H. R. SMITH.
Cooking-Stove.

No. 203,084. Patented April 30, 1878.

Fig. 1.

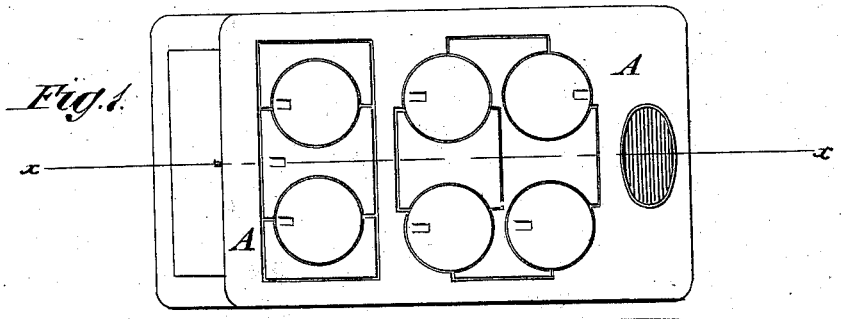


Fig. 2

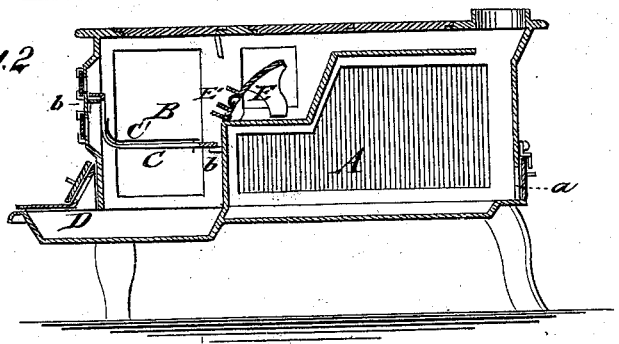


Fig. 7.

Fig. 3

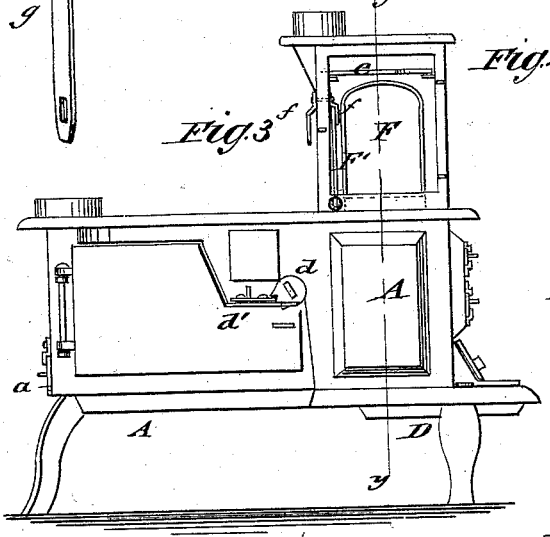


Fig. 4

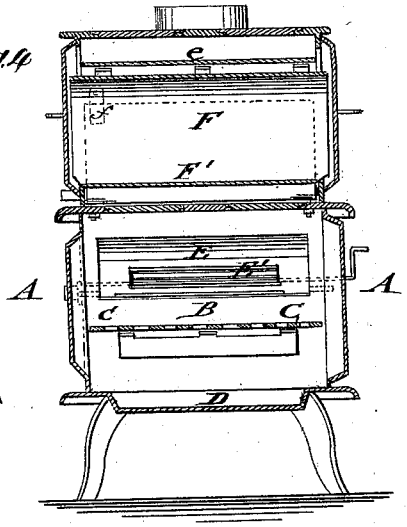


Fig. 5.

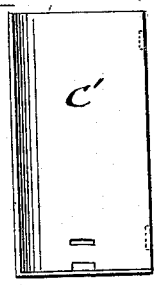
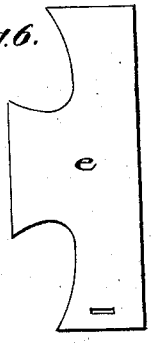


Fig. 6.



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UNITED STATES PATENT OFFICE.

HEMAN R. SMITH, OF MINNESOTA LAKE, MINNESOTA.

IMPROVEMENT IN COOKING-STOVES.

Specification forming part of Letters Patent No. **203,084**, dated April 30, 1878; application filed January 22, 1878.

To all whom it may concern:

Be it known that I, HEMAN R. SMITH, of Minnesota Lake, county of Faribault, State of Minnesota, have invented a new and Improved Cooking-Stove, of which the following is a specification:

In the accompanying drawing, Figures 1 and 2 represent, respectively, a top view and a vertical longitudinal section on line *x x*, Fig. 1, of my improved cooking-stove without the additional top story. Figs. 3 and 4 are, respectively, a side elevation and a vertical transverse section on line *y y*, Fig. 3, of my stove with the top story in position thereon; and Figs. 5, 6, and 7 are detail views of the accessories to the stove, such as a grate-plate for burning wood, an oven-plate, and a lifter.

Similar letters of reference indicate corresponding parts.

This invention is designed to furnish a cooking-stove that is adapted to burn hay as well as wood or coal, mainly for the purpose of utilizing the cheap hay crops of the Western States after the hay is properly prepared or baled for this purpose.

The invention will first be described in connection with the drawing, and then pointed out in the claims.

Referring to the drawing, A represents a cooking-stove that is constructed for the purpose of admitting the burning of prepared or baled hay as fuel. The general features of the stove are the same as in other cooking-stove—namely, an oven back of the fire-place, front and side doors, &c. The flue formed between top of stove and oven is made somewhat deeper, to furnish the required draft from the fire-place to the chimney. The back plate of stove is provided with an opening, *a*, near the bottom, closed by a suitable door, for cleaning out the ashes from under oven.

The fire-place B is provided with a removable and adjustable gate, C, that may either be supported at the bottom of the fire-place, or on projecting lugs or seats *b* at some height above the bottom, so as to make a larger or smaller fire-place, accordingly as it is desired to burn hay or wood. Below the fire-place is an ash-pan, D, with front register, as customary in stoves. For burning hay a coarse grate is used, through which the ashes from the burning hay fall into the ash-pan, and a powerful draft may be kept up, while for burning wood a closer grate, or a plate, C′, fitting partly over the grate, may be employed.

In connection with the larger or smaller size of fire-place is arranged a compound damper, E, that may be adjusted at will to the burning of hay or wood by providing a more or less powerful draft. The damper E is made convex, and strengthened by lateral ribs on its convex side toward the fire-place. The damper is regulated from the outside by a damper-rod, and made to close the draft-flue partly or entirely by means of a wheel, *d*, with three cogs, that is keyed to the pivot or shaft of the damper at the side opposite to the handle of the damper, and locked by a sliding and slotted pawl, *d′*. The cogs of the wheel *d* pass through the slots of the sliding pawl *d′*, and are engaged by the latter, so that the damper is firmly held in closed or partly open position, and thereby the draft regulated. The large damper is used in open or partly open position when burning hay, while for wood-fire a second smaller convex damper, E′, is used, that is hinged to the larger, and also strengthened by projecting ribs. This second damper is opened or closed by the damper-rod when the large damper is locked into closed position. The front plate of the fire-place is provided with two sets of regulating openings and slides, of which one is used with the smaller, the other with the enlarged, fire-place, as required.

Above the fire-place is arranged another story, F, of about the same width, length, and height as the fire-place, and connected by a smoke-pipe from the top to the pipe at the back of the stove. This upper story or stove-section F is provided at each end with doors, and at the bottom with a hinged damper, F′, that closes the entire top of the fire-place B. The top story F is set by threaded bottom pins or studs into corresponding holes of the top of the stove, and secured by screw-nuts. It may be entirely removed if not required.

In place of the bottom damper, rimmers may be used in the top of the fire-place,

or an oven-plate put in wide enough to leave draft at each side, so as to bake with little fire.

The bottom damper may be retained in open position by a catch, *f*, in which case the top part of the upper section may be used with direct heat for cooking purposes. The oven-plate *e* is supported on lugs at the inside of the top story, and may be removed, if desired.

The compound-damper construction admits the ready use of the stove either with wood, hay, or other fuel, while the top story above the fire-place is of special advantage when burning hay. A farmer may therefore use the cooking-stove with but little adjustment for burning up his hay, and afterward use wood or other fuel. The top story forms also an effective heating-surface, and tends to utilize fully the heating capacity of the hay fuel, so as to furnish an economical cooking-stove, adapted for the wants of the farmers in those sections of the country where hay is abundant and coal expensive.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In a cooking-stove adapted to burn hay and other fuel, the combination, with a fire-place having a grate adjustable to different heights, of a draft-flue with compound damper, that may be set for the larger or smaller fire-place to obtain greater or less draft, substantially as and for the purpose specified.

2. In a cooking-stove, a compound damper made of a convex ribbed plate, and having a smaller opening and smaller hinged damper, in combination with a locking device for securing the larger damper rigidly in position, substantially as and for the purpose specified.

3. The combination, in a cooking-stove, of large convex damper, having toothed wheel keyed to one of its pivots, with a sliding and slotted lock part of the stove to secure the large damper in open or closed position, substantially as described.

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Witnesses:
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