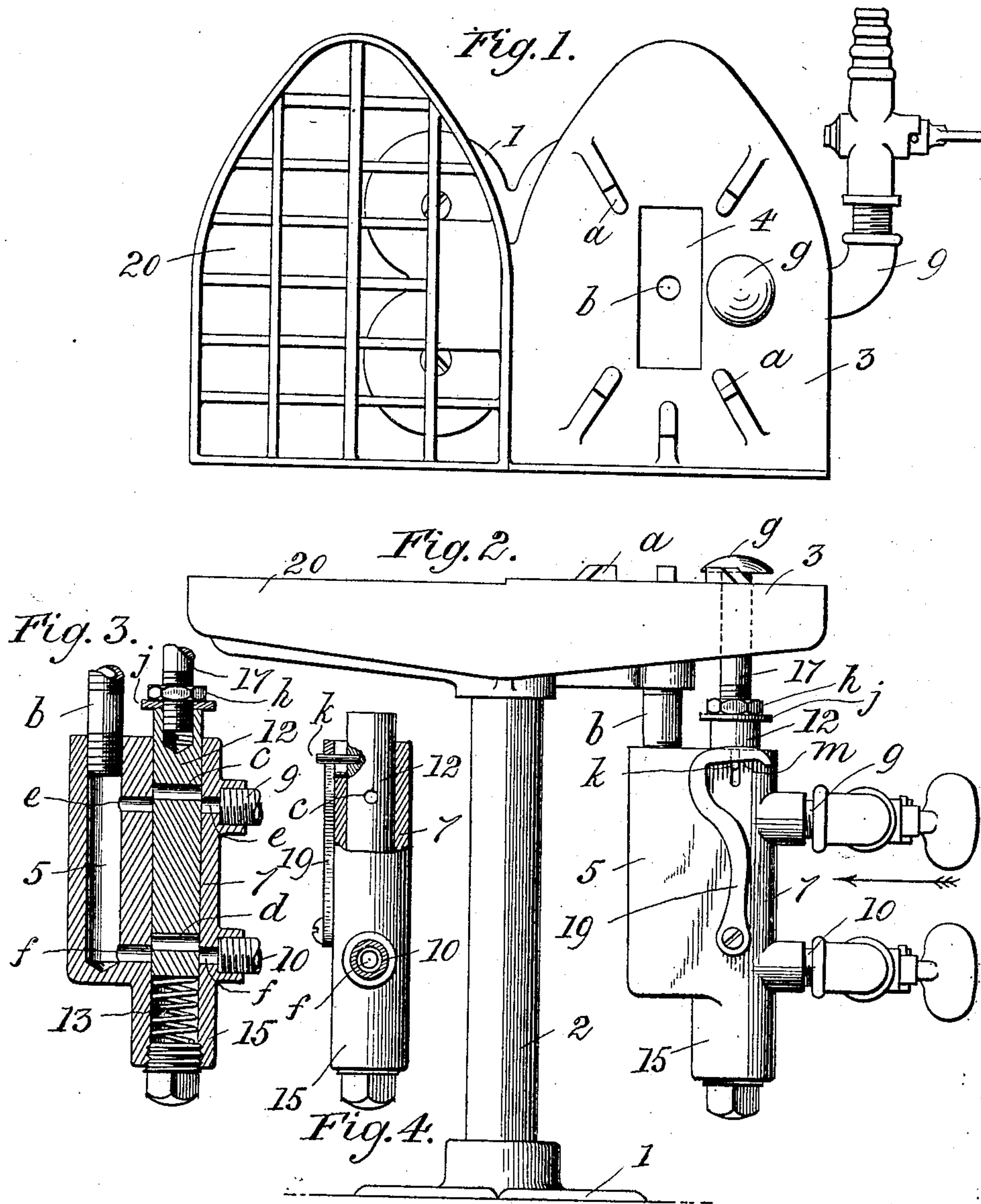


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 AUTOMATIC CONTROLLER FOR GAS HEATERS.  
 APPLICATION FILED NOV. 23, 1907.

912,000.

Patented Feb. 9, 1909.



Witnesses

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# UNITED STATES PATENT OFFICE.

ANDREW J. KREIN AND JOHN F. HARGREAVES, OF BALTIMORE, MARYLAND.

## AUTOMATIC CONTROLLER FOR GAS-HEATERS.

No. 912,000.

Specification of Letters Patent.

Patented Feb. 9, 1909.

Application filed November 23, 1907. Serial No. 403,478.

*To all whom it may concern:*

Be it known that we, ANDREW J. KREIN and JOHN F. HARGREAVES, both of the city of Baltimore and State of Maryland, have invented certain Improvements in Automatic Controllers for Gas-Heaters, of which the following is a specification.

This invention relates to an appliance adapted for attachment to gas heaters of various kinds whereby upon the removal of the object to be heated, the flow of gas to the burner is automatically diminished and the flame thereby reduced to a mere taper. In the further description of the said invention which follows, reference is made to the accompanying drawing forming a part hereof and in which,—

Figure 1 is a top view of a gas heater for sad irons one of the uses to which the invention is adapted, together with appliances forming the subject of the present invention. Fig. 2 is an exterior front view of the same. Fig. 3 is a front vertical section of the gas-controlling appliance. Fig. 4 is a partly sectional view of the controller looking in the direction indicated by the arrow in Fig. 2.

Referring now to the drawing, 1 is the base of the heater, and 2 a column secured at its lower end to the base. The column 2 supports the heating table 3 which is shown as adapted to receive a sad iron to be heated, and the upper surface of the table has projections *a* upon which the sad iron is placed to be heated.

4 is a cavity in the heating table, which constitutes the combustion chamber to which a mixture of air under pressure and gas is conducted through the pipe *b* from the mixing chamber 5.

At one side of the mixing chamber 5 and preferably formed integral therewith, is a cylinder 7 into the wall of which is screwed the gas and air pipes respectively denoted by 9 and 10; and within the said cylinder is placed a cylindrical piston-valve 12 supported by the spiral spring 13 situated in a lower extension 15 of the said cylinder as shown in Fig. 3.

The gas and air passages in the piston-valve 12 are denoted by *c* and *d*, and the ports in the cylinder 7 which admit gas and air from the pipes 9 and 10 to the mixing chamber 5, are represented by *e* and *f* respectively.

Into the upper end of the piston-valve is screwed the stem 17 which extends loosely

through a hole in the heating table 3, and is provided with a head *g* the top of which is on a higher plane than the projections *a*, as shown in Fig. 2, for a purpose hereinafter described.

It is intended that when the piston-valve is in its highest position as shown in Fig. 3, the passages *c* and *d* will partly register with the ports *e* and *f* so as to admit sufficient gas and air, or gas alone to the mixing chamber to maintain a taper flame in the combustion chamber 4; and when the top of the head *g* is forced down by the weight of the sad iron, to the same level as the surface of the projections *a*, that a full admission of gas and air will take place, and a maximum heating flame produced.

It will be understood that the size of the maximum flame depends on the length of the stem 17, and the stem is therefore made adjustable in length by being screwed into the piston-valve as before stated; and when the proper sized flame is obtained, alteration is prevented by the lock nut *h* which is screwed tightly on to the overhanging washer *j* which prevents to some extent, dust being deposited on the exposed portion of the valve.

The upward movement of the piston-valve which contracts the size of the taper flame, is limited by the pin *k* which projects from the valve and extends through a slot in the wall of the cylinder 7, and the hinged hook 19 having an inclined surface *m* which bears on the said pin.

To arrange the apparatus for use, the stem 17 is first given such length as will produce the desired size of heating flame, when the sad iron is seated on the heating table, and then the upward limit of movement of the piston-valve to give a small taper flame is effected by the position of the hinged hook 19 with respect to the pin *k*.

In the drawing the heating table 3 is shown as having a grated extension 20 to hold the sad iron when not in use, but the extension while a convenient device is not essential to the operation of the apparatus.

We claim as our invention:—

In a gas heater, a table having a combustion chamber, and projections to support a sad iron, a vertical cylinder situated beneath the table, the said cylinder having in its wall a gas, and an air port, a spring-supported piston-valve within the cylinder, a stem which extends from the piston, through the table and terminates at a point above the projec-

tions on the table, the said piston having lateral passages which, in the depression of the piston, register with the gas and air ports, combined with a mixing chamber in communication with the interior of the cylinder  
5 by means of ports which are in alignment with the aforesaid ports, a pipe to carry the mixed gas and air to the combustion chamber and means whereby the upward move-

ment of the said piston is controlled, to regulate the taper flame, independently of the heating flame, substantially as specified.

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