No. 754,595. PATENTED MAR. 15, 1904.

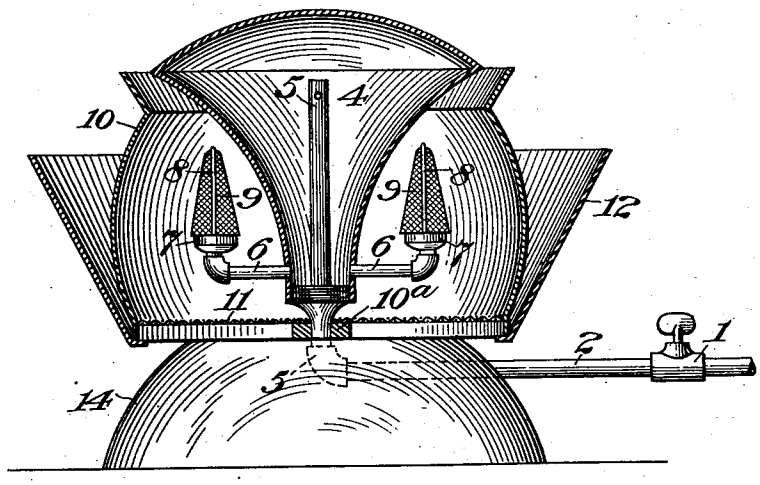
J. W. McKNIGHT.

REGENERATIVE GAS BURNER.

APPLICATION FILED APR. 30, 1903.

NO MODEL.

Fig. 1



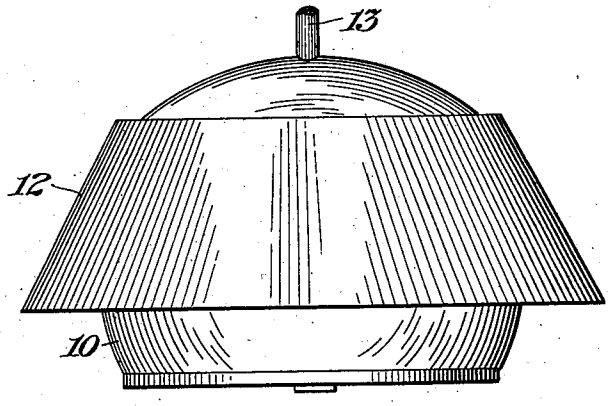


Fig. 2

Witnesses
Chas. L. Clagett
J. L. Cybas.

J. W. McKnight,
Inventor
By his Attorney, J. R. Littell

No. 754,595. Patented March 15, 1904.

UNITED STATES PATENT OFFICE.

JOHN WESLEY McKNIGHT, OF HANOVER, PENNSYLVANIA, ASSIGNOR OF ONE-FOURTH TO WILLIAM F. KINTZING, OF HANOVER, PENNSYLVANIA.

REGENERATIVE GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 754,595, dated March 15, 1904.

Application filed April 30, 1903. Serial No. 154,935. (No model.)

To all whom it may concern:

Be it known that I, JOHN WESLEY McKNIGHT, a citizen of the United States, and a resident of Hanover, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Regenerative Gas-Burners, of which the following is a specification.

My invention relates to improvements in gas-burners, and especially in that kind employing a regenerator or heating-chamber interposed between the burner and the gas-supply, whereby the gas furnished to the burners is highly heated.

The object of my invention is to produce a gas-burner which shall economically use the gas, developing a high efficiency and giving out a large amount of light for the gas consumed.

Another object is to simplify the construction of such gas-burners so that they may be economically manufactured and to improve such construction so as to obtain a good distribution of light and a construction which will not readily become disarranged.

I obtain these results by a construction the preferred form of which is illustrated in the accompanying drawings.

Figure 1 is a central vertical construction through the gas-burner constructed in accordance with my invention. Fig. 2 is a side elevation of the same burner, showing the reflector thereof in a different position.

Corresponding parts in both figures are denoted by the same reference characters.

The construction herein shown comprises, essentially, a central regenerator or gas-heating chamber to which the gas is supplied and from which it is taken to the burner or burners, which are located outside of and beneath the regenerator, said regenerator being of a general conical shape, so that the burner may lie within the concavity of its outer surface. The outer and under surface of the regenerator is preferably made of such quality that it will act as a reflector, and an additional reflector is provided, which is outside of the burners, said reflector being adjustable in position, so that the light may be reflected either upwardly or downwardly, as desired.

In Fig. 1, 4 represents the regenerator or gas-heating chamber, and 2 the gas-supply pipe, which is supplied with a cock 1 and enters the bottom or apex of the cone. This pipe is preferably extended upwardly within the cone or regenerator, as at 5. Near the bottom or apex of the cone of the conical chamber forming the regenerator is inserted one or more pipes 6, through which the supply of gas is drawn to the burners, said burners 7 being mounted thereon close to and beneath the concave outer surface of the regenerator. The form of burners preferred and which are herein shown are of the Bunsen type and are provided with the usual mantle 9 and support therefor 8. These burners heat the mantle 9 to incandescence, and thereby produce a large quantity of light. This light is reflected from the under surface of the regenerator outwardly and downwardly. A globe 10 is preferably placed outside of the burners. The bottom of this globe 10 is closed by a sheet of wire-gauze 11, which will permit the passage of air, but will prevent a downward passage of flame therethrough should the globe become at any time filled with gas. The globe is supported upon a bar or bars 10^a, which in turn are carried by the center pipe through which the gas is supplied or by the elbow 2 thereon. A second reflector 12, which, as herein shown, is in the shape of a frustum of a cone, is placed outside of the globe and may be supported either from the bottom of the globe or its top. In Fig. 1 this outer reflector is shown as having the small end downward, in which position it will reflect the light upwardly. This reflector may, however, be reversed in position, as is shown in Fig. 2, in which case it is supported from the upper edge of the globe or in any other desired manner.

My burner may be mounted as a bracket-burner supported by the pipe 2 (shown in Fig. 1) or be suspended as a drop-light by introducing the gas-supply pipe at the top of the regenerator-chamber, as is indicated at 13. In another construction the burner may be

supplied with a base, as 14, being thus portable, as an ordinary lamp. In such case the pipe 2 becomes simply a point of attachment for a hose or other means by which the gas is supplied thereto.

I do not desire to be understood as limiting myself to the details of construction and arrangement, as herein described and illustrated, as it is manifest that variations and modifications may be made in the features of construction and arrangement in the adaptation of the device to various conditions of use without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variation and modification as properly fall within the terms of the following claims.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. In a gas-lamp, the combination with a gas-heating chamber having upwardly and outwardly flaring side walls serving as a reflector and a top wall, said side walls having apertures therethrough, burners located under the walls of said chamber, branch supply-pipes supporting said burners and engaging said apertures, and means for supplying gas to said chamber, substantially as described.

2. In a gas-lamp, the combination with a gas-heating or regenerating chamber of a conical shape with the apex downward, the outer surface of said chamber being adapted to act as a reflector, means for supplying gas thereto, one or more burners outside of and beneath the said gas-heating chamber and receiving gas therefrom, a reflector in the shape of a frustum of a cone outside of the burner and means for supporting the same with its large end either up or down.

In testimony whereof I have signed my name in the presence of the subscribing witnesses.

JOHN WESLEY McKNIGHT.

Witnesses:
FRANK R. RODGERS,
H. C. NAILL.