

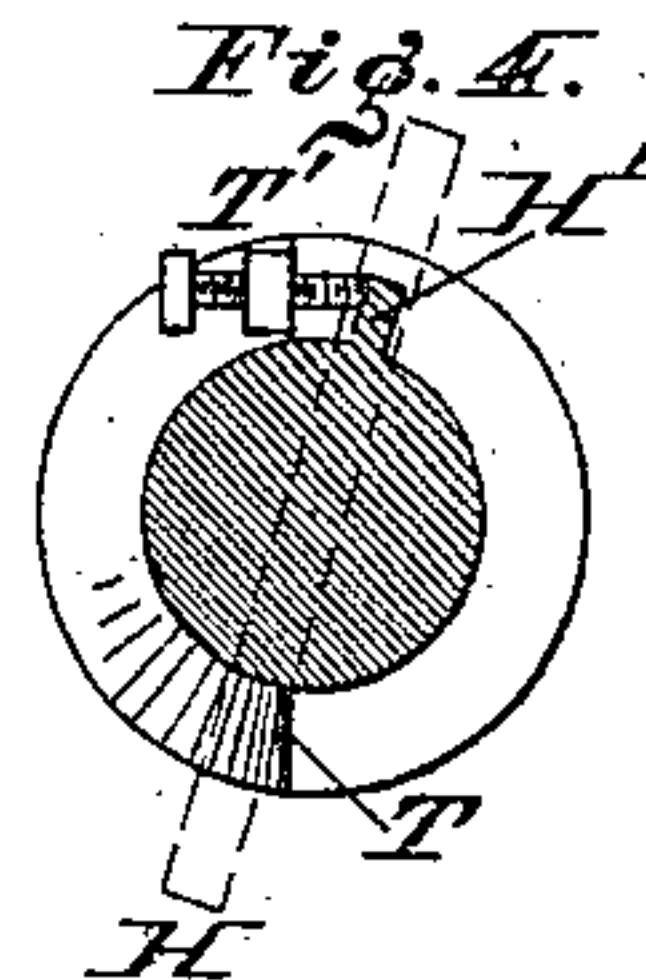
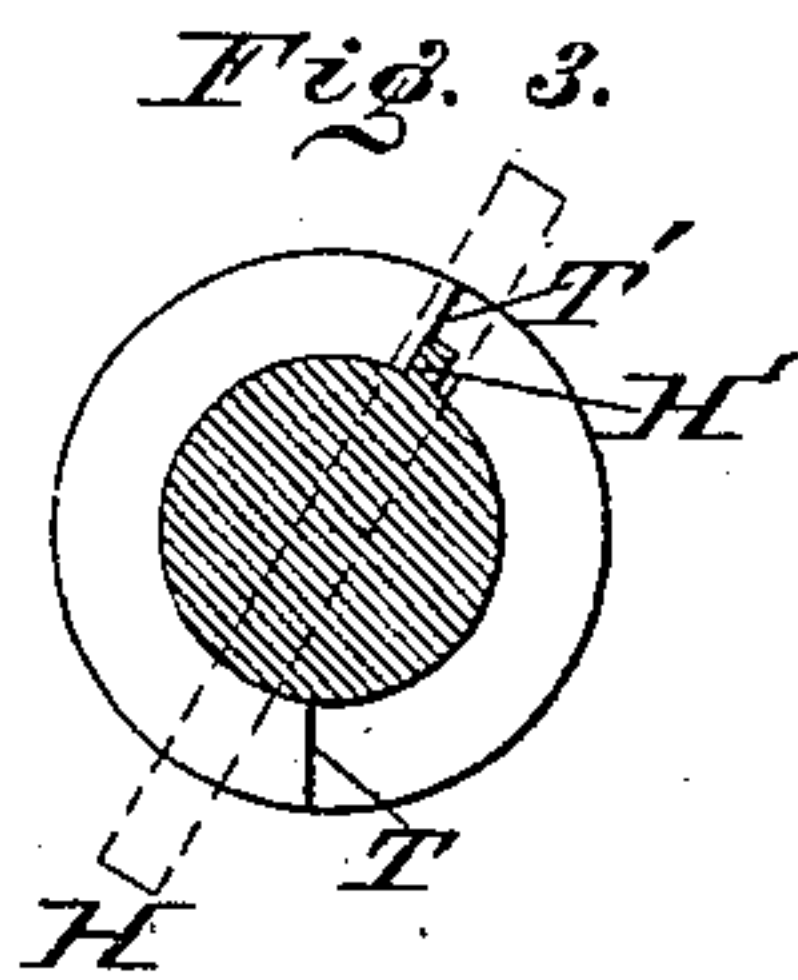
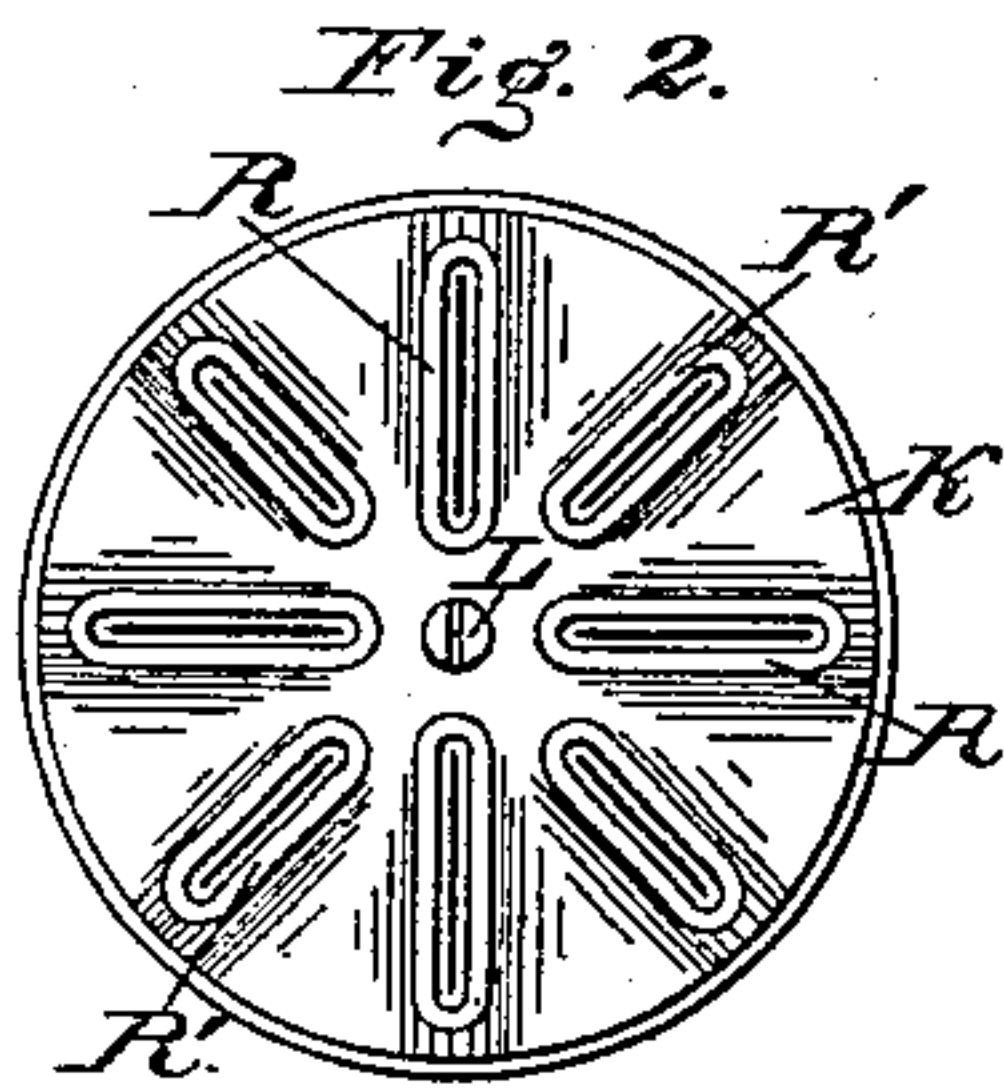
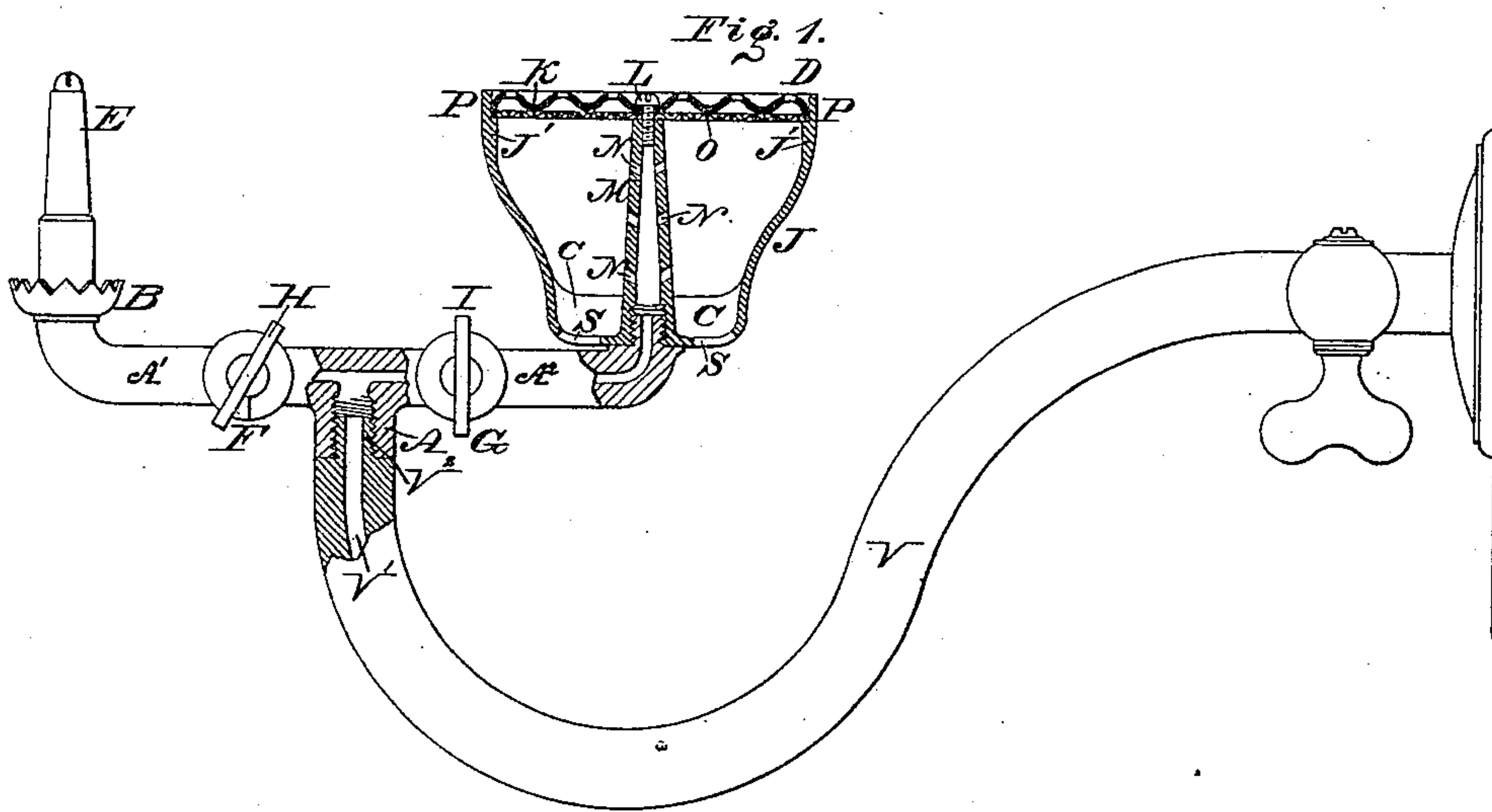
(No Model.)

I. W. HEYSINGER.

LIGHTING AND HEATING ATTACHMENT FOR GAS BRACKETS.

No. 271,708.

Patented Feb. 6, 1883.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## LIGHTING AND HEATING ATTACHMENT FOR GAS-BRACKETS.

SPECIFICATION forming part of Letters Patent No. 271,708, dated February 6, 1883.

Application filed November 2, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, ISAAC W. HEYSINGER, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Lighting and Heating Attachments for Gas-Brackets, of which the following is a full, clear, and exact description, reference being had to the drawings accompanying and forming part of this specification.

Figure 1 is a side view of my invention, partly in section, attached to an ordinary wall gas-bracket. Fig. 2 is a top view of one form of the cap-plate of the heating part of my invention. Figs. 3 and 4 show the stop-cock mechanism which I employ, and which forms a part of my invention.

The lettering in all the figures is uniform.

My invention relates to the construction and arrangement of a gas-burning attachment to be applied to an ordinary gas-bracket in the manner of a common gas-burner, and provided with a gas-burner of any of the forms in general use, and also with a Bunsen or heating burner, so that, when required, various articles of food may be properly heated or cooked or water heated without interfering with the operation of the light-giving burner, which is in habitual use, the heating device being out of the way when not in use, and at all times ready for service.

My invention also relates to the special construction of the Bunsen or heating burner, which I prefer to employ, and in addition to the stop-cock mechanism for the illuminating-burner, so that the light thereof may be turned down when not required without danger of extinguishment, or may be totally extinguished, if desired.

Referring to the drawings, Fig. 1 shows my invention in its complete form, ready for use, and attached to the wall-bracket V, which supplies the flow of gas required.

At V<sup>2</sup> the bracket terminates in a screw-tip, to which an ordinary gas-burner is usually attached. Instead of this, however, I attach the combination-burner shown by means of the female thread of the shank A, through which the gas flows. This shank forms part of and supports the branched pipe A' A<sup>2</sup>, terminating at its two extremities in the burners E and

J. The stop-cocks H and I are interposed at proper points to cut off or regulate the flow of gas to the burners.

At B is attached an ordinary illuminating-burner, E, which furnishes light precisely as though no other burner were used.

At the opposite end of the supply-tube A' A<sup>2</sup> is seen the heating-burner J, so constructed as to furnish a mixture of air and illuminating-gas in the proper proportions to insure perfect combustion and maximum heat.

I prefer having the centers of the burners for general use about four inches apart and nearly on the same level, as in this way the flame of the one can be readily communicated to the other by merely passing the hollow of the hand over the one and toward the other, without the use of matches. I also arrange the threads of the screw A, which secures the attachment to the bracket, in such manner that the branch pipe A' A<sup>2</sup> shall lie in the same vertical plane as the bracket, and to have the illuminating-burner project to the front, while the heater lies back and above the bracket V. By this construction the heater is entirely out of the way, and is also supported nearer the wall, which insures greater strength when heavy vessels are set upon it to be heated.

The stop-cock I is of the ordinary type of those in common use. At H, however, I use a modification more fully shown in Figs. 3 and 4.

As is well known in gas stop-cocks, a pin is attached to the cock-stem, which abuts at each half-revolution against a shoulder formed upon the rim of the socket, so as to limit its motion.

In order to prevent the accidental extinguishment of the illuminating-burner, I carry this shoulder formed upon the rim of the socket farther around at one side than at the other, so that the shoulders T and T' are not opposite each other. By this means, when the cock is turned to the right the light will be entirely extinguished, but when turned to the left the pin H' will strike the shoulder T' before the vent has been entirely cut off by the stop-cock, and thus a small flame will be allowed to burn, which may be readily extinguished by turning the cock in the opposite direction. In Fig. 4 the same device is shown, supplemented by a regulating-screw, so as to adjust the



shoulder T' to whatever-sized flame may be required. Where cheapness is not an object this form is obviously preferable.

The heating-burner which I prefer to use is that shown at J, Fig. 1, though any of those in use may be employed, if suitable. The heater shown, however, is cheap, convenient, durable, and effective, and seems to meet all the requirements.

J is a shell of cast metal, made usually somewhat in the shape of an inverted bell or cup, open at the top, and provided with a hollow central post, M, with exit-openings N N for the escape of the gas from the hollow post M into the bell-shaped chamber. At the bottom of the post is a female screw to attach the same to the stem of the burner-tube A<sup>2</sup>. There are a number of openings, S S, in the bottom of the bell or cup J, around the post M, to admit air from beneath, and to compensate for this loss of metal the partitions between the said openings S S are expanded vertically for the sake of strength of construction, in the manner shown in surface at C C. Near the open top of the bell-shaped cup is a peripheral interior shoulder, J' J', upon substantially the same level as the top of the post M. A disk of wire-gauze or perforated metal, having perforations too small to pass a flame, is laid upon this shoulder J' J', a central hole therein corresponding to the top of the post M. Over this perforated disk is then laid a corrugated cast-metal cap provided with a series of slits, (shown as concentric in Fig. 1 and radial in Fig. 2,) the said slits being so placed at or near the summits of corresponding corrugations as to burn the mixed air and gas in a series of flat flames. The slits are also made very narrow, so as to offer an additional safeguard against the descent of the flame into the chamber beneath, while the mass of cast-iron above keeps cool the perforated plate beneath and protects it from injury.

I sometimes dispense with the cap-plate K where a mass of flame is desired, though I usually prefer to use it. This cap-plate K is attached to the post M by the screw L, which passes through the plate K, perforated disk O, and into the end of the post M, where it is seated.

In use, when the gas is turned on, it escapes through the openings N N into the bell-shaped chamber J, where it meets the inflow of atmospheric air, passing up through the openings S S, and both are commingled. They are further mixed in passing the gauze disk, and still further when they are forced through the slits R' R' by the upward current and burned in flat sheets against the under surface of the vessel to be heated, which is placed above.

Around the periphery of the upper part of the bell-shaped vessel J, I place studs P P, to raise the vessel to a proper height above the flame.

Having now described my invention, what I desire to claim is—

1. In combination with the wall-bracket V,

a combined heating and illuminating attachment having the burners E and J, substantially as shown and described. 70

2. A combined heating and illuminating attachment provided with burner E, heater J, stop-cocks H and I, and screw-shank A, substantially as and for the purpose set forth.

3. The combination of the illuminating-burner E, heating-burner J, connecting-pipes A' and A<sup>2</sup>, and shank A, the whole constructed to operate substantially as described. 75

4. A combined heating and illuminating gas-burning device, having the illuminating-burner E and the heating-burner J upon substantially the same level, and sufficiently near each other to pass the flame from one to the other, substantially as herein shown and described. 80

5. As an article of manufacture, a combined heating and illuminating gas-burning device, having the burners E and J, connecting-pipes A' and A<sup>2</sup>, stop-cocks H and I, and attaching-shank A, the whole being adapted to be attached for use to an ordinary wall-bracket without the intervention of flexible or other connections, substantially as described. 85

6. The gas stop-cock H F T, having the stop-shoulders T and T', and the stop H', so arranged with reference to each other that when the cock is turned in one direction it will close the vent entirely, and when in the other direction its motion will be arrested before the vent is entirely closed, substantially as and for the purpose described. 90

7. A gas stop-cock provided with an adjustable stop, T', and stop-pin H', so arranged as to variably limit the motion of the stop-cock before the gas is entirely cut off, substantially as described. 95

8. The gas heating-burner J, having an interior mixing-chamber provided with air-inlets S S, gas-inlets N N, perforated exit-disk O, and slotted burner-cap K, substantially as shown and described. 100

9. A heating gas-burner having the outer shell, J, and the hollow central post, M, cast in a single piece, said shell J having air-inlet openings S S, and said post M having gas-inlet openings N N, and a female screw at the bottom to attach the same to a bracket gas-burner screw, substantially as herein shown and described. 105

10. In combination with the heating gas-burner J and perforated disk O, the corrugated slotted cast-metal cap K, adapted to rest over said perforated disk O and concentrate the current into a series of flat flames beneath the vessel to be heated, substantially as described. 110

11. In combination with the perforated diaphragm of a Bunsen burner, a heavy cast-metal slotted and corrugated cap-plate adapted to absorb and prevent the heat from acting directly upon said diaphragm, and thus protect the same, substantially as described. 115

12. The combination, in a Bunsen burner, of the shell and central feed-tube cast in a sin-

gle piece, with a detachable perforated cover adapted to close the shell and form a mixing-chamber, the whole constructed and arranged to be detachably applied to a gas-bracket or burner-tube, substantially as described.

13. As an article of manufacture, the heating-burner having a cup-shaped mixing-chamber closed above by a perforated diaphragm, air-openings S S, central hollow screw-post, M, having gas-openings N N, and a screw-seat

at the top, said perforated diaphragm being centrally attached to the said post M by the screw L, and the whole thus held together substantially as and for the purposes shown and described.

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Witnesses:

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