

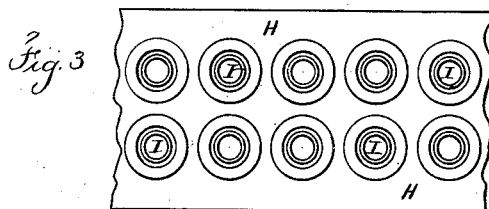
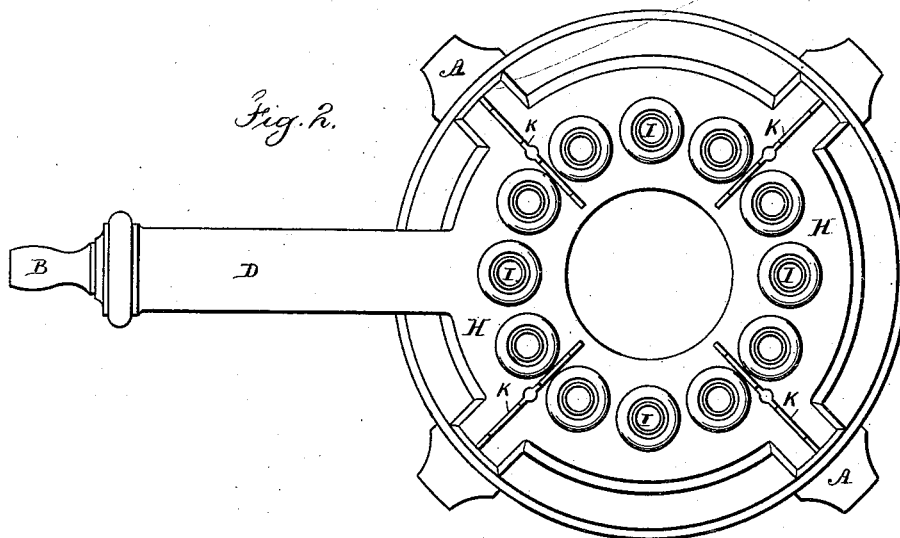
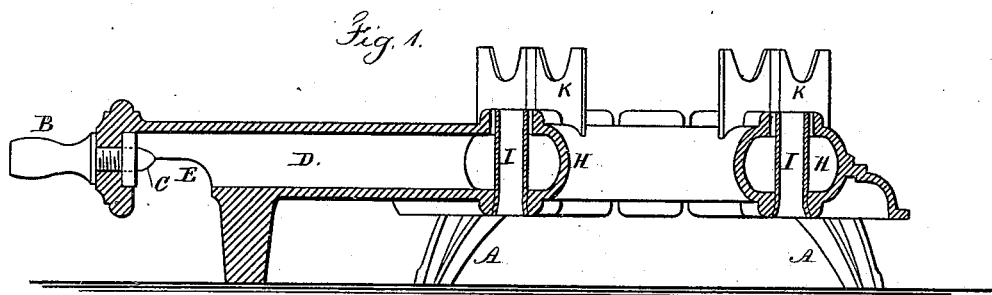
(No Model.)

T. REDMAYNE.

GAS BURNER FOR COOKING PURPOSES.

No. 344,986.

Patented July 6, 1886.



Witnesses

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UNITED STATES PATENT OFFICE.

THOMAS REDMAYNE, OF SHEFFIELD, COUNTY OF YORK, ENGLAND.

GAS-BURNER FOR COOKING PURPOSES.

SPECIFICATION forming part of Letters Patent No. 344,986, dated July 6, 1886.

Application filed August 3, 1885. Serial No. 173,372. (No model.) Patented in England October 2, 1884, No 13,060.

To all whom it may concern:

Be it known that I, THOMAS REDMAYNE, of 23 Upper Hanover Street, Sheffield, in the county of York, England, gas-stove manufacturer, &c., do hereby declare the nature of my invention for Improvements in Gas-Burners for Cooking and Heating Purposes to be as follows:

In my improved burner the hydrocarbon gas is mixed with atmosphere as heretofore usual in this class of burners; but, in order to render the combustion perfect, I introduce into the center of each flame atmospheric air, the flame being cylindrical, thereby insuring the production of great heat and preventing the loss resulting from the development of smoke.

In the drawings, Figure 1 is a longitudinal section of my improved burner in a form adapted to cooking purposes. Fig. 2 is a plan of the same. Fig. 3 is a plain view of a portion of the body of the burner with two ranges of flame-openings arranged in straight lines.

My burner is usually of a circular form; but it may contain a series of flame-openings in a straight line.

In Fig. 1 the burner is supported on legs A, and at B is a tube, to which the ordinary hydrocarbon gas is supplied by a flexible pipe, and said gas issues from the jet-tube C and passes into the mixing-chamber D, and the jet of gas draws in the atmosphere at the opening E. The gas and atmosphere in their mixed condition pass into the hollow body H of the burner, which in Fig. 1 is circular, and in Fig. 2 is straight. Each burner consists of a vertical tube, I, open at both ends, and passing through the body H of the burner, and the metal of the body tightly surrounds the lower part of each tube I, so as to hold said tube firmly, and these tubes may be screwed into place. Around the upper ends of the tubes I there are annular openings for the escape of the combustible gas. It is preferable to make use of dome-shaped projections upon the upper surface of the burner to form nipples around the annular orifices, through which the combustible gases escape.

Upon the burner vertical supporting-flanges K are usually provided for forming rests for the article that is being heated.

It is now to be understood that the com-

mingled air and gas issuing through the annular orifices is to be ignited, and the atmosphere ascending through the tubes I passes into the center of each circular flame, and the combustion is rendered very perfect and the heat intense.

I am aware that air and gas in a mixed condition have been allowed to issue through openings or through wire-netting and burn, and air has been supplied into the flame by a tube or through an opening. By making use of a hollow metallic body and a mixing-chamber, and numerous air-tubes passing through the body, fastened at their lower ends and having narrow annular openings between the body and the upper ends of the tubes, the most perfect combustion and intense heat are produced, and the apparatus is specially adapted to heating and cooking purposes, because the flames are extended over a large space, and they can be burned upwardly for heating or cooking, or the apparatus can be turned bottom side up, and the flames directed downwardly for grilling or broiling, thus greatly promoting the efficacy of the burner.

In cases where the flame is spread over a considerable space, such as in perforated metal or gauze, the passage of air or gas through the same is greater at one place than another, and when the flame is turned down low it flashes from place to place and often goes out, and the gas also frequently escapes unconsumed and gives a bad odor, and is detrimental to health.

In my burner, each air-tube being of thin sheet metal, the flame turns around the upper end and the air passes into the center of the flame whether the flame is high or is turned down to a mere ring, and the warmth of the air-tube causes an ascending current that prevents the small flame being blown out by lateral drafts of air; hence the burner can be turned down very low without risk of being extinguished.

In furnaces for steam-boilers, air tubes have passed through a space between plates, and a generating-retort has also been provided between the plates for burning the liquid hydrocarbon in the presence of steam, and the unconsumed gases have also been burned above the air-tubes. This apparatus is not portable, and is not adapted to use as a gas stove or heater. In my improvements the mixing-chamber

opens directly into the body of the burner, and the parts compose a portable heating-burner.

I claim as my invention—

1. The portable heating-burner composed of
5 a mixing-chamber having an opening for admitting air and a gas-supply tube, and a hollow metallic body with sheet-metal tubes passing vertically through the same, each firmly fastened at one end to the body, and having a
10 narrow annular slot around the other end for the mixed air and gas to escape and burn, substantially as set forth.

2. The portable heating-burner composed of a mixing-chamber for air and gas, a hollow me-

tallic body having dome-shaped projections 15 and openings through the same, and sheet-metal air-tubes within such openings, and passing across the hollow metallic body and through the opposite side and firmly attached, there being annular slots around the air-tubes at the
20 dome projections for the air and gas to issue and burn, substantially as set forth.

Signed by me this 13th day of July, A. D. 1885.

THOMAS REDMAYNE.

Witnesses:

F. F. HIBBERT,
JOHN MALLINSON.