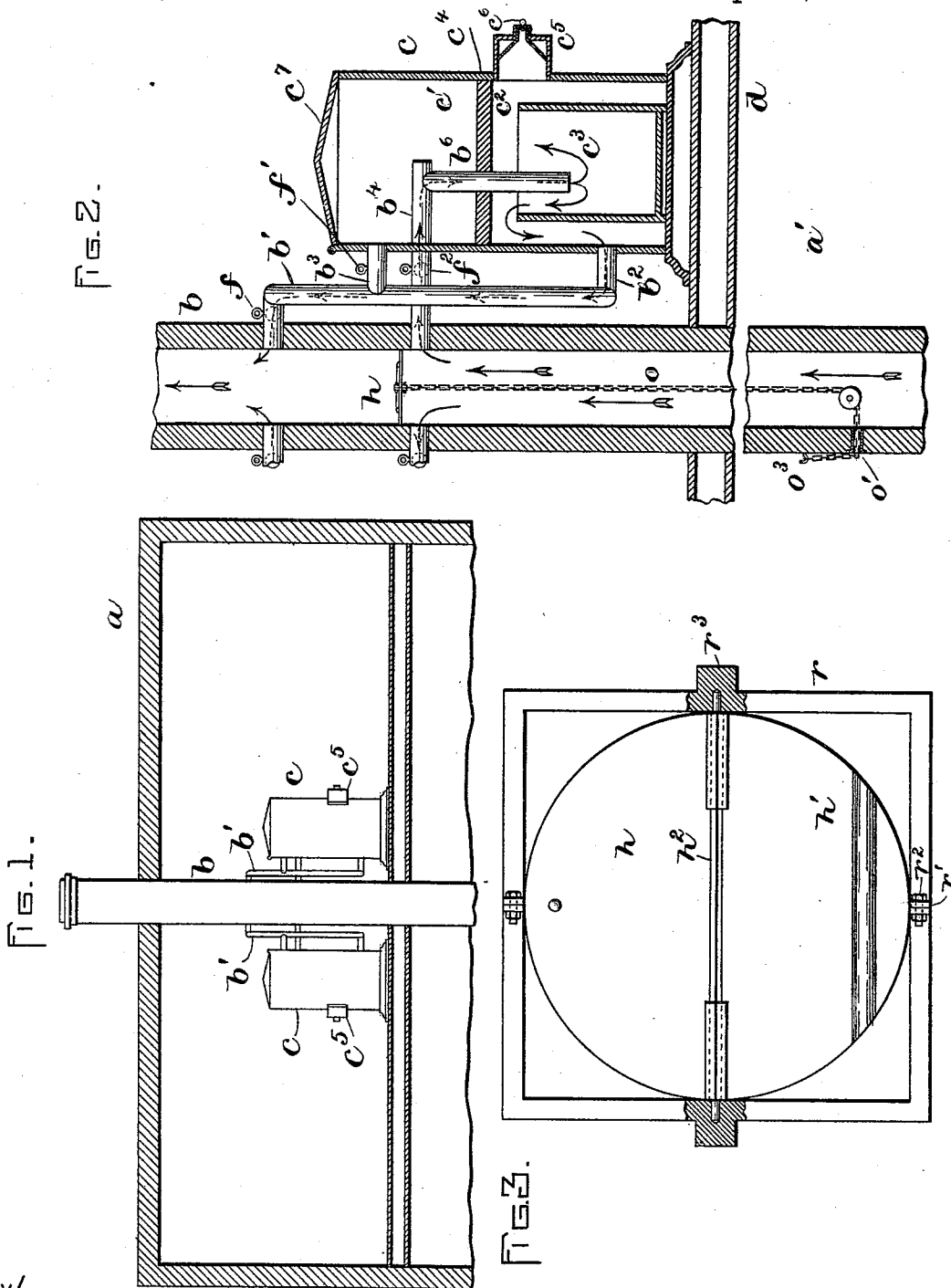


(No Model.)

W. E. GALLAGHER.
HEATING APPARATUS.

No. 536,719.

Patented Apr. 2, 1895.



WITNESSES:

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WILLIAM E. GALLAGHER, OF SOUTH FRAMINGHAM, MASSACHUSETTS.

HEATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 536,719, dated April 2, 1895.

Application filed July 5, 1894. Serial No. 516,554. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. GALLAGHER, of South Framingham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Heating Apparatus, of which the following is a specification.

My invention relates to an improvement in heating apparatus, and has for its object to provide means whereby the heat which usually escapes through the chimney may be utilized to warm some or all of the various rooms of a dwelling in which my invention is employed.

As is well-known, a large percentage of the heat of an ordinary stove escapes into the open air through the chimney, and but a small portion of said heat is utilized in the room where the stove is situated. By my invention I am enabled to overcome in a very large degree this defect.

My invention consists in certain novel features of construction and arrangement of parts which will be fully hereinafter described and particularly pointed out in the claims.

Reference is to be had to the accompanying drawings and the characters marked thereon, which form a part of this specification, like characters designating like parts or features, as the case may be, wherever they occur.

In the drawings,—Figure 1 is a sectional view of so much of a conventional view of the rooms of a dwelling house as is necessary to illustrate the mode of operation of my invention. Fig. 2 is a vertical section of Fig. 1 taken on the chimney. Fig. 3 is a detail view of the damper.

a represents one of the upper stories of a dwelling; *a'*, the lower room thereof, (see Fig. 2;) *d*, the chimney into which the funnel from the stove enters in the room, *a'*, the funnel and stove not being shown, as they are no part of my invention.

Connected on opposite sides of the chimney or at as many points as there are separate rooms to be heated, are funnels, *b'*. Situated in the room to be warmed is a heater, *c*, made of sheet iron or any similar material having two compartments, *c'*, *c''*, divided by the partition, *c⁴*. The compartment, *c''*, contains a separate auxiliary chamber, *c⁵*, open at its

upper end. The funnel, *b'*, is connected with both chambers by means of the short funnel pieces, *b²b³*. A funnel, *b⁴*, also leads from the chimney to the compartment, *c'*. This funnel has a joint, *b⁶*, extending down through the partition and into the auxiliary chamber, *c⁵*. The funnel, *b'*, is provided near the chimney with the damper, *f*, the short funnel piece, *b⁸*, with the damper, *f'*, and the funnel *b⁴*, with the damper, *f²*. The heater is still further provided with a ventilating arrangement, *c⁵*, having a slide, *c⁶*.

In Figs. 1 and 2, *d* represents the floor separating the rooms. The vertical partitions separating the rooms are not shown. The heaters in their connection with the chimney are identical, and hence a description of one will suffice for all.

h is a damper situated in the chimney above the points where the funnels, *b⁴*, enter the chimney, and below the points where the funnels, *b'*, enter the chimney. This damper is weighted at *h'*, in order to keep it normally open. A chain, *o*, leads from said damper through the chimney into the compartment, and may be secured upon the hook or other similar device, *o³*.

A thimble piece, *o'*, in the chimney will serve as a protection thereto. The damper, *h*, is trunnioned by means of the rod, *h²*, in a two-part frame, *r*, secured in the chimney. The parts of the frame, *r*, are joined together by means of ears, *r'*, united by bolts, *r²*. Two lugs, *r³*, upon the frame serve to enter the mortar between the bricks and thereby steady the frame in the chimney.

If desired the partition, *c⁴*, may be omitted, and the short funnel, *b³*, be utilized for the escape of the hot air. The funnel, *b⁴*, entering the upper compartment, *c'*, serves to heat it by radiation, hot air escaping if desired by means of the short funnel, *b³*. The heater, *c*, is provided at its upper end with a cover, *c⁷*.

The apparatus being constructed and arranged as described the heat from the stove entering the chimney will follow the directions of the arrows. Now, when it is desired to heat one of the rooms in which my improved heater is situated, all that is necessary is to close the weighted damper by pulling down upon the chain, *o*. This deflects the heat away into the funnels, *b⁴*, from

whence it passes by the funnels, b^6 , into the auxiliary chamber, c^3 ; thence into the compartment, c^2 , thence into the funnel, b' , into the chimney above the damper, h . By this arrangement I have found my improved heater can be made to utilize a large portion of the heat which otherwise escapes by way of the chimney.

The dampers, f , f' , and f^2 , are of the ordinary construction and serve to close the funnels when not in use. The ventilator, c^5 , may be used in connection with my heater when desired, the air from the room entering through the slide when open and passing up the funnel, b' , into the chimney.

I have confined my illustration to a conventional formed room since the general structure of the house, &c, is not necessary to be shown.

Having thus explained the nature of my invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, what I claim, and desire to secure by Letters Patent, is—

1. An improved heating apparatus comprising in its construction a chimney provided with a damper, a heater having two compartments, a funnel leading from the chimney at a point above the damper to the lower compartment of said heater and a second funnel leading from the chimney at a point below the damper into the lower compartment of the heater, substantially as and for the purpose described.

2. An improved heating apparatus comprising in its construction a chimney pro-

vided with a damper, a heater having two compartments and an auxiliary chamber in the lower compartment, a funnel connected at one end with the chimney at a point above the damper and also connected with the lower and upper compartments, a second funnel connected at one end with the chimney at a point below the damper and leading through the upper compartment into the lower compartment, and having its delivery point within the auxiliary chamber, substantially as and for the purpose described.

3. An improved heating apparatus comprising in its construction a chimney provided with a weighted damper and means for operating the same, a heater having two main compartments and an auxiliary chamber in the lower compartment, a ventilator connected through the lower compartment to a funnel leading from the chimney at a point above the damper, and connected with the upper and lower compartments, a second funnel connected with the chimney at a point below the damper and passing through the upper compartment into the auxiliary chamber in the lower compartment, the heater, c , being still further provided with a hinged cover, c^7 , substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 23d day of June, A. D. 1894.

WILLIAM E. GALLAGHER.

Witnesses:

WILLIAM QUINBY,
C. F. BROWN.