2 Sheets Sheet 1

7367X

J. Atwater,

Fire Place.

Patented Jan. 9. 1833.

Fig 3

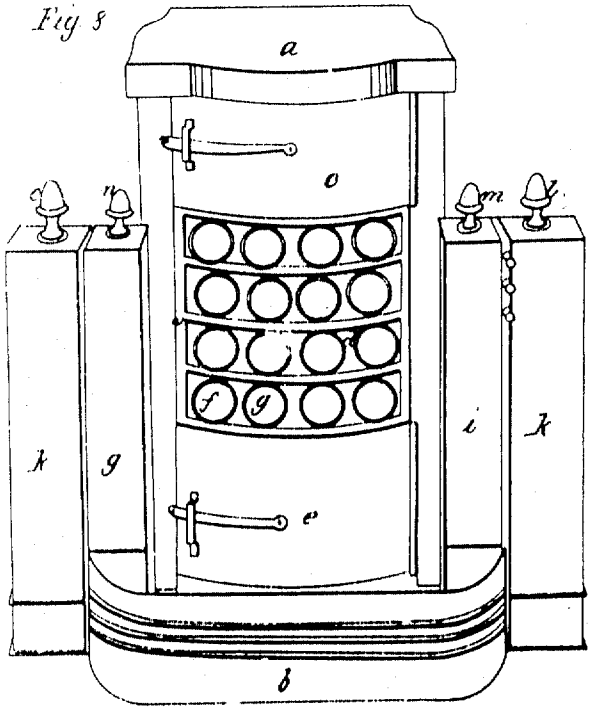


Fig. 3.

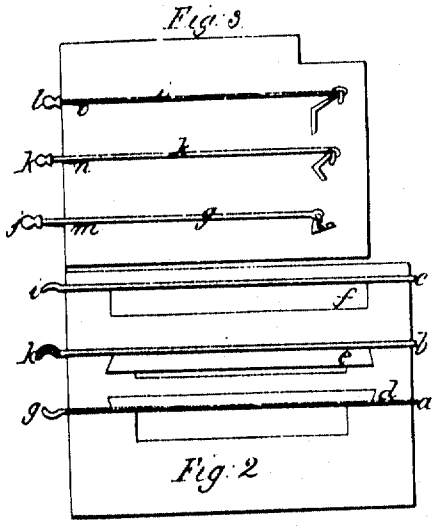


Fig. 2

Fig. 1

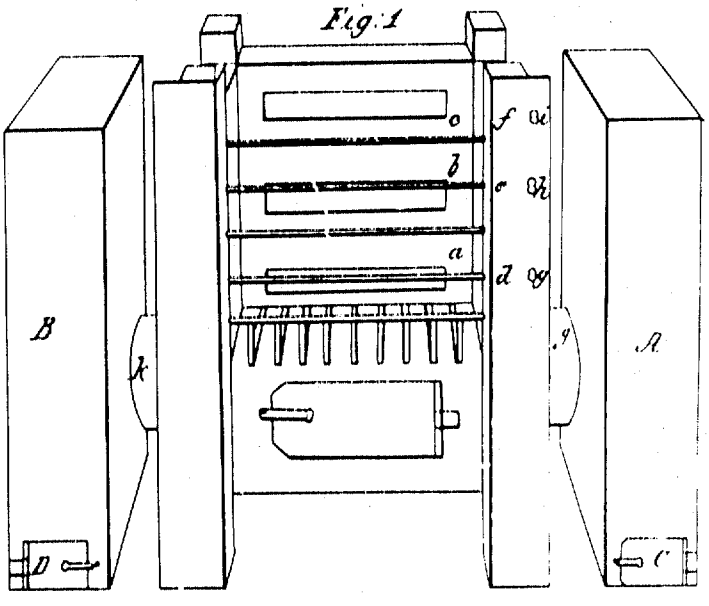
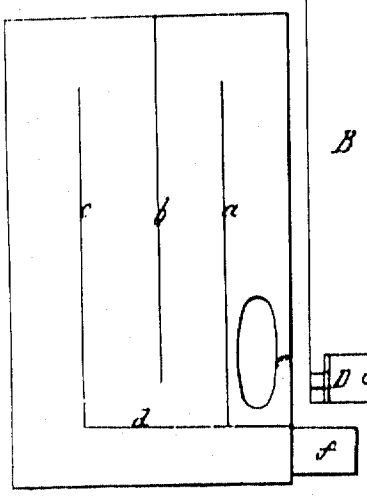


Fig. 4.



2 Sheets. Sheet 2.

J. Atwater,

7,367 X

Fire Place.

Patented Jan. 9. 1833

Fig. 5.

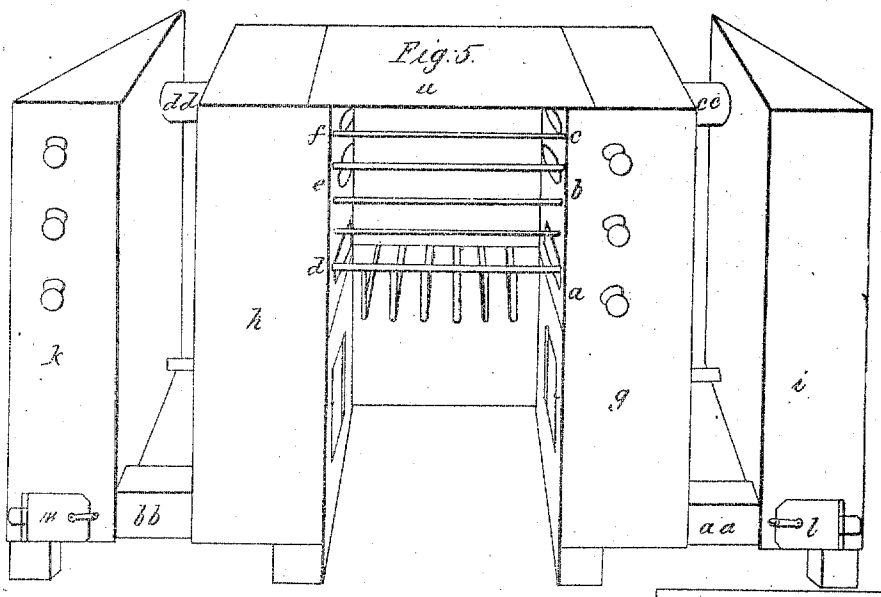


Fig. 6.

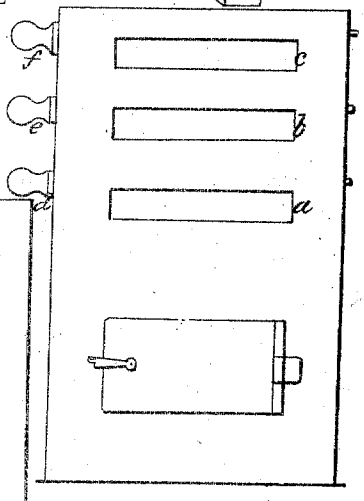


Fig. 7.

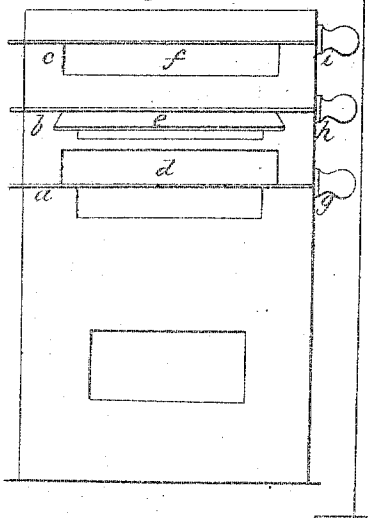
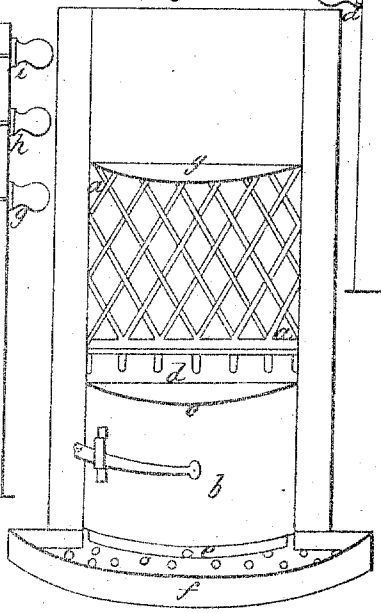


Fig. 9



7367X

Doc. 14

Jan. 9, 1833

227

James Atwater

Letters Patent

The Schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said Jamey Atwater himself of his improvement in the common Fire Grate.

To all people to whom these presents shall come greeting, Know ye that I James Atwater of New Haven in the County of New Haven State of Connecticut a Citizen of the United States have invented constructed & applied to use a new & useful improvement upon my patent improvement in the common Fire Grate which new & useful improvement I describe & specify in manner following (viz.) This improvement consists in making alterations in my patent improvement in the common fire grate for which I have obtained Letters Patent from the Government of the United States dated the 25th day of October one thousand eight hundred & thirty two & which is particularly described specified & set forth in the specification to said Letters Patent annexed and making part of the same as the same are on record in the office of the Secretary of State of the United States according to the act of Congress in such case provided to which Letters Patent & specification on record as aforesaid express reference is hereby made for a full description of said instrument or manufacture to which this present improvement is made by way of alteration or addition & which new & useful improvement addition or alteration for which this patent is solicited I proceed to describe & specify as follows Constructing my patent improved common Fire Grate according to my said specification in every respect except the following that is to say instead of the bars or bolts, slide rollers, balanced by weights & used to enlarge or diminish or alter or close the openings which make the draughts or flues of the patent improved fire grate aforesaid & which are placed at the back thereof make the back of the grate of solid materials such as soap stone or

7367x Jan. 9, 1833

or fire brick a rim with one or more openings in that part of the back which usually incloses the fuel which openings should slope upward & outward from the inside of the grate toward the chamber in the rear at about an angle of forty five degrees measured from the plane of the back of the grate & these openings should in their size correspond with and be proportioned to the size of the whole grate but should not in ordinary grates vary much from two inches in width & should be somewhat shorter than the width of the back of the grate measured from side to side & not more than three such openings will ordinarily be needed or found useful. And in order to regulate the draught of the grate at pleasure so as to extinguish the fire or cause it to burn with greater or less intensity, construct a valve or moveable cover or stopper for each of the openings of some solid material which will bear a high degree of heat such as iron or some other metal & large enough fully to cover the opening or orifice to which it is to be applied, which valve, cover or stopper should be attached firmly to a rod or shaft supported by proper bearings at or near each end thereof which bearings may be formed in the back or sides of the grate so that the rod or shaft & the valve cover or stopper attached thereto will readily turn together & thus the valve cover or stopper will open or close the openings or draughts already mentioned in the back part of the grate separately or together at pleasure. The rod or shaft must be of solid materials such as will bear a good degree of heat such as iron or some other hard metal. Each rod or shaft & the valve, cover or stopper, attached to it may be turned by any means that are convenient. A useful mode of doing it will be to form a small crank at one end of each rod or shaft & attach one end of a wire or small rod to the crank at the end of each rod or shaft before described & bring the other end to the front part of the Grate & place a knob or other convenient handle to this other end so that when the valve cover or stopper closes its corresponding opening by its own weight then by pulling the wire or small rod each shaft or rod with its valve cover or stopper will be made to revolve & open the place, orifice or opening to which it is fitted, or when more convenient a knob or handle may be placed

7367x Jan. 9, 1833

placed at one end of each rod or shaft to attach the valve cover or stopper is attached by this the same thing may be accomplished. The end of the wire or small rod when such is used is made to project some distance & a small notch is made in the wire or small rod at such a part that when the opening is enclosed by pulling forward the wire or small rod the notch may fall upon the bearing & hold the valve cover or stopper firmly in its position. And if the knob or handle is placed at the end of the rod or shaft then a small hole is made near the bearing of that end of the rod or shaft & a pin to placed as to extend from the knob or handle toward the bearing & when the rod or shaft with its valve cover or stopper is sufficiently turned to enclose the corresponding opening then the rod or shaft may be pushed endwise towards the grate so that the pin may enter the hole & hold the rod or shaft with its valve cover or stopper fast in its position when one that may be according as it is more or less turned. The accompanying sheets annexed & herein referred to & which make a part of this specification I describe as follows. Figure 1 is a front view of a patent improved common fire grate with new improvements in this entitlement set forth. made with three openings in the back marked a, b, c. & three knobs d, e, f. represented in their positions when the openings a, b, c. are not closed. when the openings a b c. are closed the knobs will be in the positions g, h, i,. The residue of the figure represents two side chambers or air cells A B added to the grate within & pipes for the purpose of diffusing heat to the surrounding air & other objects within the room C D for the purpose of removing ashes or dirt of any kind or of opening the damper of the flue. Figure 2. exhibits the rods or shafts a, b, c, with the valves covers or stoppers d, e, f. in various positions & the crank g, h, i,. Figure 3. shows the small rods or wires g, h, i, with the knobs f, h, C. at the one & the notches n, n, n, on the small rods or wires & these are represented in positions corresponding with the positions of the valves covers or stoppers as seen in figure 2. Figure 4. shows the interior of the side chambers or air cells A B by means of the divisions a, b, c, d, made the last on & another

7367x Jan. 9, 1833

cover at the opening a, which is connected with the chamber in the grate as seen in Figure 1, j, k, to pass upwards over the partition a & downwards under the partition b, & then upwards over the partition c, & then downwards & under the partition d, & so off into the flue of which it is to be connected with a flue & carry off the smoke & air. Figure 5 is a front view of an improved fire Grate with a double set of openings a, b c, d, e, f, placed in the sides of the grate & one at the back with two chambers. g, h, at the sides of the grate for each of the sets of openings & two air cells or chambers i, k, of little different in shape & without internal divisions receiving the hot air & smoke at aa, bb, & passing it off at cc, dd, & two doors in the same b, no. Figure 6 is an interior or front view of one side of this grate with its openings a, b, c. and the knobs d, e, f. Figure 7 is a back view of one side of this grate as it would be seen if its chamber was removed with the rods or shafts a, b, c, valves, covers, or stoppers d, e, f, & knobs g, h, i, in various positions. Figure 8 is a front view of an improved fire grate which differs from the grate represented in Figure 1. by the addition of a cover a, at the top & a pan & fender b, at the bottom & three slightly covered doors c, c, c, in front to close up the whole grate. The doors c & c, may be made of sheet iron or tin or such like material. The door d, is made of a frame of brass or polished iron or steel semi-cilindrical bars made flat on the back side & a lining or frame of tin or sheet iron made fast to the frame of the door which lining is perforated with the holes f, g, &c. which holes are filled with isinglass to admit of the fire being seen while the air is excluded from passing. The pilasters h, i, j, k, with the urns l, m, n, o, are added for ornament. Figure 9. is a view of the same grate with the doors c & d, as seen in Figure 8. removed in order to show the front of the grate formed of iron Lattice work a, a, and made flat or straight from side to side of the grate so that the curve of the door Figure 8. d. will keep the said door off from the front of the grate a, a, & so prevent the bars of the door d, Figure 8. from being so much tarnished by the heat. The lower door b. is made double convex in front &

7367x Jan. 9, 1833

affixed in the same as exhibited at the top of the same at c. d. & at the bottom is placed a slide or stopper e. which when pushed back closes the space between the front & back of the door at the bottom & when pulled forward opens the same. The use of this is to admit the air which is to feed the fire to pass upward thro' the door & out at the top between the front & back plates of the door at c. d. & thus pass thro' the fuel & ignite the same. The pan f. is seen in this figure which is held by the fender b. in Figure 8. The grate in Figure 6. is represented with a top w. & in Figure 8. with a top a & the grate in Figure 1 may also be used with a top & in Figure 5 & in Figure 1 with a pan or bottom when needed. These drawings exhibit the patent improved common fire grate as altered & claimed in this patent in some of the various positions in which the same may be conveniently used according to the fancy or taste of the owner & so as to correspond with the furniture of the apartment in which they are placed. In Figure g. at g. is seen a piece of sheet iron or other solid substance which in shape is a segment of a circle & is use to prevent the air which comes in from below thro' the door b. otherwise from ascending any higher than this part of the grate & causes the air to pass thro' the fuel as before mentioned. (Whether door c. as seen in Fig. 8 is closed or not) the grate is filled with fuel.

I claim as my improvement that in the place of a slide or slides grate or grates used in my patent improved common fire grate to regulate the draught of the same. I have substituted as many valves covers or stoppers as there may be openings in the back or sides of the grate by means of which the draught is regulated at pleasure or entirely closed in the manner set forth in this specification & all the benefits which are set forth in my patent for my improved common fire grate dated 25th October 1832. & resulting from the use of slides or grates are thereby obtained in a more convenient manner & this is all I claim in this patent. In testimony that the above is a true specification of my said improvement as above described I have hereunto set my hand the 9th day of January one thousand eight hundred

7367x

Jan. 9, 1833

