

J. A. PENNEY.

FURNACE.

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959,253.

Patented May 24, 1910.

FIG. 1.

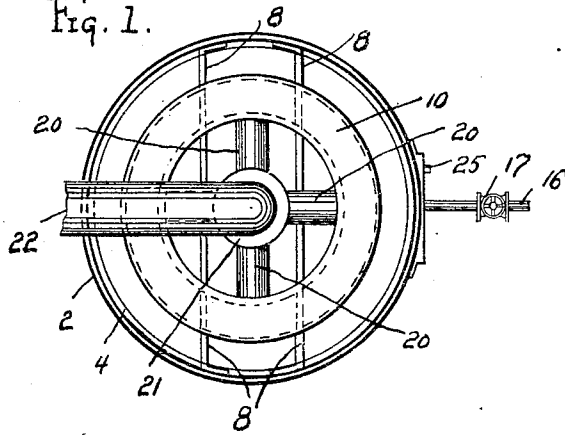


FIG. 2.

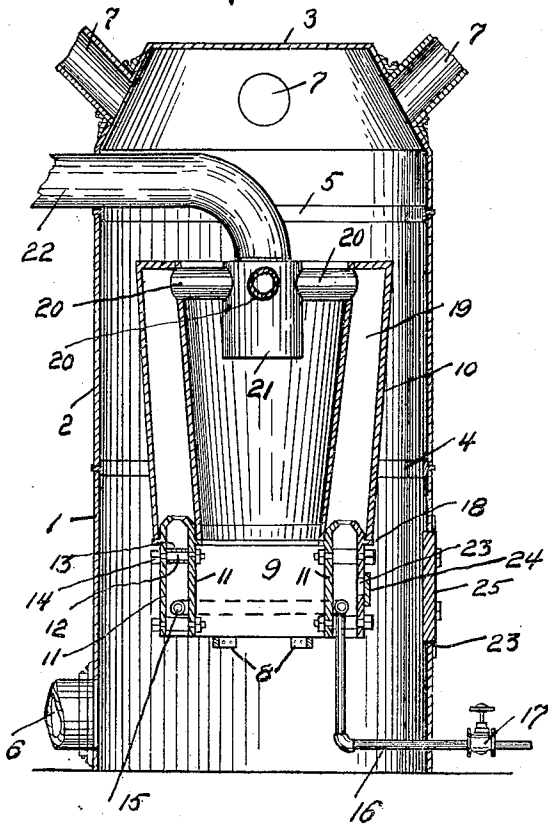
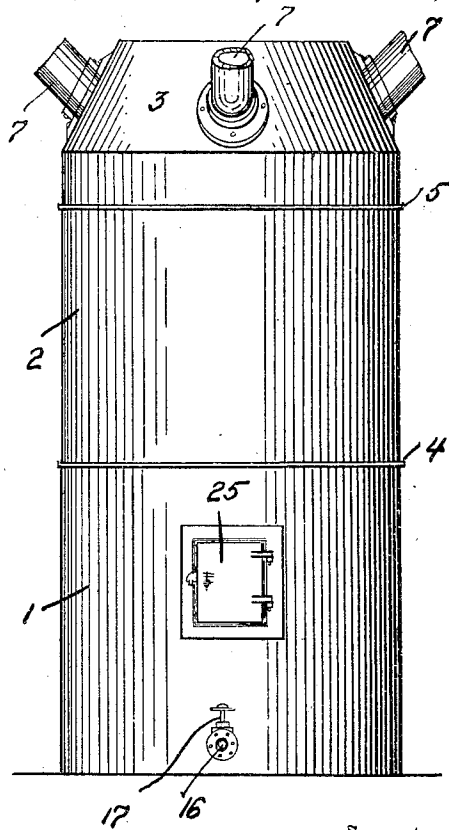


FIG. 3.



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Witnesses

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UNITED STATES PATENT OFFICE.

JAMES A. PENNEY, OF McKEESPORT, PENNSYLVANIA.

FURNACE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JAMES A. PENNEY, a citizen of the United States of America, residing at McKeesport, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Furnaces, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to furnaces and heaters, and the objects of the invention are first, to provide a simple and inexpensive furnace wherein positive and reliable means are employed for insuring thorough heating
15 of cold air admitted to the furnace; and second, to provide a furnace or heater wherein the products of combustion are baffled and the heat therefrom radiated so as to effectually heat the cold air admitted to the furnace or heater.

20 In the drawings: Figure 1 is a top plan view of a furnace or heater constructed in accordance with my invention, the dome of the outer casing being removed, Fig. 2 is a central vertical sectional view of the furnace,
25 and Fig. 3 is a front elevation of the same.

The furnace or heater consists of an outer casing or shell built up of two cylindrical sections 1 and 2 and a dome 3. The section
30 1 is provided at its upper end with a circular securing ring 4, T-shaped in cross-section and upon which the section 2 rests. A similar securing ring 5 is mounted upon the section 2, and receives the dome 3. The section
35 1 is provided with a cold air inlet 6, and after the cold air has been heated in the furnace it escapes to the various compartments of a building through flues 7 connected to the dome 3.

40 In the section 1 is arranged two horizontal bars 8 for supporting a cylindrical burner casing 9 and a superposed drum 10 having an open lower end that is received within the upper end of the burner casing 9. The
45 burner casing 9 comprises two shells 11 connected by bolts 12 and nuts 14, and which shells are held spaced by means of sleeves 13 on the bolts 12 between the shells. Between the shells 11 is arranged a circular burner 15

which may be of an ordinary type. The burner is supported by bolts 12 near the lower edges of the shells 11 and is supplied with gas through a supply pipe 16 provided with a controlling valve 17.

The superposed drum 10 is supported by
50 projections 18 carried by the outer shell 11 of the burner casing. This drum provides an annular combustion chamber 19 connected by inwardly-extending pipes 20 to a central collector 21 which latter has an exhaust pipe
60 22 which extends through the dome 3 at the lower edge of the latter. The exhaust pipe 22 can be connected with a chimney or stack, not shown. The section 1 of the casing has an opening therein normally closed by a
65 door 25, and the outer shell of the burner casing has an opening 23 opposite the door way in the casing 1 and which is normally closed by a door 24.

In operation, cold air enters through the
70 inlet 6 and rises around the casing 9 and drum 10 and is heated by the heat given off by said drum or casing, and it escapes through the outlet flues 7. The cold air entering the casing 1 also rises within the
75 burner casing 9 and is heated by the heat given off by said burner casing, the collector 21, and the pipes 20, and escapes through the flues 7. A certain quantity of cold air also enters between the walls of the burner
80 casing at the lower edge thereof, and furnishes sufficient oxygen to the gas to effect combustion. The inwardly bent upper edges of the shells forming the burner casing 9,
85 serve to deflect the products of combustion centrally of the drum 10, and prevents the lower edge of said drum being subjected directly to the action of the flame from the burner 15.

What I claim is:

A furnace of the type described embodying an outer shell or casing, transverse bars arranged in the lower portion of said shell, a burner casing supported by said bars and comprising two shells having converging
95 upper edges, means connecting said shells and holding them in spaced relation, an annular burner located between said shells and

supported on said spacing means, a drum
supported on said burner casing and inclos-
ing the upper end thereof and providing an
annular combustion chamber, a collector lo-
5 cated in said drum having an open lower
end received within the inner shell of said
burner casing and at its upper end having
radially-disposed connections with said

chamber, and an exhaust flue for said col-
lector.

In testimony whereof I affix my signature 10
in the presence of two witnesses.

JAMES A. PENNEY.

Witnesses:

MAX H. SROLOVITZ,
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