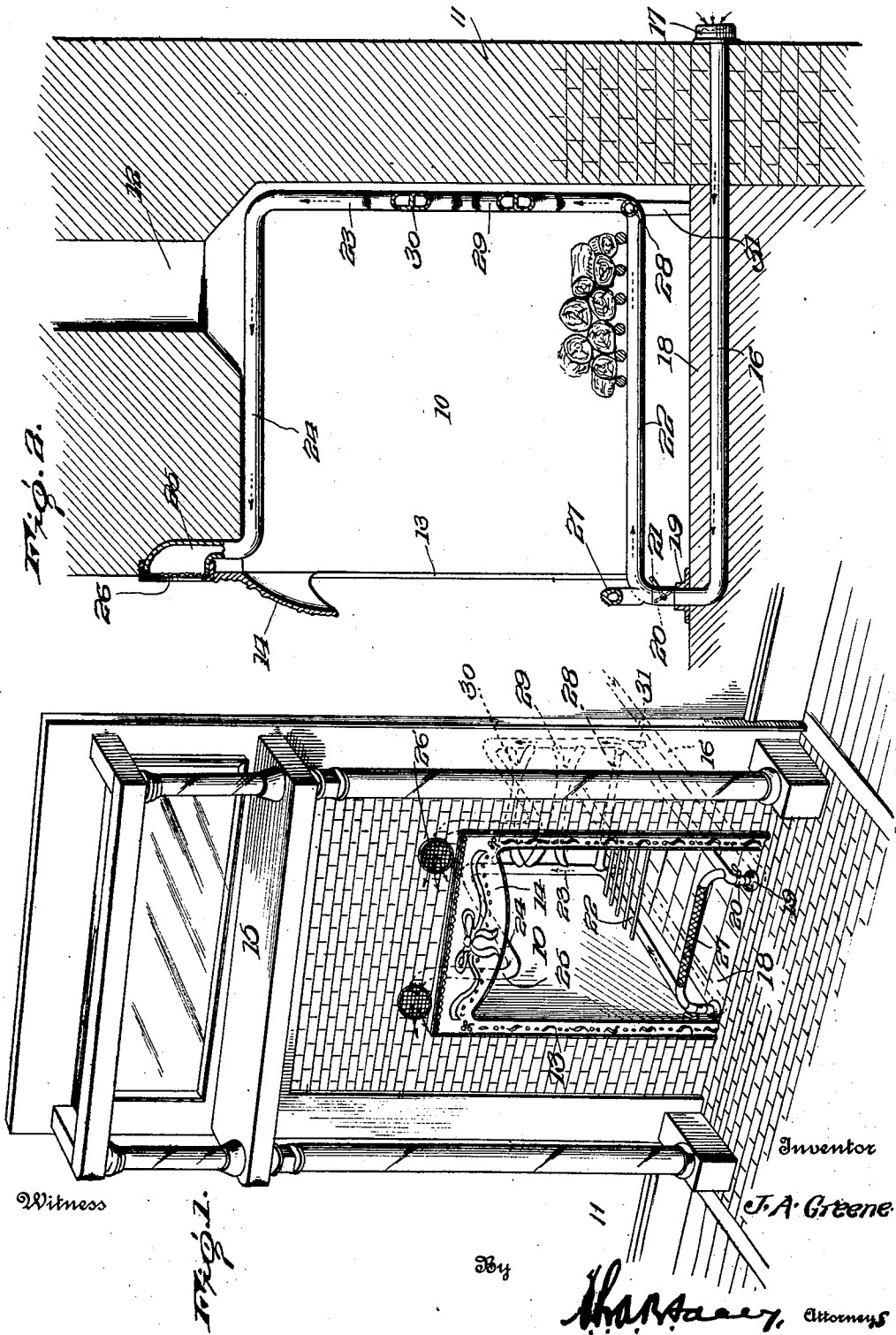


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APPLICATION FILED JUNE 22, 1917.

1,313,085.

Patented Aug. 12, 1919.
3 SHEETS—SHEET 1.

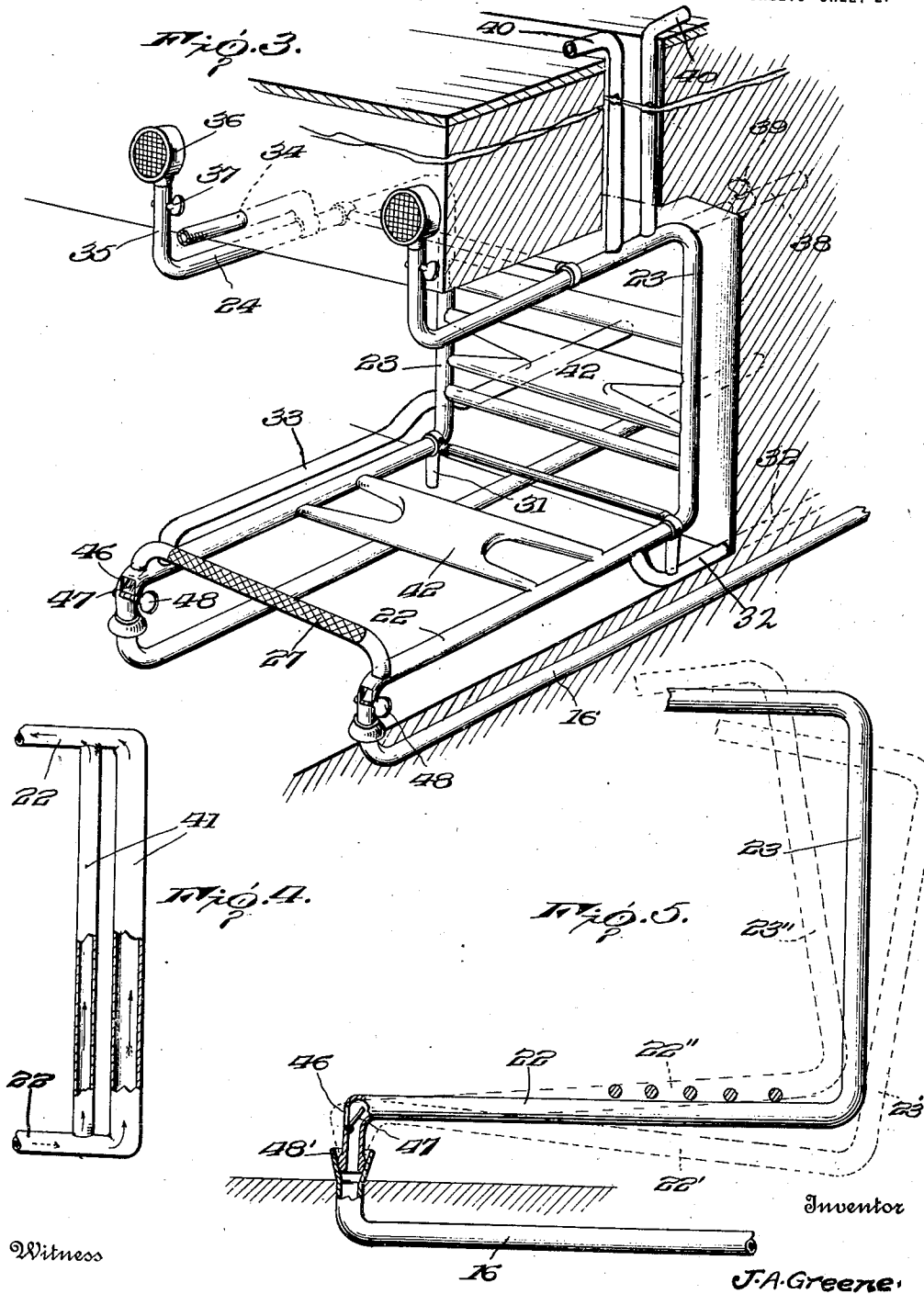


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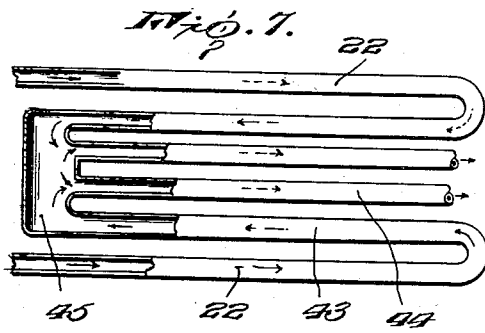
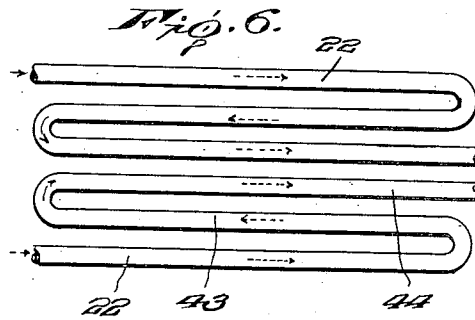
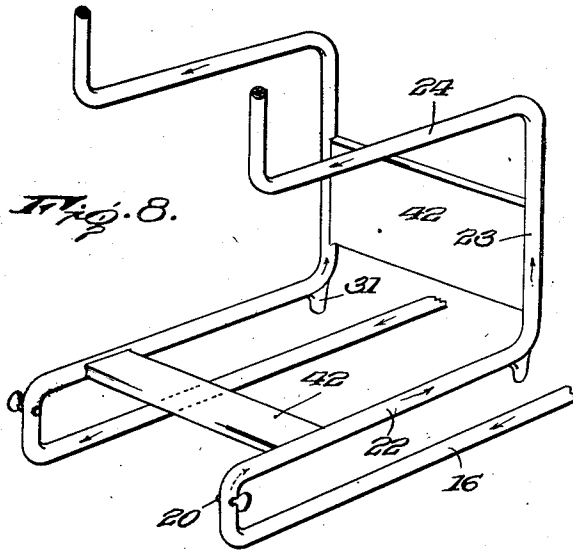
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Witness

Inventor
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By

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UNITED STATES PATENT OFFICE.

JOHN A. GREENE, OF ATASCADERO, CALIFORNIA.

COMBINED ANDIRONS, RADIATOR, AND VENTILATOR.

1,313,085.

Specification of Letters Patent.

Patented Aug. 12, 1919.

Application filed June 22, 1917. Serial No. 176,382.

To all whom it may concern:

Be it known that I, JOHN A. GREENE, a citizen of the United States, residing at Atascadero, in the county of San Luis Obispo and State of California, have invented certain new and useful Improvements in Combined Andirons, Radiators, and Ventilators, of which the following is a specification.

no communication with each other, although they are connected by webs.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

In order that a clear and accurate understanding of my invention, as applied to an open fireplace, may be had, I have illustrated it in connection with an open fireplace 10 built into the outer wall of a building, a stack 12 leading from this fireplace to any suitable form of chimney. Surrounding the front of the fireplace is the usual ornamental face plate 13, across the top of which is an inwardly and downwardly inclined deflecting hood 14 which prevents injury to the top of the fireplace and to any possible mantle 15 by deflecting flames, smoke and the like downwardly. All of this structure may be of conventional or any preferred form and a detailed description is believed to be unnecessary. Air supply conduits 16 lead beneath the floor below the side portions of the fireplace or from any desired direction and open at one end through the outer wall of the building, such ends being preferably closed by any suitable form of strainer 17 which will prevent the passage of dust. The opposite ends of these pipes, irrespective of the direction from which they lead, open through the bottom 18 of the fireplace and are preferably held in place by base rings 19 secured to the bottom of the fireplace and through which they pass. Butterfly valves 20 are interposed in the upwardly directed terminals of these pipes 16 and may be controlled by exterior valve levers 21 so that the amount of fresh air admitted through the pipes 16 may be governed at will.

Tubular andiron forming conduits or pipes 22 lead from the upper ends of the conduits 16 rearwardly in spaced relation to the bottom of the fireplace and preferably parallel to each other and at their rear ends communicate with vertical conduits or pipes 23 which form heating members in slightly spaced relation to the back wall of the fireplace and which in turn communicate with upper horizontally disposed conduits 24 which terminate in discharge heads 25 opening through the front of the fireplace above the face plate, above the mantle, or at one side, if the fireplace is built into the room, as desired. These discharge nozzles may be

10 One of the objects of my invention is to provide an attachment for open fireplaces in the form of a combined andiron and ventilator which also serves as a radiator, foot rest and kettle warmer.

15 A further object which I have in view is the arrangement of valves for controlling the admission of air to the tubular structure so that any desired proportion of fresh air from the outside of the building and air from the room being heated may be employed in the structure, and further valves which will control the point or points at which the air heated in the structure will be discharged.

20 With these and other objects in view, my invention will be more fully described, illustrated in the accompanying drawings, and then specifically pointed out in the claim which is attached to and forms a part of this application.

In the drawings:

Figure 1 is a perspective view of a conventional open fireplace, illustrating my invention applied therein;

35 Fig. 2 is a central vertical sectional view, showing substantially one-half of the tubular structure in elevation with parts of such structure broken away or shown in section to more clearly illustrate such details;

40 Fig. 3 is a perspective view of the auxiliary and ventilator system shown in Fig. 1 removed from the fireplace and also showing additional inlet and outlet ducts;

45 Fig. 4 is a fragmentary plan view, partially in section, showing how additional fire supporting and radiating sections may be interposed, if desired;

Fig. 5 is a side elevation, partially in section, of one of the andiron forming units, showing the air admission controlling valve;

Figs. 6 and 7 are plan views illustrating various possible modifications in the fire supporting portions of the structure;

55 Fig. 8 is a perspective view of a slightly modified form of combined andiron and ventilator in which the andiron sections have

provided with a foraminous closure 26, if preferred, in order to prevent passage of foreign matter into the conduits above described. A tubular conduit or pipe 27 connects the forward portions of the conduits 22 and is preferably arched upwardly somewhat to provide a convenient foot rest. A number of transverse conduits 28, 29 and 30 may connect the side conduits of the above described structure, the conduit 28 preferably connecting the conduits 22 at their junctures with the conduits 23, while the conduits 29 and 30 connect the vertically disposed conduits 23 and form heating members. Feet 31 may be provided to support the rear ends of the conduit portions 22 upon which the fire is built as is ordinarily the case with andirons.

All of the above described conduits or pipes may be formed of metallic piping, suitable earthen material or any other proper material and may be of any dimension and cross sectional shape. Furthermore, such conduits may be externally ornamented in any suitable manner, if desired.

Obviously, a fire built upon the andiron forming portions 22 of the supplemental heater and ventilator will set up a circulation in the vertical portions 23 so that the air in such portions will be heated and discharged through the nozzles or heads 25 to create a draft which will cause air to be drawn in through the conduits 16 and through the remainder of the system, being heated in its passage through the conduits 23 and 24. This heated air will circulate through the room and as it becomes cool will be drawn into the bottom of the fireplace so that, as a result, there will be a continuous circulation of fresh, but heated, air through the room.

In Fig. 3, I have shown air conduits 32 leading into the rear portions of the andiron forming conduits, air conduits 33 extending forwardly through the fireplace and into the andiron forming conduits 22 adjacent their forward ends, discharge pipes 34 leading directly from the portions 24 through the front of the fireplace without any nozzles or heads 25, and the pipes 24 led directly through the front of the fireplace and extended upwardly, as at 35, to carry discharge nozzles 36, passage of air through which may be controlled by butterfly valves 37. I also show pipes 38 leading from the upper ends of the vertical portions 23 of the structure through a wall into an adjacent room, passage of air through them being controlled by valves 39, and pipes 40 leading upwardly from the horizontal portions 24 and directed laterally to discharge into rooms on the floor or floors above.

Although I have described the conduit sections 22 as parallel to the bottom of the fireplace and the sections 23 as vertical, it

will be clear that these sections may be disposed at various inclinations. Furthermore, in place of the single connection 28 at the rear ends of the conduit sections 22, a number of transverse tubular connections 41 may be employed, as shown in Fig. 4, and these connections may be of various sizes, as there shown. Again, if desired, as shown in Fig. 8, there need be no communication between the side members of the system, including the sections 22, 23 and 24 and such members may be connected and braced by webs 42 which will serve as heating members. One of these webs, if desired, may be disposed in the position shown in Fig. 8, to provide a foot rest.

In Fig. 6, I have illustrated a somewhat modified form in which the tubular sections 22, after running rearwardly to the back of the fireplace, are brought horizontally forward, as shown at 43, and then rearward again, as shown at 44, to in effect form a grate, thereby creating an enlarged system of piping in which the air is heated so that a more rapid heating of air and, consequently, a more rapid circulation may be provided. A greatly similar structure to that shown in Fig. 6 is illustrated in Fig. 7, the sole exception being that the sections 43 and 44, at their forward ends, communicate with each other through a substantially rectangular chamber 45 which forms an efficient foot rest.

In place of the valves 20, shown in Figs. 1 and 2, which control merely the admission of fresh outside air, I may employ a valve structure, such as that shown in Figs. 3 and 5, in which the lower ends of the pipes or conduits 22 are formed with inlet openings 46 and in which a valve 47, controlled by a knob or valve lever 48, is mounted in each of the sections 22 so that they may be swung to completely close the openings 46 and, consequently, admit nothing but fresh outside air, to completely close the passage from the fresh air pipes 16 or to occupy any position between these extremes, as shown in Fig. 5, and to proportion the amount of fresh air and air from the room being drawn into the heating and ventilating structure. Furthermore, as shown in Fig. 5, the upper ends of the pipes 16 may be flared to provide funnel shaped heads 48' to detachably seat the lower ends of the pipe sections 22 so that the structure set up in the fireplace may be removed, when desired, without the necessity of removing the piping led beneath the floor.

Having thus described the invention, what is claimed as new is:

The combination with an open fireplace, of pipe sections lying in substantially parallel planes throughout their extent, each pipe section including a horizontal portion spaced above the bottom of the fireplace to provide andirons, a vertical portion dis-

posed adjacent the back wall of the fireplace, a forwardly projecting portion extending along the top wall of the fireplace and opening into the room above the fireplace, communicating portions connecting the sections and forming additional heating members, and means for supplying air to the forward ends of the portions of the sections disposed to provide andirons, said means including a conduit leading from outside of the building to each section, the conduit being formed with an opening adjacent its juncture with such section communicating with the room, and a valve disposed in each section movable to shut off communication from the conduit to the section, or from the room to the section, or to vary the proportion of air flowing from both sources to the section. 15

In testimony whereof I affix my signature.

JOHN A. GREENE. [L. S.]