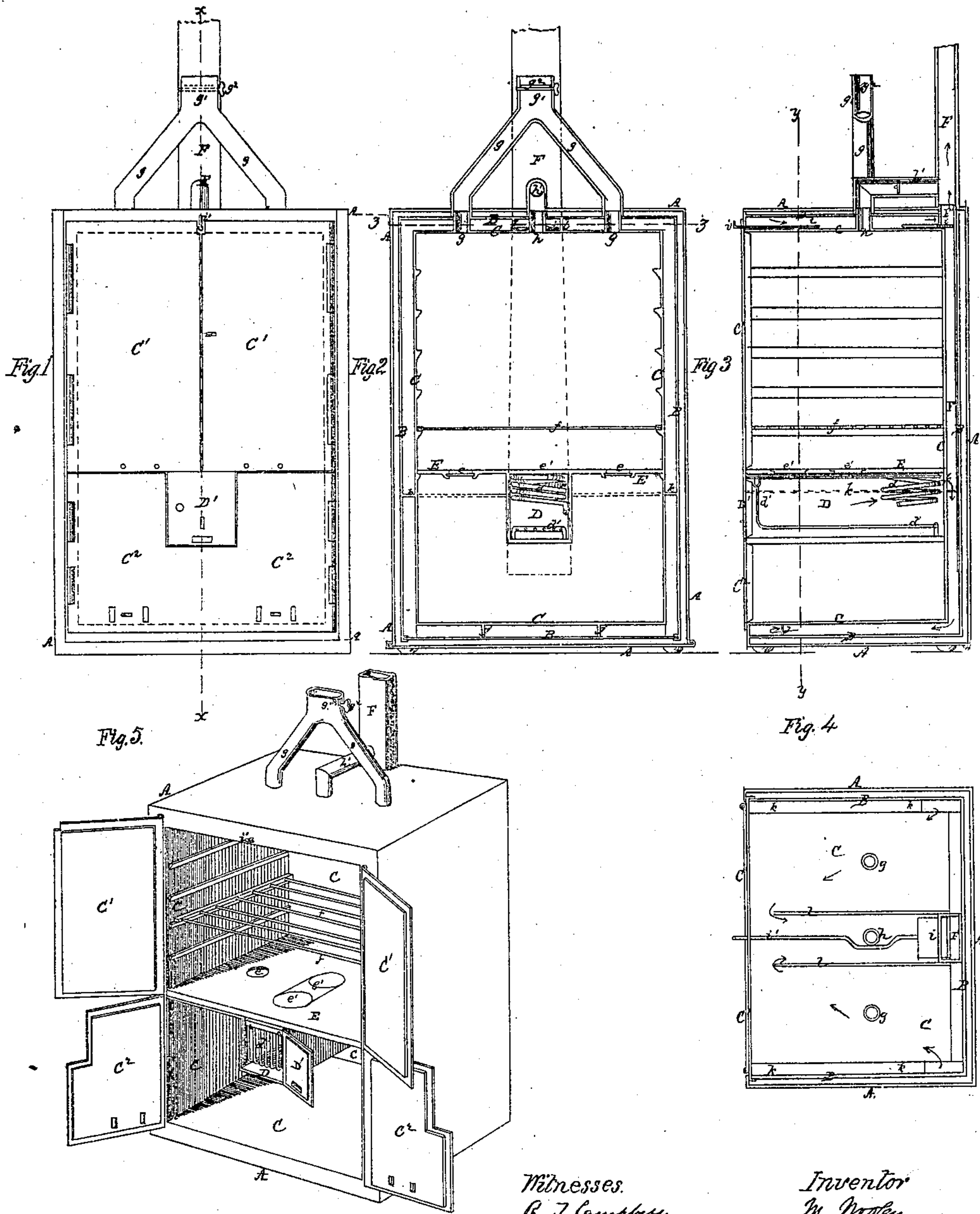


M. WOOLLEY.
COOKING STOVE.

No. 79,619.

Patented July 7, 1868.



Witnesses.
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MILTON WOOLLEY, OF BROOKLYN, NEW YORK.

Letters Patent No. 79,619, dated July 7, 1868.

IMPROVEMENT IN COOKING-STOVES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, MILTON WOOLLEY, of Brooklyn, in the county of Kings, and State of New York, have invented certain new and useful Improvements on Stoves; and I 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 an elevation of the front of the improved stove with the doors closed.

Figure 2 is a section through the stove, taken in the vertical plane indicated by red line *y y* in fig. 3.

Figure 3 is a section through the stove, taken in the vertical plane indicated by red line *x x* in fig. 1.

Figure 4 is a horizontal section taken in the plane indicated by red line *z z* in fig. 3.

Figure 5 is a perspective view of the stove with its front doors open, exposing the interior of the ovens and furnace.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain improvements on stoves which are adapted for cooking and warming purposes generally, and which have their furnaces or fire-chambers arranged within oven-chambers, that are enclosed by double-wall flue-casings, so constructed that after the products of combustion leave the fire-chambers, these products circulate between the said casing-walls, and are thereby conducted around the oven-chambers, and in this manner caused to give off large quantities of heat before escaping into the main flues.

My invention provides for having two ovens enclosed by a double-wall flue-casing, and separated by a division-plate, which serves as a means for sustaining a fire-box or furnace, and which is constructed with registers and dampers, by means of which the two apartments can be made to communicate with each other, or the communications closed, according to the different operations of cooking to be performed in either one or both of said apartments, as will be hereinafter explained.

The invention further provides for heating air, to be used for warming apartments adjacent to that in which the stove is located, by enclosing a double-wall flue-casing with a jacket, so as to leave an air-circulating space which will prevent, to a considerable extent, the external radiation of heat from the flue-casing, and thereby effect a utilization of fuel, as will be hereinafter described.

The invention further provides for obtaining a direct outward draught from a furnace, which is arranged within a chamber enclosed by a double-wall flue-casing, and also for causing the products of combustion to circulate throughout the flue-space formed by said casing, when a direct draught is not desired, as will be hereinafter explained.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

The stove which I have represented in the drawings is of a rectangular form, and has two oven-chambers, arranged one above the other, and enclosed on five sides by means of a double-wall flue-casing, consisting of two walls, B C, put together in such manner as to leave a space between for the circulation of the products of combustion on their way to the escape-flue F. The front side of the oven-chamber is closed by means of doors C¹ C² C³, the upper two of which serve for closing the upper oven-chamber, and the lower two doors, C² C³, serve to close the lower oven-chamber, as shown in figs. 1, 3, and 5.

The two oven-chambers are formed by means of the horizontal division-plate E, which has openings through it, provided with sliding valves *e e*, for the purpose of forming communications between the two oven-chambers, and allowing these communications to be closed when the operation of cooking in an oven would interfere with the operation of cooking in the other oven.

The furnace D is arranged beneath the division-plate E, and sustained by it within the lower oven, as shown in figs. 2, 3, and 5. This furnace is of an oblong rectangular shape, and is provided with a door, D', having a suitable register-opening for the admission of air beneath and in front of the grate *d'*. This grate *d'*

extends back, and is supported by a stool at its rear end, and suspended by hooks at its front upturned end, as shown.

If it is desired to heat water for cooking or warming purposes, a fire-back, consisting of a coil of pipe, *d*, may be arranged at the back part of the furnace, with branch-pipes leading from supply and receiving-reservoirs in any convenient manner. The coil of pipe is preferable to a box-back, as the former will allow the products of combustion to pass freely between the coils. An opening, *p*, is made through the wall C, at the back of the furnace D, for allowing the products of combustion to escape from this furnace into the flue-space F', between the two back walls B C.

Directly above the furnace D, openings are made through the division-plate E, for receiving vessels which it is desired to expose to the direct action of the fire, which openings are provided with plates *e' e'*, like those usually applied to the top plate of a common cooking-stove.

The escape-flue F connects with a flue, F', which extends down between the two back walls B C, nearly to the bottom of the bottom-wall casing, and which is provided near the top of the casing with a horizontal sliding damper, *i*, the rod *i'* of which is carried forward through the front part of the casing, so that said damper can be operated from this point. When it is desired to leave a direct draught from the furnace to the escape-flue, the damper is drawn forward, and a direct communication thus established, and when it is desired to conduct the products of combustion throughout the entire flue-space enclosed between the walls B C, the said damper is closed, as shown in fig. 3.

When damper *i* is closed, the products of combustion are carried downward to the bottom of the flue-casing, thence forward between the two converging plates *j j*, thence outward from the centre to the sides of the casing, thence upward to the top of the casing, thence to the front of a narrow channel formed by the plates *l l*, and finally into the flue F, above the damper *i*. The communication between flue F and the channel, which is formed by plates *l l*, is made through the upper end of the flue F', just above the damper *i*, as shown in fig. 3.

It will be seen from the above description that when damper *i* is shut, the products of combustion will be caused to circulate through all the spaces between the walls B C, before escaping into flue F, thereby communicating a large amount of heat to the oven-chambers, besides the heat which is radiated from the walls of the furnace D. And not only is there a saving of heat by causing the products of combustion to circulate throughout the entire flue-space between the casing-walls, but this space will prevent large quantities of heat being radiated from the oven.

Through the top walls of the flue-casing, pipes *g g* and *h* pass. The pipe *h* leads to the flue F through pipe *h'*, and is designed for carrying off vapors and smoke which rise in the oven-chambers while cooking, and the pipes *g g* lead into a central pipe, *g'*, for conducting heated air to apartments above. Both pipes *g'* and *h'* are provided with dampers or valves for regulating or preventing the escape of heated air and vapor from the oven-chamber or chambers.

The drawings represent the flue-casing B C enclosed within a jacket, A, which forms a space between it and the wall B of the said casing for the circulation and heating of air to be conducted off by way of pipes *g g g'*, or otherwise, and used for warming apartments above or adjoining that in which the stove is located.

This jacket also retains much of the heat within the flue-space of the casing, and also within the oven-chambers, which would be radiated from the external wall B if the jacket were not used.

If desirable, the jacket A may be made so that it can be removed from the stove when not required.

By my invention I provide a stove, or what I prefer to denominate a kitchen cabinet, with an enclosing non-conducting flue-casing, and divide the chamber, which is enclosed by this casing and its doors, into two apartments, with the furnace located in the lower apartment, and sustained by the division-plate E. I also provide for having the two apartments communicate with each other so that there shall be a circulation of heated air in them; and while this is the case, I am enabled also to close said communications, so that the operation of cooking in one apartment shall not interfere with the operation of cooking in the other.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is-

1. The flue-casing B C, provided with a direct-draught damper, *i*, and enclosing oven-chambers, which are separated by a horizontal plate E, having a furnace, D, and valve-openings applied to it, substantially as described.
2. Oven-chambers, which are enclosed by a flue-casing, B C, and doors C¹ C², and provided with a furnace, D, valves *e e*, and means for conducting off the vapors and gases rising in said oven-chambers, substantially as described.
3. The outer jacket A, in combination with a furnace, D, and division-plate E, arranged within a double-wall flue-casing, substantially as described.
4. The water-heater *d*, applied within a furnace, D, which is sustained by a division-plate, E, within a double-wall flue-casing, B C, substantially as described.

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Witnesses:

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