Jan. 2, 1923. 1,440,465

V. E. HUGONIOT.
AIR HEATING FURNACE
FILED JULY 2, 1920.

Fig. 1.

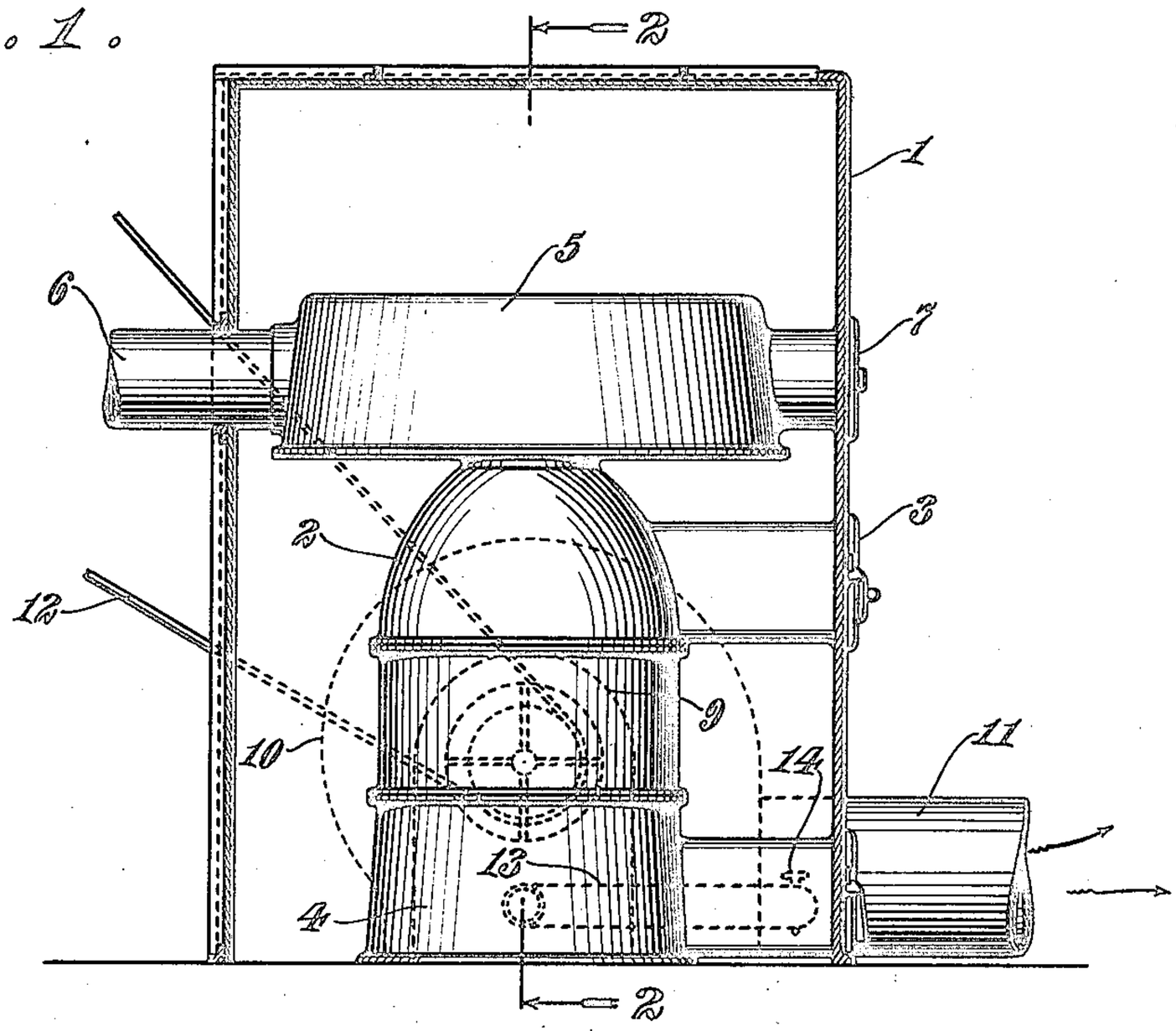
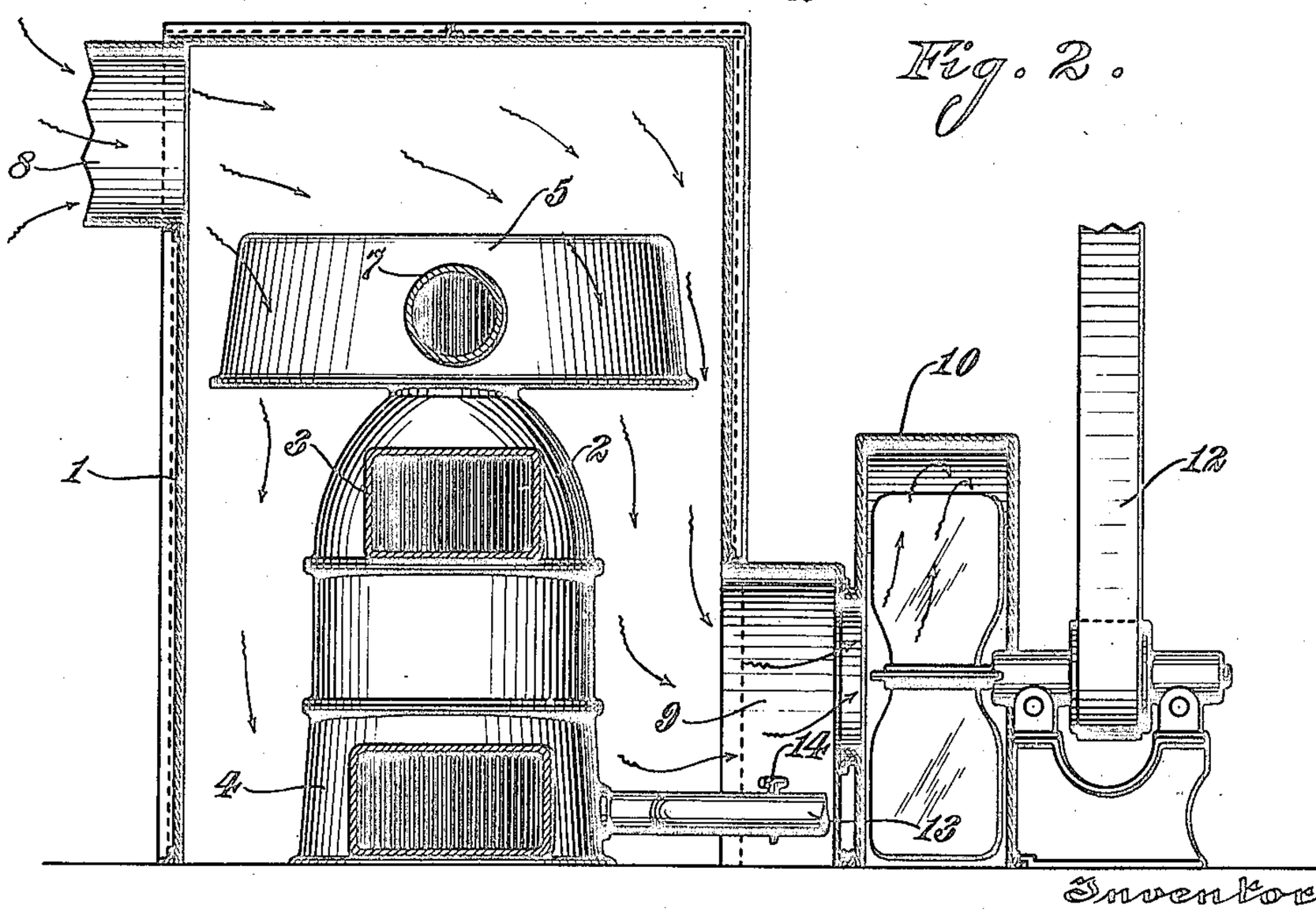


Fig. 2.



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UNITED STATES PATENT OFFICE.

VICTOR E. HUGONIOT, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO ALBERT BUSS, OF ST. LOUIS, MISSOURI.

AIR-HEATING FURNACE.

Application filed July 2, 1920. Serial No. 393,522.

To all whom it may concern:

Be it known that I, VICTOR E. HUGONIOT, a citizen of the United States, and residing at St. Louis, Missouri, have invented the new and useful Improvement in Air-Heating Furnaces, of which the following is a specification.

This invention relates to air heating furnaces, and more particularly to that type of furnace in which the air, after being heated, is distributed by means of a blower or similar device.

In some types of furnaces, in which the air is distributed for use by means of a blower, the blower is placed at the inlet to the furnace. Consequently, the air, while passing over the heating surface and being heated, is under more or less pressure. When the air is subsequently discharged from the furnace, it undergoes expansion on its way to the consuming devices, and is, therefore, cooled.

One of the objects of this invention, therefore, is to provide an air heating furnace adapted to heat the air while in a normal or uncompressed state.

Another object is to provide an air heating furnace with means for supplying heated air to the combustion chamber.

Further objects will appear from the detail description taken in connection with the accompanying drawing, in which:

Figure 1 is a section view showing a side view in elevation of a furnace embodying this invention; and

Figure 2 is a section taken on the line 2—2, Figure 1.

Referring now to the accompanying drawing, 1 designates an enclosure, which may be constructed of sheet iron or other suitable material reinforced where necessary with angle iron frames and braces in a well known manner. Within the enclosure 1 is a stove or similar heating unit 2 having a fire door 3 and an ash chamber 4. Mounted on the top of the heating unit is an enlarged drum 5 so arranged that the smoke and hot gases must traverse this drum before finding exit through the flue 6. A clean out 7 may be provided for this drum.

Near the top of the enclosure 1, an air inlet 8 may be provided. Near the bottom of the enclosure 1, and preferably on the opposite side to that of the inlet 8, is an air outlet 9 communicating with the suction side of a fan or blower 10, which discharges by means of a pipe 11 to the distributing system for supplying heated air for use. The fan 10 may be driven by any suitable source of power, being connected therewith either directly or by means of a belt 12 or by any other suitable means.

A pipe or duct 13 is arranged to form a by-pass connecting the discharge side of the blower 10 with the ash chamber 4, so as to provide means whereby a portion of the heated air discharged by the blower 10 may be supplied through the ash chamber 4 to the combustion chamber. A valve or damper 14 may be provided to control a passage of air through this duct.

When the blower 10 is started up, suction is created whereby air under normal atmospheric pressure is drawn in at the inlet 8. Said air impinges upon the hot surfaces of the heating unit 2 and after being heated thereby, passes down through the outlet 9 to the blower 10 and thence to the distributing system. Part of the heated air is taken from the discharge side of the blower 10 and passed through the duct 13 to supply the fire with heated air for the combustion. It will be seen that the air thus supplied to the fire, being in a preheated condition, will more readily support combustion and will render said combustion more easily controllable. It will also be seen that the air, when passing through the enclosure 1 and over the heated drum 5, will be in an uncompressed or even somewhat varified condition.

It is obvious that various changes may be made in the details of construction without departing from the spirit of this invention. It is, therefore, to be understood, that this invention is not to be limited to the specific details shown and described.

Having thus described this invention, what is claimed is:

An air-heating furnace, comprising, an enclosed chamber having an air inlet near the top thereof, a heating unit in said chamber having an enlarged heating drum arranged adjacent said inlet, an air outlet for said chamber in the lower portion thereof, a fan adjacent said outlet adapted to induce by suction a flow of air through said chamber to heat the same and a by-pass communicating with the discharge side of said fan adapted to convey a portion of said heated air to the ash pit.

In testimony whereof I affix my signature.

VICTOR E. HUGONIOT.