No. 787,014. PATENTED APR. 11, 1905.

T. A. & W. G. TWYMAN.

AIR FEEDING DEVICE FOR STOVES OR FURNACES.

APPLICATION FILED JULY 18, 1904.

Fig. 1.

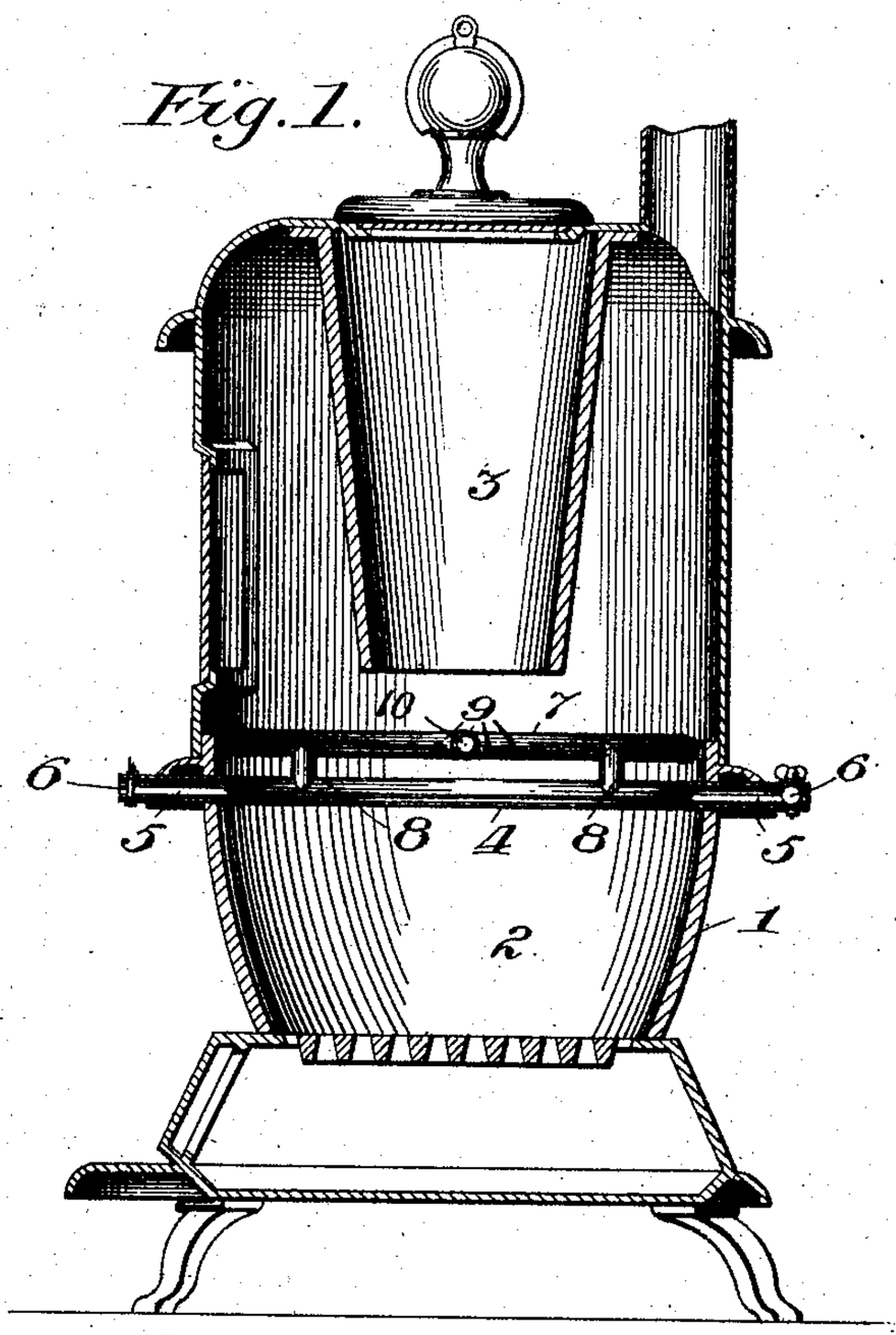


Fig. 2.

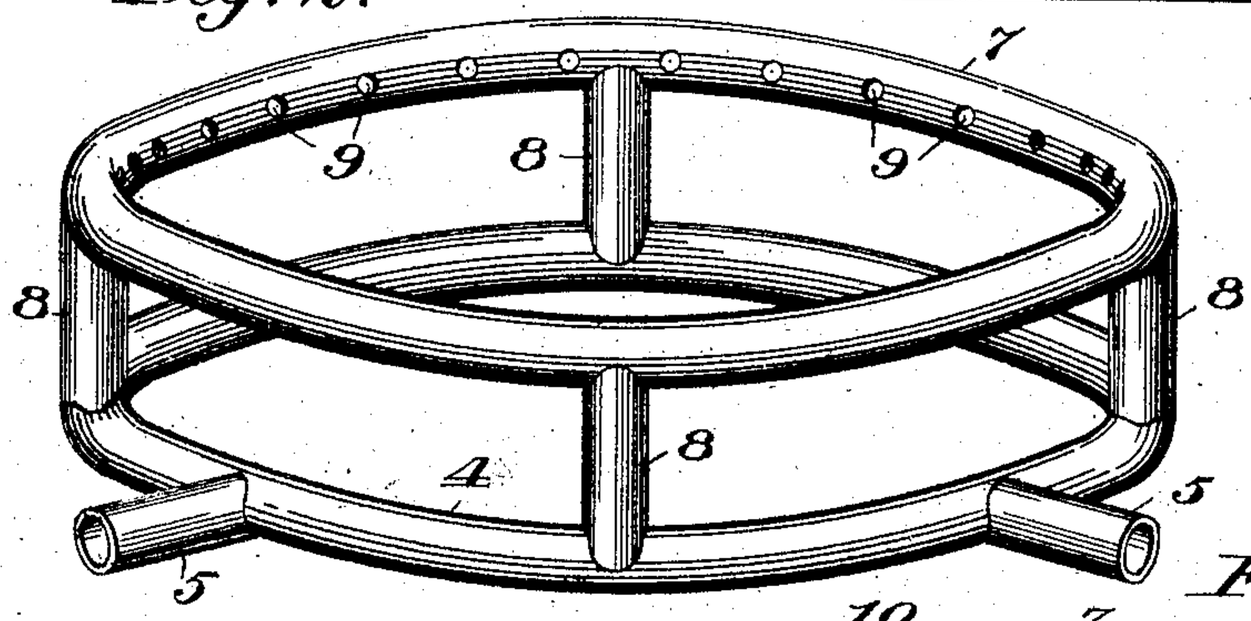
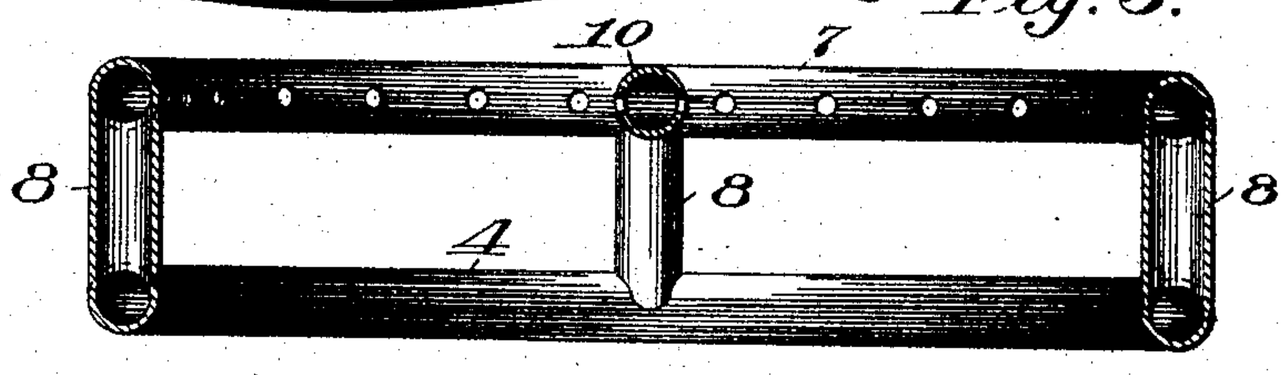


Fig. 3.



Witnesses:
James L. Young
Florence O. Anderson

Inventors:
Tucker A. Twyman
and William G. Twyman
by William L. Shaw Atty.

No. 787,014. Patented April 11, 1905

UNITED STATES PATENT OFFICE.

TUCKER A. TWYMAN AND WILLIAM G. TWYMAN, OF KANSAS CITY, MISSOURI.

AIR-FEEDING DEVICE FOR STOVES OR FURNACES.

SPECIFICATION forming part of Letters Patent No. 787,014, dated April 11, 1905.

Application filed July 18, 1904. Serial No. 217,036.

To all whom it may concern:

Be it known that we, TUCKER A. TWYMAN and WILLIAM G. TWYMAN, citizens of the United States, and residents of Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Air-Feeding Devices for Stoves or Furnaces, of which the following is a specification.

Our invention relates to stoves or furnaces, and more particularly to means embodied therein for producing a thorough distribution of a body of air across the surface of a fire-bed a distance above the latter for the purpose of intercepting the arising gases and carbon and effecting a thorough combustion of the same.

The object of the invention is to provide an arrangement for the purpose specified which is particularly simple in construction and highly efficient in operation.

To this end the invention includes the combination and arrangement of parts to be hereinafter described, and particularly pointed out in the claims.

Although the invention is susceptible of various modifications and is equally applicable to stoves and furnaces, in order to present a clear exemplification of the invention it has only been deemed necessary to only illustrate the same in connection with a conventional construction of coal-burning stove and to describe the invention in this association.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of a coal-burning stove with our invention embodied therein. Fig. 2 is a perspective view of a modified form of the air-feeding means or attachment separated from the stove; and Fig. 3 is a cross-sectional view of the attachment shown in Fig. 1, being drawn to an enlarged scale.

Our invention includes generally a primary heating-conduit and a superimposed air-distributing conduit preferably embodied in the form of a structure substantially complete in itself or in an attachment separate from the stove proper and adapted to be readily placed therein or removed therefrom.

In the illustrated exemplification of our invention the base of a coal-burning stove of conventional construction is designated by 1, the fire-chamber by 2, and the magazine by 3. The improved air-feeding device is preferably arranged with the air-feeding conduit contiguous to the wall of the stove and at the best advantage for the purpose of so directing the air-streams issuing therefrom that the arising unconsumed combustibles will be intercepted and ignited while the heating-conduit is located in closer proximity to the fire-bed.

In the present exemplification of our invention the heating-conduit 4 is disclosed as a circular or ring-shaped pipe arranged in close juxtaposition to the wall of the stove and having a plurality of lateral branches radiating outwardly at separate points and projecting entirely through the wall of the stove; but it will be understood that said conduit in every case will be so constructed as to substantially conform to the cross-sectional shape of the portion of the stove in which it is located. The branches are provided upon the outside of the stove and preferably at their ends with suitable means for restricting their areas more or less, such as ordinary dampers 6. The distributing-conduit 7 in the illustrated exemplification of the invention is also circular or of ring shape, being of substantially the same diameter as the conduit 5, arranged a suitable distance above the latter and connected rigidly thereto by hollow columns or members 8, which provide open passages or communicating ways between the two conduits. The members 8 are so spaced relative to each other and the branches 5 that they intersect the conduit 4 at points approximately centrally between the branches 5. A plurality of ports 9, radiating toward a common center, is provided in the innermost portion of the wall of the conduit 7, through which the heated air issues in a plurality of streams.

As will be understood from the foregoing description, the air entering through the branches 5 will travel in a somewhat circuitous path in order to reach the distributing-

conduit and in this travel is sufficiently heated so that when it issues from the openings 9 in a plurality of streams it will readily unite with the arising unconsumed combustibles and serve to ignite the latter.

In the form of our invention shown in Figs. 1 and 3 a distributing branch 10 is shown as extending diametrically across the distributing-conduit, opening into the latter at its opposite ends and provided with a plurality of discharge-ports 11 in its opposite sides.

The construction and operation of our invention will be readily understood upon reference to the foregoing description and the accompanying drawings, and it will be appreciated that the parts and combinations recited may be varied within a wide range without departing from the spirit and scope thereof.

Having thus described our invention, what we claim as new, and desire to be secured by Letters Patent, is—

1. The combination with a heater, of an air-distributing device arranged therein comprising a heating-conduit having a plurality of branches extending radially therefrom and projecting entirely through the wall of the heater, means for regulating the areas of said branches, a superimposed distributing-conduit having discharge-ports therein and hollow connecting members extending between the conduits, substantially as described.

2. An air-distributing attachment for heaters, comprising a heating-conduit having a plurality of branches extending radially therefrom, a superimposed distributing-conduit spaced a distance above the heating-conduit and having discharge-ports through its inner wall and hollow vertical connecting members disposed substantially centrally between said branches and providing open passage-ways between the two conduits, substantially as described.

3. An air-distributing attachment for heaters, comprising a heating-conduit having a plurality of branches radiating therefrom, a superimposed distributing-conduit having discharge-orifices through its inner wall, a distributing-branch extending diametrically across the same, opening thereinto at its opposite ends and having lateral discharge-ports, and vertical connecting members interposed between the two conduits for connecting the same rigidly to each other, said members having passage-ways therethrough, substantially as described.

4. An air-distributing attachment for heaters, comprising an endless heating-conduit shaped to conform to the cross-sectional contour of the heater with which it is associated, branches extending therefrom, means for regulating the effective areas of said branches, a distributing-conduit of substantially the shape of the heating-conduit and arranged a distance above the latter, and hollow members extending between the two conduits for rigidly connecting the same to each other and providing open passage-ways therebetween, said member being spaced out of register with said branches, substantially as described.

In testimony whereof we have hereunto signed our names, in the presence of two attesting witnesses, at Kansas City, in the county of Jackson and State of Missouri, this 5th day of July, 1904.

TUCKER A. TWYMAN.
WILLIAM G. TWYMAN.

Witnesses:
FLORENCE O. ANDERSON,
HENRY GEISS.