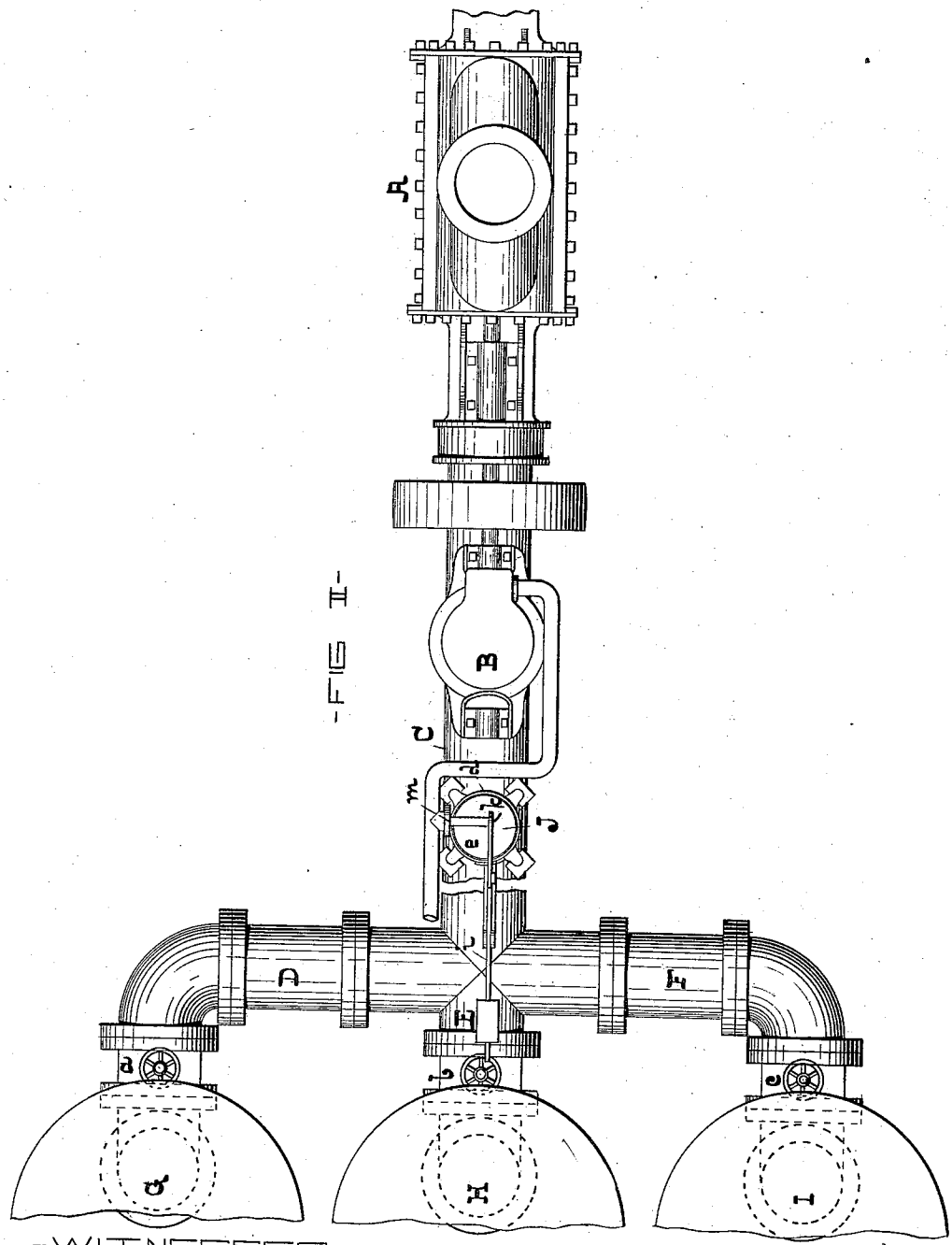


FIG. 1.

WITNESSES:

Danl Fisher

Warren Ross.

INVENTOR:

Francis H. Hambleton,

by G. H. & H. T. Howard,

Attys.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

FRANCIS H. HAMBLETON, OF BALTIMORE, MARYLAND.

GAS-MAKING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 361,820, dated April 26, 1887.

Application filed June 1, 1886. Serial No. 203,705. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS H. HAMBLETON, of the city of Baltimore, and State of Maryland, have invented certain Improvements in Gas-Making Apparatus, of which the following is a specification.

To fully understand the nature of my improvement it must be known that in the manufacture of what is termed "water-gas" a series of generators are employed, to which air is forced by means of suitable blowing apparatus; and as the number of generators in use at one time varies no constant air-pressure can be maintained without some regulating device. The regulating device generally employed consists of a safety or escape valve which is opened, and a portion of the compressed air allowed to escape when the pressure is increased beyond a proper limit. With this arrangement practically the same wear and tear of the engine and blowing apparatus take place with one generator in use as with several, as the same volume of air is forced to the pipes in all cases.

The object of my invention is to furnish only such volume of air as is required; and to this end my invention consists, broadly, in means whereby the speed of the engine and blowing apparatus is regulated directly by the air-pressure in the pipes.

In carrying out my invention I apply to the air-blast pipe a governor operated directly by the air-pressure, and connect this governor, by means of suitable connections, to a valve adapted to regulate the supply of steam to the engine from which the air-forcing apparatus or blower derives its movement.

With this arrangement of apparatus, should the pressure of air in the pipe or pipes be slightly increased or diminished, by reducing or increasing the number of generators to which the air is forced the quantity of steam admitted to the engine is decreased or increased and the speed of the engine or motor and blowing apparatus changed and the proper air-pressure maintained.

In the further description of the said invention which follows reference is made to the accompanying drawings, in which—

Figure I is a partly-sectional side elevation of the improved apparatus, and Fig. II is a plan of Fig. I.

In the said drawings, A is an air-forcing apparatus, which in the present case consists of a blower of suitable construction. This blower is driven by means of an engine, B, of any approved design.

C is the main blast-pipe, having branches D, E, and F, leading, respectively, to the generators G, H, and I. These generators embody no part of the present invention, and therefore require no description herein. The branch air or blast pipes have gates or valves, respectively, denoted by *a*, *b*, and *c*, and their construction is well known, as they are commonly employed.

J is a governor, which consists, preferably, of an outer and an inner shell, represented, respectively, by *d* and *e*, one being situated within the other, and the joint formed by a liquid seal—a well-known regulating device. A pipe, *f*, connects the interior of the governor with the blast-pipe C, and the movable member of the governor is united by suitable devices, which in the present case consist of the rods *g* and *h* and the lever *i*, to an arm, *k*, connected to the steam-regulating valve *m*.

I do not confine myself to the combination of rods or levers herein described and shown, as these devices can be changed without altering the result of their action, which is the controlling of the admission of steam to the engine.

From the foregoing description it will be understood that any change in air-pressure in the blast-pipes alters the quantity of steam admitted to the engine, and consequently its speed and that of the blower connected therewith.

While I have specified the motor as being a steam-engine, it is obvious that a water-engine could be substituted for it without changing the ultimate result, which, as before stated, is the governing of the speed of the motor and the blower by the pressure of air in the blast-pipe.

I am aware that it is common in air-carburetors to operate certain of the valves which control the movement of the fluids by the pressure of the gas in the holder, the action

of the said valves being obtained directly from the movable section of the holder, through the medium of suitable mechanism, and such apparatus I disclaim; but

What I do claim is—

In a gas-making apparatus, the combination of a motor, a blowing apparatus driven by a motor, a blast-pipe leading from the blower to a generator or to generators, a controlling-valve on the motor, a governor operated by the pressure of air in the said blast-pipe, and mechanism to connect the said governor with the said controlling-valve, substantially as and for the purpose specified.

FRANCIS H. HAMBLETON.

Witnesses:

WM. T. HOWARD,

WARREN ROSS.