(No Model.) 2 Sheets—Sheet 1.

F. K. WILCOX & C. E. VAIL.

COMBINED STOVE AND HEATER.

No. 519,750. Patented May 15, 1894.

FIG. 1

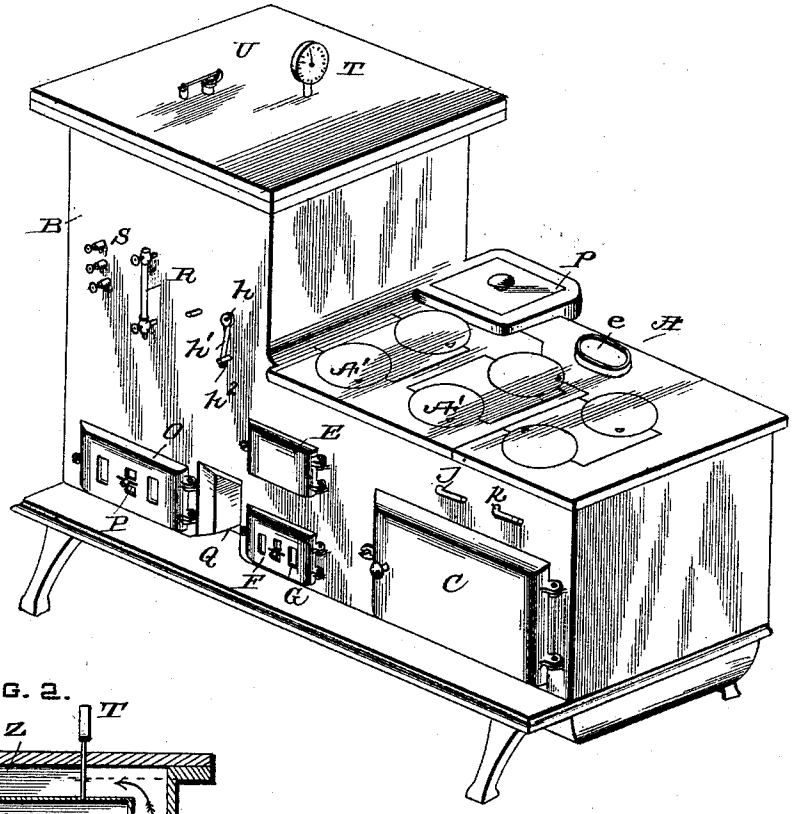


FIG. 2.

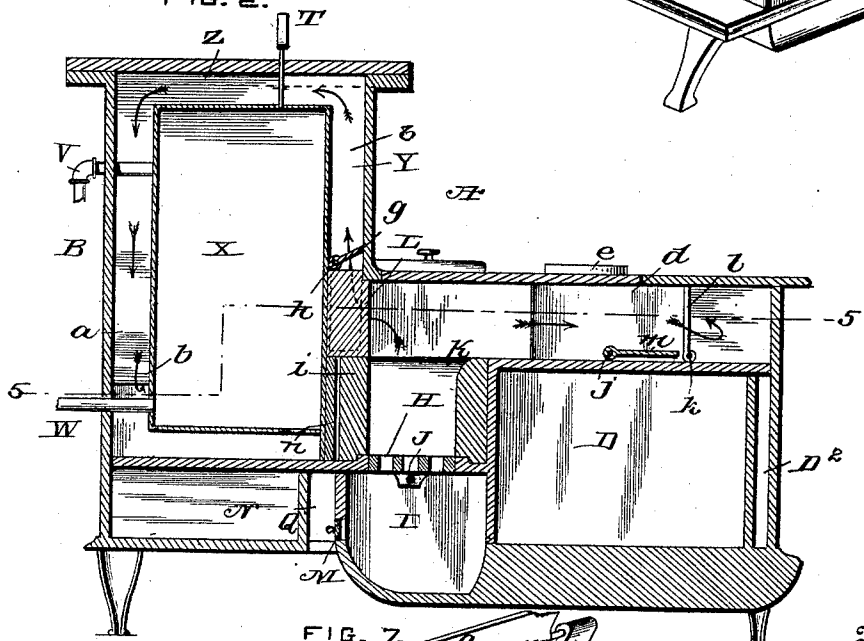
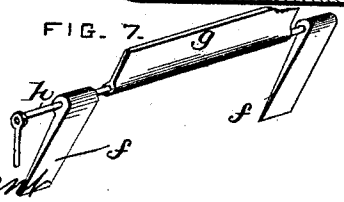


FIG. 7.



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(No Model.) 2 Sheets—Sheet 2.

F. K. WILCOX & C. E. VAIL.

COMBINED STOVE AND HEATER.

No. 519,750. Patented May 15, 1894.

FIG. 3.

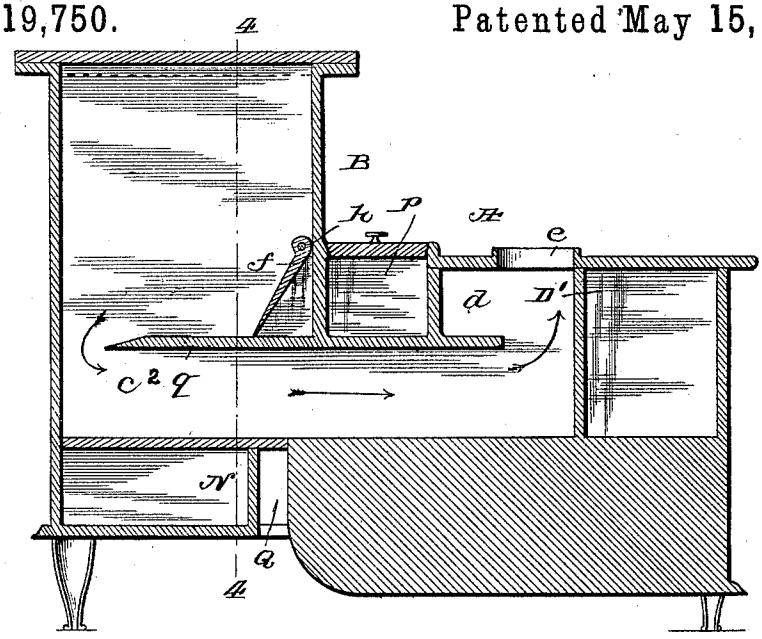


FIG. 4.

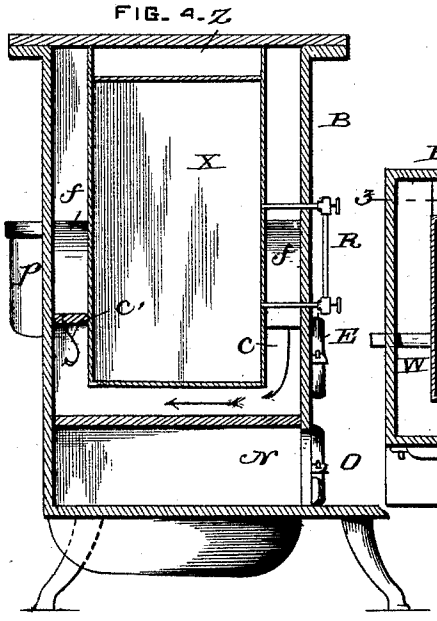


FIG. 5.

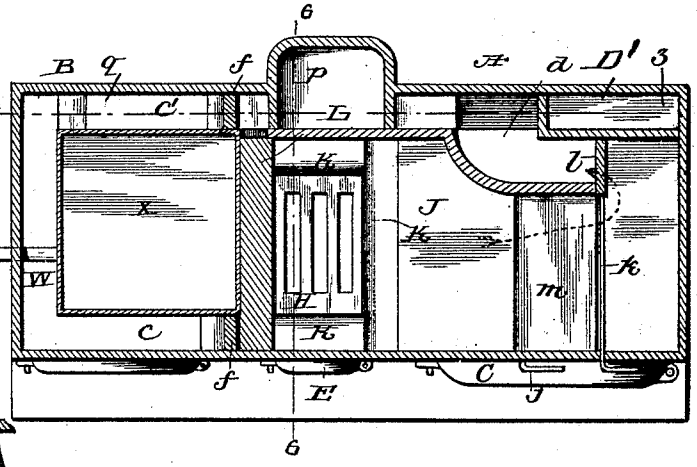
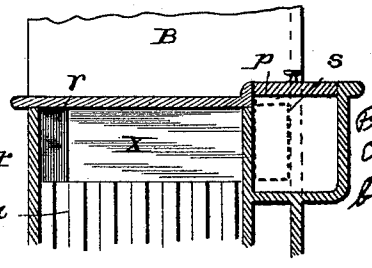


FIG. 8.



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UNITED STATES PATENT OFFICE.

FREDERICK K. WILCOX AND CHARLES E. VAIL, OF PLAINFIELD, NEW JERSEY; SAID VAIL ASSIGNOR TO SAID WILCOX.

COMBINED STOVE AND HEATER.

SPECIFICATION forming part of Letters Patent No. 519,750, dated May 15, 1894.

Application filed November 16, 1893. Serial No. 491,091. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK K. WILCOX and CHARLES E. VAIL, of Plainfield, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in a Combined Stove and Heater; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

Our invention relates to combined stoves and heaters; and its objects are: first, to construct a combined stove and heater in such manner that a side draft will be provided for the stove additionally to the front draft; second, to provide air chambers on either side of the stove-oven, whose contained air may be augmented in temperature; third, to provide a damper shaft in the heater, whose central damper is reversely set to its terminal dampers, whereby the path of the products of combustion through the heater is prescribed; fourth, to provide an oven under the heater, whose temperature may be regulated at will; fifth, to provide a reservoir in the side of the stove, to which water for general service may be admitted, with or without pressure; and sixth, to accomplish these ends with maximum structural simplicity and economy. We accomplish these purposes by the device illustrated in the accompanying drawings, in which—

Figure 1 represents a perspective view of a combined stove and heater, operatively embodying the essential elements of our invention. Fig. 2 is a central, longitudinal section thereof. Fig. 3 is a longitudinal section thereof on the line 3—3 of Fig. 5. Fig. 4 is a vertical section on the line 4—4 of Fig. 3. Fig. 5 is a horizontal section on the line 5—5 of Fig. 2. Fig. 6 is a vertical, detailed section on the line 6—6 of Fig. 5; and Fig. 7 is a detail view of the damper-shaft controlling access of the products of combustion to the heater.

The same designations indicate corresponding parts in all the views.

The stove A is provided with a series of lids A′; a smoke-exit *e;* an oven D having door C and two adjacent air chambers $D' D^2$; a fire-pit K having grate H, shaker J and ash-pit I; a water reservoir *p* for general service; a flue *d* to conduct the products of combustion to the exhaust; and two dampers *l*, *m*, controlled by shafts *k*, *j*.

B indicates the heater, integrally formed with the stove A, provided with a vertical grate *n;* a vertical layer of fire brick (or other material) *i;* the boiler X, having cold water inlet, and steam outlet, pipes W, V; the usual water glass R, blow-off cocks S, gage T, and safety valve U being provided; a lug h^2 limits the rotation of crank h' operating the damper shaft *h* whereon the two terminal blades *f* are reversely set to the central damper *g*.

Q is a recess, separating the lower portion of the stove from the corresponding portion of the heater, and the wall thereof is provided, on the stove side, with a side draft damper M, serving to increase the combustion of the fuel. An oven N is located under the boiler X, and is provided with a door O having a regulating damper P therein.

E is the fuel door of the stove.

F is the ash-door, and G is a damper therein to regulate atmospheric access to the fire.

L is a supplemental fire-brick, pressing against the boiler in front of the ports *r s*, opening respectively into the flues *c c′*. A partition *q* constitutes the base of the reservoir *p*, and of the damper *f*, besides guiding the waste products of combustion from the heater to the exhaust *e*. Z indicates the space on top of the boiler X, formed by the partitions *b*, which connects flues Y, *a*.

It is apparent that different courses can, by this device, be prescribed to regulate the passage of the products of combustion. If the damper *m* be open, the damper *g* open, the fire brick L removed, and the damper *l* closed, part of the products of combustion will heat the boiler X and exhaust at *e;* another part passes down the end of the stove; under oven D; thence to exhaust *e*. If the damper *g* be closed, the fire brick L removed, the dampers *f f* being then open, and the dampers *l m* closed, the products of combustion will pass through flues *c c′* c^2 *d*, until they

reach the exhaust *e*. If the firebrick L is located in position, the products of combustion will then pass over the oven D, and through flue *d* to the exhaust *e*, the dampers *l m* being then both open.

Having thus fully described our improvements, what we claim is—

1. In a combined stove and heater, the fire brick (cut off) *i*, L in combination with the grate *n*, and ports *r*, *s*.

2. In a combined stove and heater, the recess Q, one wall whereof has the damper M affording a side draft to the fire on grate H.

3. In a combined stove and heater, the damper shaft *h* having the central damper *g* set reversely to the terminal dampers *f f*, in combination with the fire-brick L and the ports *r*, *s*.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

FREDERICK K. WILCOX.
CHARLES E. VAIL.

Witnesses:
JOHN KIRCH, Jr.,
RENÉ VON MINDEN.