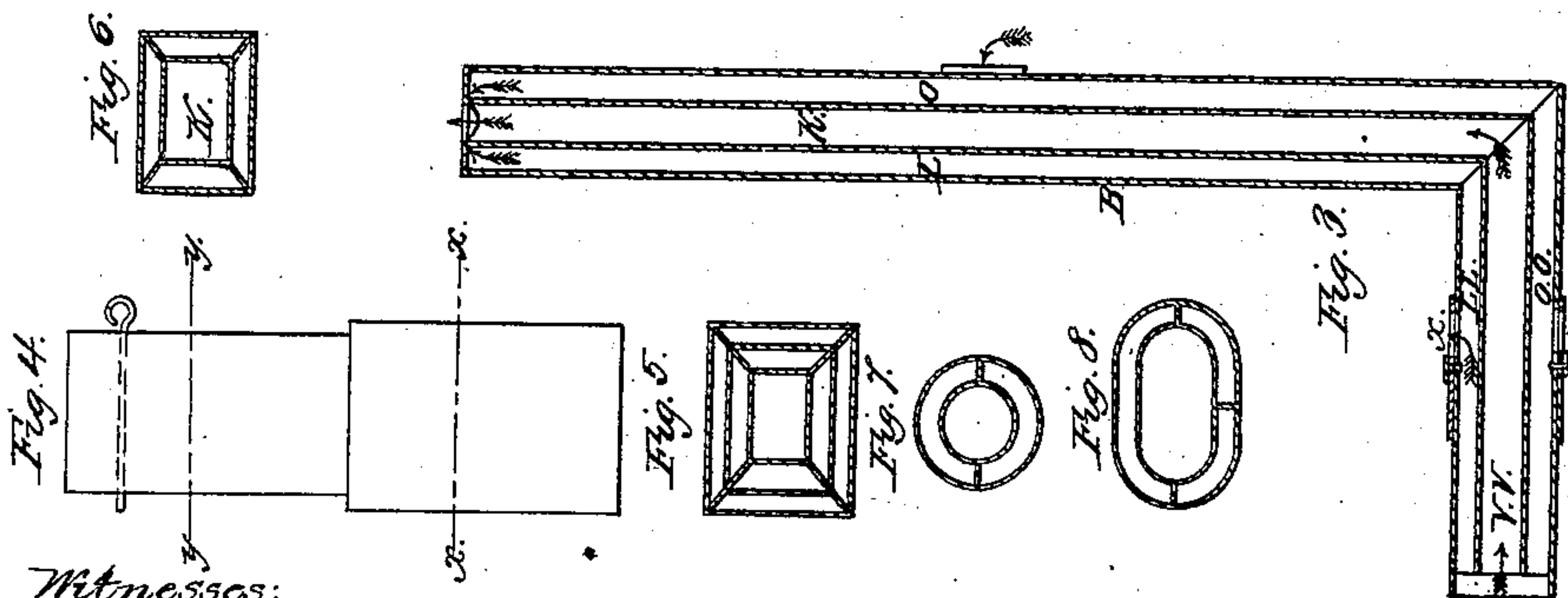
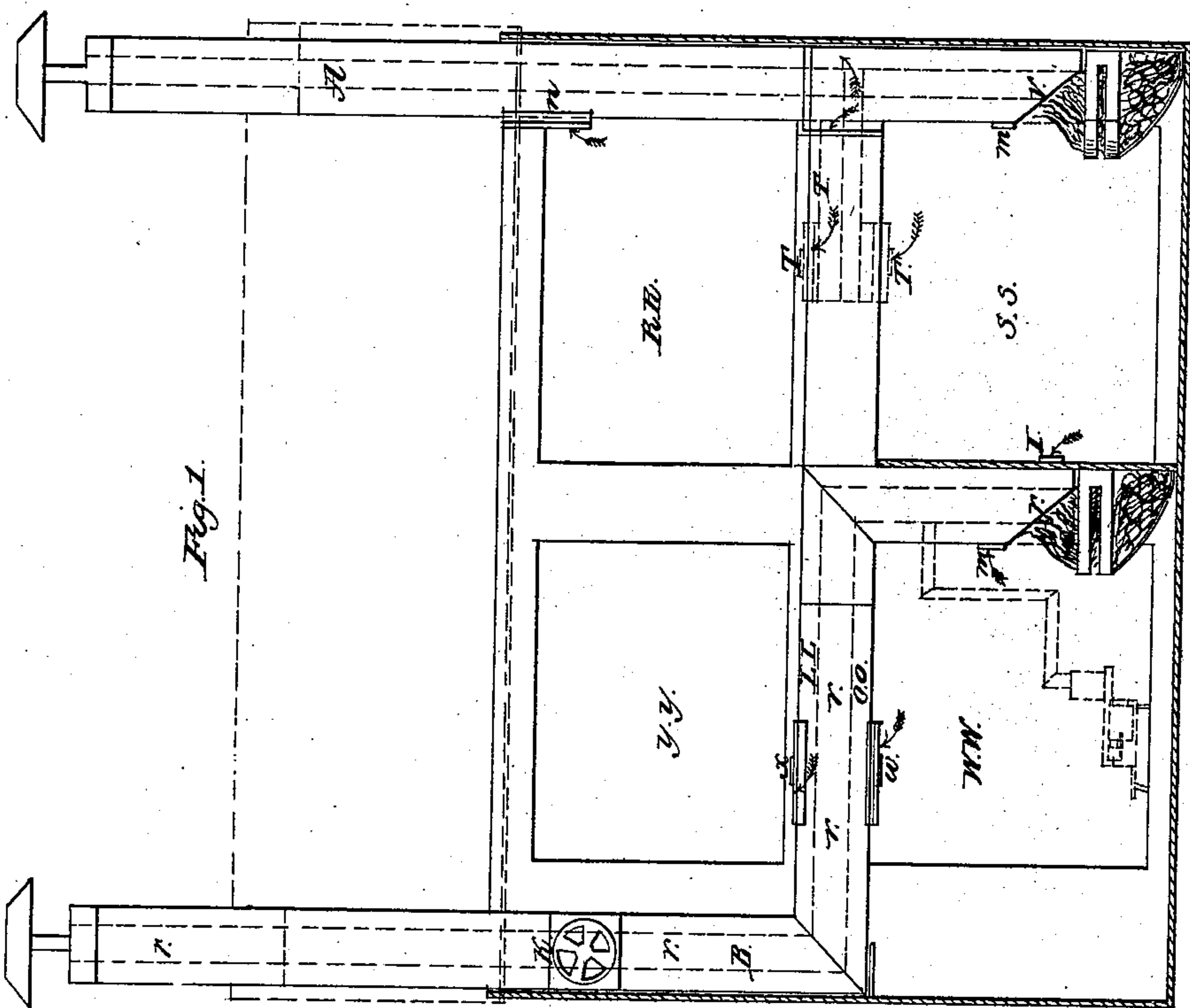
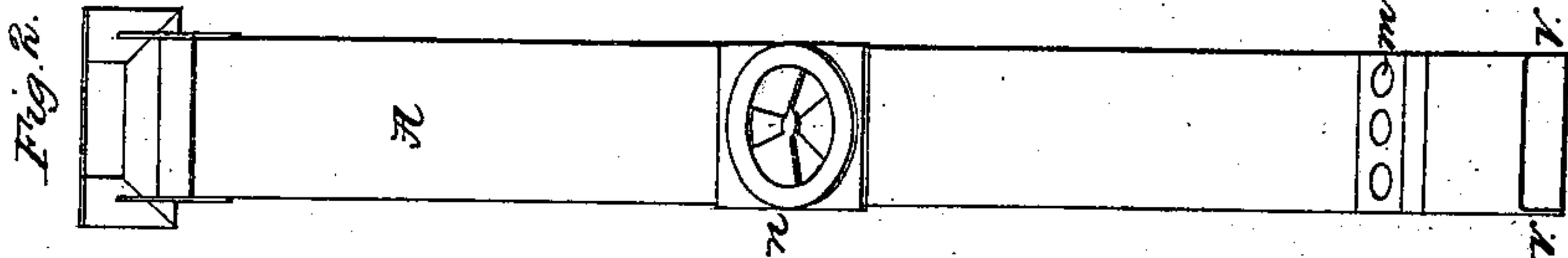


C. T. Harvey, House Ventilator,

N^o 41,993.

Patented Mar. 22, 1864.



Witnesses:

G. H. Smith.
C. W. W. Buffine.

Inventor:

Charles T. Harvey.

UNITED STATES PATENT OFFICE.

CHARLES T. HARVEY, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN CHIMNEY-FLUES.

Specification forming part of Letters Patent No. 41,993, dated March 22, 1864.

To all whom it may concern:

Be it known that I, CHARLES T. HARVEY, of the city of Chicago, in the county of Cook, in the State of Illinois, have invented a new and Improved Combination Flue and Chimney; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

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

Figure 1 is a vertical section of a house or building, showing the application of the combination flue and chimney in two forms, A and B, A being a perpendicular chimney used for ventilating and safeguard purposes, and with a branch flue for the more convenient application of the general principle to a particular point, the opening at V being the smoke-flue, the orifice at M allowing the ingress of cold air, and the register at N permitting the impure air of room R R to escape, being facilitated thereto by the upward current and consequent draft in the compartment with which it is connected. The dotted lines at T T T show a branch flue as being inserted with two compartments without the smoke-flue in the branch, because of the effect being gained by their connection with the perpendicular smoke-flue, one compartment of the branch permitting the impure air of room S S to escape through one of the compartments of the perpendicular chimney, while the upper compartment conducts heated air from the same source into room R R.

B in same Fig. 1 shows the main flue combined with chimney, and used for all purposes herein specified.

The smoke-flue V V is shown in position by the dotted lines as distinct from the upper and lower compartments, L L and O O, the cold air passing in at I and M, and, becoming more or less heated passes into room Y Y at register X, while the impure and rarefied air of room U U passes out and upward at the register W. The register K, being connected with a third compartment, can furnish ventilation for room Y Y, or any room adjoining it, leaving the fourth compartment to

furnish a like independent current of air for a similar purpose in other rooms with which it may be connected. Thus a great variety and number of combinations for ventilating and heating purposes can be made, not necessary herein further to describe, as all involve the same general principle or idea.

The waste heat of the stove can also be used to advantage, as shown in Fig. 1, in the room U U.

Fig. 2 is a front view of the combination-chimney A shown in Fig. 1, with the smoke-flue opening at V V, the cold-air orifice at M, and the ventilating-register at N.

Fig. 3 is a vertical section of the combination flue and chimney B shown in Fig. 1.

Fig. 4 is a surface view of the combination-flue with four or eight compartments and with damper to regulate the passage of air through each compartment or through the smoke-flue.

Fig. 5 is a cross-section of Fig. 4, taken at the line *x x*, where, for greater security against fire being communicated from the smoke-flue to exterior substances, a double set or eight compartments are usable.

Fig. 6 is a cross-section of Fig. 4 at *y y*, where four compartments are usable, as in ordinary cases.

Figs. 7 and 8 show different shapes in which the same principle is used, the form being capable of indefinite variation into octagon, hexagon, and other configurations too numerous to mention, in which the compartment plan can be used, with metal, tile, or other material, put together in sections or continuously, as the case may be.

I do not claim the use of a flue for heating air or of registers and dampers for conducting or regulating the escape of hot or impure air, such having been long in use.

Should the proximity of a wall render one compartment unnecessary, or for other cause the smoke-flue should not be entirely surrounded by the compartments while more than one are in use, substantially as shown, I hold such use to be within the scope of my claim.

I claim—

1. The combination and use of two or more longitudinal compartments surrounding (ex-

cept as before stated) the smoke-flue or chimney when they are divided into distinct air-flues, and have independent currents of air passing through them for heating and ventilating purposes and as a protection against fire, substantially as shown.

2. The branch connection T T, by which heat can be conveyed to or air drawn from the center or other part of a room or rooms

into and from the upright air-flues, in combination with the chimney described in the preceding clause of my claim, substantially as shown.

CHARLES T. HARVEY.

Witnesses:

GEO. C. LAMBRIGHT,
G. A. C. SMITH.