

No. 650,473.

Patented May 29, 1900.

A. O. McBEAN.

RADIATOR.

(Application filed June 28, 1899.)

(No Model.)

Fig. 1.

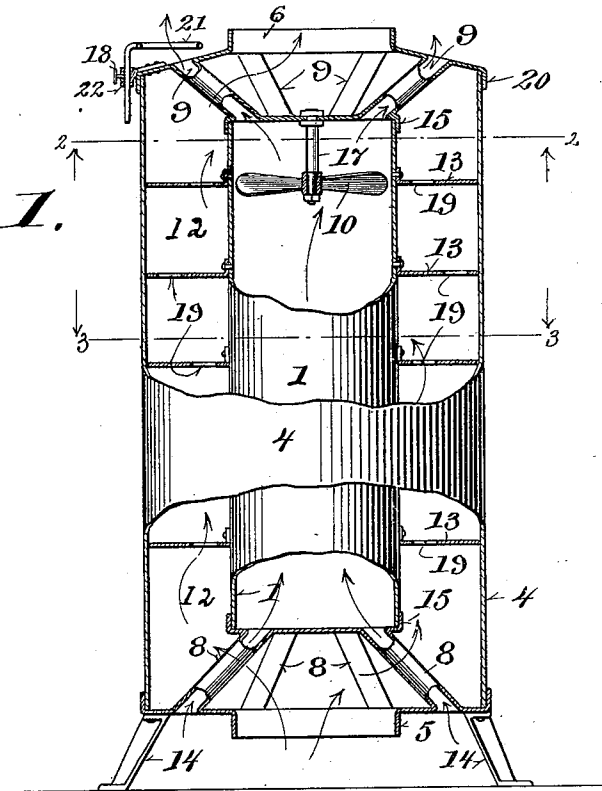


Fig. 2.

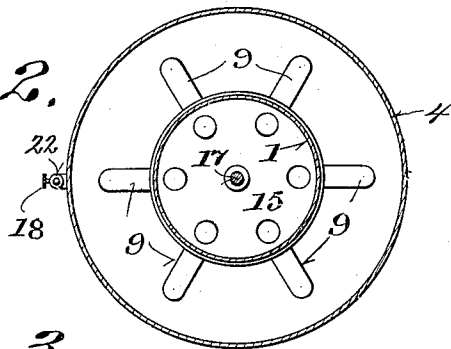
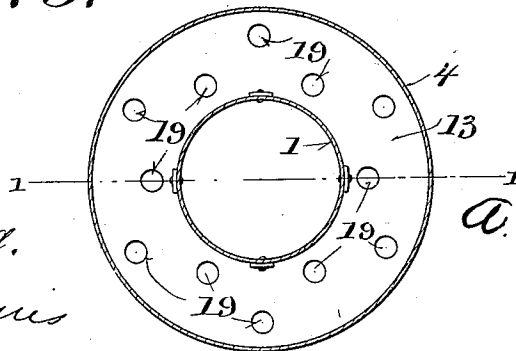


Fig. 3.



Witnesses:

Geo. W. Young.
F. L. Harris

Inventor:

A. O. McBean

UNITED STATES PATENT OFFICE.

ALEXANDER O. McBEAN, OF GRAFTON, WISCONSIN.

RADIATOR.

SPECIFICATION forming part of Letters Patent No. 650,473, dated May 29, 1900.

Application filed June 28, 1899. Serial No. 722,134. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER O. McBEAN, a citizen of the United States, residing at Grafton, in the county of Ozaukee and State of Wisconsin, have invented new and useful Improvements in Radiators, of which the following is a specification.

My invention has for its object to provide simple, economical, durable, and efficient radiators of the heating-drum type, the same consisting in certain peculiarities of construction and combination of parts hereinafter particularly set forth with reference to the accompanying drawings and subsequently claimed.

Figure 1 of the drawings represents an elevation of my improved radiator partly broken away and in section, the plane of the section being indicated by line 1 1 in the third figure of the series; and Figs. 2 and 3, horizontal sections of the radiator, respectively indicated by lines 2 2 and 3 3 in the first figure.

Referring by numerals to the drawings, 4 indicates a preferably-cylindrical shell joined at its ends to flanges of plates 20, provided with central openings surrounded by outwardly-extending flanges 5 and 6, around which to fit sections of a stove or furnace draft-pipe, these plates being parts of castings embodying flues 8 9, and other flanged plates 15, the latter plates being of less diameter than those aforesaid and joined to the ends of an interposed also preferably-cylindrical shell 1. The shells and end castings form the inner and outer casings of my improved radiator, all the joints being smoke and gas tight, but readily separable. The flues 8, constituting parts of the lower end castings, serve for the admission of air into the inner casing of the radiator, and the flues 9 of the upper end casting serve as outlets for said air from said casing. A fan-wheel 10, suspended on a spindle 17, depending from the upper end casting within the inner casing of the radiator, serves to retard the flow of air through said casing. Legs 14 are shown in connection with the lower end casting for the support of the radiator clear of the floor of an apartment in which it may be placed.

Smoke and gas products of combustion as-

pend through the space 12 between the inner and outer casings of the radiator and are retarded by perforated horizontal plates 13, arranged at intervals in said space longitudinally of said radiator, these plates being shown as provided with flanges secured to shell 1. The perforations 19 in each of plates 13 are out of line with the perforations in the next adjacent plate or plates, and thus the products of combustion are caused to have a zigzag course on their way through the outer casing of the radiator. By retarding the flow of the products of combustion through the radiator the air in the inner casing of said radiator is thoroughly heated. From the foregoing it will be understood that the products of combustion passing through the space 12 will raise the temperature of the air in the inner casing 1, and as the heated air passes out through the flues 9 there is an inflow of cooler air through the flues 8, whereby a circulation of heated air is maintained, while at the same time there is direct radiation of heat from the external portions of my device.

The upper end casting being removed, the inner shell 1, with the plates 13, may be lifted out and the outer shell 4 may be disconnected from the lower casting, whereby all the parts of the radiator are accessible for cleaning or repair.

Made fast to the upper end casting I show an eye 22, engaged by the vertical shank of an otherwise horizontal bracket 21, the latter being held in adjusted position by a set-screw 18, that engages said eye against said shank, this bracket serving as a support for vessels containing material to be heated.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A radiator comprising upper and lower end castings each consisting of an outer plate provided with a central aperture surrounded by an outwardly-extending flange, an inner plate of less diameter than the one aforesaid and a series of flues connecting the plates; a shell connected to the inner plates, another shell connected to the outer plates, and perforated horizontal plates arranged at intervals in the space between the shells.

2. A radiator comprising upper and lower

end castings each consisting of an outer plate provided with a central aperture surrounded by an outwardly-extending flange, an inner plate of less diameter than the one aforesaid and a series of flues connecting the plates; a
5 shell connected to the inner plates, another shell connected to the outer plates, and horizontal plates arranged at intervals in the space between the shells, each plate being
10 provided with perforations out of line with the perforations in the next adjacent plate or plates.

3. A radiator comprising upper and lower end castings each consisting of an outer plate
15 provided with a central aperture surrounded

by an outwardly-extending flange, an inner plate of less diameter than the one aforesaid and a series of flues connecting the plates; a shell connected to the inner plates; another
20 shell connected to the outer plates, a fan wheel suspended within the casing formed by the inner shell and the inner plates of said castings, and perforated horizontal plates arranged at intervals in the space between the shells.

A. O. McBEAN.

Witnesses:

F. L. HARMS,
E. WALTER SCHUCHT.