2 Sheets--Sheet 1.

H. J. FERGUSON.

Carburetor or Hydrocarbon Diffuser.

No. 160,410

Patented March 2, 1875.

FIG. 1.

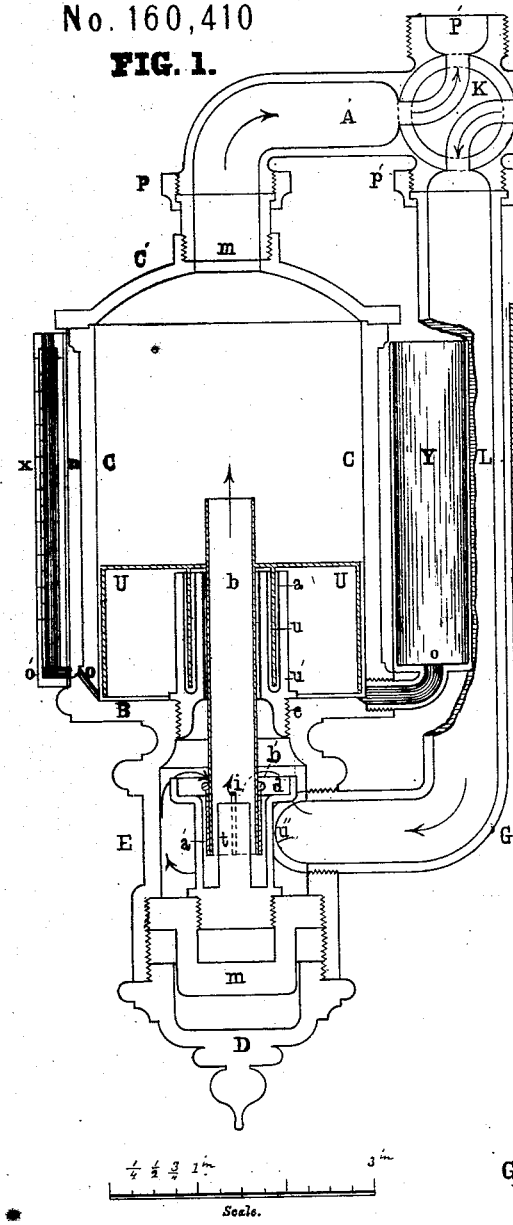
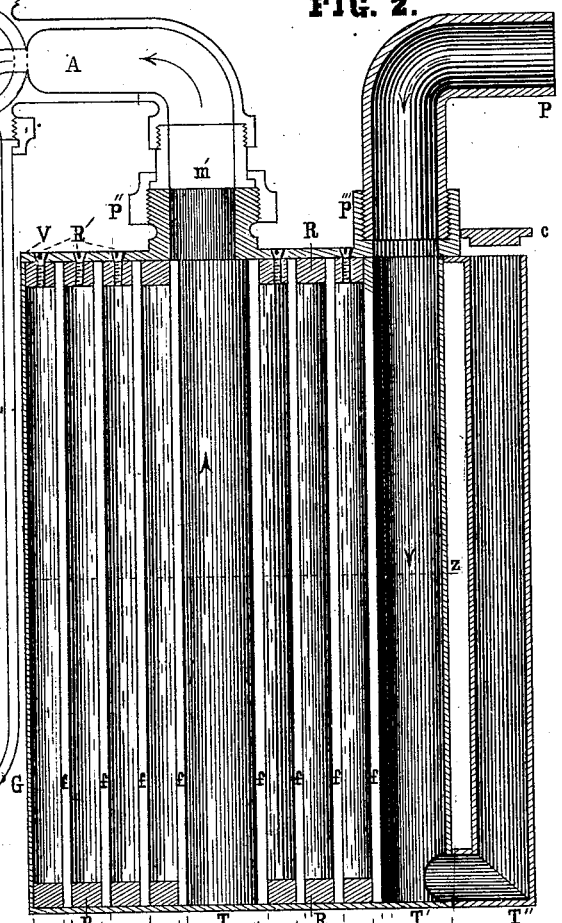


FIG. 2.



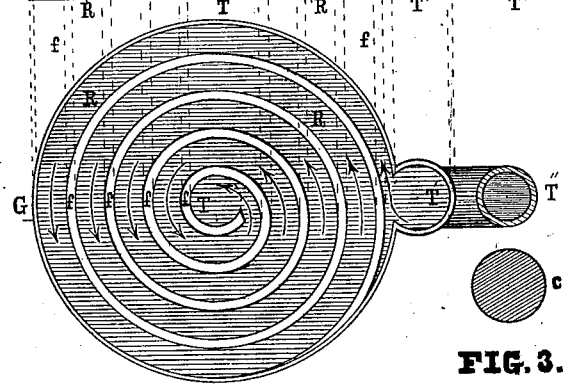


FIG. 3.

Witnesses. Wm Dixon. Charles E. Kimball.

INVENTOR. Henry J. Ferguson.

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

2 Sheets--Sheet 2.

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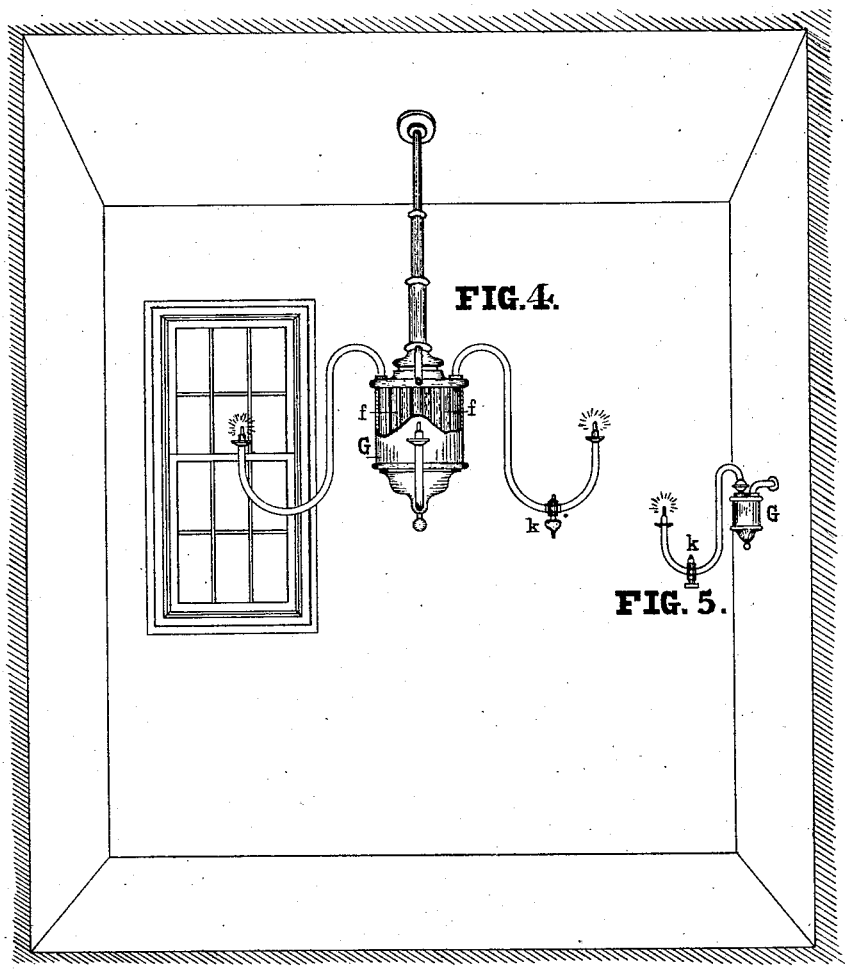

FIG. 4.

FIG. 5.

Witnesses. A. Orth, Ch. Wientge

INVENTOR. Henry J. Ferguson

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

HENRY J. FERGUSON, OF NEW YORK, N. Y.

IMPROVEMENT IN CARBURETERS OR HYDROCARBON-DIFFUSERS.

Specification forming part of Letters Patent No. **160,410**, dated March 2, 1875; application filed October 16, 1874.

To all whom it may concern:

Be it known that I, HENRY J. FERGUSON, of the city and county of New York, and State of New York, have invented certain Improvements relating to Carbureters or Hydrocarbon-Diffusers, of which the following is a specification:

The object of my invention is to provide gas-consumers with an improved appliance for enriching their gas (as ordinarily supplied to them) by the use of any of the suitably light hydrocarbons, and also to prevent any oily deposit within the pipes reaching the burners, and hence a danger of conflagration through the act of lighting, &c.

My invention consists in a vertical cylindrical vessel of suitable thickness and strength of metal, having a detachable cover, to the under side of which is fixed a spirally-coiled strip of metal, having attached to it endwise a spirally-coiled piece of felt, or its equivalent, and termed an absorbent, which, when adjusted with its appendage, the metallic coil and cover, occupies vertically the chamber of the cylindrical vessel, a given lower portion of which is always immersed in the hydrocarbon fluid—that is to say, the chamber of the cylinder is kept filled to a given height with the hydrocarbon fluid.

Figures 1 and 2 are vertical longitudinal skeleton sections of the governor and hydrocarbon-diffuser in combined relation. Fig. 2 is a vertical longitudinal section of the diffuser or carbureter. Fig. 3 is a horizontal transverse section of the carbureter. Fig. 4 is a perspective view of the diffuser as applied to a chandelier and operating with it. Fig. 5 is a perspective view of the diffuser, as applied to a bracket and operating with it.

The same letters refer to the same parts in all the figures.

In Figs. 2 and 3, G is the body of the diffuser, is cylindrical, and has one side slotted nearly from top to bottom, and to which an induction-tube, T′, likewise slotted, is joined, slot to slot, so as to form a lengthened passage between the two parts. Joining T′ at the bottom by a horizontal tubular connection is a vertical tube, T″, for supplying the vapor fluid. *c* is its closer. T″ may be of glass, and thus serve as an indicator, too, to the quantity of contained vapor fluid, the latter occupying any practical level, as Z. V is a detachable cover of the instrument, in the center of which is a neck to connect with coupling P″, and to join the eduction-tube T, and in it, too, over T′, is also another neck, P‴, to join the meter-connection P. R, Figs. 2 and 3, are vertical and transverse sections of the interposed leather, lead, or other equivalent, (lead is preferable, because of its perfect flexibility and high gravity,) the use of the latter quality in the lower end of the coil being to keep the planes of the coil in even and perfect shape by weighted stretching, and thus avoid the use of all interfering substances, as wire-cloth and the like, it being desirable that the passing gas should have the widest contact, and an unobstructed passage along the planes of the coil. The upper interpose or strip R is the medium for attaching the absorbent coil to the detachable cover V, the attachment being made by passing screws through cover V, and into R, the upper interpose being attached to the under side of cover V. *f*, Figs. 2 and 3, are vertical and transverse sections of the felt coil. Gas from the meter traverses the interspace of the felt coil above the surface of the vapor fluid from T′, goes out at T, then on through A, &c.

It will be seen that the absorbent coil will steadily elevate and diffuse through its substance the vapor fluid, and that, as gas progressively advances along the wet planes of the coil, it will more and more take up and become charged with vapor, and the degree of charging or saturation may be estimated by the distance traveled by the gas through the felt coil, or by the equivalent length of it. Thus the degree of diffusion may be regulated, and it may also be regulated by the depth of the vapor-space maintained, or, in other words, by the distance the level of the vapor fluid is maintained from the top of the chamber.

The width of R determines the width of the interspace, and is thus one of its special uses, constructively, and as respects the necessary volume of space the respective volume of gas requires.

In adapting the diffuser in miniature to chandeliers and brackets, various ornamental forms may be employed, and generally in those

cases the gas enters by the center, or centrally, and passes out by the periphery.

I do not claim a hydrocarbon-diffuser, broadly; but

What I claim as my invention is—

In a gas-carbureter, the combination of a detachable cover with a vertical scroll-coil, consisting of a thin sheet of fibrous absorbent material, provided with detachable strips of heavy metal at each end, and secured to the cover, substantially as herein shown and set forth.

HENRY J. FERGUSON.

Witnesses:

MARTHA J. HOUGHTON,

THOMAS HOUGHTON.