

W. DOYLE.
Base-Burning Stoves.

No. 141,770.

Patented August 12, 1873.

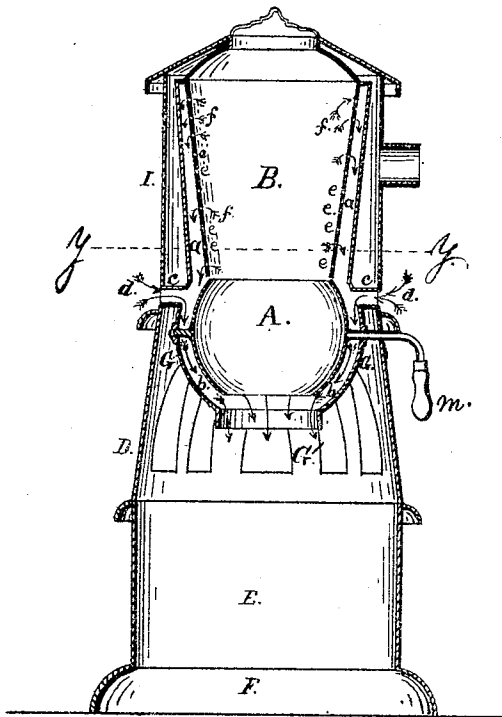


Fig. 1.

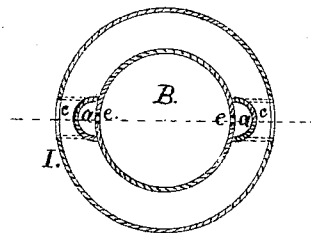


Fig. 2.

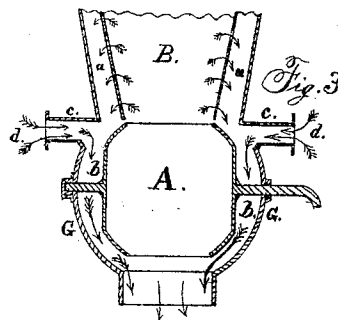


Fig. 3.

WITNESSES:
James Knight
Edward H Doyle

INVENTOR:
W. Doyle

UNITED STATES PATENT OFFICE.

WILLIAM DOYLE, OF ALBANY, NEW YORK.

IMPROVEMENT IN BASE-BURNING STOVES.

Specification forming part of Letters Patent No. 141,770, dated August 12, 1873; application filed May 28, 1873.

To all whom it may concern:

Be it known that I, WILLIAM DOYLE, of Albany, in the State of New York, have invented Improvements in Fuel-Reservoirs for Heating-Stoves, of which the following is a specification:

One object of my invention is to improve the construction of the supply-valve used at the bottom or lower part of the fuel-reservoir of base-burning stoves, for which I have received Letters Patent No. 117,996, dated August 15, 1871. Another object is to provide an improved air-duct, for the threefold purpose of withdrawing the gases from the reservoir, keeping the revolving valve comparatively cool, and supplying the fire with oxygen.

Figure 1 is a central vertical section of a stove embodying my invention. Fig. 2 is a cross horizontal section on dotted line *y y* in Fig. 1. Fig. 3 is a vertical section of the revolving valve having flat sides, and suspended within its spherical casing *G*.

The fuel-reservoir *B* is constructed in any convenient form, preferably conical or cylindrical, open at the bottom and top, the bottom being provided with a spherical faucet-valve, *A*, and the top with any ordinary cover.

It will be seen from the drawing that there is no communication between the reservoir *B* and the combustion-chamber *G'*, except at the bottom of valve *A*, either directly downward at its bottom or through the sides of the reservoir into descending flues *a a*. This reservoir is in this respect unlike that of other stoves of this class. They are usually constructed with inside covers or valves, which, when open, allow the gas within the reservoir to escape from the top of the reservoir into the combustion-chamber at its upper part, or, as is frequently the case, into the room whenever the outer cover is removed to supply fuel to the stove.

To the outside of reservoir *B* I secure tubes or flues *a a*, closed at their tops, but communicating with the reservoir by means of one or more rows of perforations, *e e*, in its sides. The bottoms of flues *a a* join to one or more horizontal cold-air tubes or flues, *e e*, which are located near the bottom of the body-section

I of the stove. The inner ends of flues *a a* connect to a cold-air space or flue, *b*, surrounding the valve *A*. Valve *A* is a faucet-valve, and is made spherical in form, consisting of a segment of a hollow sphere included between two parallel planes, as shown in section in Fig. 1, and may have flat sides, as shown in Fig. 3. The sides of this valve are solid or imperforate, for the purpose of forming the cold-air space *b*. Valve *A* is supported upon two opposite axial bearings or shafts running into and supported by an outer casing, *G*, of a spherical form, as shown in Figs. 1 and 3. Said case *G* constitutes the lower or delivery part of fuel-reservoir *B*, and is made large enough to give a flue-space, *b*, around the valve *A*, for the circulation of cold air around the valve. By making valve *A* in a spherical form, with solid or imperforate walls, as herein shown, I find that it is easier of construction and better in operation than when made with perforated ends or sides, as in my patent hereinbefore referred to; also, that by making a flue, *b*, as herein shown, to surround the valve *A*, and connecting said flue *b* with cold-air flues *e e*, the valve will be kept in good working order for a greater length of time. Flues *a a* may be made either upon the outside of or within the reservoir *B*; or they may be made to entirely surround the reservoir, forming one continuous flue; but I do not think it desirable to do so.

The operation of my invention is as follows: The fire having been kindled, and the reservoir *B* filled with fuel and covered, it will be found that currents of cold air will enter the flues *e e*, passing into the flue-space *b* around the valve *A*, keeping it cool and in good working order; thence the air will pass down to the bottom of the valve into the fire. The arrows *d d* indicate the entering cold air, and the arrows *f f* the course of the gases in passing from the reservoir into the descending flues *a a*. Simultaneously with the above operation a downward draft will be caused within the flues or chambers *a a*, which will carry off from the reservoir all accumulation of gases which rise in the reservoir, and which is very objectionable in parlors or other rooms. The cold

air entering flues *cc*, after passing around and cooling the valve A, will go into the combustion-chamber G' within the mica section D, there to supply the fire with oxygen for the more perfect combustion of the fuel.

It will be seen that the perforations *cc* extend from the top of the reservoir B down to the top of the valve A. By this arrangement the fuel, as it descends in the reservoir, uncovers a greater number of escape-passages for the gas, which increases as the fuel descends.

What I claim as new, and desire to secure by Letters Patent, is—

1. A faucet or revolving valve, A, suspended within the lower part G of a fuel-reservoir, B, and having solid or imperforate walls, so as to form a flue-space, *b*, as herein shown and set forth.

2. A fuel-reservoir, B, provided with one or more descending gas-flues, *aa*, communicating, near the lower part of said reservoir, with cold-air-induction flues *c c*, flue *b*, and valve A.

WM. DOYLE.

Witnesses:

JAMES WRIGHT,
EDWARD H. DOYLE.