Nov. 18, 1924. 1,515,944

J. T. FLOWER, JR., ET AL

GAS HEATER

Filed June 3, 1922 2 Sheets-Sheet 1

Fig. 1.

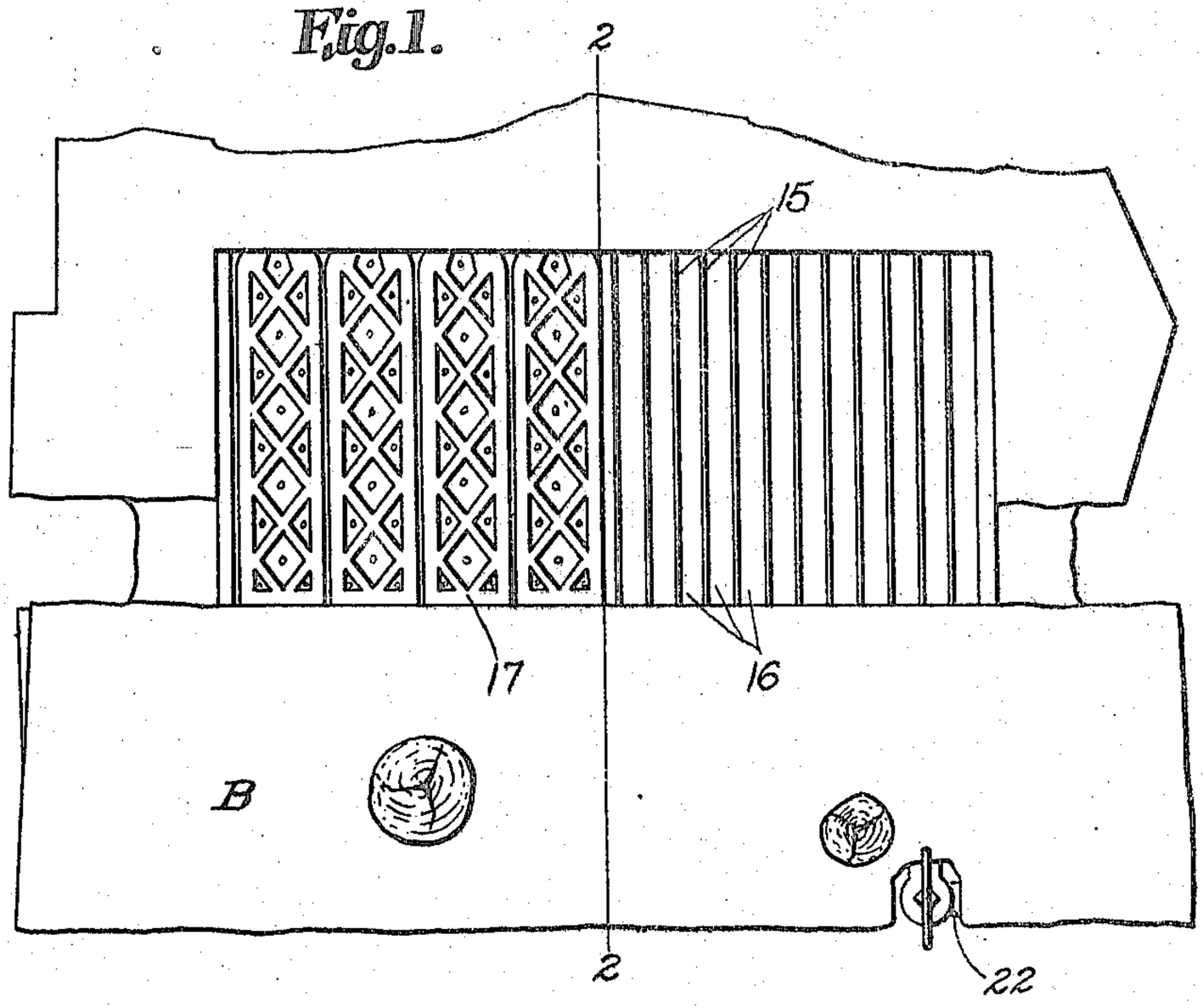

Fig. 2.

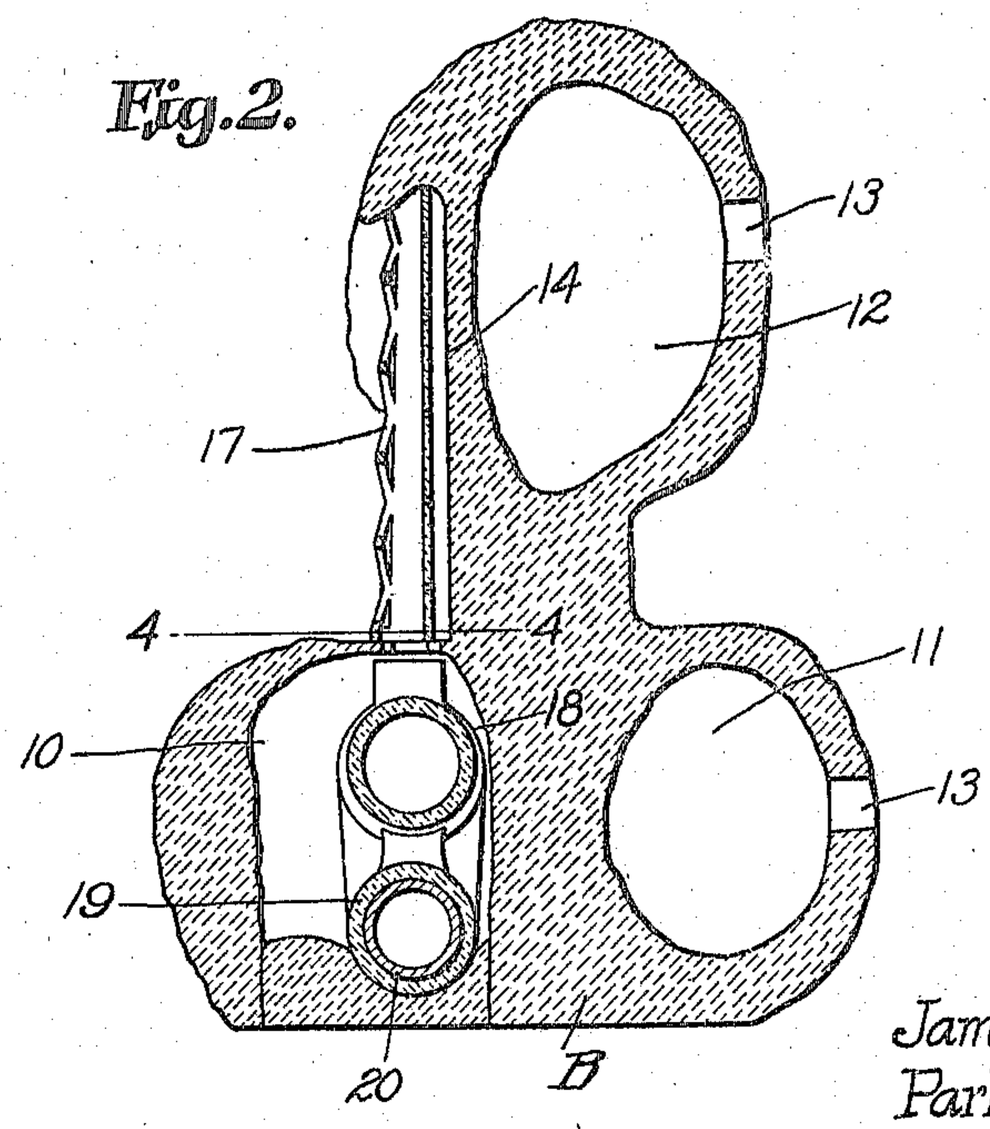

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Fig. 3.

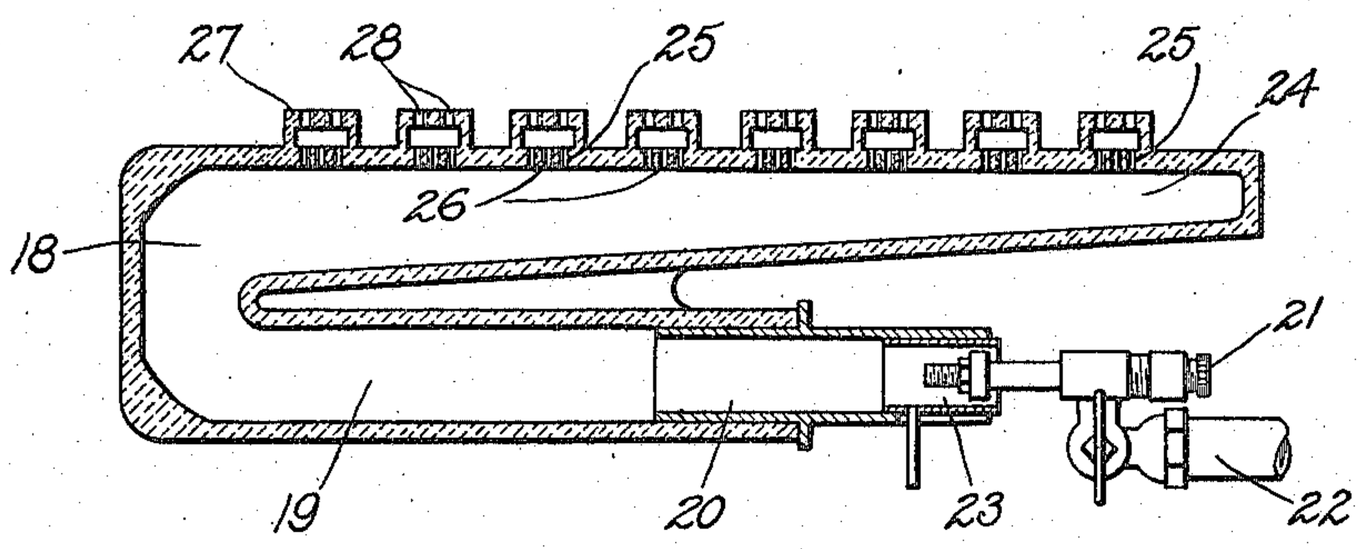
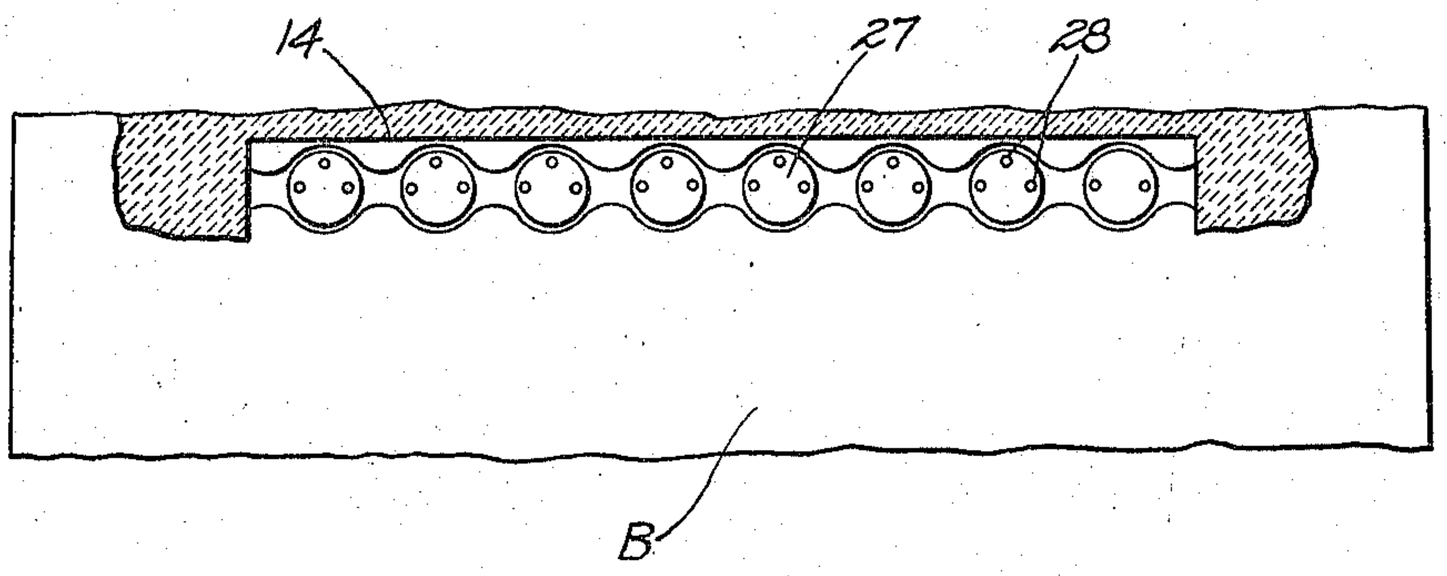


Fig. 4.



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Patented Nov. 18, 1924. 1,515,944

UNITED STATES PATENT OFFICE.

JAMES T. FLOWER, JR., AND PARK A. SMITH, OF AKRON, OHIO.

GAS HEATER.

Application filed June 3, 1922. Serial No. 565,537.

To all whom it may concern:

Be it known that we, JAMES T. FLOWER, Jr., and PARK A. SMITH, citizens of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented new and useful Improvements in Gas Heaters, of which the following is a specification.

This invention relates to heating devices, particularly to those employing artificial or natural gas as fuel, and has for its object the provision of a novel device in the nature of gas logs combined with a radiant portion which will operate to give off the maximum degree of heat with the consumption of the minimum quantity of fuel.

An important object is the provision of a combined device of this character which is constructed entirely of clay and which may be considered a practically integral structure, certain portions being treated by a more or less peculiar process whereby to insure the maximum radiation of the intense heat.

An additional object is the provision of a device of this character which will be simple and inexpensive in manufacture, and installation, highly efficient in use, durable in service and a general improvement in the art.

With the above and other objects and advantages in view the invention consists in the details of construction to be hereinafter more fully described and claimed and illustrated in the accompanying drawings in which:

Figure 1 is a front elevation of the device with parts broken away and in section,

Figure 2 is a vertical cross section,

Figure 3 is a vertical longitudinal section showing the burner structure and

Figure 4 is a detail horizontal section.

Referring more particularly to the drawings, we have shown our device as comprising a body B formed of refractory material such, for instance, as clay or the like. This body has its lower portion wider than the upper portion and formed with chambers or hollowed portions 10 and 11. Within the upper portion is a chamber 12. The chambers 11 and 12 communicate with the atmosphere through holes 13 so as to avoid cracking of the body on account of increase in air pressure when it becomes hot. The front surface of the body, at the intermediate portion thereof, is formed flat, as indicated at 14, and is provided with a series of vertical partitions 15 defining air passages 16.

This flat front portion constitutes the radiating element and secured thereagainst are mantles 17 formed of suitable clay and secured in place by any desired means. The number of mantles and air passages together with the exact formation thereof is a mere matter of design as many variations might be resorted to without in any way departing from the spirit of the invention.

Located within the chamber 10 is the burner structure designated broadly by the numeral 18 and including a lower conduit 19 which is connected with a casting 20 with which is associated a spud adjustment 21 controlling the inlet of gas from a supply pipe 22. The numeral 23 designates an adjustable air shutter located within the member 20 and regulable to control the proportion of air entering the device with respect to the gas. The burner also includes an upper conduit 24 which has its top surface formed with holes 25 within which are mounted back firing preventing screens 26 and over which are disposed pressure equalizers 27 which are located below the respective mantles 17 and which really constitute the burner jets.

The mantles 17 are formed of washed fire clay made into a heavy slip which is not too thick to be poured. Plaster Paris molds are provided into which the slip is poured to effect molding. After stiffening somewhat the mantles are removed from the molds, dried and then baked in the kiln.

The burners 18 are also formed of clay molded in a suitable form and subsequently dried and baked, though the perforations 28 in the so-called pressure equalizers are made while the burner is still somewhat plastic.

In the operation of the device it will be seen that the gas issuing from the jets 27 will burn and will supply an intense heat to the mantles which of course become red hot so as to be radiant for giving off great heat into the room or other place where the device is used. The air ducts or passages 16 back of the mantles prevent a suction at the base and keep the heater from making a sputtering noise while burning.

While we have shown and described the preferred embodiment of the invention it is of course to be understood that we reserve the right to make such changes in the form, construction and arrangement of parts as

will not depart from the spirit of the invention or the scope of the subjoined claim.

Having thus described our invention we claim:

In a device of the character described, a body formed of a mass of plastic material, and with hollow portions formed with holes to permit the escape of air expanding under the influence of heat, a portion of the front of said body being formed flat and recessed, vertical partitions extending across the recess for defining a plurality of compartments, radiant mantles fitting within said flat portion and closing the recess, said mantles engaging against the partitions and covering the compartments, and a burner structure located within the lower portion of the body and having jets communicating with said radiant mantles.

In testimony whereof we affix our signatures.

JAMES T. FLOWER, JR.
PARK A. SMITH.