

(No Model.)

A. ZERBAN.
HOUSE COOLING DEVICE.

No. 269,983.

Patented Jan. 2, 1883.

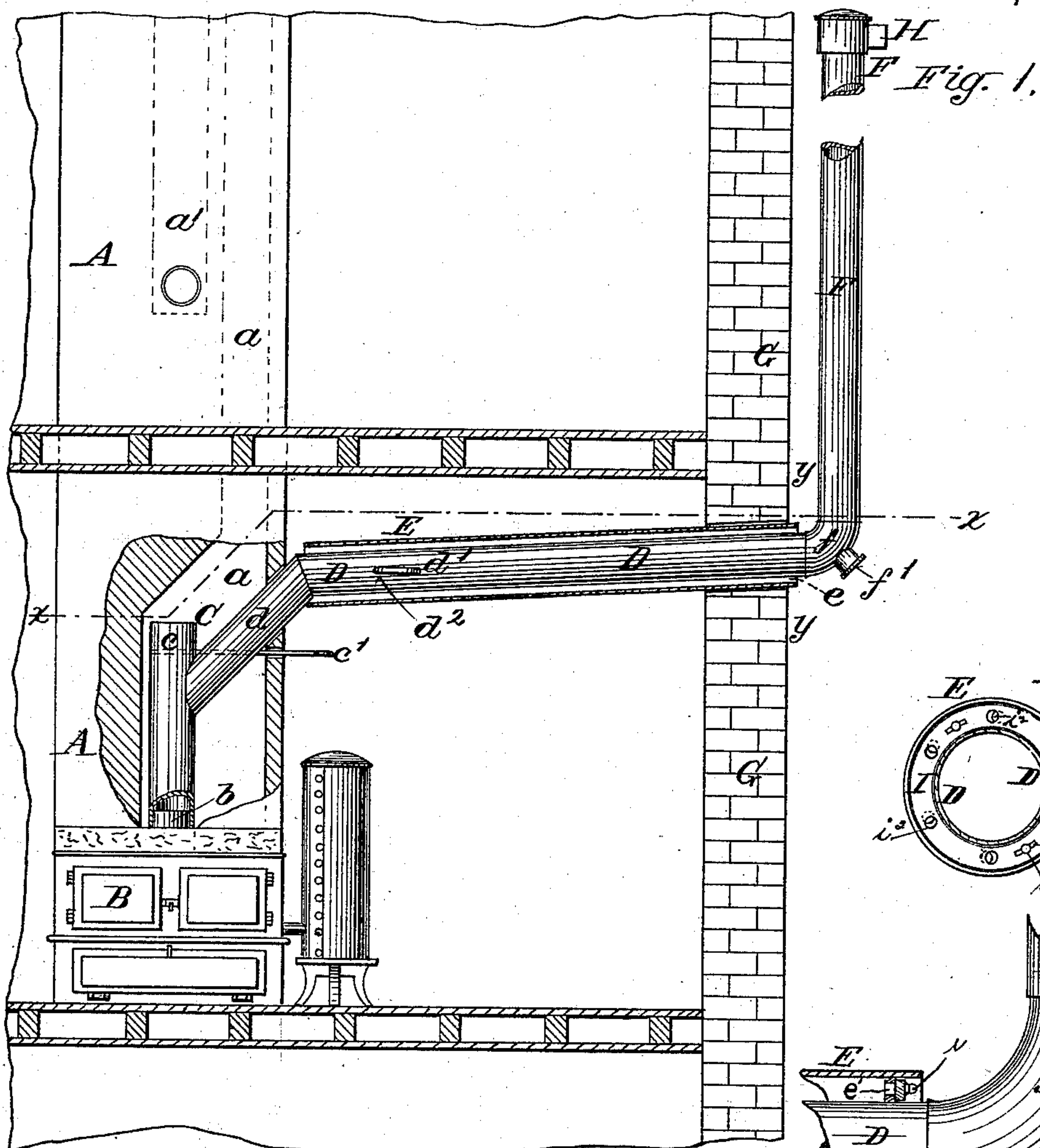
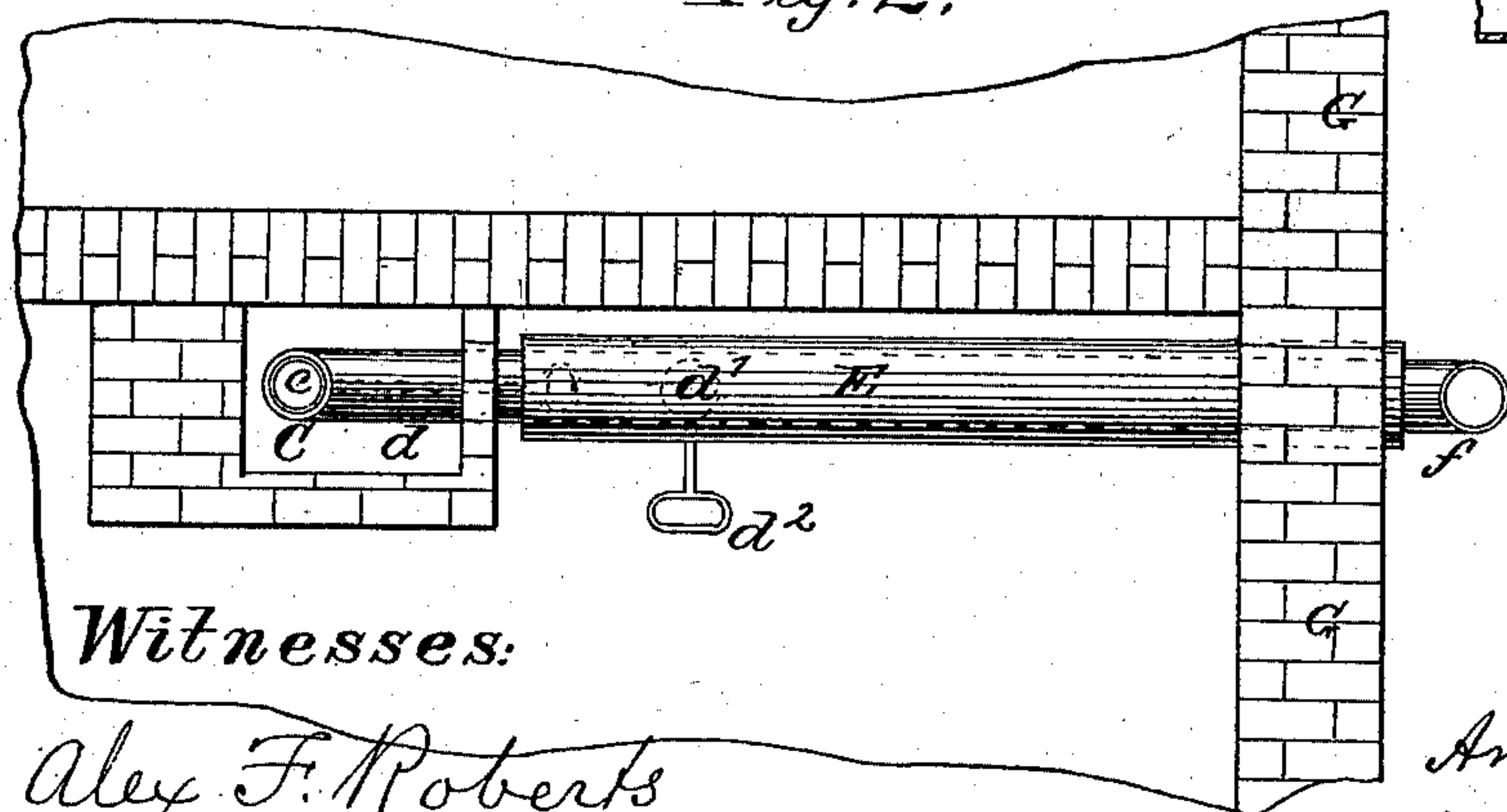


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

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HOUSE-COOLING DEVICE.

SPECIFICATION forming part of Letters Patent No. 269,983, dated January 2, 1883.

Application filed August 9, 1882. (No model.)

To all whom it may concern:

Be it known that I, ANDREW ZERBAN, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented a new and useful Improvement in House-Cooling Devices, of which the following is a specification.

The object of my invention is to provide a simple and effective device for preventing during the warm season of the year the waste heat of a kitchen range or stove of a house or building from heating the chimney-breasts, and adjacent walls and rooms of superjacent stories of the same house or building, and consequently, also, the rooms of the adjoining house in cases where there is only one wall between two adjoining houses.

It is well known that in houses as generally constructed the kitchen is situated in the rear basement and the bed-rooms in the rear parts of the floors above, and the heat ascending from the necessary kitchen-fire through the chimney-breasts above increases the temperature of the chimney-wall of the entire building to such a degree as to render the adjacent sleeping-apartments of the upper floors almost unendurably warm and unfit for use in the hot season. It is therefore extremely desirable to get rid of this superfluous heat. Again, in the winter time or cold season it is equally as desirable to utilize the waste heat for warming the walls, and thereby also the rooms of the upper apartments. To retain the advantage of the said heat in the winter and dispense with its disadvantage in the summer is therefore the aim of my present invention, which also, as practical experiments have abundantly proven, very effectively accomplishes its purpose.

In the accompanying drawings, Figure 1 represents a partial sectional elevation of the basement and first floor of a house provided with my present improvement, the chimney-breast above the fire-place being partly broken out to show the interior. Fig. 2 is horizontal sectional view of the same, taken through the line *x x* of Fig. 1. Fig. 3 is a detail cross-section of the auxiliary flue, taken on the line *y y* of Fig. 1. Fig. 4 is a similar detail longitudinal section of the inclosing-pipe E and its end-
ing.

Like letters of reference indicate like parts in the several figures.

A is a chimney-breast containing the flues *a a'*, &c., for the respective floors, the flue *a* leading from the cooking range or stove, and the flues *a'*, &c., of the upper floors having ordinary pipe-holes through the breast for attaching heating-stoves in the winter. B is the kitchen or cooking range or other place where fire is generated and from which the gases of combustion ordinarily ascend through the flue *a*. The wall-pipe, nipple, or discharge-opening from the range to the flue *a* is designated by the letter *b*.

In order to prevent the heat from the fire from ascending the breast A in the warm season, thus increasing the temperature of the rooms above and of the adjacent rooms of the adjoining building, I have made the following improvement for leading the heat of gases directly from the fire-place out into an auxiliary flue in the open air: Upon the nipple *b* I place a vertical pipe-joint, C, and connect to the side of the latter by a so-called "Y-joint" a pipe, *d*, issuing through the side of the breast A. In the pipe C, immediately above its junction with the pipe *d*, I place a close-fitting damper, *c*, whose damper-rod projects through the breast, and is provided with a handle, *c'*, conveniently accessible near the fire-place. To the pipe *d* I connect a lateral pipe, D, and place the same at a slight upward and outward inclination, and pass the outer end of the said pipe D through the wall G of the building into the open air, connecting it there by an elbow-joint, *f*, to a vertical pipe, F. The upper end of the pipe F is preferably provided with an ordinary revolving chimney-top, H. In the elbow is a covered hand-hole, *f'*, through which soot from the pipes F and D may be removed. In the pipe D, I place a damper, *d'*, whose handle *d''* is accessible near the fire-place. The pipes *d* and D are inclined, as shown, the former much more than the latter, to facilitate the flow of the heated gases by way of the pipe *d* when the damper *c* in the pipe C is closed, as shown in the drawings. The waste heat from the fire will then naturally pass into the pipe D, thence through the elbow *f* into and escape through the outer pipe, F, thus entirely evading the

heat of the chimney-breast in the floors above. In order not to heat the room where the fire-place is situated by radiation of the heat from the pipe D, I surround the latter with a pipe, 5 E, sufficiently larger than the pipe D to leave an air-space of at least an inch in width between the two pipes, and perforate or otherwise leave open the outer end of the pipe E, so as to allow the air heated between the pipes 10 D E to escape into the outer air. One mode of leaving openings at the outer end of the pipe E, while yet retaining the pipe D in the central position in the pipe E, is shown in Figs. 3 and 4—namely, by a ring, *e*, fitting outside 15 of and around the pipe D and within the pipe E, and provided with perforations *e'*, which may be closed up or covered in winter by a slight turn of another ring, I, placed upon the ring *e*, the latter ring being held to the ring *e* 20 by headed studs *i* in slots *i'* through the ring I, and having perforations *i''*, corresponding to the said perforations *e'*.

When my improvement is applied to frame houses the outer pipe E is necessary also to 25 prevent any danger of fire from the heat of the pipe D where the latter passes through the wall. When applied to a frame house the outer pipe F should also, for the same reason, be placed at some sufficient distance from the 30 wall, and when this cannot be conveniently done the pipe F should also be surrounded with a pipe similar to E, sufficiently larger than the pipe F to leave a proper air-space between. When this is done the outer pipe may then be 35 placed quite near to the wall.

It is evident that instead of making the flues D and F of metallic pipes, as shown in the drawings, the same may be built in brick or 40 in some other manner, and may be wholly or partly inclosed in a wall wherever there is sufficient space to allow of placing it far enough from the apartments desired to be kept cool to prevent the heat from reaching the inner surface of the wall. In erecting new build- 45 ings such arrangements might sometimes be conveniently made.

I am aware that means have been devised for driers and smoke-houses whereby products of combustion are directed either through the 50 drying or smoking apparatus or to a perpendicular pipe outside of the same, and I do not claim such devices in connection with any such apparatus.

Having thus described my invention, I claim 55 as new and desire to secure by Letters Patent—

1. The combination, with an ordinary chim-

ney-breast flue, *a*, the same forming an interior wall-flue of a dwelling-house, and with the kitchen-range of the said building, of an auxiliary flue, a lateral connection between the 60 said interior and auxiliary flues, and suitable regulating devices for discharging the gases of combustion from the fire-place through either of the said flues, while shutting them off from the other, substantially as and for the 65 purpose set forth.

2. The combination, with an ordinary chimney-breast flue, *a*, the same forming an interior wall-flue of a dwelling-house, and with the kitchen-range of the said building, of an 70 auxiliary flue, F, exterior of the wall, a lateral connection, D, between the said interior and exterior flues, and suitable regulating-dampers for discharging the gases of combustion from the fire-place through either of the said flues 75 *a* F while shutting them off from the other, substantially as and for the purpose set forth.

3. The combination of the chimney-flue *a*, the pipe C, leading from the fire-place to the said flue, and provided with a damper, *c*, the 80 lateral duct *d* D, provided with a damper, *d'*, and with means of preventing radiation of heat from the pipe D, and the flue F, arranged outside of the wall G, substantially as and for the purpose set forth. 85

4. The combination of the chimney-breast flue or interior wall-flue, *a*, the auxiliary flue F, exterior of the wall G, and suitable damp- 90 ers for closing and opening passage through said flues, with the pipe D, connecting the said flues *a* F, said pipe D being inclosed in a larger pipe, E, projecting through the wall G and having openings or perforations at its outer end, substantially as and for the purpose set forth. 95

5. In combination with the interior and exterior flues, *a* F, and their connecting-pipe D, the latter being inclosed in a larger pipe, E, projecting through the wall G, the perforated stationary ring *e*, supporting the pipe D 100 in the pipe E, and the perforated valve-ring I, arranged to be oscillated upon the surface of the ring *e*, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as 105 my invention I have signed my name, in presence of two witnesses, this 4th day of August, 1882.

ANDREW ZERBAN.

Witnesses:

A. W. ALMQVIST,
ROBERT W. MATTHEWS.