No. 785,401. PATENTED MAR. 21, 1905.

G. W. BUCK.

FIREPLACE HEATER.

APPLICATION FILED FEB. 17, 1904.

2 SHEETS—SHEET 1.

FIG. 1.

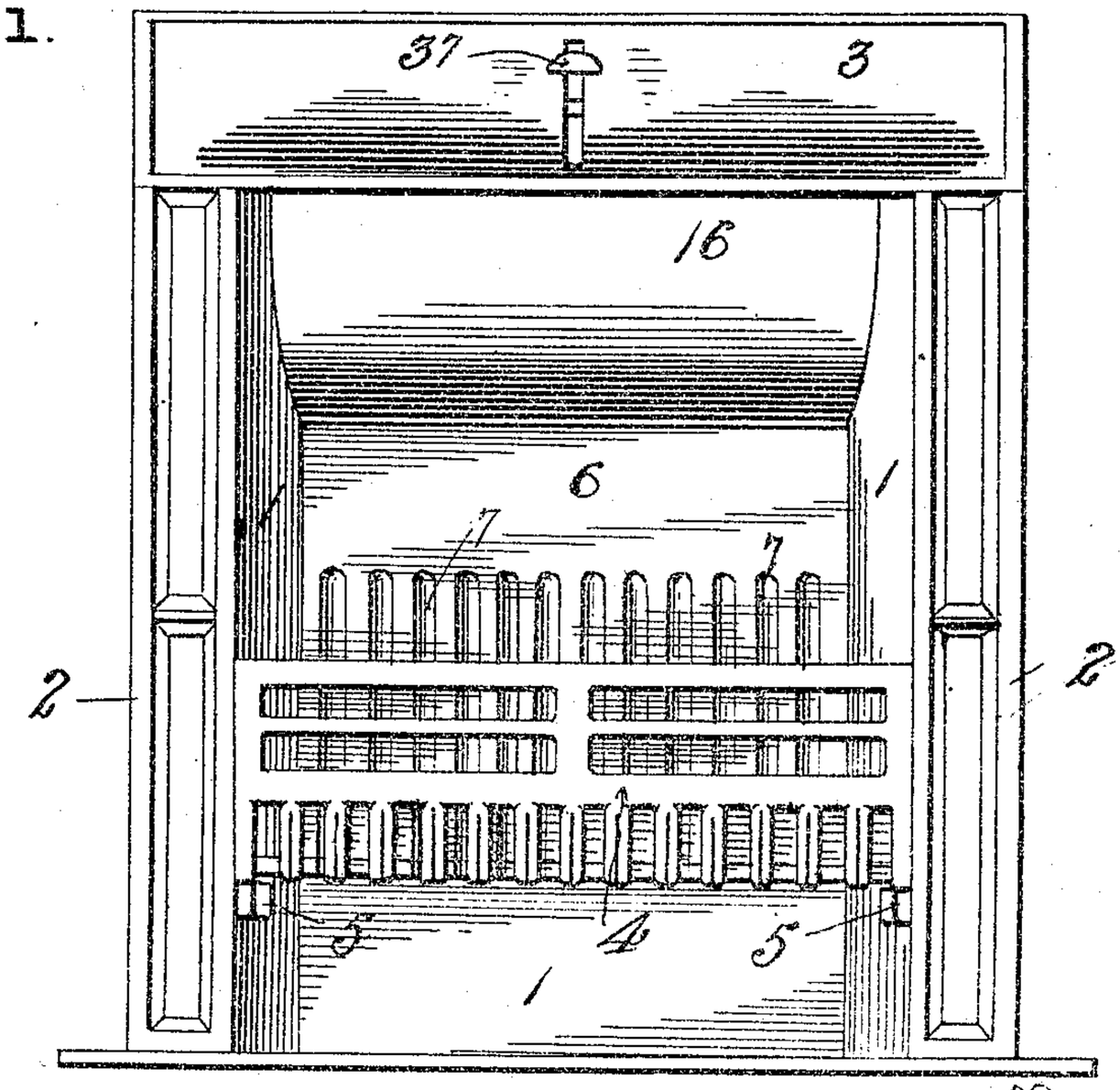


FIG. 2.

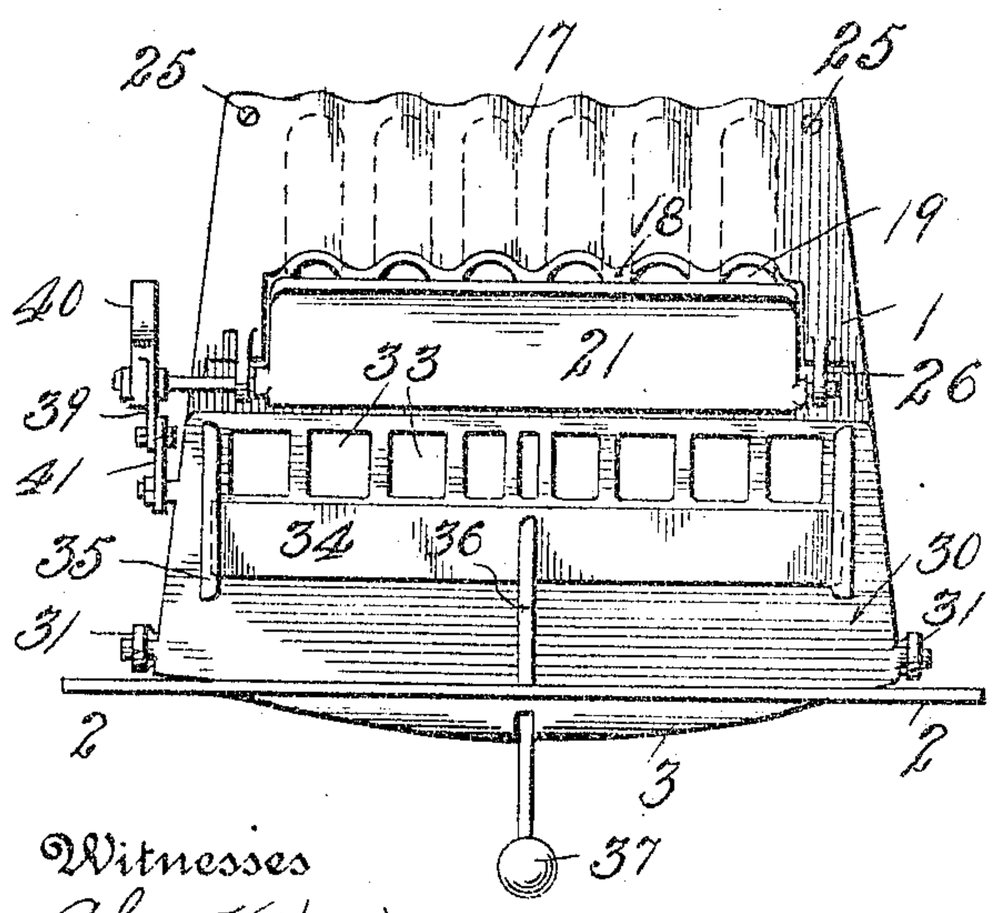
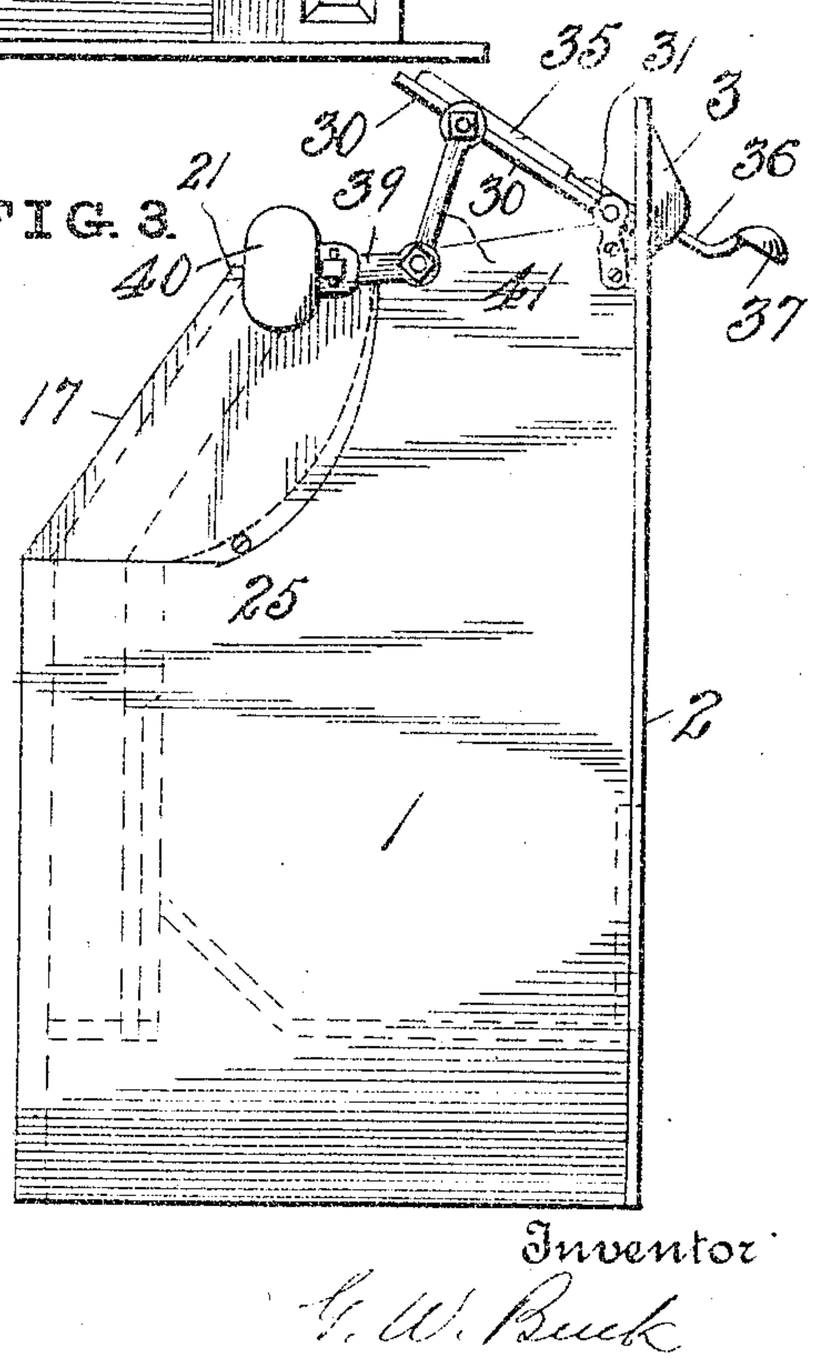


FIG. 3.



Witnesses
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2 SHEETS—SHEET 2.

FIG. 4.

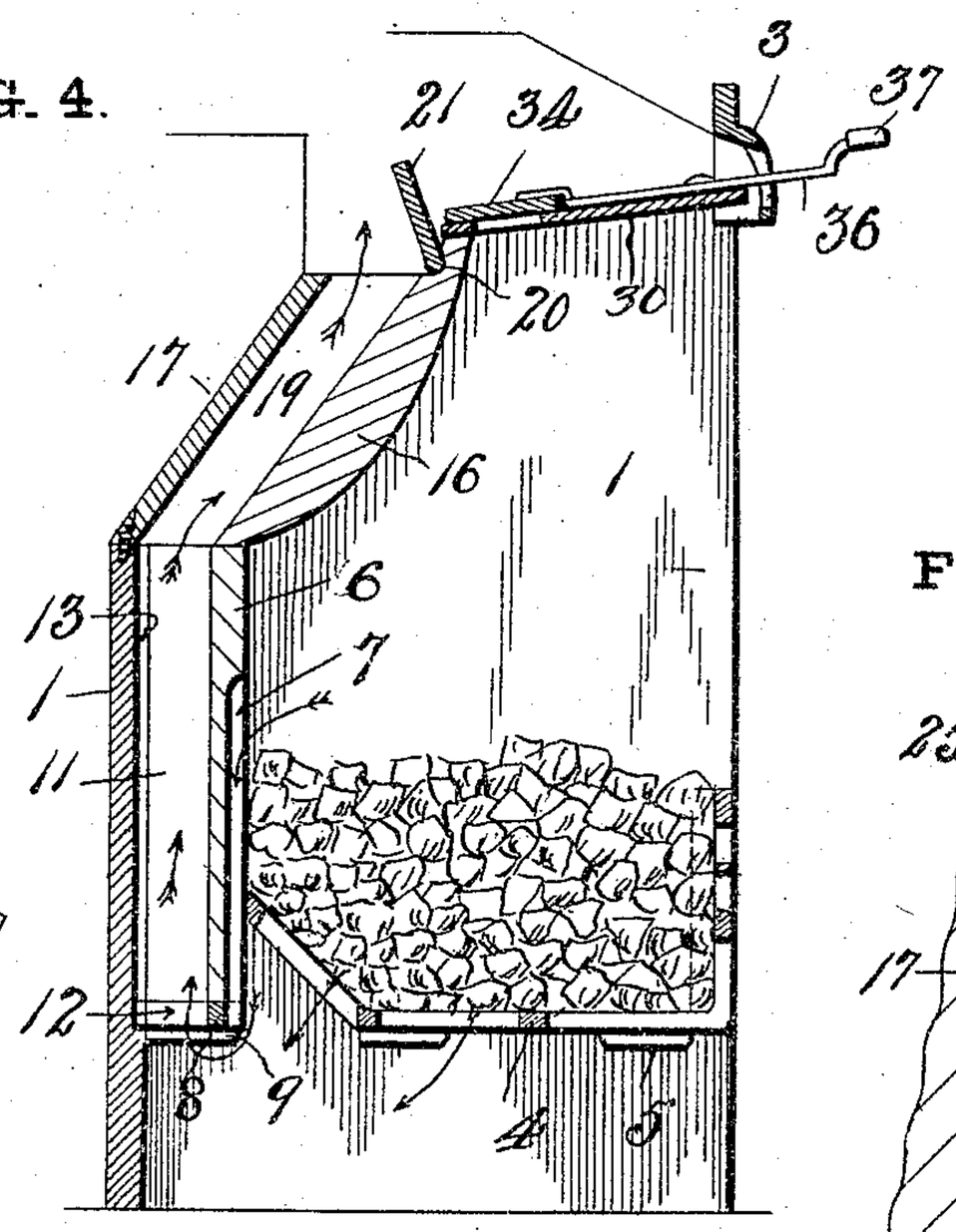


FIG. 5.

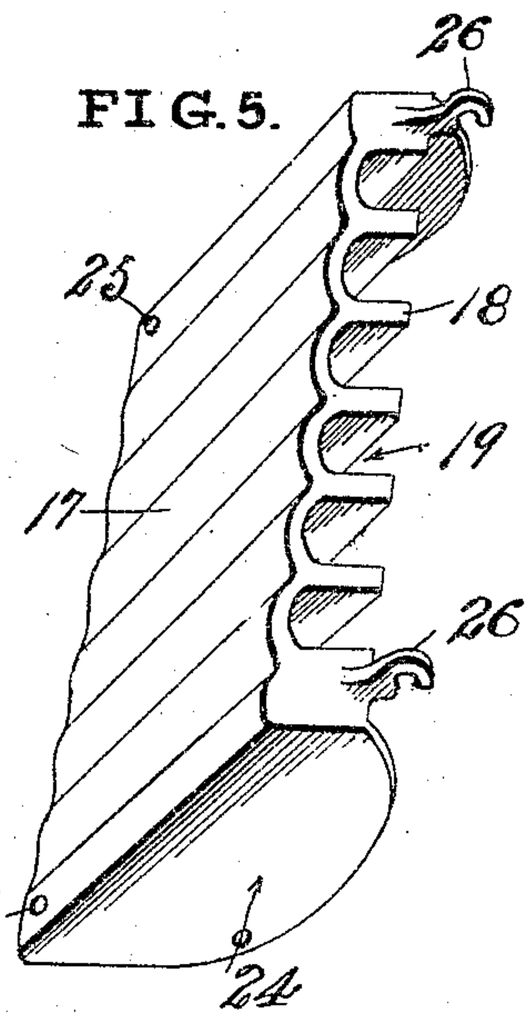


FIG. 9.

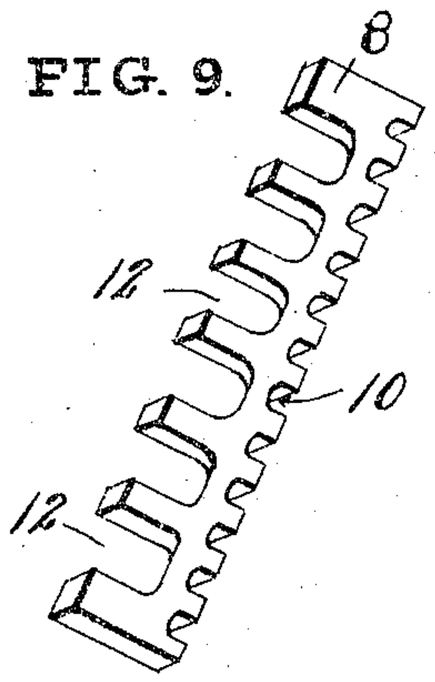


FIG. 6.

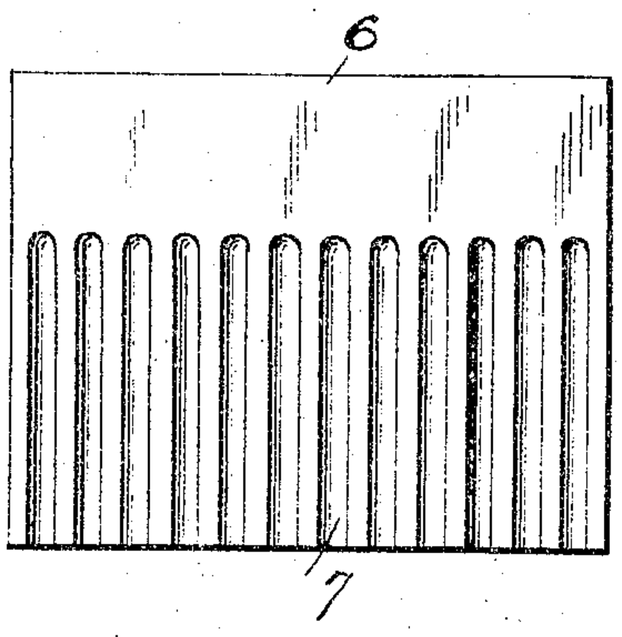


FIG. 7.

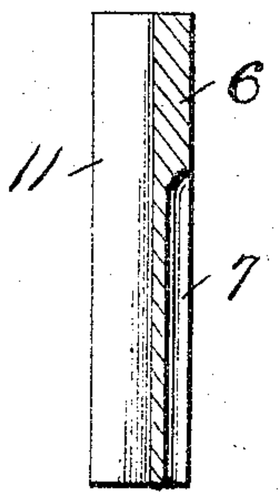
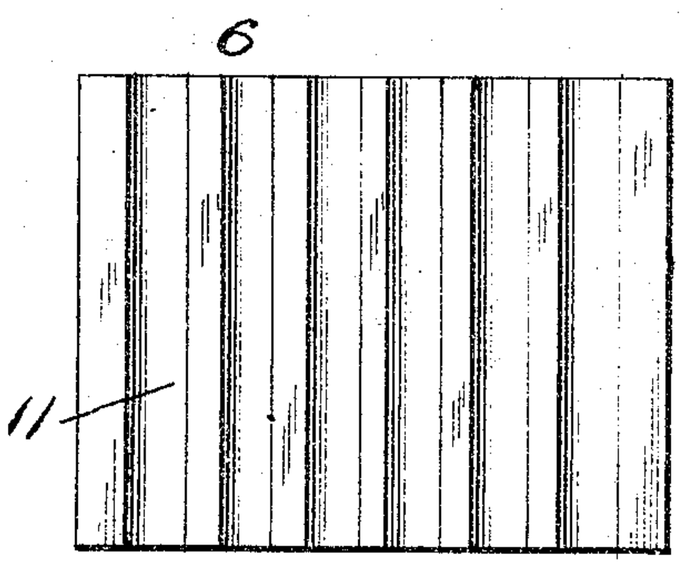


FIG. 8.



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No. 785,401. Patented March 21, 1905.

UNITED STATES PATENT OFFICE.

GEORGE W. BUCK, OF LOUISVILLE, KENTUCKY.

FIREPLACE-HEATER.

SPECIFICATION forming part of Letters Patent No. 785,401, dated March 21, 1905.

Application filed February 17, 1904. Serial No. 194,088.

To all whom it may concern:

Be it known that I, GEORGE W. BUCK, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Fireplace-Heaters, of which the following is a specification.

This invention relates to open-fireplace heaters.

The object of the invention is to improve the construction of open-fireplace heaters by making a movable mainly metallic structure adapted to enter the brickwork space as usually prepared, which structure contains within itself the draft-flues, dampers, grate, &c., substantially as hereinafter described and claimed.

Figure 1 is a front elevation of the improved fireplace-heater. Fig. 2 is a top plan of the fireplace-heater, and Fig. 3 is an end elevation thereof. Fig. 4 is a vertical central section looking in the same direction as in Fig. 3. Fig. 5 is a perspective view of the back flue-cover removed. Fig. 6 is a front view, Fig. 7 a vertical section, and Fig. 8 a rear view, of the fireback. Fig. 9 is a perspective view of the fireback-support.

Let the numeral 1 indicate the body or shell of the heater, which is of metal and may be either a single casting or may be made up of separate plates, as is common in stove construction. This body or shell is open at the front and at the top, and the face-pieces 2 2 may be ornamented in any suitable way. The cap-piece 3 joins these face-pieces, and when the heater is set this cap is usually under the mantel, the face-pieces 2 extending in front of the masonry of the fireplace proper.

The body or shell preferably flares toward the front, and a grate 4, of any usual or convenient construction, is applied to the body and supported on lugs 5 5 or in any other usual and convenient way.

Directly back of the grating and in front of the back plate of the shell I place the fireback 6. This fireback is a very important part of the invention. It is preferably of fire-brick and is so constructed as to be entered from the flaring front of the body and can be readily replaced by removing the grate 4.

The fireback 6 has a number of vertical grooves 7 in its face. These grooves 7 furnish downdraft-passages in rear of the grate, as clearly shown in Fig. 4.

The fireback 6 rests on a bar 8, which rests on lugs 9 in the shell or body or is otherwise suitably supported.

The bar 8 has notches 10 in its front face, which register with the grooves 7 in the face of the fireback.

The rear face of the fireback 6 has vertical grooves 11, which are preferably less in number and greater in depth than the grooves 7 in the front face of said fireback. The bar 8 has notches 12, corresponding with the grooves 11 of the fireback, so that when the fireback rests on bar 8 the grooves in each face of said fireback are continued through the supporting-bar, which thus becomes a protector for the corners of the projections between the grooves at front and rear of said fireback.

The back plate of casing 1 is preferably grooved or corrugated, as at 13, to correspond with the grooves in the fireback, so that the fireback 6 and the back plate of the shell or casing have between them a series of small flues composed of the grooves 11 in the fireback, continued through notches in the supporting-bar, and the grooves 13 in the back plate of the shell proper.

Above the fireback 6 and within the shell or body 1 the deflector 16 is placed. This deflector is preferably of fire-brick and extends entirely across the shell 1, the ends of the deflector resting on the top of the side plates of the shell. The front of the deflector is preferably convex, as shown, and the top of shell 1 is formed to correspond. The deflector thus occupies an oblique position on the rear upper portion of the shell.

The flue-plate 17 is a metal piece, preferably cast, and having ribs 18 extending from the front face. These ribs rest on the inclined rear face of the deflector 16 and form (with the rear side of the deflector) flues or passages 19, which are continuations of the flues or passages 11 in the fireback.

In the rear face of the deflector there is a groove 20, which forms a rest or fulcrum for the rear damper 21. Said damper 21 can be turned down over the top of all the flues or passages 19, thus cutting off the draft, which is a downdraft from the fire, through such flues or passages.

Assuming the damper 21 to be open, as in Fig. 4, it will be seen that smoke and the gaseous products of combustion may pass down through the grate and also down the grooves 7 and passing under bar 8 may turn up the grooves or flues 12 and continuing through passages 19 may escape up the chimney in the direction of the arrows, Fig. 4. The same passage serves as a passage for ventilation from below the grate; but when damper 21 is closed this downdraft and ventilation is stopped.

I find that by breaking up the space between the fireback and the back plate of the shell or body into a number of small passages a more efficient draft may be obtained than by a single large passage in the same location, and the structure is stronger, as the parts mutually support each other.

The flue-plate 17 is preferably constructed with wings 24, which wings overlap the ends of deflector 16 and hold the same in place. Flue-plate 17 can be held to the shell by suitable screws or bolts, as 25, or in other usual manner for securing stove parts together.

The damper 21 is held down by lugs 26, which project from the flue-plate in the proper position.

The top damper 30 is pivoted in lugs 31 on the body and extends across the open top of the shell or body 1. This damper has openings 33, which may be closed by slide 34, held on top of the damper by lugs 35 thereon.

A handle-rod 36 extends from slide 34 through an opening in the cap-piece 3 of the heater, and a handle 37 thereon permits the operator to slide the piece 34 backward or forward, thus opening or closing the holes 33.

The damper 21 has a lever-arm 39, which is provided with a counterweight 40. Arm 39 is connected by a pivoted link 41 to a stud on damper 30, so that when damper 21 is closed down the damper 30 will be lifted at its rear edge, the counterweight 40 serving to hold the dampers in any adjusted position when assisted by the friction of the parts. The handle 37 can therefore be manipulated to lift damper 30 at its rear edge and close down damper 21 simultaneously by a downward pressure on said handle or to reverse the operation by an upward pressure. It is desirable that both dampers 21 and 30 shall not be closed at the same time, as gas developed in the stove must then escape into the room; but when damper 21 is open and damper 30 closed the same effect as of lifting damper 30 may be caused by sliding the slide 34 forward, thus opening the upper or direct draft and the rear or down draft at the same time.

Except as pointed out in the claims I do not limit myself to precise forms or constructions, as the general features of this heater are applicable to many forms of fireplace-heaters.

What I claim is—

1. In a fireplace-heater, a metallic body in form of an open box, the back plate of said body having grooves extending in a generally vertical direction, a grate in said body, a fireback in rear of said grate and in front of said back plate, said fireback having vertical grooves in its front and rear faces, a bar extending across the body beneath said back plate and having grooves in its front and rear faces, and an inclined deflector above the fireback, all combined.

2. In a fireplace-heater, the body or shell, a grate therein, a fireback of fire-brick in rear of the grate and provided with a series of passages in its rear face which rests against the back plate of the shell, and a metallic supporting-bar for said fireback having notches corresponding to the grooves in the fireback, all combined.

3. In a fireplace-heater, the shell or body, a fireback therein having vertical passages in its rear face next to the back plate of the shell, a deflector-plate above said fireback, and a flue-plate having grooves in its face and forming, with the deflector, flues which are continuations of the passages in the fireback.

4. The combination with the body or shell, the fireback, and the inclined deflector above said fireback, of a ribbed flue-plate resting on said deflector, and having wings extending over the ends of the deflector.

5. The combination with the body or shell and the inclined deflector thereon, of the flue-plate having ribs on its front face and forming with the deflector a series of flues, a damper over said flues, and a damper in front of the deflector.

6. The combination with the body or shell, the inclined deflector, and the flue-plate having grooves and forming with the deflector a series of flues, of a damper having its fulcrum on the deflector and extending over said flues, a second damper hinged at the front of the shell and extending back to the deflector, and a link connecting said dampers so that one lifts as the other falls.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE W. BUCK.

Witnesses:
A. M. PARKINS,
W. A. BARTLETT.