

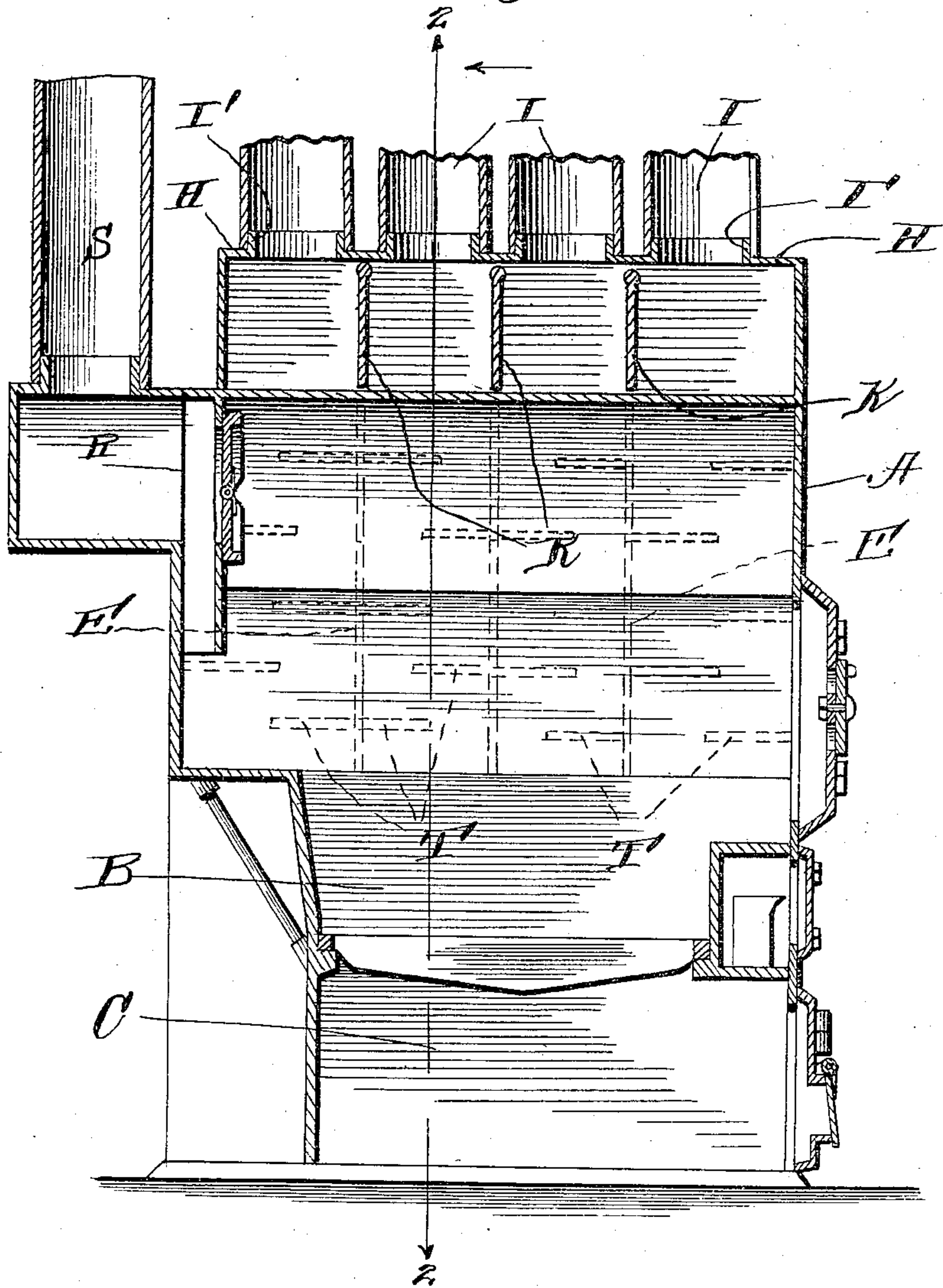
No. 868,203.

PATENTED OCT. 15, 1907.

E. T. MARSTERS.
HOT AIR FURNACE.
APPLICATION FILED JAN. 24, 1907.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

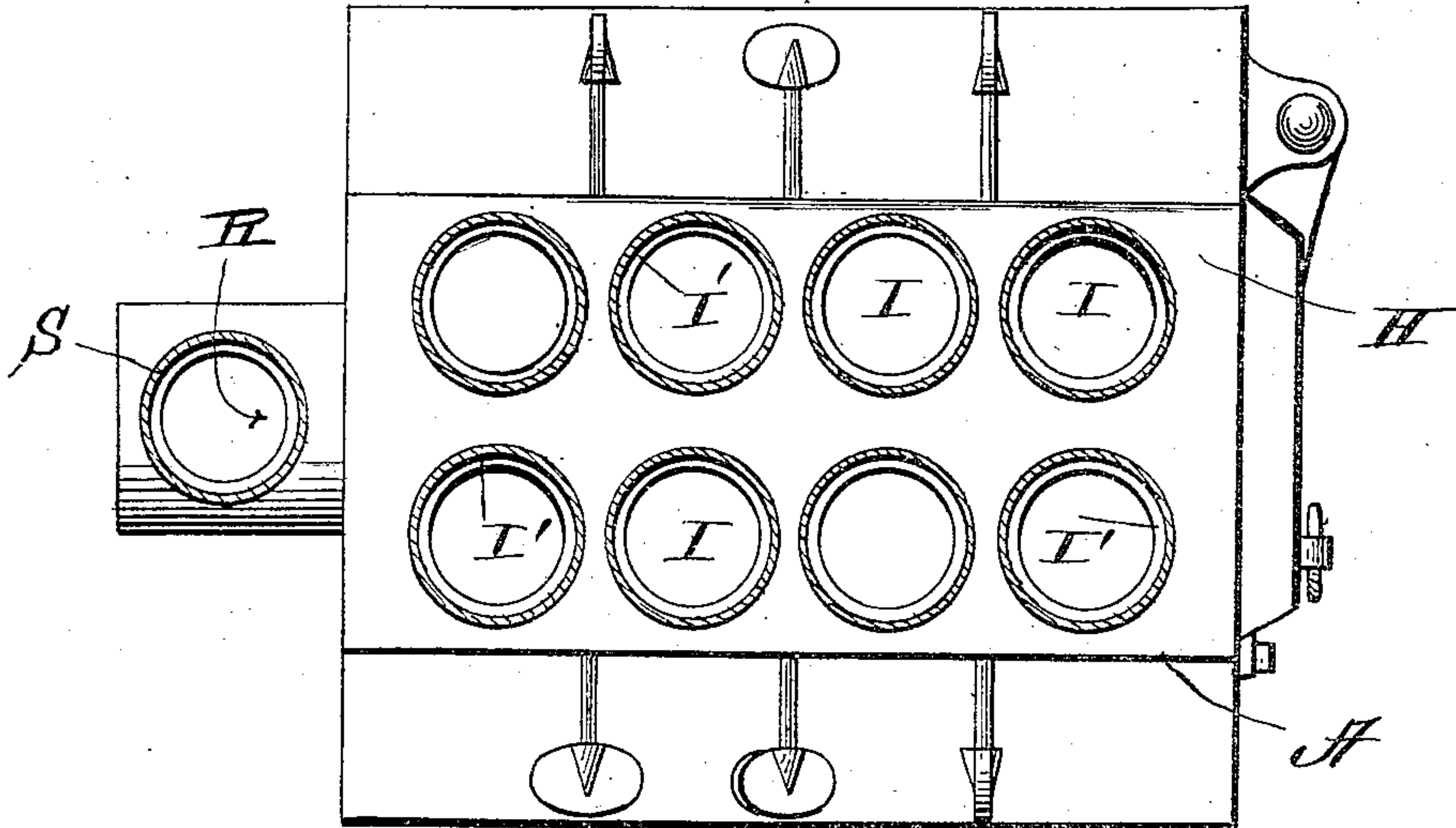
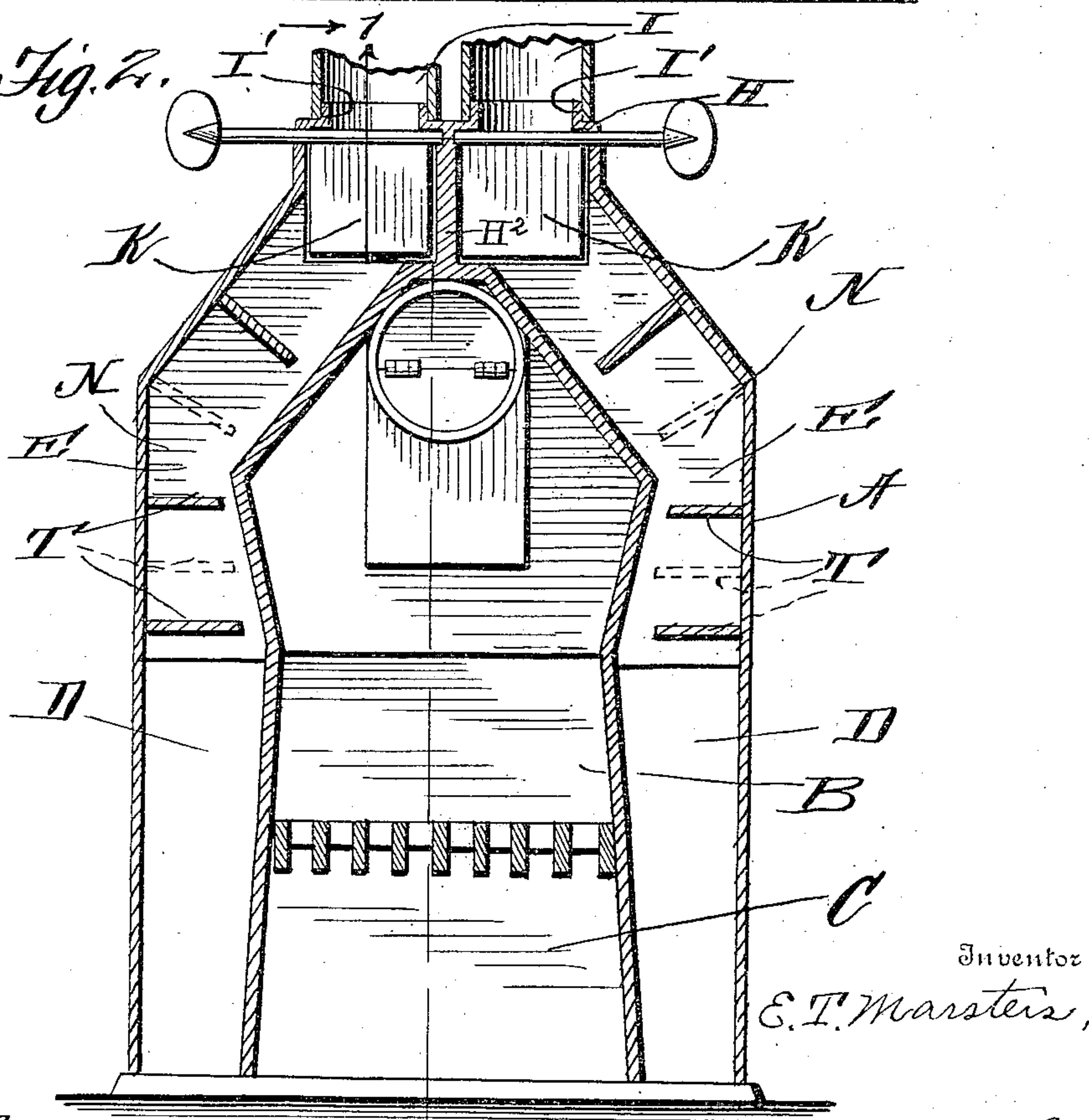


Fig. 2.



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HOT-AIR FURNACE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWARD THORNTON MARSTERS, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Hot-Air Furnaces; and I do hereby 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 same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in warm air furnaces, and the object of the invention is to produce a simple and efficient apparatus of this nature whereby the quantity of heat to be conducted to different rooms may be regulated by a system of flues and dampers, whereby all of the heat which is radiated may be directed to one or more flues.

The invention consists in various details of construction and combinations of parts which will be hereinafter fully described and then specifically defined in the appended claims.

I illustrate my invention in the accompanying drawings, in which:—

Figure 1 is a vertical sectional view longitudinally through the furnace. Fig. 2 is a cross sectional view, and Fig. 3 is a top plan view.

Reference now being had to the details of the drawings by letter, A designates the outer shell of a hot air furnace which is preferably of the general shape shown in the drawings, being of a low structure and somewhat elongated in order not to require a high basement or cellar in which the same may be located, thereby affording a greater pitch to the pipes or flues for carrying the heat to various rooms.

B designates the fire-box, C the ash pit, and D a hot air chamber divided by partitions E into a series of hot air flues N which are angular, as shown clearly in Fig. 2 of the drawings, their upper portions being substantially at right angles to each other in pairs upon opposite sides of the furnace. The lower ends of said partitions E terminate at the top line of the fire-box.

H designates a cover which forms a roof or closure to the tops of said flues N, and said roof or closure is provided with a series of openings I about each of which is a flange I' for connection with a pipe which is adapted to telescope over the same for the purpose of conveying heat to any desired room. A vertically disposed longitudinal partition H² extends between the roof H and the top of the wall of the fire chamber and divides the superstructure into two air chambers.

K, K designate dampers, there being one pivotally mounted above each partition E and normally in alignment therewith and forming a temporary partition between two flues. Said dampers are of such a size that

when turned at right angles against the roof or closure H, they will close the openings I. When the dampers are in their normal position, as shown in Figs. 1 and 2, each flue N will be in communication with an opening I, all of the flues being normally distinct from one another, and it will be noted that the heated air which passes up through the various flues may be directed all through a single opening I and be conveyed to any one particular room through suitable pipe connections, or any number of the flues may be thrown to conduct the entire heat to a single pipe by simply throwing one or more of the dampers to horizontal positions to close the various openings I.

It will be noted that the flues through which the heated air is conducted takes the cold air from the lower part of the furnace and causes the same to pass in direct contact with the heated wall of the fire chamber, and has no chance to escape until it absorbs the heat from the wall of the fire-box.

R designates an exit passageway through which the smoke and products of combustion pass from the fire-box to the chimney S. Fixed to each partition which divides the space intermediate the fire chamber and the outer wall of the furnace into flues, is a series of baffle plates T arranged in alternate relation with one another and provided in order to allow the cool air to pass from one side of a flue to the other, and assure the air being thoroughly heated before entering the warm air conducting pipe leading from the tops of the flues.

From the foregoing, it will be noted that by the provision of a furnace made in accordance with my invention, the cold air is drawn from the lower part of the furnace and conducted through the flues so that it will contact with a large heat radiating surface and the entire draft of heated air may be conducted either through a single pipe or more pipes as may be desired, thereby affording means whereby distantly located rooms connected by pipes to the furnace and which under other conditions would be difficult to heat, may receive, if desired, the entire heat from one side of the furnace.

What I claim is:—

1. A hot air furnace having a series of upright partitions forming hot air flues leading from a space below the upper line of the fire-box, the upper portion of each partition having an opening therein, a hinged damper mounted in each of said openings and normally in alignment with the partition in which the opening is formed, the roof of the furnace provided with a series of openings, each adapted to communicate only with the space intermediate a set of dampers and each opening into the roof adapted to be closed as a damper is swung to a horizontal position, as set forth.

2. A hot air furnace having a series of upright partitions forming hot air flues leading from a space below the upper line of the fire-box, the upper portion of each partition having an opening therein, a longitudinal partition dividing the upper portion of the furnace into two air compartments, dampers hinged in the outer wall of the casing and said longitudinal partition, and each normally closing

an aperture in the vertical partition and positioned in
alinement with the latter, the roof of the furnace provided
with series of openings, each adapted to communicate only
with a space intermediate a set of dampers and each open-
5 ing in the roof adapted to be closed as the damper is swung
to a horizontal position, as set forth.

3. A hot air furnace having a series of upright angular
partitions forming hot air flues leading from a space below
the upper line of the fire-box, series of deflecting plates
10 mounted in each of said flues, a roof to said furnace, a ver-
tical partition centrally disposed and extending between
the roof and the ridge of the roof of the fire chamber, the
upper portion of each of said upright angular partitions

being cut away forming series of registering openings, a
series of hinged dampers pivotally mounted in said central 15
longitudinal partition and in the outer wall of the furnace
and normally in alinement with said angular partitions,
said roof having openings, each adapted to communicate
normally only with the space intermediate a set of dam-
pers, as set forth. 20

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

EDWARD THORNTON MARSTERS.

Witnesses:

WELLINGTON S. WILKINSON,
RUFUS KIMBALL.