No. 776,568. PATENTED DEC. 6, 1904.

B. F. VOORHIS.

HEATING STOVE.

APPLICATION FILED JAN. 27, 1904.

NO MODEL.

Fig. 1.

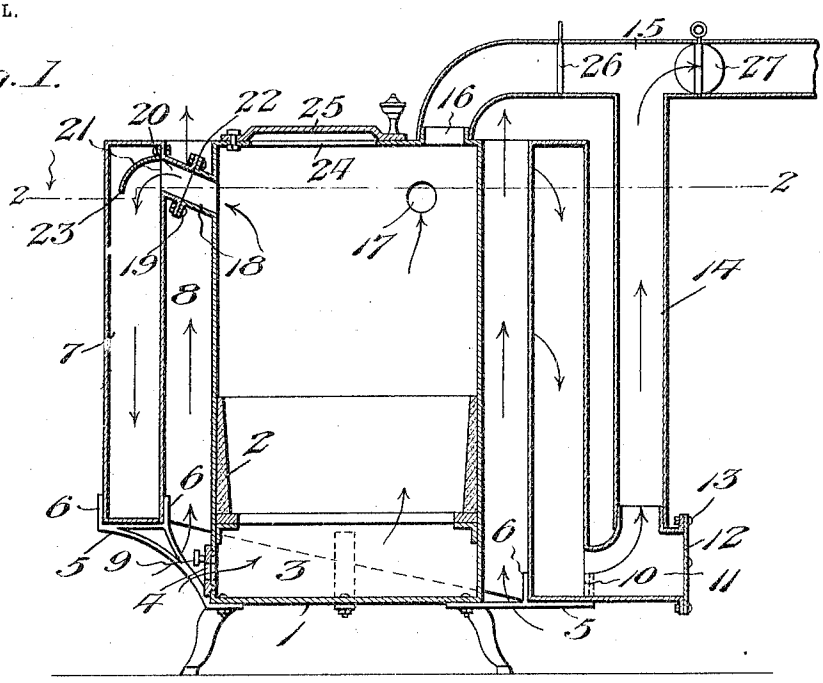
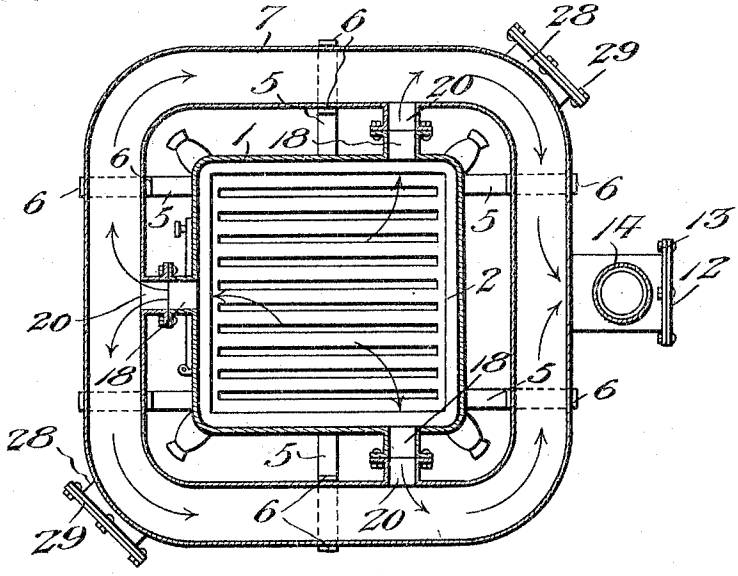


Fig. 2.



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UNITED STATES PATENT OFFICE.

BENJAMIN F. VOORHIS, OF NYACK, NEW YORK, ASSIGNOR OF ONE-THIRD TO AUGUST WM. ZUBER, OF NYACK, NEW YORK.

HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 776,568, dated December 6, 1904.

Application filed January 27, 1904. Serial No. 190,860. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. VOORHIS, a citizen of the United States, residing at Nyack, in the county of Rockland and State of New York, have invented new and useful Improvements in Heating-Stoves, of which the following is a specification.

My invention relates to new and useful improvements in heating-stoves; and its object is to provide a simple device of this character having a large heating-surface, whereby the temperature of the air surrounding the stove may be quickly raised, the hot products of combustion escaping from the stove being utilized for heating the air prior to their discharge into the chimney.

With the above and other objects in view the invention consists of a stove having a radiator or drum inclosing the same and spaced therefrom to form a passage from the bottom to the top of the stove and which constitutes a flue.

The invention also consists of a novel arrangement of devices by means of which the products of combustion can be directed either into the drum or directly to the chimney.

The invention also consists in the further novel construction and combination of parts hereinafter more fully described and claimed and illustrated in the accompanying drawings, showing the preferred form of my invention, and in which—

Figure 1 is a central vertical section through my improved heating-stove; and Fig. 2 is a section on line 2 2, Fig. 2.

Referring to the figures by numerals of reference, 1 is a stove-casing of any suitable contour, having a fire-box 2 therein and an ash-box 3, provided with a suitable air-inlet 4. Brackets 5 are secured to the bottom of the casing 1 and extend laterally therefrom, and these brackets have upwardly-extending arms 6, which are adapted to overlap the sides of a drum 7, which incloses but is spaced apart from the casing 1 and forms a passage 8 between the drum and stove-casing. This drum is concentric with the casing 1, and the lower portion thereof is so shaped as to permit of convenient access to the door 9 of the ash-box 3. The drum 7 is closed at all points except at the lower portion of the rear thereof, where an outlet 10 is provided. This outlet opens into a laterally-extending receptacle 11, having a head 12, which is detachably secured to its outer end by means of bolts 13 or in any other suitable manner. An outlet-pipe 14 extends upward from the top of the receptacle 11 and opens into the stovepipe 15, which extends from an outlet 16, formed in the top of casing 1.

Any desired number of outlets 17 are arranged within the casing 1 near the top thereof, and these outlets are inclosed by tubular extensions 18, having flanges 19 at their outer ends. These extensions 18 are adapted to register with inlet-pipes 20, extending outwardly from apertures 21, formed within the inner face of the drum 7, and have flanges 22, adapted to be bolted or otherwise secured to the flanges 19. Shields 23 are secured within the drum directly above the inlets 21 and are for the purpose hereinafter more fully described.

An inlet 24 for fuel is formed in the top of casing 1 and is adapted to be closed by a cover 25.

A damper 26 is arranged within the stovepipe 15 between the outlet 16 and the outlet-pipe 14, and another damper 27 is located between the stovepipe 14 and the chimney. (Not shown.)

Tubular extensions 28 are arranged adjacent the bottom of the drum 7 at desired intervals and are normally closed by rods 29, which are bolted or otherwise secured in position. These extensions are provided so as to enable the interior of the drum to be readily cleaned.

In starting a fire in the stove herein described the dampers 26 and 27 are opened, and after the fuel has been ignited the products of combustion will pass directly into the outlet 16 and the stovepipe 15. After sufficient headway has been obtained the damper 26 is closed, and the products of combustion will then pass into the apertures 17 and extensions 18 and will come into contact with shields 23, which will direct them downward

into the drum 7. These hot products will then circulate through the drum and thoroughly heat all the surfaces thereof and will then pass through the outlet 10 into the receptacle 11 and thence outward by way of the outlet-pipe 14 to the stovepipe 15. It will thus be seen that the surrounding air upon coming into contact with the faces of the drum will be thoroughly heated, and a draft will be established through the passage 8, which will result in the rapid heating of all the air confined in a room with this stove. Any soot or other solid materials which may accumulate within the drum can be readily removed by detaching the heads 12 and 29. The drum itself can be quickly removed by detaching the inlet-tubes 20 from the extensions 18, after which it can be raised from the supporting-brackets 5.

It will be seen that the device is vey simple in construction and very effective for heating purposes and that practically all of the heat generated is utilized.

In the drawings I have shown by arrows the circulation of air and products of combustion through the apparatus and the circulation established by the surrounding air through the passage 8.

In the foregoing description I have shown the preferred form of my invention; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing any of the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

Having thus described the invention, what is claimed as new is—

In a device of the character described, the combination with a stove; of a detachable drum inclosing and supported by the stove, said drum being spaced from the stove to form an air-passage, detachable tubular connections between the drum and stove and forming outlets from the stove to the drum, shields within the drum and adjacent the connections, an outlet from the drum, and means for directing products of combustion into the drum.

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

BENJAMIN F. VOORHIS.

Witnesses:
MICHAEL MCNICHOL,
THOMAS NOLAN.