2 Sheets—Sheet 1.

G. WELLHOUSE & J. L. TAPLIN.

RESERVOIR COOKING-STOVE.

No. 186,026. Patented Jan. 9, 1877.

Fig. 1.

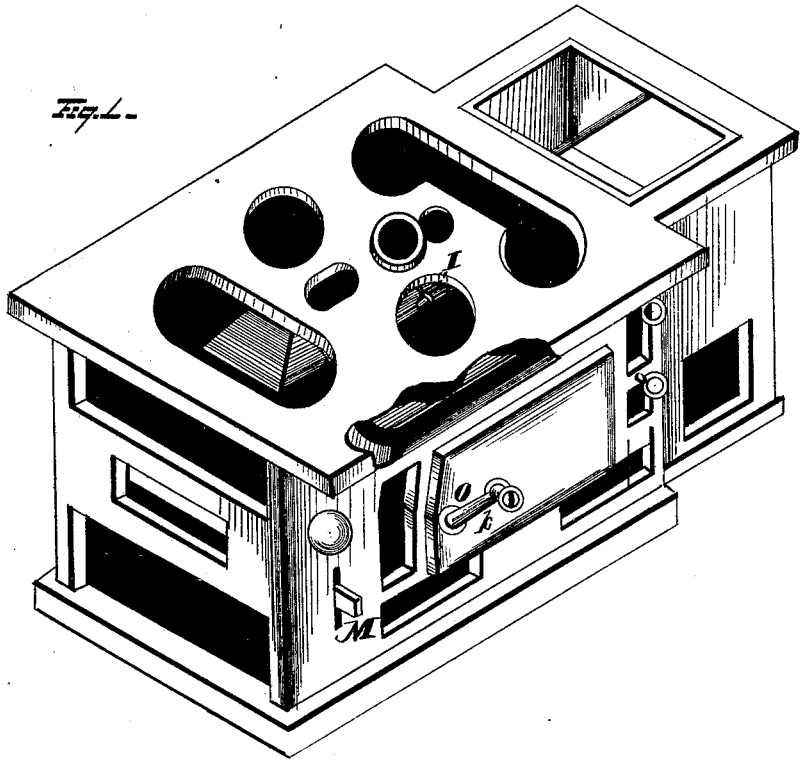
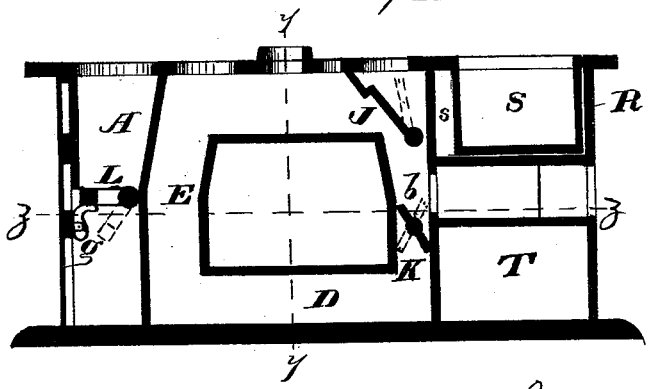


Fig. 2.



WITNESSES

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2 Sheets—Sheet 2.

G. WELLHOUSE & J. L. TAPLIN.

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Fig. 3.

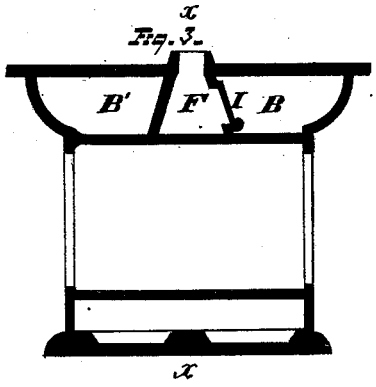


Fig. 4.

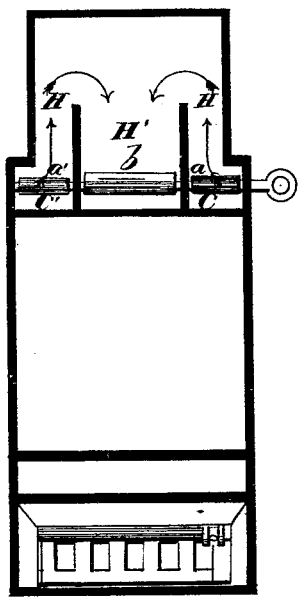


Fig. 5.

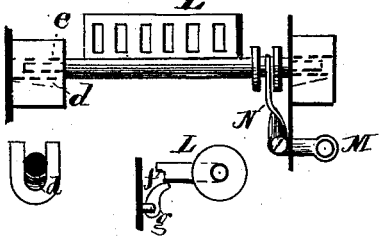


Fig. 6.

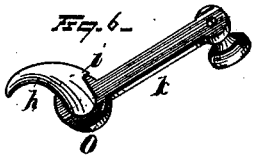
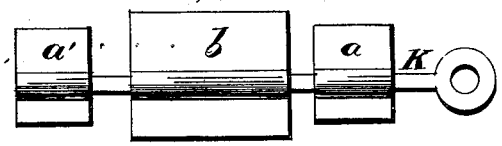
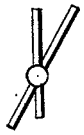


Fig. 7.





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UNITED STATES PATENT OFFICE.

GEORGE WELLHOUSE AND JOHN L. TAPLIN, OF AKRON, OHIO.

IMPROVEMENT IN RESERVOIR COOKING-STOVES.

Specification forming part of Letters Patent No. **186,026**, dated January 9, 1877; application filed August 15, 1876.

To all whom it may concern:

Be it known that we, GEORGE WELLHOUSE and JOHN L. TAPLIN, of Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Cooking-Stoves; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to an improvement in cooking stoves, ranges, and the like; and it consists in the arrangement of the several flues and dampers, or valves, whereby the draft-current is made to pass directly under the pot-holes, and whereby it can be made to take any one of four different directions before reaching the exit-flue, as will be hereinafter more fully set forth. It also consists of a construction whereby a cushion or body of air is interposed between the water-reservoir and the rear wall of the stove proper, and whereby too great subtraction of heat from the oven is prevented.

In the drawings, Figure 1 represents an isometric view of a stove, with parts removed to show the improvements which we claim. Fig. 2 represents a longitudinal vertical section on line *x x* of Fig. 3. Fig. 3 is a vertical cross-section on line *y y* of Fig. 2. Fig. 4 is a horizontal cross-section on line *z z* of the same figure. Fig. 5 is a front and side view of the grate in a vertical and horizontal position, showing the self-cleaning, shaking, and partially-dumping devices. Fig. 6 is a detached view of the door-catch. Fig. 7 is a side and end view of the series of butterfly valves or dampers, which operate in connection with other dampers to direct the current under the oven or under the reservoir-chamber.

A represents the fire box or chamber of the stove; B B′, the right and left hand top sheet-flues; C C′, the diving or vertical flues in the rear of the oven; D, the bottom sheet-flue, which passes under the oven; E, the ascending flue in front of the oven, which leads to the exit-flue F over the oven. H′ is the central return-flue of the reservoir, which extends thereunder, and communicates with the reservoir inlet-flues H H. I is a damper, which, when open, establishes the most direct draft. It opens communication between flues B and F, and is situated substantially as shown in the drawing.

The principal use and advantage of the damper I are that, at times, when a small fire is sufficient, the heat may be the best utilized by being taken only through flue B. By this operation the heat is concentrated in this locality, from whence it is discharged without heating the stove beyond said damper I.

J is a damper, which opens communication between the flues B, B′, and F, and is placed at the rear end of the latter. It is opened at the starting of a fire, furnishing a direct draft. K is a shaft, placed across the flues C C′ H′, on which are mounted the three dampers, *a a′ b*. In the drawing the valve *b* is shown as standing at an angle with the valves *a a′*. If desired, they can be constructed to lie in the same plane.

When the shaft K is turned so that the valves *a a′* stand vertically, then valve *b* closes the reservoir return-flue H′, and the draft-current (if dampers I and J are closed) will pass from the fire-pot, by the way of flues B B′, down the vertical diving-flues C C′, then through flue D, under the oven, up flue E, and out by the exit-flue F, having licked or come in contact with all the four plates of the oven.

If, now, shaft K is turned so that the dampers *a a′* close the flues C C′, barring communication with bottom flue D, and establishing it with the reservoir-flues, thereby also opening damper *b* and establishing communication between the reservoir return-flue H′ and flue F, in that case the draft-current from the fire-box will pass along flues B B′, then partly down flues C C′, and, entering the inlet reservoir-flues H H, will pass by the return reservoir-flue H′ (in the direction indicated by the arrows) to and through the exit-flue F, having thus come in contact with the bottom plate and one side plate of the reservoir-chamber.

It will be seen that by forming the two side top sheet-flues B B′ by erecting the partition-plates, which form the walls of exit-flue F, on the top oven-plate, the draft-current of heated

air is compelled to pass under the pot-holes, instead of passing over the center of the top oven-plate, as in the present construction of stoves. The series of dampers, any one or all, are made a little longer or heavier above than below the shaft, so that if moved out of a vertical position they will readily fall to one side or the other, as the case may be, and when in position will not be so liable to accidental displacement. Instead of this construction a loaded handle may be placed upon the end of the shaft operating these dampers, which shall automatically tilt them in the manner just described.

L is the grate, journaled, as shown. Along the entire bottom portion of the journals in which rest the trunnions of the grate is provided a gutter or slot, so inclined as to empty into the ash-pit. The purpose effected thereby is to render the grate self-cleaning, so that the ashes which would otherwise accumulate and remain in and clog the bearing fall into said groove or gutter, the incline of which facilitates their discharge into the ash-pit. The grate is reciprocated or shaken by means of the handle M attached to the forked lever N, which latter works between and bears against two lugs, pins, or projections on the grate-shaft. We do not limit ourselves to the means here shown for reciprocating the grate, as any substantial equivalent therefor may be employed without a departure from the spirit of our invention. The grate is also provided at its front with an offset or step, *f*, which, operating in connection with the pivoted and weighted retaining-piece *g*, attached to the inside of the front plate of the stove, allows the grate to be correspondingly and sufficiently lowered or partially dumped to permit the removal of clinkers. By moving the retaining-piece the required distance the grate is completely released and dumped. O is the door-latch, consisting of the finger *h*, having an offset or projection, *i*, and the handle *k*. The finger *h* is inserted in an opening of the oven-door, having a slit to receive the projection *i*, and is then turned a half revolution to bring the projection *i* out of line with its corresponding slit in the oven-door opening. It is prevented from making a complete revolution by a lug on the inside of the door, so placed that the handle K will be in a horizontal position when the door is closed. The finger *h* in the act of closing the door rides upon the beveled or inclined face of a catch attached to the oven-plate and drops behind it. The weight of the handle keeps the latch in position, and to open the door it is only necessary to raise the handle slightly out of its horizontal position, thus disengaging the finger *h* from the catch.

The advantages derived from this removable, self-mounting, and self-locking door-catch are that, in packing, they can be removed, and thus rendered less liable to be broken in transportation; that the handles can be plated or replated at any time, with no trouble incident to their removal or attachment; that others of the same kind can be readily substituted in case of breakage; and, by its self-locking function, its accidental opening is prevented and its closing facilitated.

The reservoir-chamber R contains a receptacle or water-reservoir, S, which holds the water, and by this arrangement an air-cushion, S, is secured between the water-receptacle and the rear wall or back plate of the stove proper, which prevents too great abstraction of heat from the flues during the process of heating the oven.

This reservoir-chamber may be also used as an oven, if desired, being, of course, provided with a cover.

Below the reservoir-flues is situated a warming-closet, T, which receives its heat by means of said flues.

It will be observed that while we have shown and described the peculiar grate, and also the loaded door-knob, we do not include the same as a part of this application for Letters Patent; but while we disclaim them both in this application, we so disclaim on the reservation of right to hereafter make separate applications for Letters Patent respectively upon the same.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The top sheet-flues B B′, extending laterally over a stove-oven, from the fire-box to the rear diving-flues, and separated by the central exit-flue F, whereby the draft-currents are forced to pass under the pot-holes, substantially as described.

2. The combination of rear diving-flues C C′, bottom sheet-flue D, ascending flue E, exit-flue F, and top sheet-flues B B′, substantially as and for the purpose described.

3. The exit-flue F of a cook-stove, extending centrally and longitudinally over the oven, between the top plate of the latter and the top plate of the stove, substantially as described.

4. In a stove, the exit-flue F, placed centrally and longitudinally over the oven, in combination with the reservoir return-flue H′, substantially as and for the purpose described.

5. In a stove, the exit-flue F, placed centrally and longitudinally over the oven and provided with damper I, substantially as and for the purpose described.

6. In a stove, the exit-flue F, placed centrally and longitudinally over the oven, and provided with damper J, substantially as and for the purpose described.

7. The combination of reservoir inlet-flues H H, reservoir return-flue H′, and dampers *a* *a′* *b*, substantially as and for the purpose described.

8. The combination of diving-flues C C′,

reservoir inlet and return flues H H H′, with exit-flue F and dampers *a a′ b*, substantially as described.

9. The combination of the flues B B′, placed as described, with the diving-flues C C′, reservoir inlet and return flues H H H′, exit-flue F, and dampers *a a′ b*, substantially as described.

10. The combination of top sheet-flue B, placed as described, with damper I, situated at the side, between said flue and exit-flue F, for the purpose of opening and closing communication at the side, between said flues, substantially as described.

11. The combination of top sheet-flues B B′, placed as described, with damper J and exit-flue F, substantially as and for the purpose described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

GEORGE WELLHOUSE.
JOHN L. TAPLIN.

Witnesses:
GEO. W. WEEKS, Jr.,
S. NASH.