

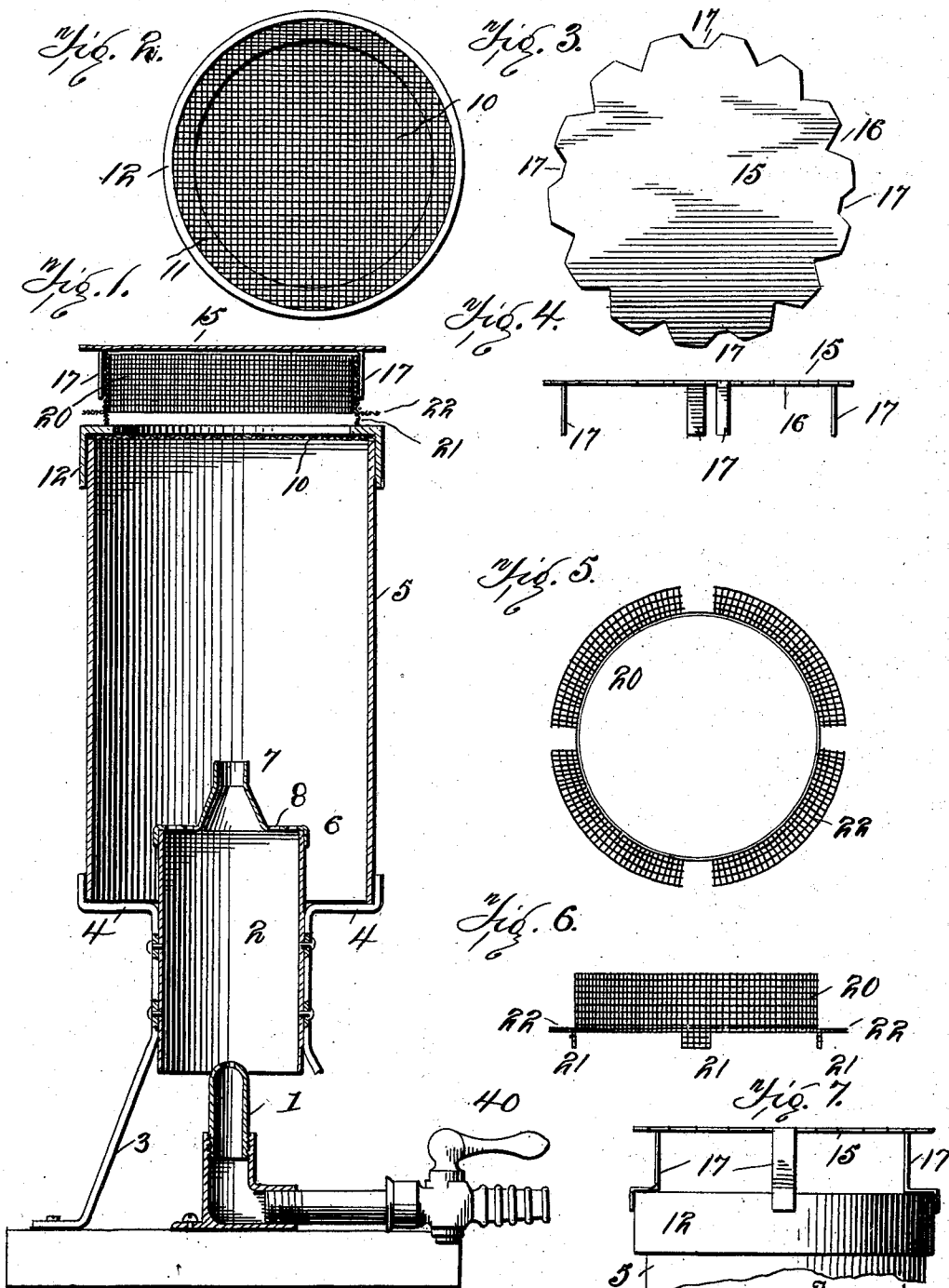
No. 700,535.

Patented May 20, 1902.

E. A. MONJO.
GAS HEATER.

(Application filed Apr. 11, 1901.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

EDWARD A. MONJO, OF ELIZABETH, NEW JERSEY.

GAS-HEATER.

SPECIFICATION forming part of Letters Patent No. 700,535, dated May 20, 1902.

Application filed April 11, 1901. Serial No. 55,334. (No model.)

To all whom it may concern:

Be it known that I, EDWARD A. MONJO, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Gas-Heaters, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to burners for gas-heaters.

The object of the invention is to produce a simple, easily-assembled, and cheap burner, which may be used singly or assembled in battery in stoves, ranges, fireplaces, and other heaters. The improvement largely consists in the details of construction and combinations of elements.

Figure 1 is a vertical section of a burner complete. Fig. 2 is a bottom plan of the reticulated disk and holding-ring. Fig. 3 is a top plan of the deflector-plate, and Fig. 4 a side elevation thereof. Fig. 5 is a plan of the annular screen, and Fig. 6 a side elevation thereof. Fig. 7 is a side elevation of the burner-top with the deflector 15 alone.

In most gas-heaters it is common to furnish a gas-supply and an air-supply to a mixing-chamber, in which the air and gas are mixed before combustion. In my device the gas enters a central supply-tube 1 from any usual source of supply and thence rises into the interior of the cylinder 2. This cylinder 2 is open at the bottom and extends slightly below the top of tube 1, so that the gas, which is lighter than air, will not escape under the bottom of cylinder 2. Cylinder 2 is supported by legs 3, which may be riveted to the outside of the cylinder. These legs are turned out at their upper ends and form brackets 4, which brackets support a second cylinder 5, larger in diameter than cylinder 2 and open at the bottom like 2. The cylinder 5 extends a little below the top of cylinder 2, so that rising gas may not escape from the open bottom.

The top of cylinder 2 has a cover 6, provided with a central cone or nozzle 7 and a number of small openings 8 surrounding said cone. Cover 6 is removable and serves merely to break up and mix the air and gas rising from the cylinder 2. Still more air enters at the bottom of cylinder 5, and this all moves upward to the top of cylinder 5.

Cylinders 2 and 5 are simply short cylinders of light pipe of any suitable metal. A three-inch cylinder 5 makes an excellent burner.

At the top of cylinder 5 I place a disk 10 of wire-gauze. This disk is simply cut from a sheet of gauze and is of the same diameter as the outside of cylinder 5. The disk 10 is merely laid on the top of the cylinder and held by the inturned flange 11 of ring 12, which ring fits neatly around the upper end of cylinder 5.

Gauze disk 10 forms the burner proper and can be used without further addition. Above this disk the construction is according to the usage desired. For certain purposes I prefer to use the deflector-plate 15 alone. This plate 15 is preferably of sheet metal, of an extreme diameter equal to the outer diameter of ring 12. The plate 15 is a disk with notches 16 in its edge, and has turned-down legs 17 a little inside the outer periphery. These legs 17 are intended to rest on top of flange 11 and may be formed to lightly clamp around ring 12. The rising gas and air being ignited at the top of burner 10 will form a blaze which curls around the edge of disk 15. The notches 16 give steadiness to the flame which it will not otherwise have. The top of the deflector 15 will be heated and may be used to support a light cooking utensil. I prefer, however, to use the burner with the reticulated auxiliary ring-burner 20 in addition to the deflector 15. This ring-burner consists of a ring of wire-gauze of diameter less than the ring 12 and having short legs 21, which support the ring-burner a little above the top of flange 11, say one-eighth inch, more or less. At the bottom of ring 20 a flange 22 of the wire-gauze is bent outwardly until its outer edge is about in line with the outside of ring 12. The deflector 15 is applied above the ring-burner 20, legs 17 extending down outside said ring. The deflector 15 thus becomes a cover for the reticulated ring-burner. When the gas is ignited at the auxiliary ring-burner 20, a flame curls around the flange 22, and then draws inward toward the sides of ring 20, again curving outward when it encounters the outer rim of plate 15. I do not know the reason for this course of the flame, but by ac-

tual test I have found the burner when so equipped to develop heat for heating an oven, &c., much quicker than when ring 20 is omitted. For some purposes, however, the ring-burner seems unnecessary. The outwardly-turned flange 22 of the ring-burner seems to cause a much more complete combustion than when the same is omitted. The elevation of the lower edge of ring 20 above the top of flange 11 produces quite a different combustion from that which would take place if ring 20 extended down to the flange 11, inasmuch as combustion in my construction begins inside the ring 20, and in part goes on just above the diaphragm 10.

As the various parts above the cylinder 2 are merely held together by gravity, the burner can be quickly assembled, broken, worn, or unsatisfactory parts replaced, or substitute parts of other form can be readily applied and all parts readily cleaned.

A battery of six or eight of these burners applied in the fire-box of a common coal-stove or cooking-range enables the user to apply the device to all the uses of a cooking-range, with moderate expenditure for gas and with an efficiency for cooking, baking, broiling, &c., far in excess of the common coal-fire. A cock 40 enables the user to control the gas-supply and to extinguish unnecessary burners when the burners are used in a battery.

What I claim is—

1. In a gas-heater, the combination of an in-flow gas-pipe, an open-bottom hollow cylinder surrounding the same, a removable cover on this cylinder having a central nozzle and side perforations, and a second open-bottom hollow cylinder, of larger diameter partly surrounding and extending above the first, and a reticulated-diaphragm burner at the top of this cylinder.

2. In a gas-heater, the lower cylinder open at bottom and having supporting-legs, brackets extending outward from the sides of said cylinder, the upper larger cylinder removably supported on said brackets and surrounding the upper portion only of the lower cylinder, and a removable reticulated diaphragm and flanged ring fitting the top of said upper cylinder, substantially as described.

3. In a gas-heater, the combination of the cylindrical mixing-chamber, a reticulated diaphragm at the top thereof and a flanged

ring retaining the same, and a separately-removable metallic deflector-plate supported above said diaphragm by legs connected to the plate and resting on the flange-ring, substantially as described.

4. In a gas-heater, the combination of the cylindrical mixing-chamber, a reticulated diaphragm held by a removable flanged ring at the top thereof, an auxiliary reticulated ring-burner above the diaphragm, with open gas-passage below, and a cover above said auxiliary ring-burner, substantially as described.

5. In a gas-heater, the combination of the mixing-chamber, a reticulated diaphragm at the top thereof, a ring-burner of reticulated material above said diaphragm and having an outwardly-turned flange at its lower edge and a space below the same, and a cover for said ring-burner.

6. In a gas-heater as described, the combination with the mixing-chamber having a reticulated diaphragm at the top, of a ring-burner of reticulated material supported above the diaphragm leaving a space between, a flange extending outwardly from the base of said ring-burner, and a cover for said ring-burner, as set forth.

7. In a gas-heater, the combination with the mixing-chamber having a reticulated diaphragm at the top, of a ring-burner of reticulated material and having legs by which the same may be removably supported from the chamber, leaving an open gas-passage below said ring, and a cover for said ring-burner.

8. In a gas-heater, the combination with the mixing-chamber having a reticulated burner, of an auxiliary ring-burner of reticulated material supported above said diaphragm, and a separately-removable deflector-plate above said ring-burner.

9. In combination with the mixing-chamber and reticulated diaphragm at the top, a separately-removable deflector-plate of sheet metal having notched edges and supporting-legs to rest on the top of said chamber.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD A. MONJO.

Witnesses:

D. TULUONJO,
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