No. 768,367. PATENTED AUG. 23, 1904.

A. M. HUNT & T. MIRK.

HYDROCARBON BURNER.

APPLICATION FILED DEC. 22, 1902.

NO MODEL.

FIG. 1

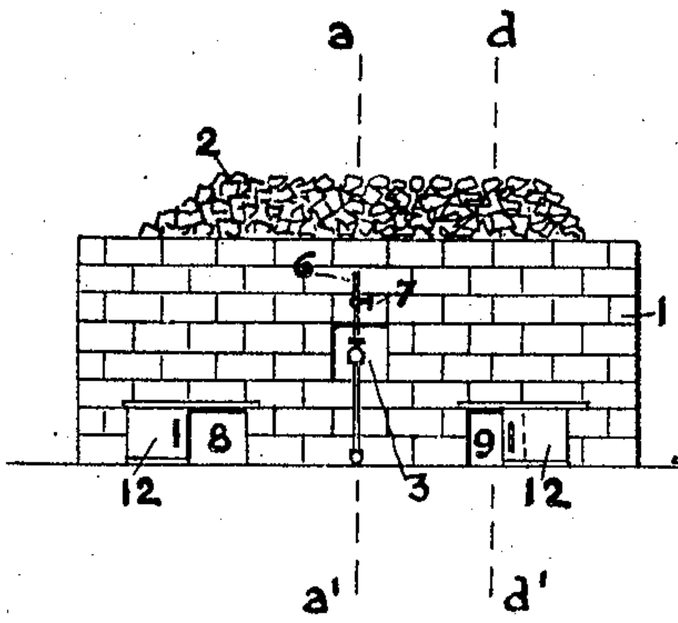


FIG. 2

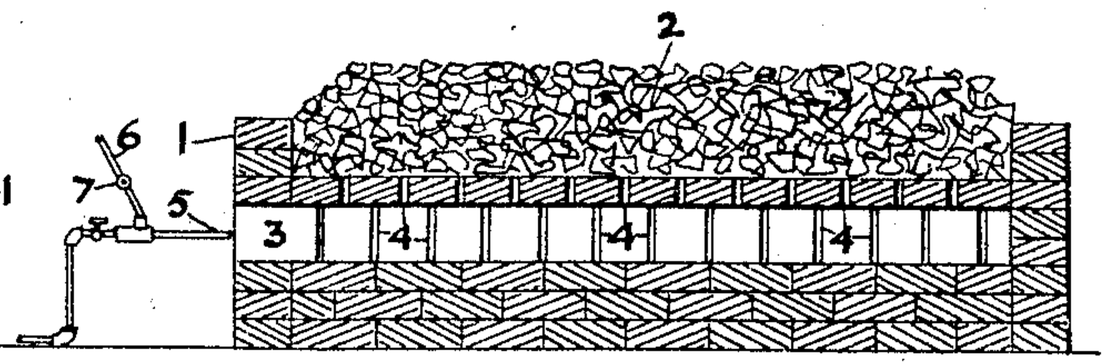


FIG. 3

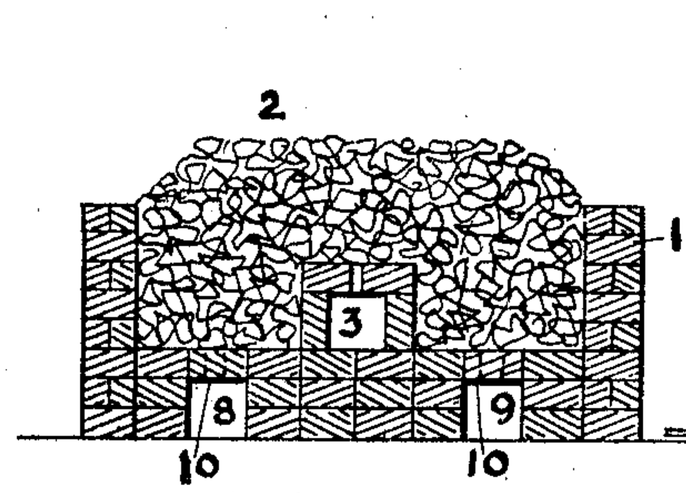


FIG. 4

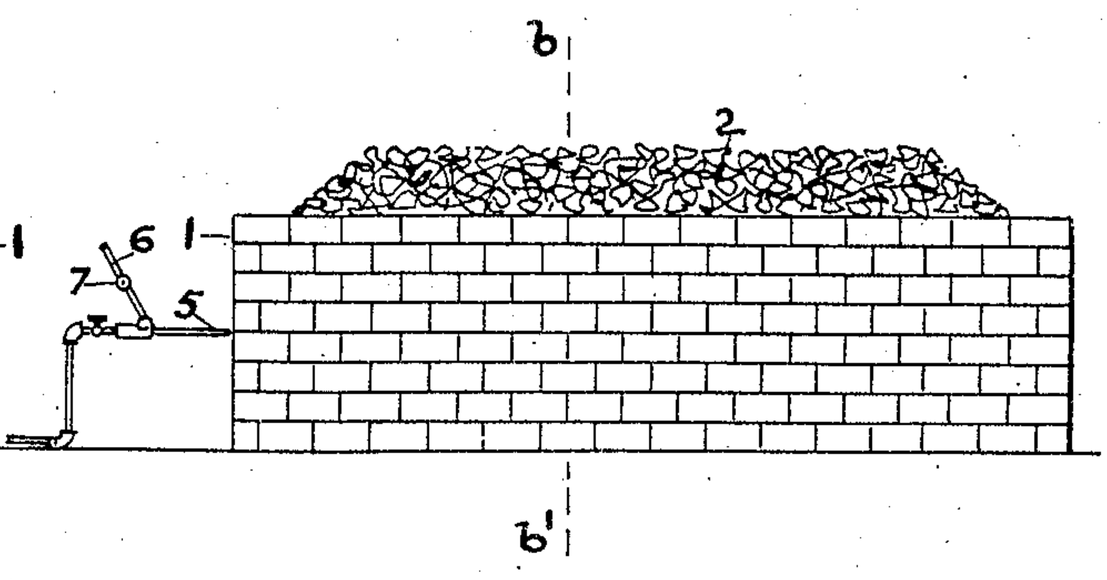
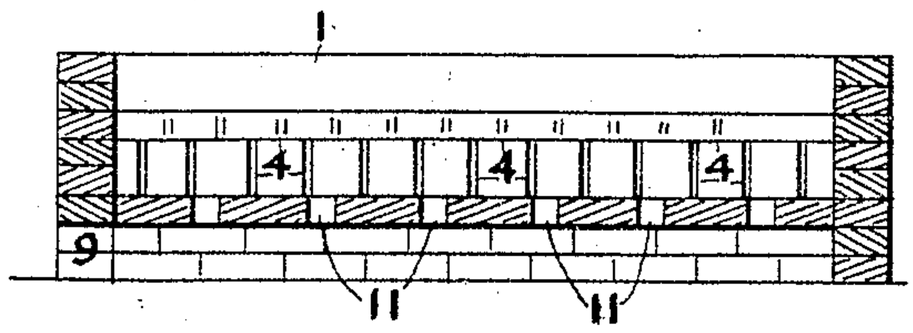


FIG. 5



WITNESSES:

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No. 768,367. Patented August 23, 1904.

UNITED STATES PATENT OFFICE.

ANDREW M. HUNT AND THOMAS MIRK, OF SAN FRANCISCO, CALIFORNIA.

HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 768,367, dated August 23, 1904.

Application filed December 22, 1902. Serial No. 136,128. (No model.)

To all whom it may concern:

Be it known that we, ANDREW M. HUNT and THOMAS MIRK, citizens of the United States, residing in the city and county of San Francisco, State of California, have invented certain new and useful Improvements in Hydrocarbon-Burners; and we do hereby declare the following to be a full, clear, and exact description of the same.

The present invention relates to an improved form of hydrocarbon-burner for use in connection with furnaces generally, the object of the invention being to provide a burner having a body composed of refractory material, with means whereby hydrocarbon is fed into said body.

To comprehend the invention, reference should be had to the accompanying sheet of drawings, wherein—

Figure 1 is a front view of the burner. Fig. 2 is a longitudinal sectional view on line *a a'* of Fig. 1. Fig. 3 is a vertical sectional end view on line *b b'* of Fig. 4. Fig. 4 is a side view in elevation of the burner, and Fig. 5 is a longitudinal sectional view taken on line *d d'* of Fig. 1.

The numeral 1 is used to indicate any suitable style of frame for the burner, which, preferably, is constructed of fire-clay brick, although any suitable material may be employed for this purpose. Within the frame is arranged a heating-body 2, consisting of pieces of refractory material. This bed or body surrounds or envelops an inlet-flue 3 for the hydrocarbon, which flue is provided in its top and side walls with outlet-openings 4. This flue shall hereinafter be termed a "mixing" or "vaporizing" flue.

At the entrance of the flue 3 is arranged a nozzle 5, which is attached to the free end of the supply-pipe 6 for the hydrocarbon. To regulate the discharge of the hydrocarbon into the flue 3, the nozzle 5 is provided with a controlling-valve 7.

As the hydrocarbon is discharged into the vaporizing-flue 3 during operation of the burner the suction caused thereby will, it is believed, draw into the flue a sufficient quantity of air to create proper combustion. However, should such admission of air prove insufficient for the production of proper combustion, then additional air may be supplied through the air-flues 8 9. These flues are arranged below the division-wall 10, the air admitted thereto escaping through outlet-openings 11. By means of a slide 12 the supply of air through the flues 8 9 may be readily controlled. The air admitted by the said flues 8 9 escapes into and circulates throughout the body 2 of refractory material.

In starting the burner an initial heat is obtained by placing into the vaporizing-flue 3 a short distance from its open end a piece of saturated waste, which waste is then ignited. Into this flame the hydrocarbon is discharged, which is at once vaporized. The draft thus created causes the flame to rush toward the rear end of the vaporizing-flue and to escape therefrom into the body of refractory material through the outlet-openings 4. As the flame circulates throughout the body 2 the refractory material is heated to a red heat, thus producing, so to speak, a "bed of coals." Whether or not the flame projects above the body of refractory material is dependent upon the quantity of hydrocarbon admitted into the mixing or vaporizing flue, which is regulated by the controlling-valve 7.

From the foregoing it will be observed that the hydrocarbon properly vaporized is admitted to the interior of a body of refractory material, which when the hydrocarbon is ignited forms a heating bed or body for the burner.

While the invention is described for use in connection with furnaces generally, its use is not thus confined, inasmuch as the same principle may be successfully utilized for the construction of burners for various purposes. Neither do we wish to be understood as confining ourselves to any particular construction or shape of the burner, as the essential feature is the introducing of the hydrocarbon into a broken or loose mass or body of refractory material.

Having thus described the invention, what is claimed as new, and desired to be protected by Letters Patent, is—

1. A hydrocarbon-burner, comprising a frame, a vaporizing-flue therein, having top

and side sections, the side sections having a plurality of vertically-arranged slits, and the top being apertured intermediate the slits of the side sections, a body of broken refractory material inclosing the top and sides of said flue, and means for feeding the hydrocarbon into the flue.

2. A hydrocarbon-burner, comprising a frame, a partition-wall extending the entire length and width thereof and having a series of openings at its respective sides, longitudinally-extending air-flues below the partition, communicating with said openings, a longitudinally-extending vaporizing-flue upon the partition intermediate said openings, and having a series of apertures therein, and a body of refractory material within the frame covering the top and sides of said flue and the partition-wall.

In witness whereof we have hereunto set our hands.

ANDREW M. HUNT.
THOMAS MIRK.

Witnesses:
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D. B. RICHARDS.