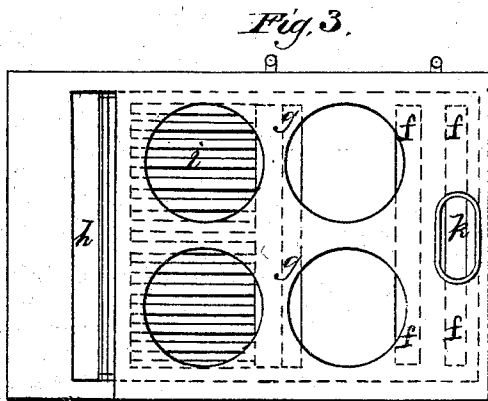
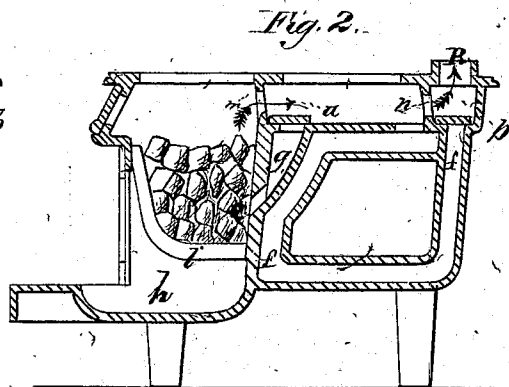
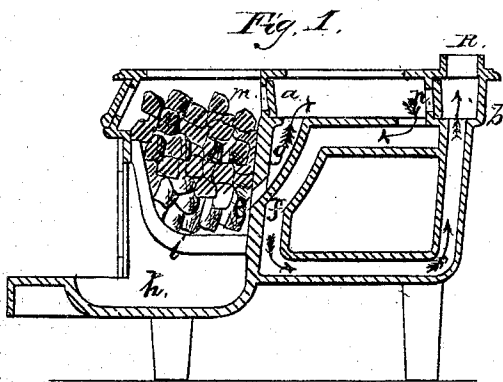


J. G. WIDMANN.
Base-Burning Cook-Stoves.

No. 151,183.

Patented May 19, 1874.



WITNESSES

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IMPROVEMENT IN BASE-BURNING COOK-STOVES.

Specification forming part of Letters Patent No. **151,183**, dated May 19, 1874; application filed May 23, 1873.

To all whom it may concern:

Be it known that I, JOHN GEORGE WIDMANN, of Yonkers, in the county of Westchester and State of New York, have made an invention of certain new and useful Improvements in Base-Burning Cooking-Stoves; and that the following is a full and correct description thereof, reference being had to the annexed drawing and to the letters of reference thereon.

My invention consists in combining a fire-chamber having two separate and distinct flues or draft-ducts, which are guarded, respectively, by one or more dampers or valves, with a round-hole top plate; a baking-oven, which is properly surrounded with flues or passages, and an exit pipe or passage communicating with said oven-passages, and guarded adjacent to the junction therewith by one or more dampers, whereby the fuel may be either burned in the grate, after the manner of a base-burning or magazine stove, or as in the ordinary "surface-burners," and also whereby the heat generated by the burning of the fuel by either method will be equally available for miscellaneous cooking purposes, and made in either case to encircle the oven, or to pass directly to the exit-pipe beneath the top plate; as may be desired. My invention also consists in the peculiar construction and arrangement of the passages and dampers or valves, involving simplicity and economy.

Referring to the drawings, Figure 1 represents in section a stove embodying my improvements arranged to operate as "base-burner" or "magazine-stove." Fig. 2 represents the same arranged to operate as the ordinary surface-burner. Fig. 3 represents the same in top view.

The grate *i*, of any desired form, and ash-pan *h*, with the representation of coal above the grate, sufficiently indicate the location and general character of the fire-chamber. It is intended to be somewhat deeper than as ordinarily constructed, with considerable space above the upper edge of the vertical grate in front, when used for the reception of a suitable quantity of coal when used as a base-burner. The top plate of the stove is provided with the usual round holes, two of which are over the fire-chamber, and two others over the oven. Beneath the top

plate is the boiling flue or passage *n*. As shown in the drawings, the oven is surrounded at top, front, bottom, and rear by the baking flues or passages *f*, while between the top of the oven and top plate is a horizontal partition having an opening adjacent to its rear end, whereby the passages or flues *n* and *f* are brought into communication. The fire-chamber has two separate passages or ducts, through which communication with the exit-pipe *K* may be maintained. One of these passages is shown at *m* immediately beneath the top plate, and at the top and rear of the fire-chamber. The other passage, *g*, extends from a point vertically midway of the back of the fire-chamber, as at *e*, upward to the front end of the boiling flue or passage *n* beneath the top plate, and so closely adjacent to the passage *m* that one valve or damper, *a*, will serve to close either one of the said passages, and cut off its communication with the exit-pipe. It will also be seen that both the flue or passage *n* at its rear end and the passage *f* in the rear of the oven enter the exit-pipe *K* so closely adjacent to each other that the single valve or damper *b* can control and close either passage.

Although such construction and arrangement involves simplicity and economy in construction, it is not essential for the proper operation of my stove, for separate dampers for each passage would serve the same practical purpose.

In order to prevent fuel and ashes from unduly obstructing the entrance to the passage *g*, the back of the fire-chamber is inclined, as shown.

When constructed as shown, the operation of the stove will be as follows: To work it to its fullest capacity, the stove must, of course, be operated as a surface-burner, as arranged in Fig. 2. All four of the holes in the top plate may be occupied with kettles, and the damper *b*, on being turned up so as to close the opening from passage *n* to the exit-pipe, will cause the entire volume of heat to encircle the oven for baking. When its fullest boiling capacity alone is required, and excessive heat objectionable in the cook-room, the valve or damper *b* will be closed over passage *f*, and the heat will, after passing beneath the top plate and kettle, at once enter the exit-pipe *K*. When

operated as a base-burner it is arranged as shown in Fig. 1, which lessens its capacity for service only so far as those two kettle-holes are concerned which are located directly over the grate. The damper *a*, in closing the boiling passage or flue *m*, opens the base-burning passage *g*, and, as air will only be supplied to the fuel on a line with the entrance to said passage in the fire-chamber and below it, that portion of the fuel in the fire-chamber which is above said line will be unconsumed. When operated as a base-burner, if boiling operations alone are desired, the damper *b* is placed as before described, so as to close the passage *f* at its junction with the exit-pipe. When both boiling and baking are desired, the passage *n* is closed by the valve *b*, causing the currents of heat to wholly encircle the oven through the baking flues or passages *f*. However used, the draft in the stove may be controlled by the usual means by opening or closing the apertures in front of the grate, as is common in nearly all stoves in general use.

It is well known that stoves having varied capacities are greatly desired by intelligent housekeepers who seek to adapt the consumption of fuel and the radiation of heat to the requirements of each occasion of their use. My improved stove is intended to meet this demand. It is thoroughly under control, and having been used all night as a heater, and slowly operating as a base-burner, meanwhile giving out all its heat, encircling the whole oven, and radiating from the entire surface of the stove, it is, by a simple change of damper, promptly converted into a surface-burner for cooking the morning meal, after which, on being supplied with plenty of fuel and made into a base-burner, it will continue to operate as a base-burner for heating purposes, and at the same time as a "boiler" to half its capacity, and as a "baker" to its fullest capacity.

I am aware that many stoves have heretofore been made in which the fire-chamber has communicated through separate passages with the exit-pipe; also, that stoves have been made with removable parts, which, by the application or removal of the same, would convert into base-burning heating or surface-burning cook-stoves; also, that dampers or valves have been employed in almost endless variety for controlling the draft in stoves, and for opening and closing ducts, flues, or passages; but I am not aware that prior to my invention a cook-stove was ever constructed in which the base-burning and surface-burning features were so combined with the usual top plates for boilers and an oven or ovens for baking that the currents of heat could be passed in the same direction and through the same passages, whether the fuel was burned on the base-burning principle or on the ordinary surface-burning principle; and

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

1. In a cook-stove, a boiler-hole top plate and oven with flues or passages requisite for boiling and baking, and a fire-chamber, a surface-burning passage, *m*, and a base-burning passage, *g*, both of which communicate with the exit-pipe by the way of said boiling and baking flues, substantially as described.

2. The combination of the fire-chamber and the separate base-burning and surface-burning passages with a flue communicating with the exit-pipe, and a damper or valve arranged to close, by a change in its position, either the base-burning or the surface-burning passage, substantially as described.

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Witnesses:

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