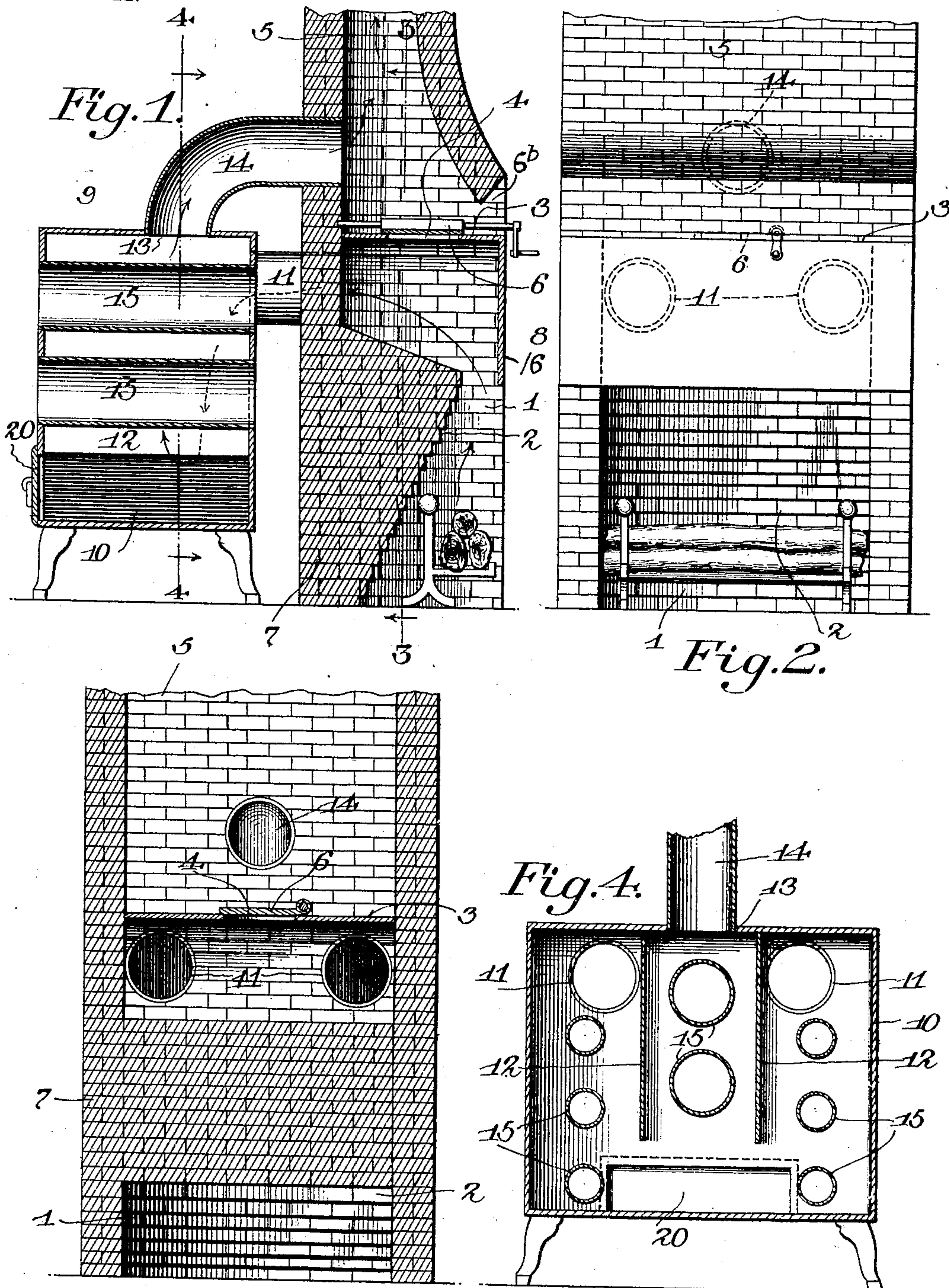


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PATENTED OCT. 4, 1904.

L. G. HORN.
HEATING APPARATUS.
APPLICATION FILED MAR. 19, 1904.

NO MODEL.



Witnesses
E. Stewart
Wm. Baggett

Louis G. Horn, Inventor.
by *C. A. Snowles*
Attorneys

UNITED STATES PATENT OFFICE.

LOUIS GILES HORN, OF MOCKSVILLE, NORTH CAROLINA.

HEATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 771,308, dated October 4, 1904.

Application filed March 19, 1904. Serial No. 198,988. (No model.)

To all whom it may concern:

Be it known that I, LOUIS GILES HORN, a citizen of the United States, residing at Mocksville, in the county of Davie and State of North Carolina, have invented a new and useful Heating Apparatus, of which the following is a specification.

The invention relates to heating apparatus adapted to be used in connection with open fireplaces; and it has for its object to provide simple and convenient means for heating an apartment adjacent to that in which the open fireplace is located in a very thorough, inexpensive, and efficient manner.

The invention therefore consists in certain improvements in the construction of said fireplace-heater and the various parts of the same, as will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical sectional view of a fireplace-heater constructed in accordance with the principles of the invention. Fig. 2 is a front elevation of the same. Fig. 3 is a sectional detail view taken on the line 3 3 in Fig. 1. Fig. 4 is a sectional detail view taken on the line 4 4 in Fig. 1.

Corresponding parts in the several figures are indicated by similar numerals of reference.

The open fireplace 1 is provided with the usual forwardly and upwardly inclined back wall 2, above which is the arch 3, having an opening 4, through which the products of combustion may pass into the chimney 5. The opening 4 may be closed by means of a damper 6. The throat of the chimney has an opening 6^b at the front side thereof disposed directly above the arch 3, said opening 6^b constituting an air-inlet whereby the combustion in the fireplace when the heater to be hereinafter described is in use will be accelerated. The fireplace 1 has in the drawings been illustrated as disposed adjacent to a partition-wall 7 between the apartments 8 and 9, in the former of which said fireplace is located. Suitably disposed in the apartment 9 is a heater-casing 10, which in the drawings has been illustrated as being in the shape of a rectangular box, although it is to be understood that a drum or casing of any desired shape may be

used. The heater-casing 10 has communication with the fireplace below the arch 3 through the medium of flues 11. Within the heater-casing are baffle-plates 12, extending downwardly from the top of said casing adjacent to the inner sides of the flue-openings 11. The top of the heating-casing has an opening 13 disposed between the baffle-plates 12, and said opening is connected, by means of a flue or elbow 14, with the chimney at a point above the arch 3. The heater-casing 10 is preferably provided with a plurality of transverse flues 15 for the passage of air, the temperature of which will be raised by the heat radiated by said flues. Valve means may be provided below the arch 3 to regulate the flue-openings 11 and to control the passage thereof of products of combustion. The front plate or deflector 16 extends in the usual manner from the front edge of the fire-arch downwardly to a point below and in front of the upper edge of the fireback 2.

The operation and advantages of this invention will be readily understood. When a fire is first started in the fireplace, the damper 6 is opened to permit the products of combustion to pass directly through the opening 4 in the arch and to the chimney. After the fire gains headway the damper 6 may be closed, and the products of combustion will then circulate through the flues 11 and through the heater-casing 10, in which they will first be compelled to pass downwardly under the baffle-plates and thence upwardly to the exit 13 and from thence through the elbow 14 to the chimney, the air in the compartment in which the heater-casing 10 is situated being heated not only by direct radiation from said casing, but also by passage through the flues 15, as will be readily understood. It is obvious that when the damper 6 is closed for the purpose of causing the products of combustion to pass from the heater-casing the draft will be considerably retarded. In order, then, to assist the draft, the opening 6^b in the front part of the throat of the chimney-flue is provided for the purpose of permitting air to enter in a somewhat heated state owing to its having to pass in contact with the deflector 16, thereby greatly assisting and intensifying

the draft in the chimney, and consequently accelerating the passage of products of combustion through the heater-casing.

I desire it to be understood that while I have in the foregoing described a simple and preferred form of embodiment of my invention I do not necessarily limit myself to the precise structural details therein exhibited, but reserve the right to any changes, alterations, and modifications which may be resorted to within the scope of the invention and without departing from the spirit or sacrificing the utility of the same.

In order to admit of accumulations of soot, ashes, and the like being removed from the heater-casing 10, the latter will be provided with a door at the lower end thereof, said door being designated 20. Said door should obviously be of such a nature that it may be tightly closed in order that the escape of products of combustion into the room or apartment where the heater-casing is located will be prevented. The heater-casing may also be supported upon legs, if desired, and it may be ornamented in any suitable way, so as to present the appearance of a heating-stove.

Having thus described my invention, I claim—

1. An open fireplace having an inclined fireback, an arch, a valved opening in said arch communicating with an exit-flue, and an air-inlet in the throat of the chimney-flue above the arch, in combination with a heater-casing disposed in an adjoining room, flues connecting said heater-casing with the back of the fireplace beneath the arch, and a flue connecting the top of the heater-casing with the exit-

flue, said heater-casing being provided with baffle-plates separating the inlet-flues from the exit-flue.

2. An open fireplace having a fireback, an arch and a deflector depending from the front edge of said arch, the arch being provided with a valved opening communicating with an exit-flue, and an air-inlet in the throat of the chimney-flue above the arch in combination with a heater-casing disposed in an adjacent compartment, spaced flues connecting said heater-casing with the fireplace between the arch and the fireback, and a flue connecting the top of said heater-casing with the exit-flue, said heater-casing being provided with downwardly-extending baffle-plates separating the exit-flue from the inlet-flues, and with transversely-disposed air-passages.

3. An open fireplace having an inclined fireback, a valved top arch communicating with an exit-flue, and an air-inlet in the throat of the flue above the arch in combination with a heater-casing in an adjacent apartment, flues connecting said heater-casing with the fireplace between the arch and the fireback, a flue connecting the top of said heater-casing with the exit-flue, and means for regulating the passage of products of combustion from the fireplace into the heater-casing.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

LOUIS GILES HORN.

Witnesses:

THOS. J. ANDERSON,
E. E. HUNT.