A. LOTZE.

Stove Radiator.

No. 6,833. Patented Oct. 30, 1849.

Fig. 1.

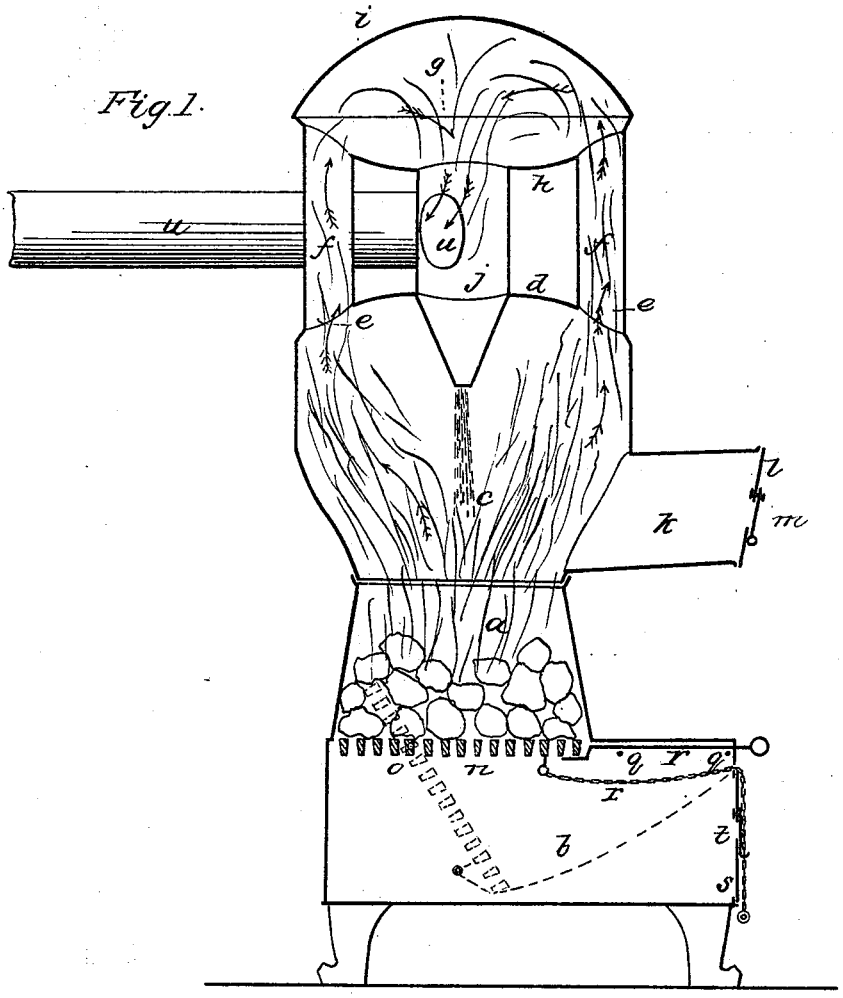
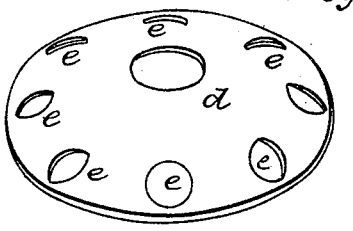


Fig. 2



UNITED STATES PATENT OFFICE.

ADOLPHUS LOTZE, OF CINCINNATI, OHIO.

STOVE.

Specification of Letters Patent No. 6,833, dated October 30, 1849.

To all whom it may concern:

Be it known that I, ADOLPHUS LOTZE, of Cincinnati, Hamilton county, Ohio, have made new and useful improvements in heaters or radiators to be attached to stoves for halls, churches, public buildings, &c.; and I do hereby declare the following to be a full, clear, and exact decription of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a vertical section through the center of the stove and heater. Fig. 2 is a perspective view of one of the heads.

All the stove heaters, or radiators with which I am acquainted, are liable to accumulations of soot, about the sides and along the top and bottom of the chambers, and thus are rendered almost completely ineffective, partly from the choking of the passages and chambers, and partly from the nonconducting nature of the sooty coating. They are also extremely dangerous in consequence of the ignition and violent combustion of the soot, a catastrophy which ends well, if it only burns off the pipe, but which is in reality, a very fertile source of conflagrations.

In my heater, experience has proved that there is not the slightest tendency to any accumulation of soot, the flues and chambers remaining clear from month to month the whole of their surfaces never accumulating as much as would fill a common breakfast cup, and consequently the whole heat is freely transmitted by the walls of the chamber, into the room or other place to be heated. The soot as soon as formed, falls into the candescent mass of fuel below and is immediately consumed having been precipitated by the conflict of opposing currents of smoke.

In the drawings annexed, (*a*) is the fire place, (*b*) the ash pit, (*c*) the lower drum, chamber or reservoir, (*d*) the spherical head of the same (see Fig. 2) perforated around its disk with round apertures (*e*) in which the pipes (*f*) are inserted.

(*g*) is the upper drum, chamber, or reservoir, (*h*) a perforated spherical head, similar to the spheical head (*d*) of the lower chamber, but in an inverted position. These two chambers (*c*, *h*) are united by the pipes or flues (*f*). The upper chamber has a dome shaped ceiling (*i*). Depending from the center of the floor of the upper chamber, is a tube terminating at bottom in a tapering nozzle, opening into the fire, and constituting a funnel (*j*) for collecting the soot precipitated by the conflicting currents of smoke, and dropping it into the fire.

(*k*) is a mouth or hopper through which the fuel is introduced into the fire.

(*l*) is the door of the hopper.

(*m*) is a registered opening for regulating the draft.

(*n*) is the grate, supported on pivots (*o*). A little to one side of the center (*p*) is a rod sliding in staples (*q*) and supporting the side of the grate, not supported by the pivots, which rod when withdrawn allows the grate to drop into the ash pit in the position indicated by the dotted lines, and tilts the contents into the said ash pit.

(*r*) is a chain by means of which the grate is elevated to its place when desired preparatory to sliding the rod (*p*) to its bearings.

(*s*) is the ash pit door with a registered opening *t* for the admission of air to the fire.

(*u*) is the escape pipe opening out of the center tube or funnel (*j*).

The lower aperture of the funnel being quite small (not exceeding an inch in diameter) does not allow of any considerable escape of smoke therethrough which is in fact just enough to loosen the descending soot.

The spherical form of the heads conduces greatly strength and durability and also subserves compactness of form for the radiating chambers and adapts them for the easy transmission of the gases and obviates the tendency to crack and sag, so usual in this kind of manufacture where vertical flues are united with flat heads.

The operation of my invention is as follows, the currents of smoke rising up through the pipes or passages (*f*) meet in conflicting currents in the center of the upper chamber (*g*) and by their contact precipitate the sooty particles which fall directly into the funnel (*j*) and are passed by it to the burning mass of fuel below and consumed.

Having thus fully, clearly, and exactly described the nature, construction and oper-

ation of my invention what I claim herein as new and desire to secure by Letters Patent is—

Attaching the exit pipe (*u*) to the funnel shaped tube or chute (*j*) so as to collect and transmit down into the fire the soot precipitated during the passage of the results of combustion to the exit pipe, substantially after the manner and for the purpose herein fully described and represented.

ADOLPHUS LOTZE.

Attest:

THOS. G. CLINTON,
GEO. H. KNIGHT.