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Improvement in Carbureters.

No. 132,025.

Patented Oct. 8, 1872.

Fig. 2.

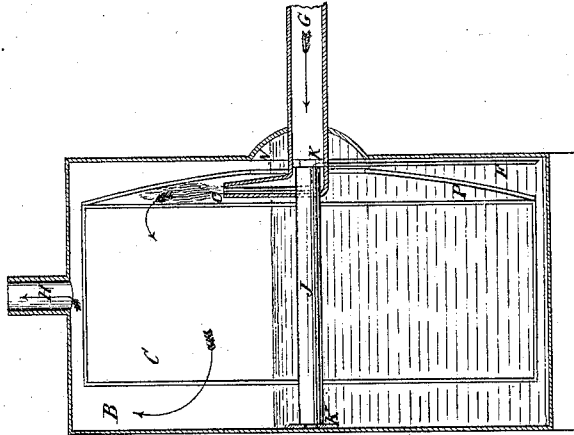
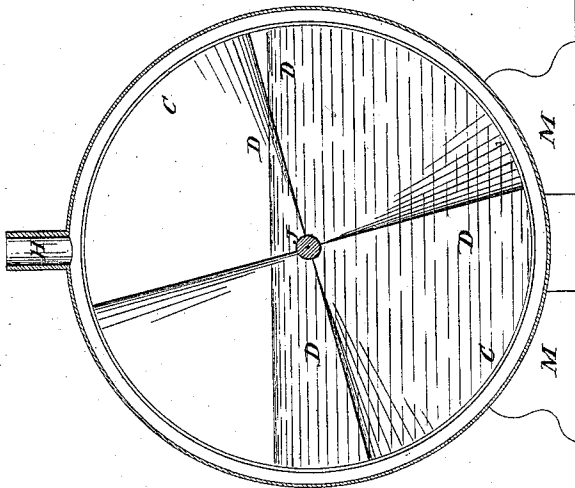


Fig. 1.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN CARBURETERS.

Specification forming part of Letters Patent No. 132,025, dated October 8, 1872.

*To all whom it may concern:*

Be it known that I, JOSEPH FRANÇOIS MARIE RIGOD, of Paris, in the Republic of France, have invented a new and Improved Apparatus for Carbureting Air; and I do hereby declare the following, when taken in connection with the accompanying drawing and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification, and represents, in—

Figure 1, a longitudinal section, and in Fig. 2 a transverse section.

The object of my invention is to provide an apparatus suitable for carbureting air by means of mineral or vegetable essences or hydrocarbons and applying the carbureted air for lighting and heating purposes. This apparatus consists of an external metal cylinder containing another metal cylinder having lateral helical openings at each of its faces, and this cylinder, which is divided into four compartments, is fixed to a horizontal shaft which turns with the cylinder in two bearings by the simple reaction of the air. The internal cylinder has on its sides a convex cap or cover, in the interior of which there is a tube which supplies the air to be carbureted. This tube, which I call a dividing tube, consists of an external tube having in its interior at the center a small capillary tube, the lower end of which is immersed in the carbureting-liquid, which is poured into the external cylinder. The air is forced by a blower through the dividing-tube and through the lateral and helical openings, where it becomes saturated with the carbureting-liquid, and it then escapes through an opposite opening in a sufficiently-carbureted state to burn with a beautiful flame.

B represents an external cylinder surrounding an internal cylinder, C, having lateral helical openings in its two sides, and it is divided into four compartments, D D D D, and fixed to a shaft, J, which turns in two bearings, K K, by the reaction of the current of air. The cylinder C, as seen in Figs. 1 and 2, is not so large as the cylinder B, and has at the side E a convex cap or cover, P, in which there is the outlet of the dividing-tube which supplies the air, and this dividing-tube consists of a small capillary tube, F, extending to near the bottom

of the apparatus, and also another tube, G, and the level of the liquid is shown at N N, and M are the legs which support the apparatus. The liquid is introduced by the opening or pipe H and allowed to rise to the level N N, the air being supplied at a low pressure by means of a special bellows or fan to the pipe G, so that when it escapes through the orifice O there will be sufficient suction to enable the liquid to rise in the capillary tube F. The liquid, when it arrives in contact with the air, becomes absolutely divided and strikes threads of metal or those made of vegetable or animal matters, placed in sufficient quantity in each of the compartments D D D D, the effect of which is that the air which passes out through the pipe or opening H is perfectly saturated with the carbureting-essence and burns with an intense flame. The pressure of the air also causes the cylinder C to rotate, the effect of which is to divide the essence or liquid and cause it to come in contact with fresh air and the air in contact with fresh liquid, and thus cooling is impossible, and at the same time the liquid is not heated and condensations are avoided. This apparatus may also be employed without the threads of metal or of vegetable or animal matters, and using instead of them cloth made of the threads, and in this case the capillary tube may be dispensed with. In another arrangement, instead of plunging the capillary tube or tubes in the liquid with which the threads or cloth are in contact, the tube or tubes may be placed in a vessel containing a heavy oil, in order to give more density to the flame, and in all cases where a pair of bellows are used they are provided with India-rubber springs, in order to supply the air with regularity and without shocks. The cylinder C may be modified in various ways without affecting the working of the apparatus; thus, the two sides may be formed of plates with open spaces, or with spaces covered with metallic cloth, and in these two cases the convex cap or cover P is indispensable. The cylinder C can also be inclosed in lateral cases full or half full of liquid, the periphery of the cylinder being formed of sheet metal having in it a number of holes or made entirely of metallic cloth. The capillary tubes can also be replaced by a simple siphon elevated between the cap P and the per-

forated sides of the cylinder, and the India-rubber springs used for regulating the pressure can also be replaced by metallic springs.

I claim as my invention—

1. The cylinder B, in the interior of which is arranged concentrically an internal cylinder provided with helical openings which give a rotation to the cylinder by the effect of the reaction of the current of air.

2. In combination with the subject-matter of the first clause of claim, I claim the tube G

divided at its end and in connection with a capillary tube, the latter having its lower end immersed in the liquid, substantially in the manner and for the purpose described.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

J. F. M. RIGOD.

Witnesses:

Q. LAFOUR,

L. DARNAME.