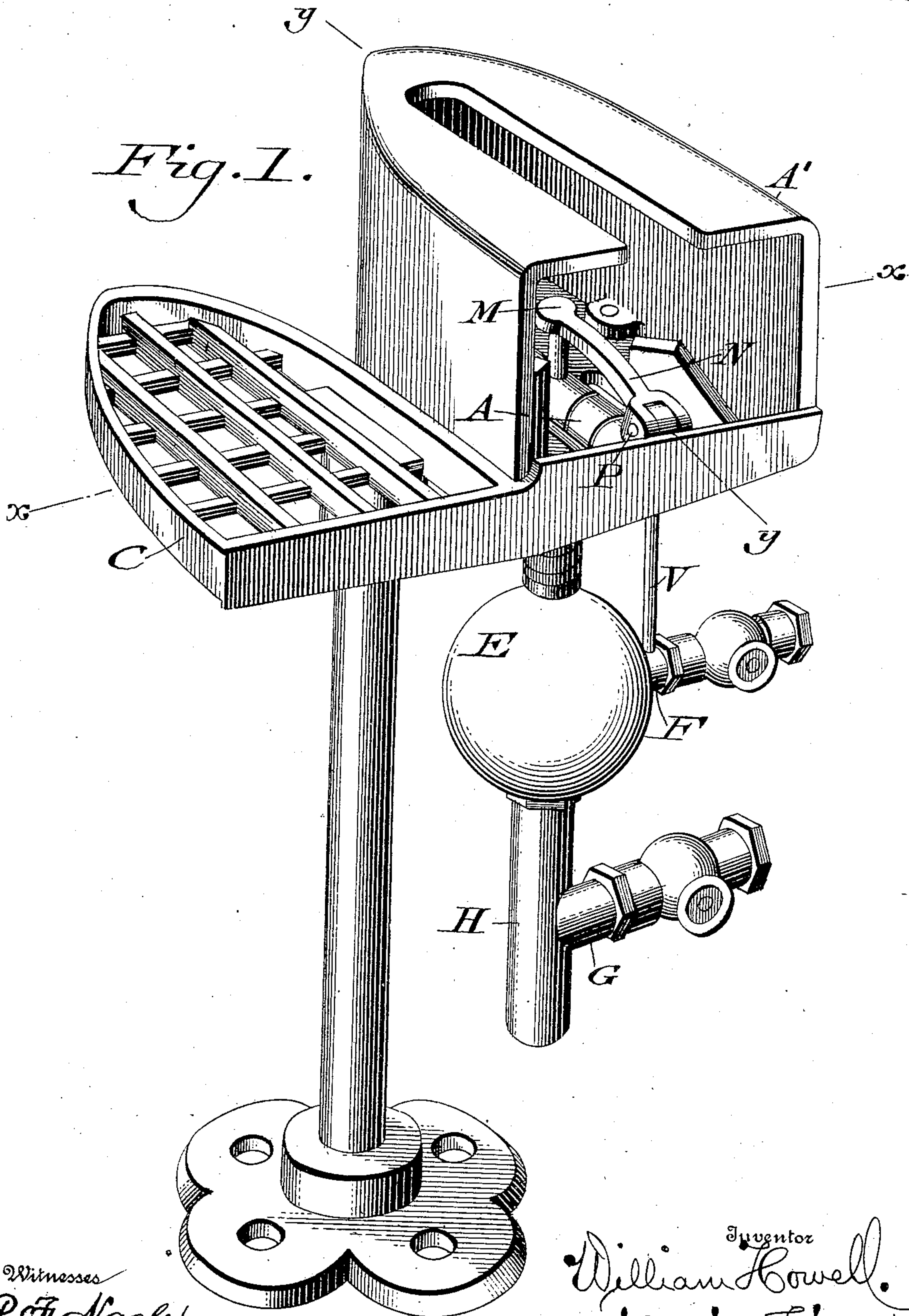


No. 862,560.

PATENTED AUG. 6, 1907.

W. HOWELL.
GAS HEATER OR STOVE.
APPLICATION FILED MAR. 8, 1906.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 2.

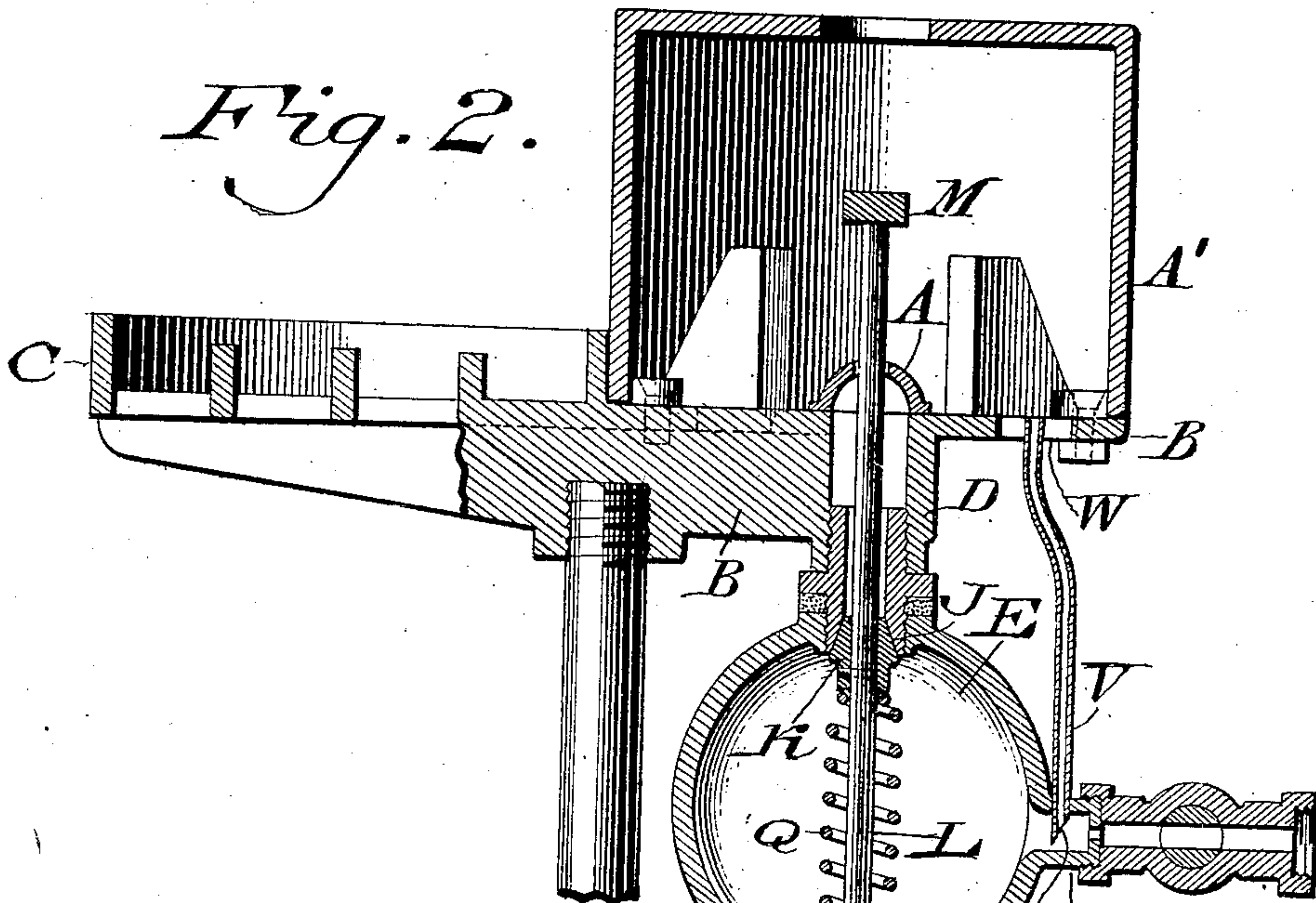


Fig. 3.

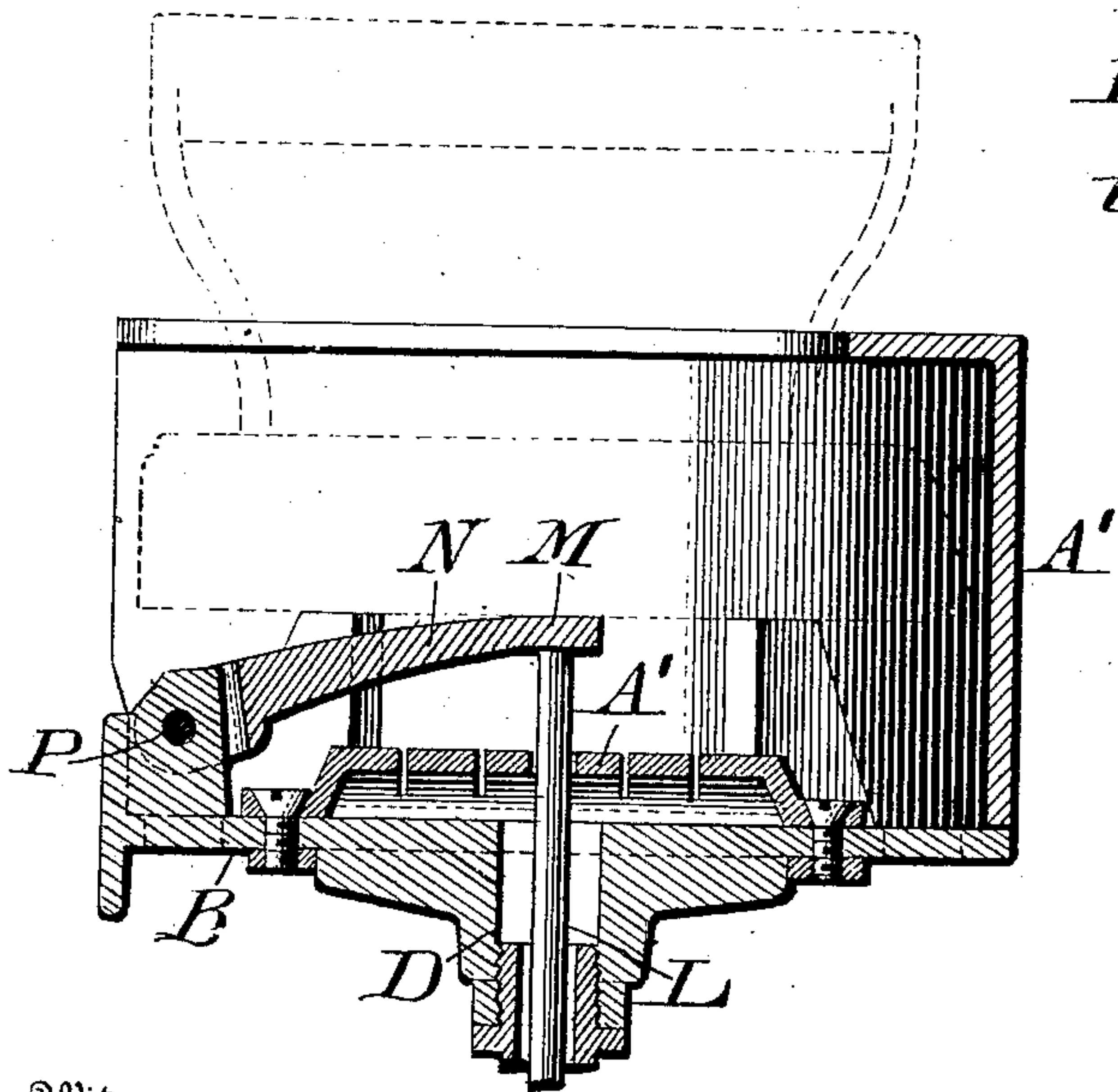
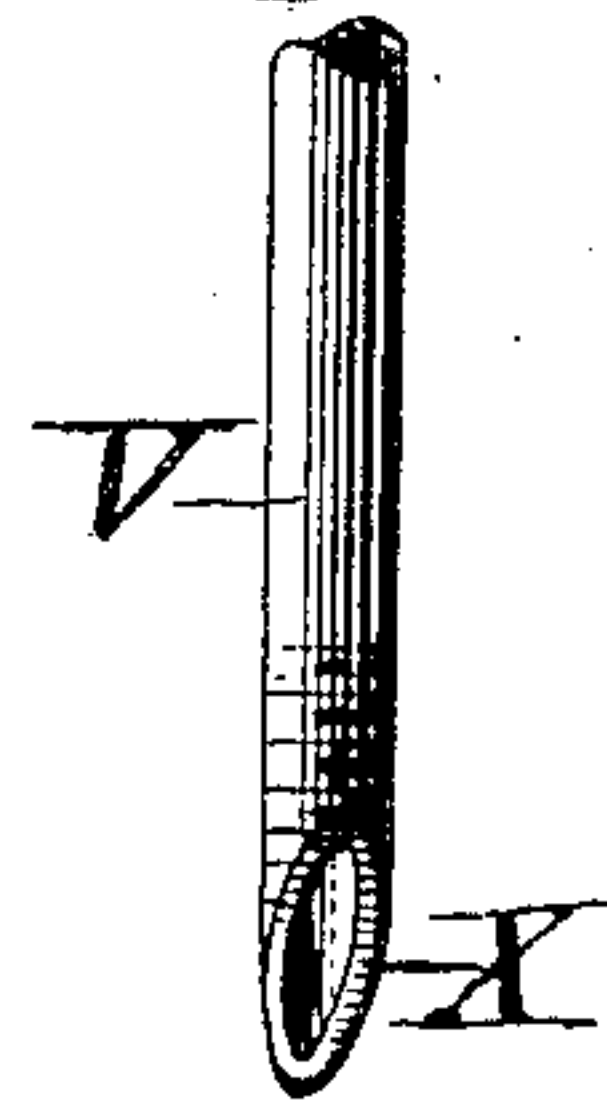


Fig. 4.



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GAS HEATER OR STOVE.

No. 862,560.

Specification of Letters Patent.

Patented Aug. 6, 1907.

Application filed March 8, 1906. Serial No. 304,912.

To all whom it may concern:

Be it known that I, WILLIAM HOWELL, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Gas Heater or Stove, of which the following is a specification.

My invention consists of an improvement in a gas heater or stove embodying a mixing chamber for gas and air, a valve that supplies the burner with the resultant gas, and a valve that supplies said chamber with air under pressure, said valves being opened by the weight of an object to be heated.

It also consists in rendering said valves separate from each other, whereby they may be independently adjusted and operated.

Figure 1 represents a perspective view of a gas heater embodying my invention. Fig. 2 represents a vertical section of a portion on line $x-x$ Fig. 1. Fig. 3 represents a vertical section of a portion on line $y-y$ Fig. 1. Fig. 4 represents a side elevation of a portion of the pilot pipe employed.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings: A designates the burner of the heater or stove, the same being supported on the plate B which has connected with it, the stand C and is sustained in any suitable manner. On said plate below said burner is the sleeve or boss D, which is in communication with the underside of said burner and has connected with it, the mixing chamber E, the latter being adapted to receive gas through the branch F and air under pressure through the branch G, the latter being connected with the sleeve H which forms a downward extension of said chamber E and is in communication therewith. In the upper part of the interior of the chamber E is the seat J of the valve K, which is firmly connected with the stem L, a portion of which above said valve passes freely through the boss D and through the center of the burner A and has its upper end engaged by the head or button M on the lever N, the latter being suitably connected by the pivot P with a member on the plate B: The portion of the stem L below the valve K is encircled by the spring Q which bears against the underside of the valve K and is seated upon the lower portion R of the interior of the chamber E. The stem L is continued through an opening in the base or under portion of the chamber E and extended freely into the sleeve H, the lower portion of which has an opening to permit the adjacent portion of said stem to pass freely therethrough, when said stem is depressed.

S designates a valve which is freely fitted on the stem L in the upper portion of the sleeve H, its seat T being on a nipple on the bottom of the chamber E and occupying a relative position on said portion of the sleeve.

Connected with the stem L below the spring Q is the pin or cross bar S' which acting as a shoulder is adapted to bear against the upper side of the valve S, whereby when said stem is depressed, said valve S will be moved from its seat and accordingly opened, whereby the air entering the sleeve H will pass into the chamber E, it being noticed that the valve K is also opened by the depression of said stem L whereby combined air and gas may pass to the burner, the flame of which is used for heating objects placed within the hood A' of the burner, the device in the present case being employed for heating sad irons to which, however, I do not limit myself.

U designates a spring which bears upwardly against the underside of the valve S and is seated on a fixed member within the sleeve H.

Connected with the branch F of the gas supply is the pilot or supplemental burner V which extends upwardly therefrom and has its outlet at or about the opening W in the plate B, the same being adjacent to the burner A. The portion of said pilot V at the place where it is connected with the branch F is beveled as at X, the same facing the gas supply pipe, whereby some of the gas may be properly directed to the said pilot at said bevel X and thus provide for a continuous light adjacent to the burner for the purpose to be hereinafter described.

The operation is as follows: An iron or other object is placed in the hood A' and rested on the lever N, whereby the latter lowers and communicates downward motion to the stem L, so that the valves K, S, leave their seats. The chamber E being supplied with gas now receives air under pressure and gas and air then mix in said chamber, producing gas of a highly inflammable nature and the same is directed to the burner A, where when it is ignited, said gas burns with a blue flame and highly heats said iron or other object on the lever N. When the heating is accomplished, the iron or other object is removed from the lever N, when the valve K being subjected to the pressure of the spring Q, is closed on its seat, thus cutting off the supply of gas to the burner and extinguishing the flame thereat. At the same time, the valve S is closed on its seat by the pressure of the spring U, whereby the supply of air is cut-off from the sleeve H, gas however continues to flow through the pilot V and producing a continuous flame adjacent to the burner A, it being, however, evident that gas is saved at the burner, when the iron or object is removed from the lever. When the iron or other object is again placed on the lever, the valves are opened as before stated and the burner supplied with gas, which is then ignited from the flame of the pilot V, by which provision relighting of the burner by hand is avoided.

It will here be noticed that the valve S is independent-

ent of the stem L, while however being adapted to be lowered by the pin S', but as the valves K, S, have each its own pressure spring, the valve S is independent in its adjustment from that of the valve K, and thus the valves may be set in their position to work true and correct without actually depending on each other.

The chamber E is preferably globular and is of such capacity as to provide for the reception of a large volume of gas and air, and causing a thorough admixture of the same before passing through the valve K to the burner, it being also noticed that the gas supply pipe is of smaller area than that of the air supply pipe, by which provision, less gas is consumed while, however, using a large quantity of air and producing a flame of high temperature.

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

1. In a gas heater, a burner, a gas and air mixing chamber communicating therewith, a plurality of valves, one for the communication between said burner and chamber, and the other for the air-supply of said chamber, a stem adapted to be operated by superimposed weight, the same being common to said valves, one being fixed to said stem and the other being free thereon, said stem being adapted to open both valves, and separate means for closing said valves.

2. In a gas heater, a burner, a mixing chamber for gas and air, a plurality of valves, one for the supply of gas from said chamber to said burner, and the other for the supply of air to said chamber, said valves being movable independently of each other in one direction, and a depressible device for actuating said valves together in the opposite direction.

3. In a gas heater, a burner, a gas and air mixing chamber, gas and air supplying pipes connected with said chamber, a valve for the discharge of the combined gas and air from said chamber, a stem to which said valve is secured, means, depressible by a superimposed weight, connected with said stem, a spring bearing against said valve to close

it, a valve for the supply of air to said chamber, the last-named valve being freely mounted on said stem and having a spring adapted to close it and means on said stem adapted to engage the last-named valve to open it.

4. In a gas heater, a burner, a gas and air mixing chamber, a communication for said chamber with said burner, a valve for said communication, a stem carrying said valve adapted to be operated to open said valve by the weight of an object to be heated superimposed thereon, an air supply in communication with said chamber, a valve for the stem, a spring bearing separately against each valve to close the same, the last-named being freely connected with said stem to be opened by the same and to be closed independent of said stem.

5. In a gas heater, a burner, a gas and air mixing chamber, gas and air supplying pipes connected with said chamber, a valve between said chamber and burner, a communication between the air supply pipe and said chamber, a valve for said communication, a stem carrying said valves and a lever adapted to engage the same, said lever being adapted to be operated by weight superimposed on the same to effect the motion of said stem to open said valves, the latter being adapted to close independently of each other.

6. In a gas heater, a burner, a gas and air mixing chamber, a gas supply connected with said chamber, a valve between said chamber and burner, an air receiver connected with said mixing chamber, a valve for said receiver, a stem carrying said valves and adapted by weight superimposed on the same to open the latter, the first-named valve being secured to said stem and the last-named valve being free on said stem and means for closing said valves independently of each other.

7. In a gas heater, a burner, a supply chamber in communication with said burner, a seat on said chamber, a depressible device, a valve movably mounted on said device, means for causing an engagement of said device with said valve to open the latter, and a resilient device for returning said valve to its seat independent of said device.

WILLIAM HOWELL.

Witnesses:

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