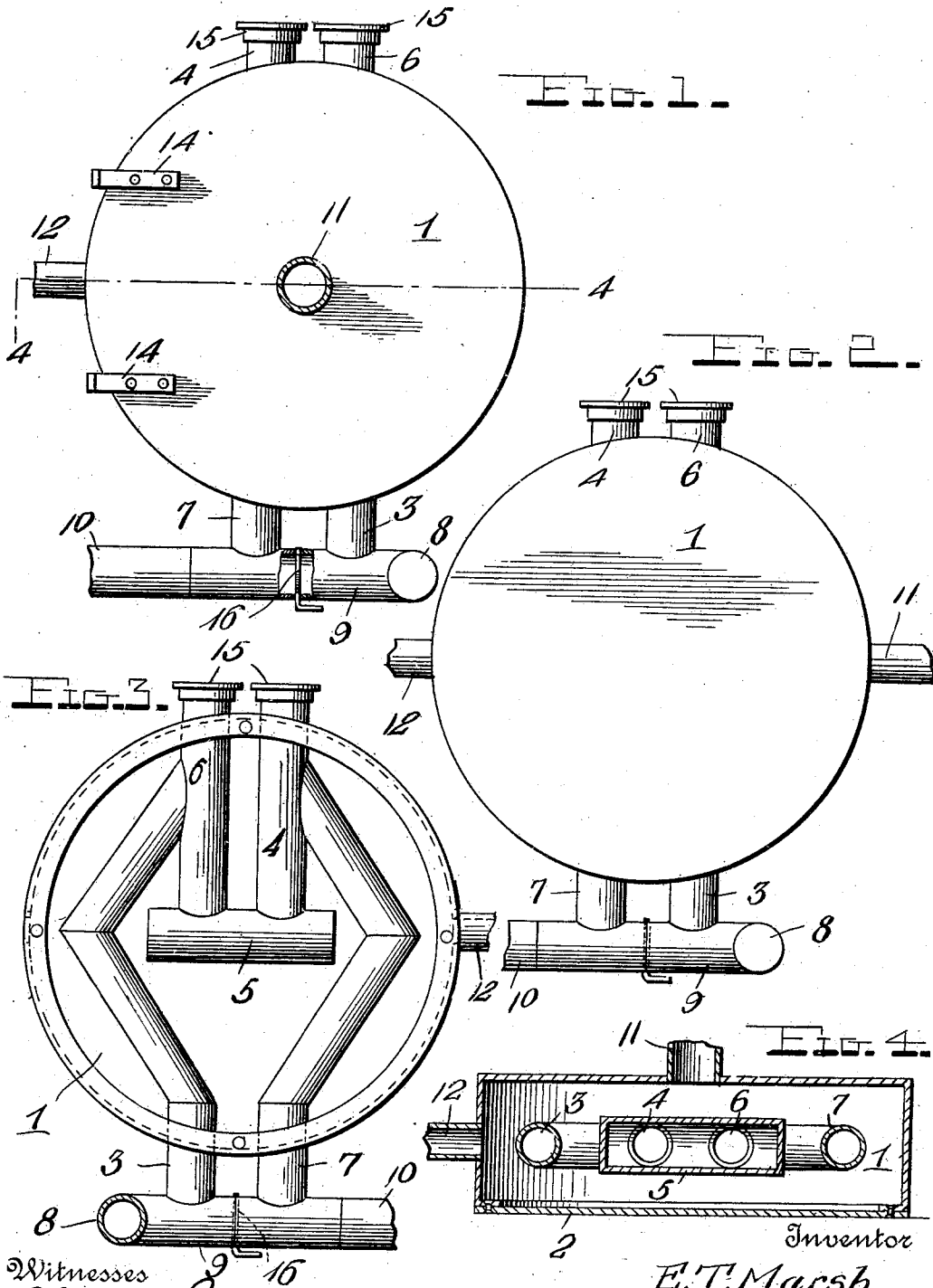


E. T. MARSH.
 AUXILIARY HEATING DEVICE FOR FURNACES.
 APPLICATION FILED JUNE 2, 1909.

937,624.

Patented Oct. 19, 1909.



Witnesses

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AUXILIARY HEATING DEVICE FOR FURNACES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWIN T. MARSH, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Auxiliary Heating Devices for Furnaces; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an auxiliary heating device for hot air or steam furnaces, and has for its object to provide a device of this kind which may be heated by the products of combustion passing out of the smoke stack, and which may in turn heat the surrounding air and conduct the air thus heated to a suitable point.

The object of my invention is to provide for the utilization of the products of combustion as a heating medium and thus utilize the heat which is usually carried away with the products of combustion and goes to waste.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claim.

In the accompanying drawings: Figure 1 is a plan view of the auxiliary heating device, showing the hot air pipe leading from the top of the casing. Fig. 2 is a similar view of another form of the device showing a different arrangement of the hot air pipe; Fig. 3 is an inverted plan view of Fig. 1, with the bottom plate removed, showing the interior arrangement of the heating pipes; and Fig. 4 is a vertical transverse section taken on the line 4—4 of Fig. 1.

Referring to the drawings for a more particular description of the invention, the device comprises a casing 1, provided with the removable bottom plate 2. An inlet pipe 3, extends through the side of the casing and into the interior thereof, and is connected with the pipe 4, which in turn is connected by means of the coupling 5 with a similar parallel pipe 6. An outlet pipe 7, leads from the pipe 6, through the side of the casing at a point immediately adjacent the outer end of the inlet pipe 3. The inlet pipe 3, is connected with the smoke flue or stack of the furnace by the coupling and pipe 9 and 8,

respectively, while the adjacent end of the opposite pipe 7, is connected with the chimney by means of the pipe 10. When the auxiliary heater is used in connection with furnaces, where the heating pipes spring from the sides of the hot air jacket, the device is mounted upon the top of the furnace jacket with the cover plate removed.

With furnaces built with the hot water pipes springing from the top of the furnace jacket, the device is suspended by straps 14, from the floor joists or from any suitable support above the furnace. In such cases, the bottom plate may or may not be removed. The hot air pipe 11, may extend from the top of the casing as shown in Figs. 1, 3 and 4 or from one side of the casing as shown in Fig. 2. The fresh air is admitted into the interior of the casing by means of the fresh air pipe 12, which extends from one side of the casing in both forms of the invention. The outer ends of the pipes 4 and 6 project beyond the adjacent side of the casing and are provided with removable caps 15, which may be removed from position to enable the various pipes to be cleaned.

A pivotal damper 16, is arranged in the coupling 9, between the outer ends of the inlet and outlet pipes, 3 and 7, respectively and is for the purpose of causing a direct draft from the fire to the chimney when the fire is low or if for any other reasons a stronger draft is required. This damper may be controlled from the upper floors by the usual chain and pulley attachment.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention, as defined in the appended claim.

Having thus described my invention, what I claim is:—

An auxiliary heating device for furnaces comprising a casing, a fresh air pipe communicating with the interior thereof, a conduit for leading the products of combustion passing out of the smoke-stack through the casing in a zigzag or indirect course, said conduit comprising a pair of oppositely disposed inlet and outlet pipes and a pair of

parallel pipes for establishing communication between the inner ends of the inlet and outlet pipes of the conduit and for lengthening the conduit, and means for connecting
5 the inner ends of the parallel pipes, a coupling between the outer ends of the inlet and outlet pipes of the conduit, a pivoted damper in said coupling to control the course of the products of combustion through the casing,

and a hot air pipe for leading the heated 10 fresh air from the casing to a suitable point.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

EDWIN T. MARSH.

Witnesses:

ESTHER E. MARSH,
RUTH M. ABKARIAN.