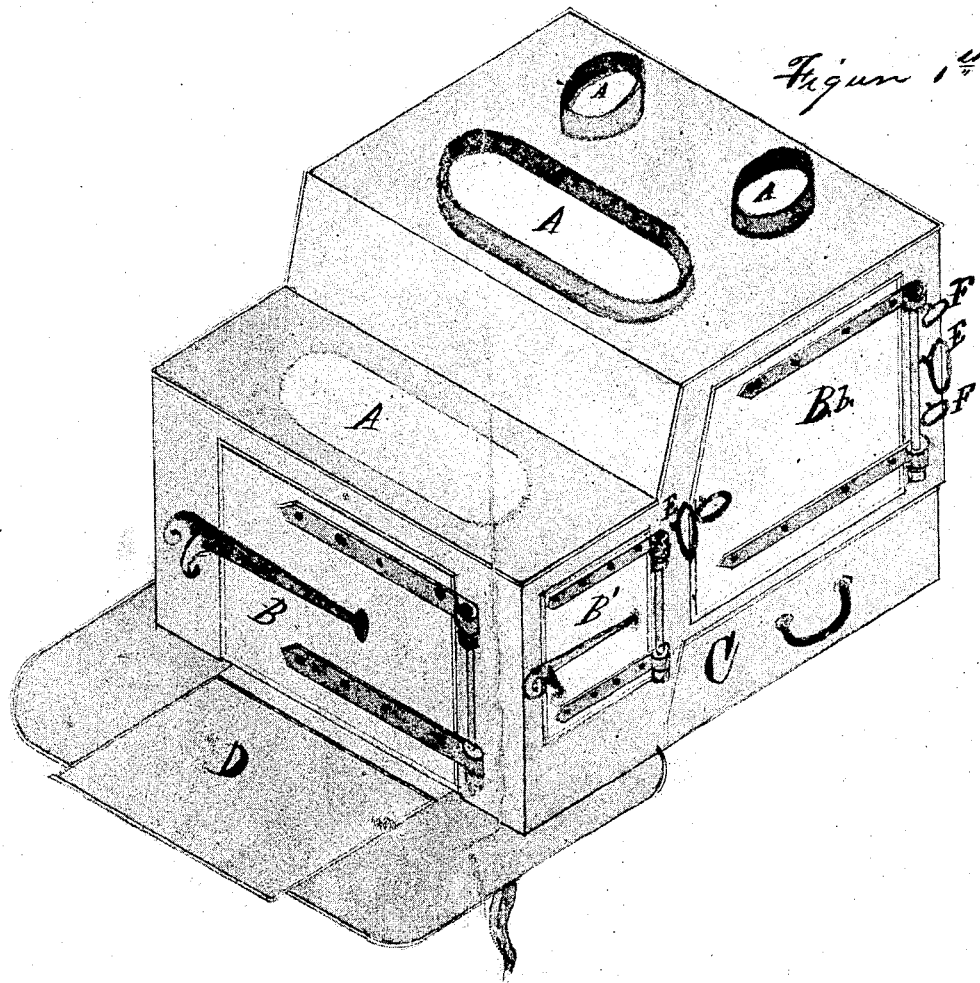


W. B. LAWRENCE.  
COOKING STOVE.

PATENTED OCT. 14, 1840.

No. 1,821.



*Only part of Drawing Accessible 1913.*

# UNITED STATES PATENT OFFICE.

WILLIAM B. LAWRENCE, OF CINCINNATI, OHIO.

IMPROVEMENT IN COOKING-STOVES FOR BURNING BITUMINOUS COAL, &c., CONSISTING OF A MODE OF CLEANING THE FLUES SURROUNDING THE OVENS OF THE SAME, &c.

Specification forming part of Letters Patent No. 1,821, dated October 14, 1840.

*To all whom it may concern:*

Be it known that I, WILLIAM BROWN LAWRENCE, of Cincinnati, in the State of Ohio, have invented a new and useful Improvement in the Manner of Constructing Stoves for Cooking, by which improvement the flues surrounding the ovens in such stoves are readily cleaned from soot, and thus admit of the employment of bituminous coal or of other fuel which produces much smoke, and which cannot be conveniently burned in such stoves as they are ordinarily constructed; and I do hereby declare that the following is a full and exact description thereof.

One of the principal causes of complaint in the operation of baking in cooking-stoves is the result of the accumulation of soot and ashes in the flues, which, being very bad conductors of heat, prevent the heating of the oven-plates, the air from the fire making its escape without communicating its heat where alone it is wanted. To obviate this difficulty is the main object of my improvement.

Said improvement consists, in the first place, in the forming of a scraper, which may be cast in one piece or which may be made by the uniting of several plates of metal together, so as to constitute one piece, and which, when in place, shall occupy the flue-space above, below, and on each side of the oven, and shall have rods attached to it that pass through holes in one of the side plates of the stove, terminating in handles on the outside in such manner as to admit of the moving of said scraper back and forth within the flues, and simultaneously to remove the accumulated soot and ashes therefrom on every side; and, secondly, for the purpose of discharging the soot which has been scraped off from the flues, I make perforations or longitudinal openings through the iron plate which forms the lower side of the bottom oven-flue, and place under this plate a drawer or other receptacle, into which the soot and ashes shall fall, and from which they can be readily removed whenever the same may become necessary.

This improvement is not limited to stoves and ovens of any particular form or construction, but is applicable to all stoves having ovens surrounded by a flue. The form of stove and oven shown in the accompanying

drawings is only intended, therefore, to exemplify the manner in which I carry out my improvement, but not to limit me in the general application thereof.

In Figure 1, A A A are boiler-holes as generally used; B, the front and B' the end door of the furnace or chamber of combustion. B b is an oven-door, the oven which it incloses extending from side to side of the stove and being surrounded by a flue at its back and front and its upper and lower sides. C is a drawer below the lower oven-plate for the reception of soot and ashes. D is a hearth-plate. So far, with the exception of the drawer C, there is no difference in the exterior of this and of many other stoves. When bituminous coal is to be used, which is the general intention in my stove, a suitable grate is placed within the chamber of combustion. When wood is to be burned, it is disposed of in the ordinary way. E E are the handles of two rods, which are attached to and serve to work the scraper that fills the cross-section of the flue-space, and F F are the handles of two dampers or valves, which serve to govern and direct the draft in its passage above or below the oven, the opening for the escape-pipe being, under this construction, in the back of the stove between the two dampers; but this is not essential to my improvement.

Fig. 2 is a vertical section of the stove from front to back, *a a a* being the flue-space around the oven; *b*, the escape-flue; *c c*, the dampers, which are moved by the handles F F, Fig. 1. These dampers extend along the back flue and serve to direct the draft either above or below the oven at pleasure, as in many other stoves. When the scraper is worked, they must be both opened, and they then allow it to pass along freely. C is the interior of the drawer. *d* is a sloping plate, which extends from the back plate, *e*, of the grate *e e* and from end to end of the stove, and serves to conduct any dust or soot which falls from the grate or from the flue directly into the drawer, there being a slot or opening into it at *f* for that purpose, as shown more distinctly in Fig. 3.

Fig. 3 shows the under side of the stove, the drawer being removed for the purpose of exhibiting the openings in the bottom plate leading into it. *f f* is that through which

the dust passes from the sloping plate *d*, and *g g* are two openings, one at each end of the plate, through which the soot falls as it is removed by the scraper. The drawer *C* is made to fit very closely, as if left open at any part it would interfere materially with the draft of the stove.

Fig. 4 represents the scraper with the rods attached to it. This scraper is shown in the form adapted to the stove shown in the drawings; but in stoves of other forms it will of course correspond with that of the flue surrounding the oven.

Having thus fully explained the nature of my improvement and shown the manner in which I carry the same into operation, what I claim as my invention, and desire to secure by Letters Patent, is—

The manner herein described of cleaning the flues surrounding the ovens of stoves of various kinds, by the use of a scraper cast or otherwise made in one piece, so as to surround the oven on four sides, and in combination therewith the respective openings in the bottom plate leading into the drawer or receptacle for the soot and ashes, the whole being constructed substantially in the manner herein set forth; and these I claim whatever variation of form they may undergo, while the same result is produced by means substantially the same.

WM. B. LAWRENCE.

Witnesses:

NATHAN CROWELL,  
JOHN HENRY KLOFFTERMANN.