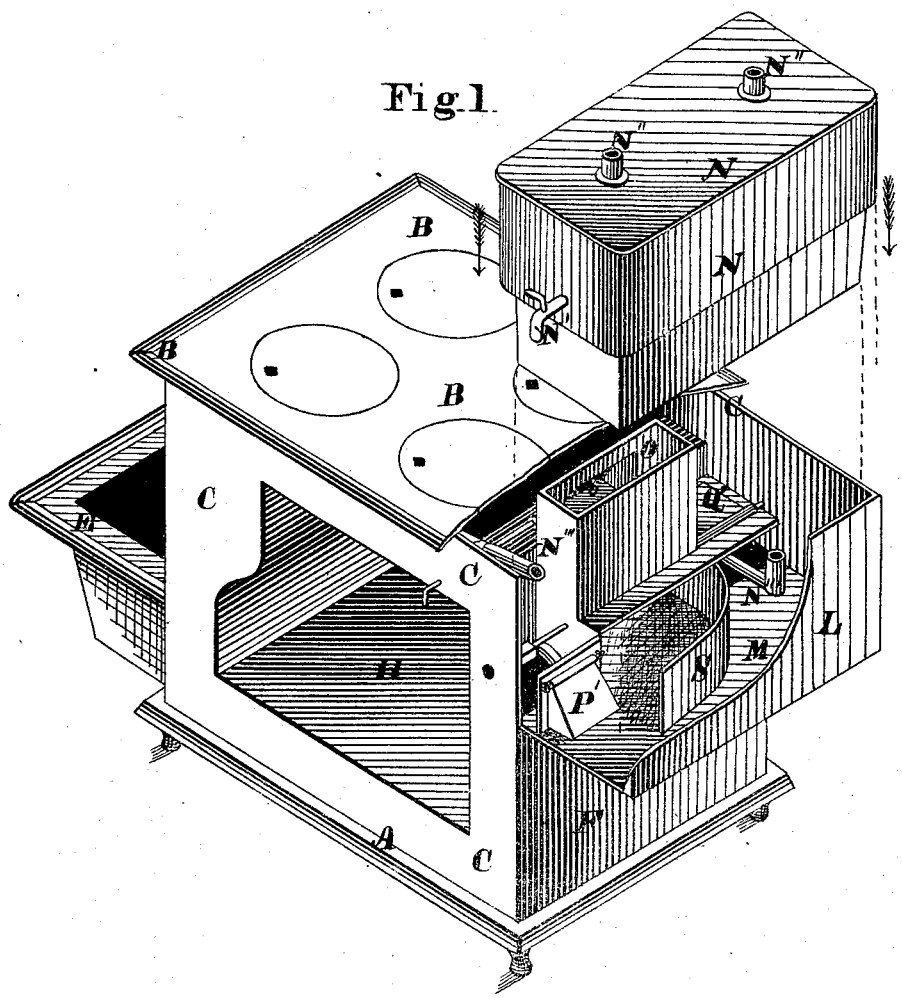
4 Sheets--Sheet 1.

A. C. CORSE & M. G. FAGAN.

Reservoir Cooking Stove.

No. 163,156. Patented May 11, 1875.

Fig. 1.



Witnesses:

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Inventors.

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Prindle and Lay their Attys.

A. C. CORSE & M. G. FAGAN.

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Fig.2.

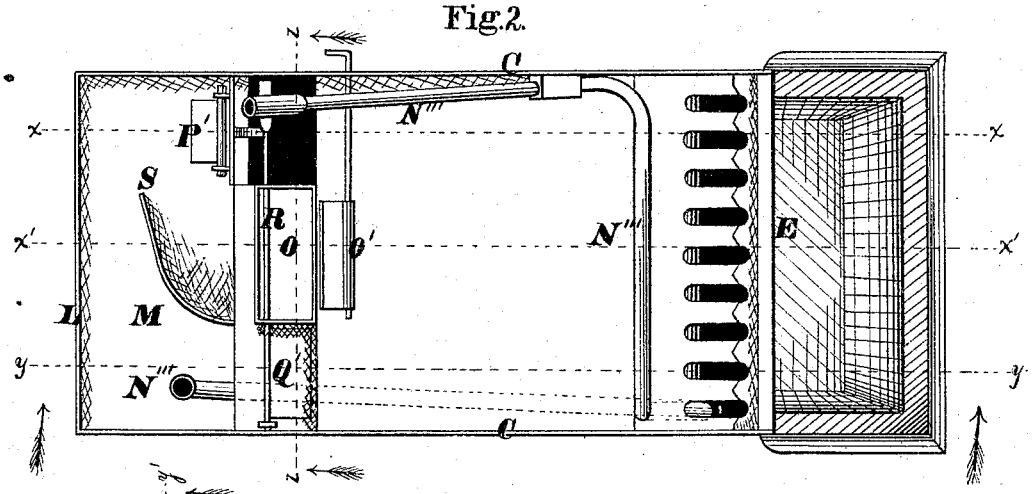

Fig.3.

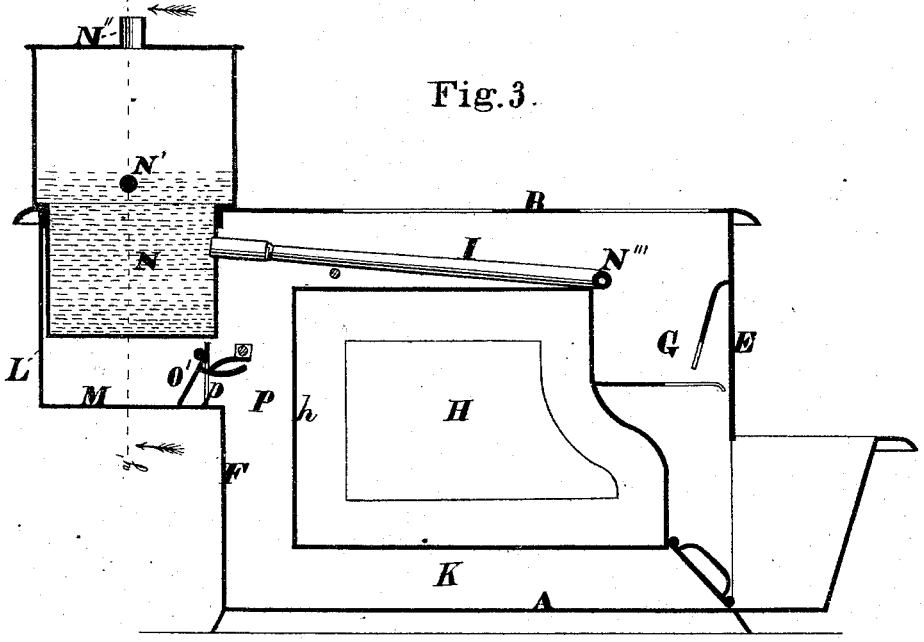

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Fig. 4.

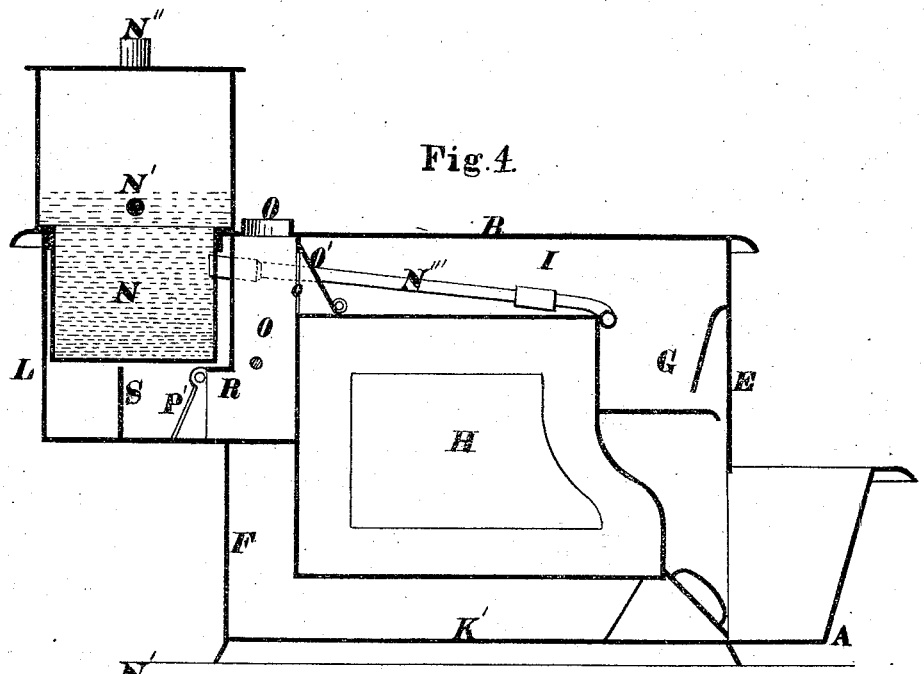
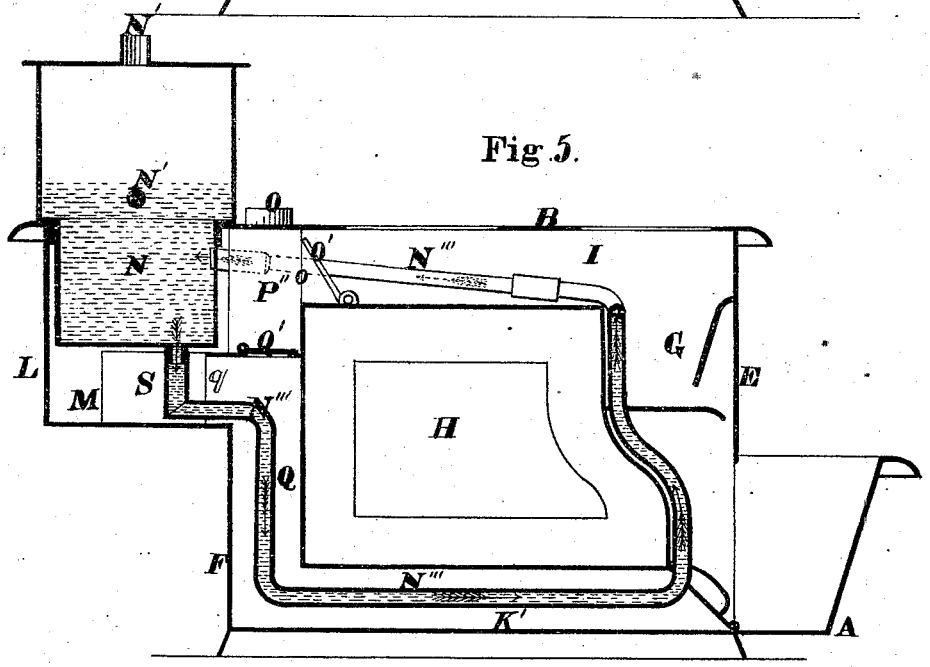


Fig. 5.



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4 Sheets--Sheet 4.

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Fig. 6.

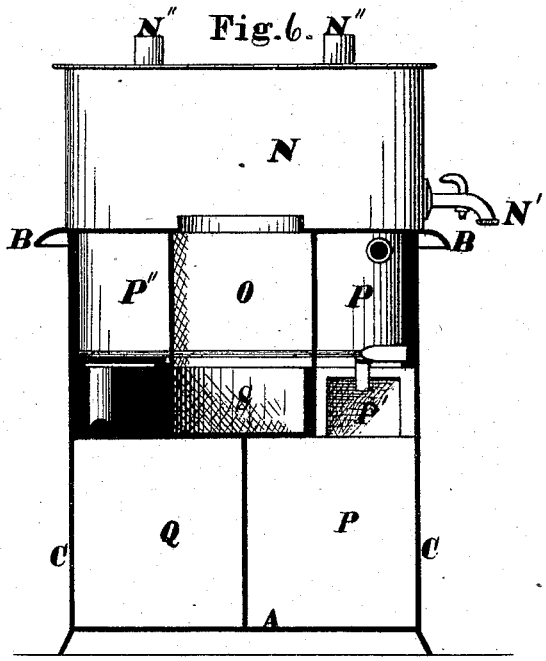
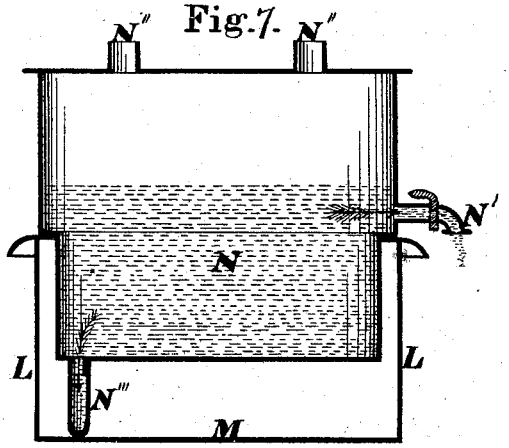


Fig. 7.



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UNITED STATES PATENT OFFICE

ALBERT C. CORSE AND MICHEL G. FAGAN, OF TROY, NEW YORK.

IMPROVEMENT IN RESERVOIR COOKING-STOVES.

Specification forming part of Letters Patent No. **163,156**, dated May 11, 1875; application filed April 14, 1875.

CASE 2.

To all whom it may concern:

Be it known that we, ALBERT C. CORSE and MICHEL G. FAGAN, of Troy, in the county of Rensselaer and in the State of New York, have invented certain new and useful Improvements in Reservoir Cooking-Stoves; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 is a perspective view of our stove, the rear end being broken away so as to show the arrangement of the vertical flues. Fig. 2 is a plan view of the upper side of said stove, the top plate and water-boiler being removed. Figs. 3, 4, and 5 are longitudinal sections upon lines *x x*, *x' x'*, and *y y*, respectively, of Fig. 2, and Figs. 6 and 7 are cross-sections upon lines *y' y'* and *z z* of said figures.

Letters of like name and kind refer to like parts in each of the figures.

The design of our invention is to enable a pressure water-boiler to be employed upon a cooking-stove in place of the usual reservoir, and to enable the same to be heated with facility and economy, to which end it consists, principally, in the combination of the principal and supplemental descending flues, and their dampered openings, with the boiler-chamber, substantially as and for the purpose hereinafter shown.

It consists further, in the combination of the descending, ascending, and exit flues with the top and bottom oven-flue and boiler-chamber, substantially as and for the purpose hereinafter set forth.

It consists, finally, in the combination of the principal and supplemental descending flues, the ascending and exit flues, and the regulating-dampers with the top and bottom oven-flues and the boiler-chamber, substantially as and for the purpose hereinafter shown and described.

In the annexed drawings, A represents the bottom plate, B the top plate, C and C the side plates, E the front plate, and F the rear plate, of a cooking-stove, having a fuel-chamber, G, oven H, top oven-flue I, and bottom oven-flues K and K', all of usual construction. Secured to or upon the rear end of the stove is a casing, L, that incloses a chamber, M, for the reception of a water-boiler, N, which chamber has such depth as to leave between its bottom and the bottom of said boiler a space that has substantially the same depth as the top oven-flue I. The back plate F extends only to the bottom of the casing L, above which the chamber M extends forward to the rear oven-plate *k*, except at the transverse center of the stove, where is provided an exit-flue O that extends between the top plate B and the bottom of said boiler, and at its lower end and rear side opens into said chamber M, while at the upper end and front side of said flue is provided an opening, *o*, which connects the same with the sheet flue I, and is closed, when desired, by means of a rolling damper, O'. Below the casing L the space between the back plate F and the oven H is divided by a vertical flue-strip into a descending flue, P, and an ascending flue, Q, the first of which is open at its upper end, and at its lower end connects with the first bottom flue K, while said ascending flue Q connects at its lower end with the second bottom oven-flue K', and at its upper end upon a line with the bottom of the boiler N is inclosed by means of a rolling damper, Q'. At the rear side of the ascending flue Q, between the bottom of the boiler N and the bottom of the casing L, is provided an opening, *q*, through which communication is had between said flue and the space below said boiler, while between the latter and the descending flue P is provided an opening, *p*, which is inclosed, when desired, by means of a rolling damper, P'. The dampers P' and Q' are arranged to be simultaneously opened or closed by the manipulation of one rod, R, which is common to both. A flue-plate, S, extending vertically between the bottoms of the casing L and boiler N, and horizontally in a curve from the inner side of the opening *q*, rearward and across, to or near the line of the inner side of the opening *p*, completes the system of flues, the operation of which is as follows:

When all of the dampers are closed the heated gases pass through the descending

flue P, bottom oven-flues K and K′, and ascending flue Q, into the chamber M, beneath the boiler N, from whence, after passing around the flue-plate S, said gases escape into the exit-flue O, during which passage the oven and said boiler are both heated. When the dampers P′ and Q′, are opened the heated gases pass downward through the upper portion of the descending flue P and through the supplemental flue P″, and enter the space beneath the boiler N through the openings *p* and *q*, and from said space escape into said exit-flue as before, the effect being to heat said boiler but not the oven. By opening the damper O′ the heated gases pass directly from the top oven-flue I into the exit-flue O without heating either oven or boiler.

The boiler N is made close and of sufficient strength to enable it to withstand the usual pressure of the public water-mains. The usual inlet and outlet pipes N′ and N″, respectively, are provided within its upper side, while from its lower side, at one end, a pipe, N‴, passes downward through the flue Q, forward, through the flue K′, to the front of the oven, and thence upward to the rear side of the fuel-chamber G, where said pipe either connects with a water-back, or, forming one itself, is extended across said chamber, and from thence along the side of the flue I, and is again connected with said boiler at a point just below the top plate B, by which means an active circulation of water is effected through said pipe whenever said fuel-chamber is employed, and such water is rapidly raised to a high temperature.

The water-pressure boiler, arranged as shown, is much less expensive than those detached from a stove, is in all respects as efficient, and is far more convenient, in that it can be easily moved with a stove as it is changed from one room to another in the fall or spring.

Having thus fully set forth the nature and merits of our invention, what we claim as new is—

1. The descending flue P, supplemental flue P″, openings *p* and *q*, and dampers P′ and Q′, in combination with the boiler-chamber M, substantially as and for the purpose shown.

2. The descending flue P, ascending flue Q, and exit-flue O in combination with the top flue I, bottom flues K and K′, and boiler-chamber M, substantially as and for the purpose set forth.

3. The descending flue P, supplemental flue P″, the ascending flue Q, the exit-flue O, the openings *o*, *p*, and *q*, and the dampers P′ and Q′ in combination with the top flue I, bottom flues K and K′, and the boiler-chamber M, substantially as and for the purpose shown and described.

In testimony that we claim the foregoing we have hereunto set our hands this 11th day of March, 1875.

A. C. CORSE.
MICHEL G. FAGAN.

Witnesses:
ALBERT R. CORSE,
WM. A. JOHNSON.