

No. 765,866.

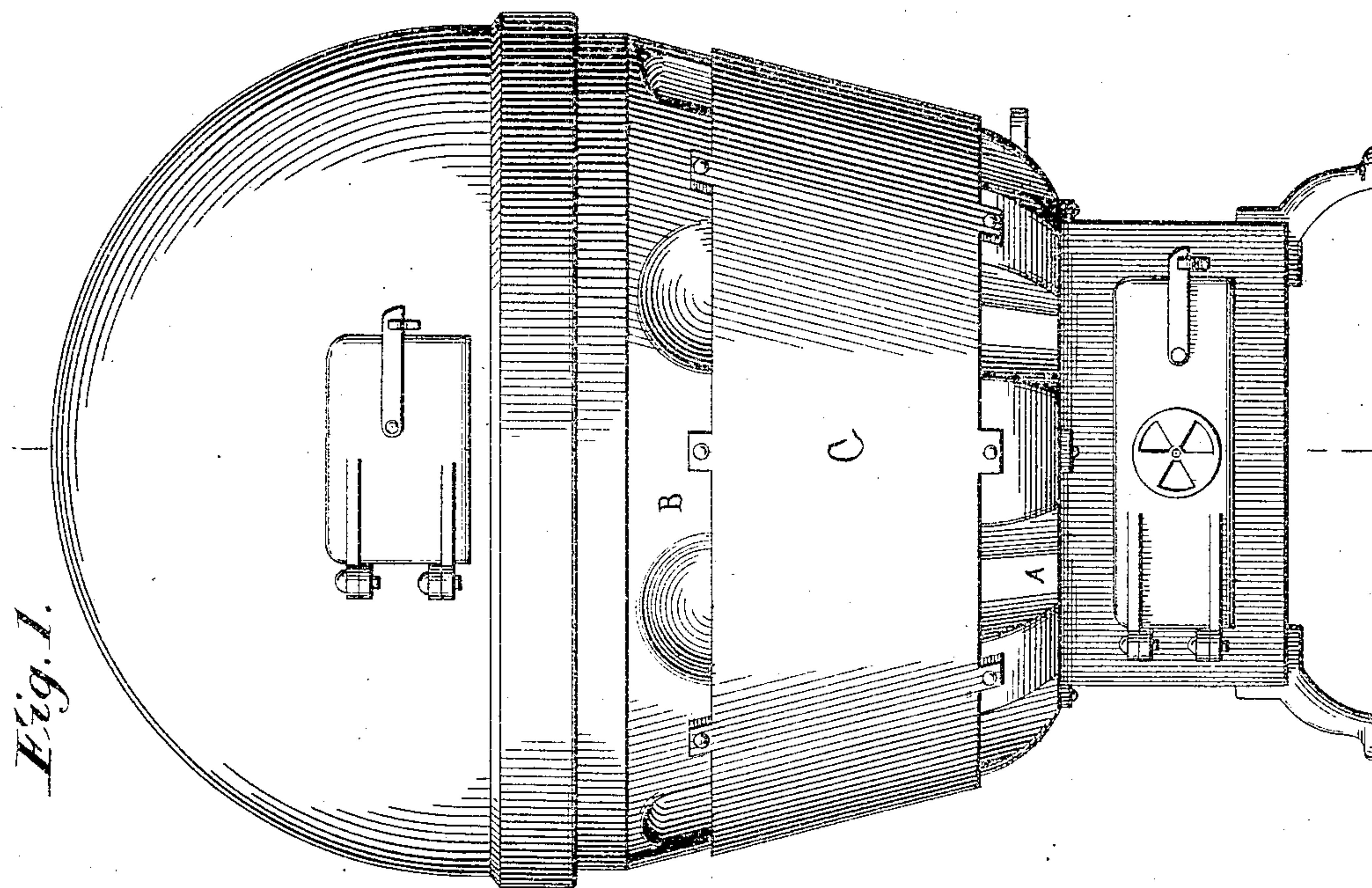
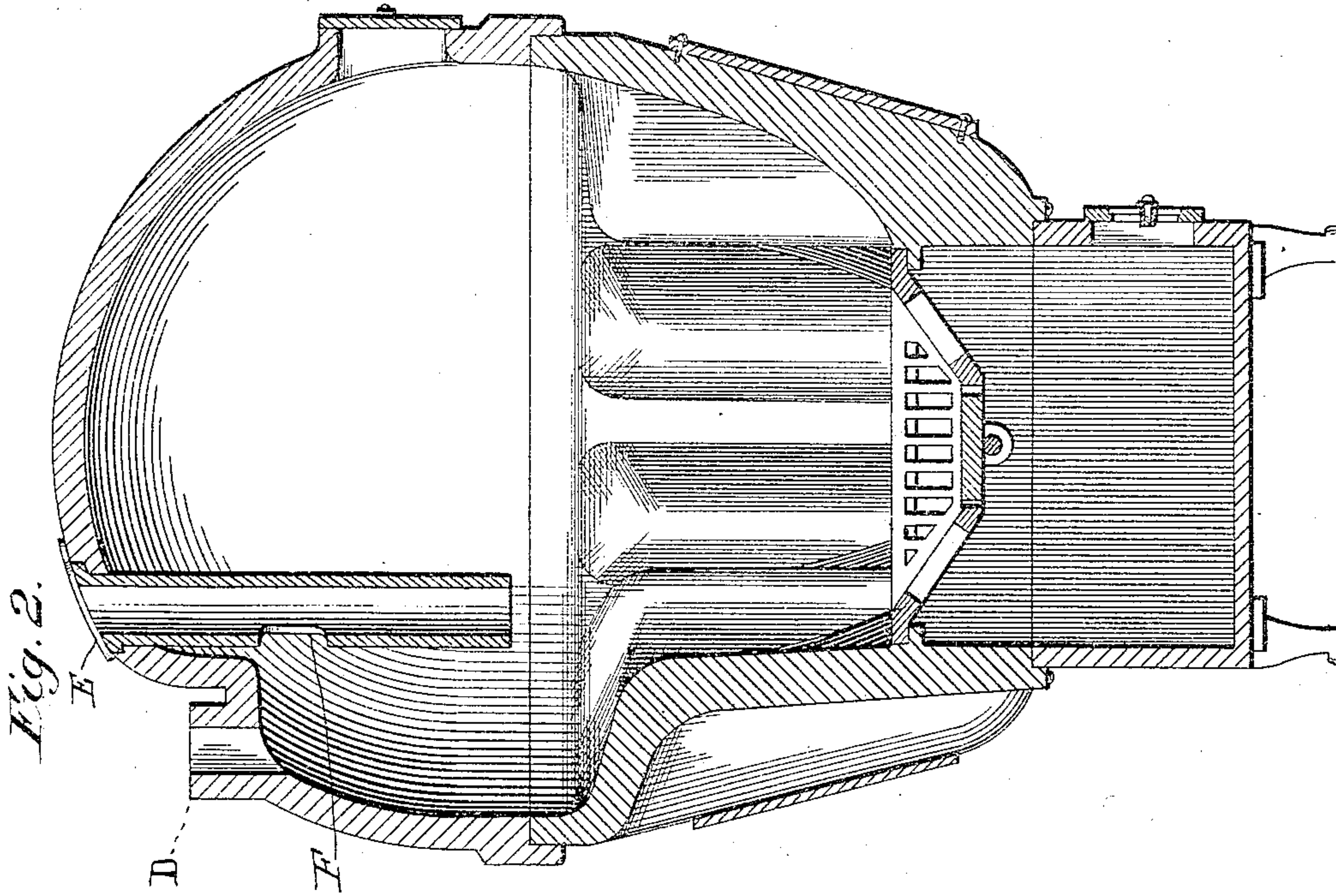
PATENTED JULY 26, 1904.

W. H. TIPPIT.  
HOT AIR FURNACE.

APPLICATION FILED AUG. 5, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:  
George Quintal.  
Chas. R. Hall.

Inventor:  
William H. Tippit

No. 765,866.

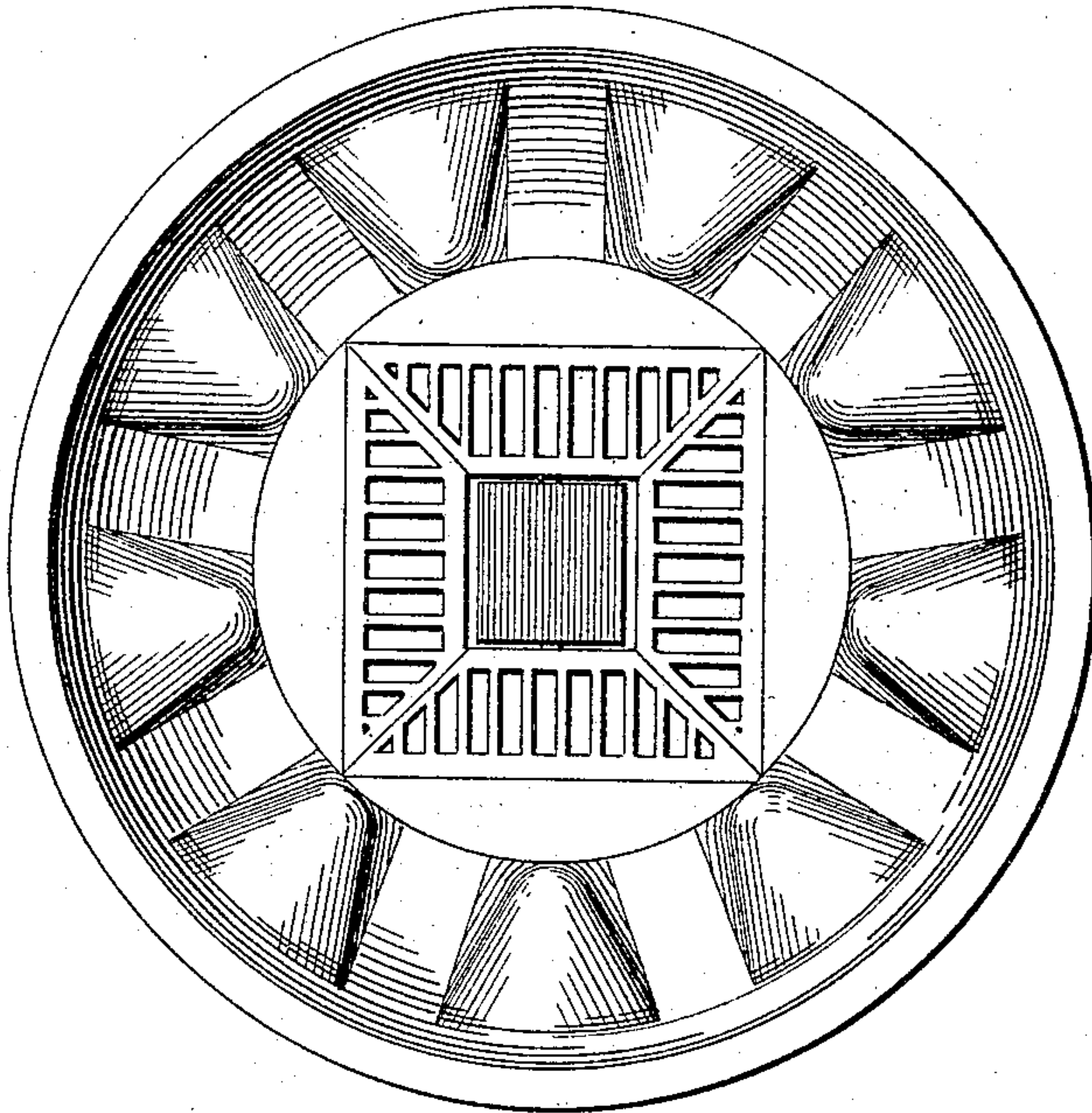
PATENTED JULY 26, 1904.

W. H. TIPPIT.  
HOT AIR FURNACE.

APPLICATION FILED AUG. 5, 1903.

NO MODEL.

2 SHEETS—SHEET 2.



*Fig. 3.*

*Witnesses:*  
*George Quintal.*  
*Chas. R. Hall.*

*Inventor:*  
*William H. Tippit*



# UNITED STATES PATENT OFFICE.

WILLIAM H. TIPPIT, OF BLUFFS, ILLINOIS.

## HOT-AIR FURNACE.

SPECIFICATION forming part of Letters Patent No. 765,866, dated July 26, 1904.

Application filed August 5, 1903. Serial No. 168,287. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. TIPPIT, a citizen of the United States, residing at Bluffs, in the county of Scott and State of Illinois, have invented certain new and useful Improvements in Hot-Air Furnaces, of which the following is a specification, reference being had for greater certainty to the accompanying drawings, which are made a part of this specification, and in which—

Figure 1 is a perspective front view of a hot-air furnace constructed in accordance with this invention. Fig. 2 is an inside sectional view showing the corrugated base and disclosing the inside protuberances and channels or corrugations, also a cold-air-blast pipe.

My invention relates to hot-air furnaces; and it consists in a furnace having an air-blast pipe of novel construction and in coöperation therewith a fire-pot having the characteristics stated in the claims.

The fire-pot is corrugated internally and externally, and its external corrugations are surrounded by a sleeve or cylinder-casing which confines the air in the channels, where it is quickly and thoroughly heated by being exposed to the large heating-surface of the channels, which are so nearly surrounded by fire, which at the same time imparts the maximum amount of heat of the consuming fuel to the inclosed air, which when sufficiently heated passes out where desired instead of the fire drawing an equal amount of cold air from the room, passing it through the fire-box or fire-pot, and discharging it out through the flue, with the consequent waste.

The outside channels form alternative protuberances on the inside of the fire-box or fire-pot, and the alternative protuberances on the outside of the fire-box or fire-pot form channels on the inside. Thus the outside channels form passages for air and the inside channels, which almost surround the outside channels, form a receptacle for the fuel. Thus the alternative channels and protuberances on the inside of the fire-box or fire-pot scatter the fuel and prevent the rapid consumption.

Like letters of reference designate corresponding parts in both figures of the drawings.

A and B designate one of the outside chan-

nels of the corrugated fire-box or fire-pot or fire-chamber. Cold air enters at A and becoming heated passes upward and out at B. A sleeve or cylinder C tightly surrounds the corrugated fire-box or fire-chamber of a width not to extend below the bottom nor to extend higher than the top of the corrugated fire-bowl, only leaving an opening at A and B, thus forming the outside channels into pipes containing an opening at A and B to permit of the passage of air through the corrugations, so that when used for the purpose of a heating-stove the heated air will pass out lower down in the room, where most needed.

D is a representation of the flue for the exit of the smoke from the furnace to the chimney. A cold-air-blast pipe enters at E through an opening in front of the flue D and extends downward to a suitable distance above the fire-bowl to distribute a blast of cold air over the upper surface of the fuel and fire, driving the heat resulting from the combustion of the fuel to and against the corrugations of the fire-box or fire-pot and at the same time causing the combustion of the gases arising from the fuel by providing oxygen for secondary combustion.

The cold-air pipe is provided with an opening F in the side at or near the top of said air-pipe and on the side toward the flue and below the flue-opening D, forming a passage for cold-air blast on the flue. This passage must open outward through the side of said cold-air-blast pipe next to the flue to form a cold-air blast on the flue, minimizing the escape of heat through the flue by operating as a check-draft. Thus the opening in the side of the cold-air-blast pipe, as above described, secures more conveniently and effectively the results than the methods heretofore adopted by other designs to prevent the passage of heat from the furnace to the chimney. Thus it will be readily seen that the cold-air-blast pipe as constructed and used with my invention will permit of the distribution of a supply of cold air over the upper surface of the fire and fuel, driving the heat toward the sides of the furnace, and also permits of the passage of a cold blast of air through the opening in the side of the cold-air-blast pipe to the open-

ing for the exit of the smoke from the furnace to the chimney, thus minimizing the escape of heat from the furnace to the chimney. The hot-air furnace is also provided with a  
5 cold-air draft at bottom of the furnace, as shown in the drawings above referred to in this specification.

I hold that this invention may be used for either the purposes of a heating stove or furnace and that various changes may be resorted  
10 to without departing from the general principle and scope of my invention.

The important advantages of my invention are convenience, effectiveness, and economy  
15 in the consumption of fuel.

What I claim as new in my invention is—

1. A hot-air furnace having a fire-pot corrugated internally and externally, a sleeve closely surrounding the exterior corrugations

to form air-passages, an exit-flue, and a cold-  
20 air pipe located adjacent said flue and extending to a point above the fuel to deliver an air-blast from its lower end toward the fuel, said pipe having also an opening on the side next  
25 the flue to deliver an air-blast operating as a check-draft.

2. A stove or furnace having an exit-flue, and an air-feeding tube located adjacent to said flue and having a lower open end to discharge  
30 air toward the fuel to produce secondary combustion, and having also an opening in the side toward the flue to discharge cold air to check the draft.

WILLIAM H. TIPPIT.

Witnesses:

L. T. FOOTE,

W. G. MUELLER.