

(No Model.)

J. C. O. CHEMIN.
INCANDESCENT GAS BURNER.

No. 445,725.

Patented Feb. 3, 1891.

Fig. 1.

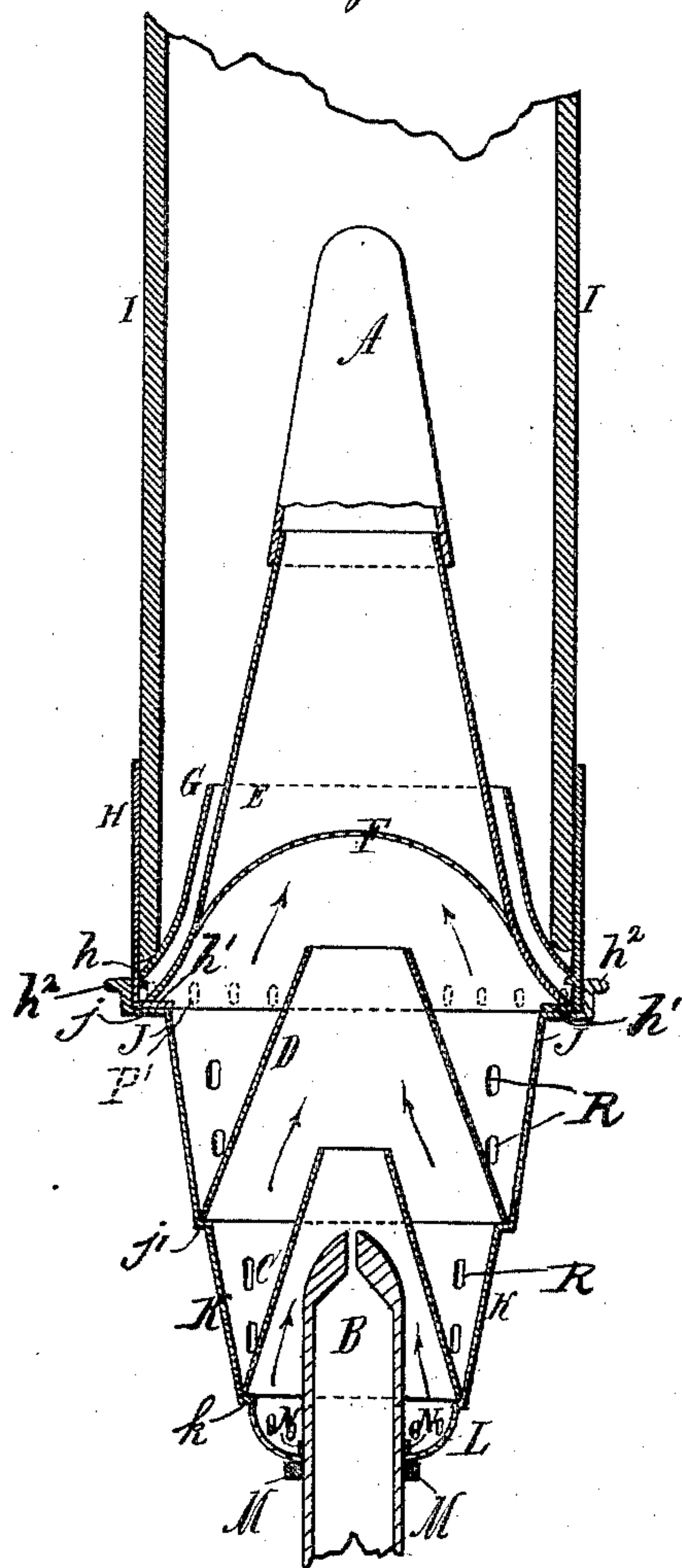
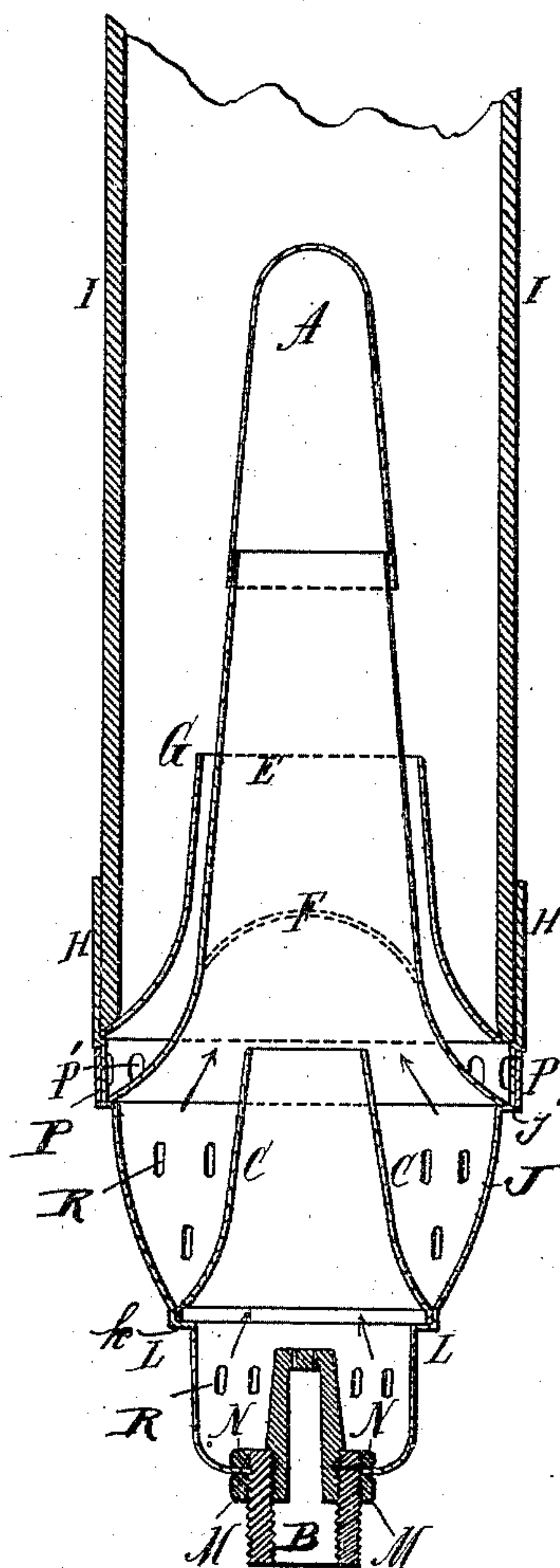


Fig. 2.



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UNITED STATES PATENT OFFICE.

JEAN CHARLES OCTAVE CHEMIN, OF PARIS, FRANCE.

INCANDESCENT GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 445,725, dated February 3, 1891.

Application filed August 6, 1890. Serial No. 361,239. (No model.) Patented in Belgium September 20, 1889, No. 87,831, and in France December 24, 1889, No. 202,772.

To all whom it may concern:

Be it known that I, JEAN CHARLES OCTAVE CHEMIN, a citizen of the Republic of France, residing at Paris, in France, have invented a certain new and useful Improvement in Incandescent Gas-Burners, (for which I have obtained Letters Patent in France, No. 202,772, dated December 24, 1889, and in Belgium, No. 87,831, dated September 20, 1889,) of which the following is a full, clear, and exact description.

My invention has relation to incandescent gas-burners; and it has for its object to provide such a burner in which an incombustible body is adapted to be highly heated by means of a jet of coal-gas, carbureted gas, water-gas, or natural gas, said body while in its heated condition serving for lighting purposes.

Further objects of the invention are to provide such a burner in which the combustion is more nearly perfect than in other burners of this class and smoking of the burner avoided, and, finally, to provide a burner which shall be of simple and inexpensive construction.

The above-recited objects I attain by the construction of the burner hereinafter described, and illustrated in the accompanying drawings, in which latter—

Figures 1 and 2 are vertical sections of my improved incandescent gas-burner, showing slight differences in the construction of the same.

Like letters of reference indicate like parts in the figures of drawings.

Referring more particularly to Fig. 1, the burner comprises a casing of porcelain or metal, said casing consisting of the three portions J K L, integral with each other and of the shape shown, the casing in its external appearance being that of an inverted truncated cone. I, however, do not wish to be confined to the precise shape of casing shown, as said shape may vary.

The upper portion J of the casing is provided with an offset or shoulder *j*, upon which is adapted to be seated a chimney holder or support H. Said support H is retained in place by means of suitable fingers *h*², project-

ing upwardly from the upper end of the burner-casing.

B indicates a gas-supply pipe provided with a collar or flange M, upon which is seated the burner-casing, which latter is secured in position upon the flange by means of a nut N.

At the lower end of the portion K of the casing a flange or offset *k* is provided, upon which is seated a tube C, having the shape of a truncated cone, the upper end of said tube extending above the upper end of the gas-pipe B, as shown. Upon an offset *j'*, intermediate the portions J K of the casing, is seated a tube D, also of a truncated-cone shape, the upper end of said tube terminating above the upper end of the tube C.

The chimney holder or support H is provided near and at its lower end with flanges *h h'*, upon which are seated, respectively, the tubes G E, which are of the general shape of a truncated cone and flared toward their lower end. It will be seen that by the arrangement of the several tubes with relation to each other air passages or spaces are formed between and around the same, and to which passages air is admitted through a suitable number of openings R, formed in the burner-casing, and openings P', formed near the lower end of the chimney-support, said openings P' being shown in dotted lines in Fig. 1. It will also be seen that by giving the tubes the shape described the air will be projected toward the center of the burner-casing, and thus be caused to more thoroughly commingle with the gas issuing from the burner-pipe, and consequently produce a mixture which will produce perfect or nearly perfect combustion, and, as a result, no smoking of the burner takes place, which is a common objection in the ordinary constructions of burners of this class. The tube E is of considerably greater height than the tube G, and upon its upper end is seated a dome or cap A, which may be composed of any suitable material or materials adapted to be brought to a state of incandescence and be practically incombustible—as, for instance, platina, palladium, iridium, or magnesia. Said cap should be reticulated, as usual, to allow proper draft through the burner.

Within the tube E, at a point above the tube D, is arranged an arched wire-gauze partition or screen F, the object of which is to render the mixture of gas and air uniform by subdividing the same as it passes through said partition.

I is a suitable chimney supported by the holder H.

The construction shown in Fig. 2 differs in but a few unessential particulars from the construction just described. In said figure the tube D and portion K of the casing are dispensed with, and the tube C being curved or flared toward its lower end, while the portion J of the casing is bulged or curved, as shown. The chimney-holder H is here shown as being formed integral with the portion J of the casing, instead of separate therefrom, as in Fig. 1.

Rotatably mounted upon the lower portion of the chimney-support H, opposite the openings P', is a ring P, which I provide with a suitable number of openings which are adapted to register or coincide with the openings P' when the ring is rotated partially, and in this way I provide a means for regulating the supply of air which is allowed to flow through the openings P' between the tubes E G. By allowing air to circulate around and between the said tubes the tube E is prevented from getting too highly heated and at the same time supply oxygen to the flame which burns upon the outer surface of the cap A.

It will be understood that the number of tubes employed may be varied, necessitating but slight changes in the construction of the casing.

What I claim is—

1. In an incandescent gas-burner, the combination, with a gas-admission pipe, a burner-casing supported thereupon and provided with a series of offsets or shoulders, and a chimney holder or support arranged at the upper end of the burner-casing, of a series of truncated-cone-shaped tubes arranged within the burner-casing and supported upon the offsets thereof, one above another, a series of air-passages between said tubes and casing, a dome or cap adapted to be heated to incandescence, arranged at the upper end of the uppermost tube, and a suitable chimney arranged upon and supported by its holder, as and for the purpose specified.

2. In an incandescent gas-burner, the combination, with a gas-admission pipe, a burner-casing supported thereupon and provided with a series of offsets or shoulders, and a chimney holder or support arranged at the upper end

of the burner-casing, of a series of truncated-cone-shaped tubes arranged within the burner-casing and supported upon the offsets thereof, one above another, a truncated-cone-shaped tube supported within the chimney-holder and surrounding the uppermost of the first-mentioned tubes, a series of air-passages between all of said tubes and the casing, a dome or cap adapted to be heated to incandescence, arranged at the upper end of the said uppermost tube, a suitable chimney arranged upon and supported by its holder, and a series of openings in said holder adapted to supply air to the passage between the uppermost tube carrying the cap and its surrounding tube, whereby to prevent undue heating of the former tube, as and for the purpose specified.

3. In an incandescent gas-burner, the combination, with a suitable gas-admission pipe, of a casing supported thereby, a series of superposed truncated-cone-shaped tubes arranged within said casing, air-passages between said tubes, openings in the casing adapted to admit air to said air-passages, a chimney holder or support carried at the upper end of the casing, openings in said holder for admitting air around the uppermost tube, a ring rotatably mounted upon the chimney-holder and provided with openings adapted to register with the openings therein, and a cap adapted to be heated to incandescence, carried at the upper end of the uppermost tube, all arranged for co-operation, as and for the purpose specified.

4. In an incandescent gas-burner, the combination, with a suitable gas-admission pipe, of the burner-casing supported thereby and having the shape of an inverted truncated cone, the truncated-cone-shaped tubes C D E G, arranged within the said casing, one above the other, forming air-passages between them, the chimney-support H, carried at the upper end of the casing and provided with openings for admitting air between the tubes E G, openings in the casing for admitting air between the tubes C D E and around the gas-admission pipe, the wire-gauze partition F, arranged within the tube E, and the cap A, secured to the upper end of the latter tube, all arranged for co-operation, as and for the purpose specified.

The foregoing specification signed by me this 5th day of June, 1890.

JEAN CHARLES OCTAVE CHEMIN.

Witnesses:

R. J. PRESTON,
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