

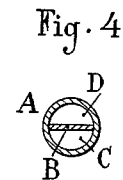
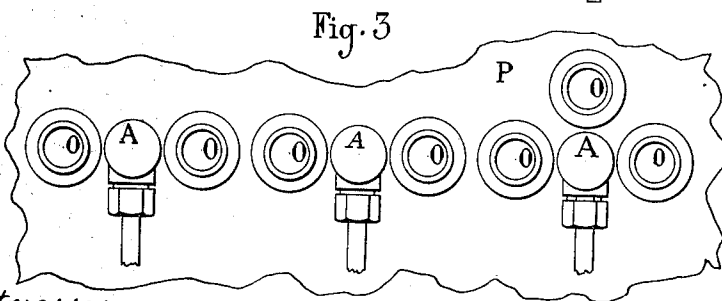
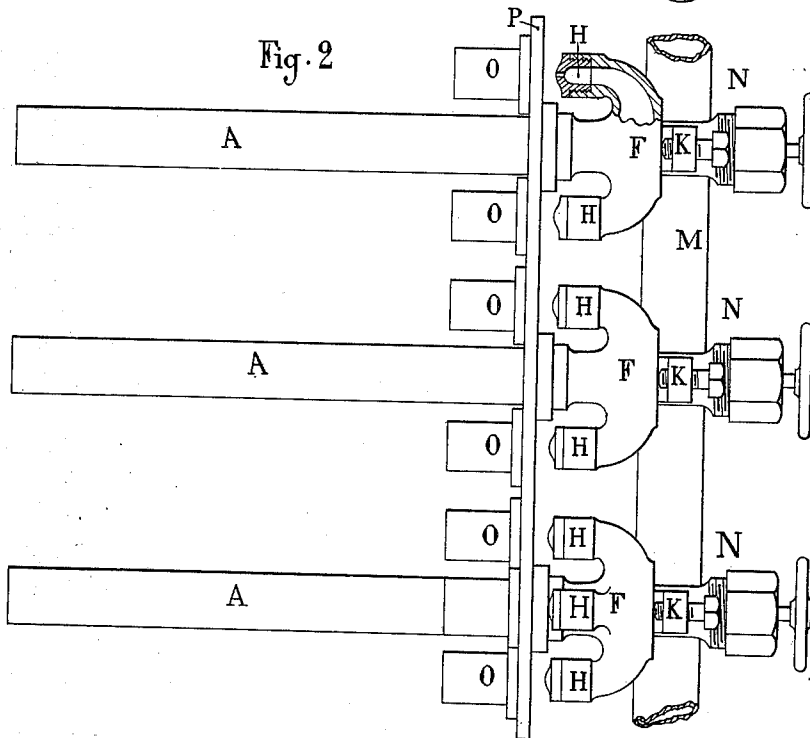
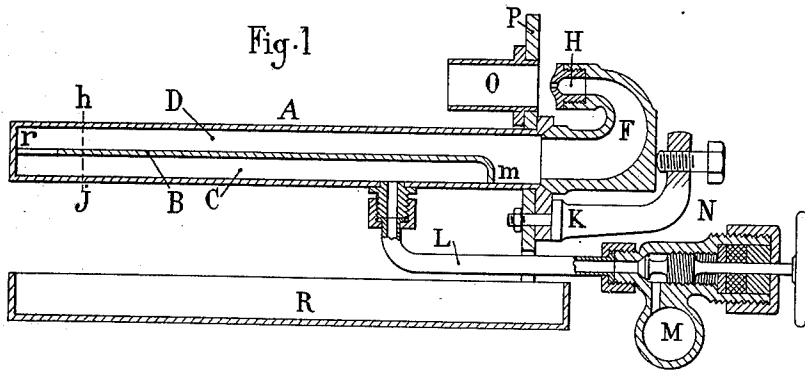
No. 672,684.

Patented Apr. 23, 1901.

C. A. ROSIER.
HYDROCARBON BURNER.

(Application filed June 12, 1900.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES ADOLPHE ROSIER, OF LEVALLOIS-PERRET, FRANCE.

HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 672,684, dated April 23, 1901.

Application filed June 12, 1900. Serial No. 20,029. (No model.)

To all whom it may concern:

Be it known that I, CHARLES ADOLPHE ROSIER, a citizen of the Republic of France, residing at Nos. 115 and 117 Rue des Freres Herbert, Levallois-Perret, Seine, in the Republic of France, have invented certain new and useful Improvements in Hydrocarbon-Burners, of which the following is a specification, such as will enable others skilled in the art to

which it appertains to make and use the same. The object of the invention is to provide a burner of a simple and cheap form of construction for use in burning liquid hydrocarbons. Such invention is fully shown and described in the following specification, of which the accompanying drawings form a part, wherein similar letters of reference designate like or equivalent parts wherever found throughout the several views, and in which—

Figure 1 shows a longitudinal section of one form of my improved burner in elevation. Fig. 2 is a plan view of a series of such burners arranged side by side, so as to form a sheet of flame when they are lighted. Fig. 3 is a view of the construction shown in Fig. 2 looking from the left, some portions of the mechanism being omitted; and Fig. 4 is a cross-section of the gasifying-tube of the burner on the line *h, j* of Fig. 1.

Referring to the drawings, as shown in Fig. 1, this improved form of burner consists of a long tube of steel or other suitable material A, hermetically closed at one end, and in this tube, which I call the "gasifying-tube," is arranged a web or baffle-plate B, which divides it into two channels C and D, which plate is arranged in such a way that it causes the liquid hydrocarbon to flow through the channel C and thence through the orifice *r* into the channel D, along which it passes to the vapor-outlet of the burner at H.

The open end of the tube A is connected with a collecting-chamber F, on which is arranged the vapor-outlet tip of the burner H. The vaporizing-tube A is fixed and held in position on a plate P, of iron or other substance, by a suitable holding-arm K, provided with a screw at the bottom, which forces the collecting-chamber F firmly against the bottom of the tube A, as shown. The said plate P is to be fixed in any firm manner to the front part of the furnace which is to be heated.

The channel C of the vaporizing-tube A is in communication, by way of a tube L and stop-cock N, with a hydrocarbon-supply pipe M.

The device is placed in the furnace with the tube or tubes A in a horizontal position and occupying the same place as would the grate-bars if coal were used, and under each of the tubes A is a cup or pan R for use in starting the burner, which is supported by the plate P.

The apparatus works in the following manner: A certain quantity of methylated spirit or alcohol is poured into the cup R and lighted. The pipe A becomes heated, and when the heating is sufficient the cock N is opened to allow the hydrocarbon, which is under pressure, to enter the chamber C, when it becomes vaporized and the vapors pass by the opening *r* into the upper chamber D, thence into the collector F, and thence to the vapor-outlets H. These jets of vapor passing through the tubes O O produce at the same time currents of air which cause the jets to burn without smoke, forming a heating-burner of the well-known Bunsen form. The apparatus which I have just described can also be grouped—that is, a certain number of burners can be placed side by side, as shown in Figs. 2 and 3—in order to obtain the necessary amount of heat. In the above-described burners the length of the flame depends on the size of the orifice of the burners H and also on the pressure of the hydrocarbon-supply. On the other hand, the length of the tubes A depends on the size of the orifices of the burners H, for the longer the tube A the greater will be its evaporating-surface and the more hydrocarbons it will be capable of vaporizing, and consequently the vapors formed will require larger orifices for their escape. The relation between the evaporating-surface of the tubes and the orifices of the burners H will also depend on the temperature required for vaporizing the hydrocarbon used. For instance, when using alcohol the tube should be made much shorter than when heavy hydrocarbons are used.

When it is desired to clean the burners after they have worked a certain time, all of them can be taken out at the same time by pulling out the plate P and can then be taken to pieces at leisure, or only the one requiring cleaning may be taken out and the others al-

lowed to burn. Whether all the burners be taken out at a time or whether they be taken out one by one all that is needed is to loosen the screw of the holding-arm K, which is fitted to the tube A by a bevel-joint, draw out the collecting-chamber F, and then the plate P, and the tube can then be cleaned.

The supply of hydrocarbons should always be under pressure, either by having the reservoir elevated above the burner or by establishing a pressure of air in the reservoir of about five hundred grams per square centimeter. It is evident that the joint of the collecting-chamber with the tube A may be of any other kind than that shown and that such collecting-chamber may be held in position against the tube A by any other means than the holding-arm K and its accompanying screw.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a burner of the class described, the combination with a supporting-frame of a vaporizing-tube divided longitudinally by a web or baffle-plate B into channels C and D in communication by way of an orifice *r*, at the end of the plate B, a hydrocarbon-supply pipe in communication with the channel C at

the end opposite to that at which is located the orifice *r*, a collecting-chamber F fitted to the outlet end of the channel D, means for forcing the collecting-chamber against the vaporizing-tube, a vapor-outlet to the collecting-chamber, and a burner-tube O adjacent to the vapor-outlet and to the vaporizing-tube, substantially as shown and described.

2. In a burner of the class described, the combination with a supporting-frame of a vaporizing-tube divided longitudinally by a web or baffle-plate B into channels C and D in communication by way of an orifice *r*, at the end of the plate B, a hydrocarbon-supply pipe in communication with the channel C at the end opposite to that at which is located the orifice *r*, a collecting-chamber F fitted to the outlet end of the channel D by a conical joint, a screw for forcing the collecting-chamber against the vaporizing-tube, a vapor-outlet to the collecting-chamber, and a burner-tube O adjacent to the vapor-outlet and to the vaporizing-tube, substantially as shown and described.

Signed at Paris, in the Republic of France, this 22d day of May, A. D. 1900.

CHARLES ADOLPHE ROSIER.

Witnesses:

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