No. 682,826. Patented Sept. 17, 1901.

G. W. BUCK.

OPEN FIREPLACE.

(Application filed Mar. 19, 1900.)

(No Model.)

Fig. 1.

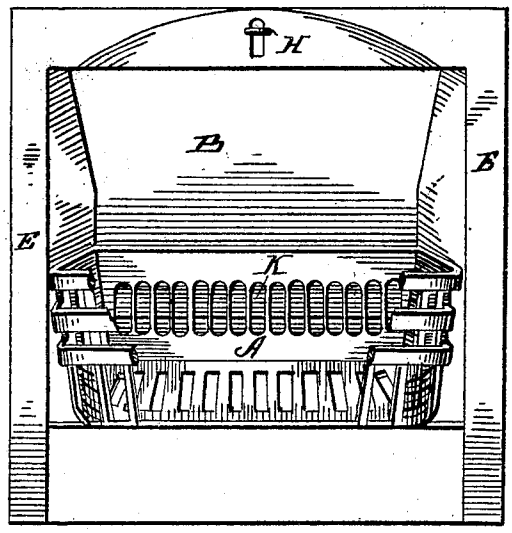


Fig. 3.

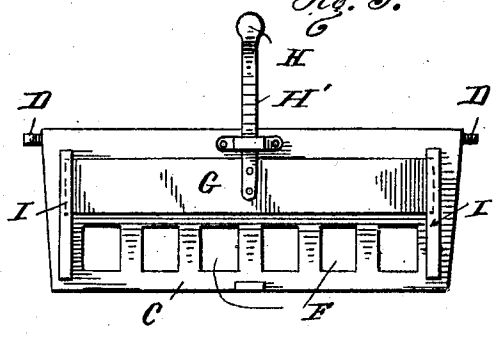


Fig. 2.

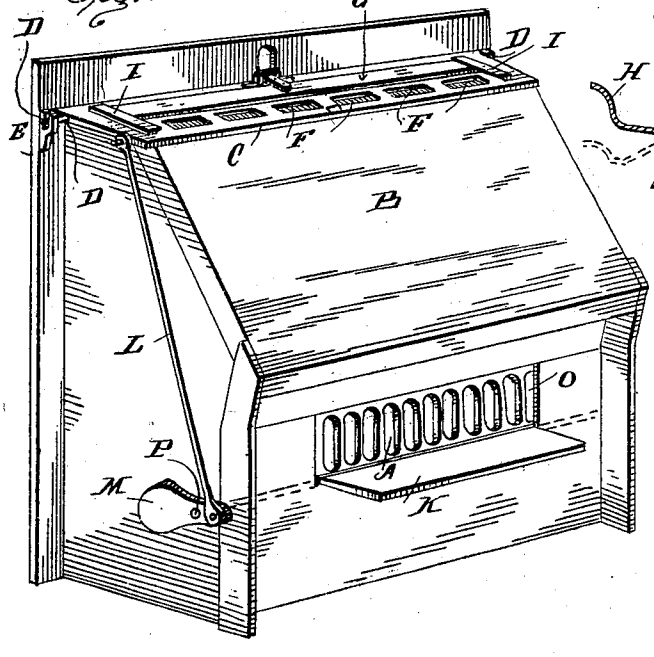
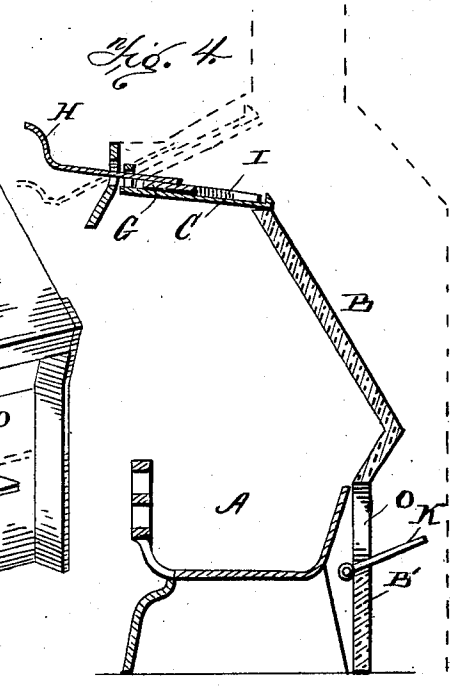


Fig. 4.



WITNESSES

Chas. K. Davies.

R. G. Davies.

INVENTOR

G. W. Buck

By W. A. Bartlett

Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE W. BUCK, OF LOUISVILLE, KENTUCKY.

OPEN FIREPLACE.

SPECIFICATION forming part of Letters Patent No. 682,826, dated September 17, 1901.

Application filed March 19, 1900. Serial No. 9,313. (No model.)

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 Open Fireplaces, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to an improved open fireplace.

The object of the invention is to produce a compound damper which will control the combustion of fuel in an open fireplace-grate and which may be operated in various ways by a single handle or lever.

Figure 1 is a front elevation of a fireplace with grate partly broken away to show the general construction of the device. Fig. 2 is a rear perspective of the grate-holder or "fireplace," so called. Fig. 3 is a plan of the top damper. Fig. 4 is a section of the fireplace and grate, the approximate position of the flue being indicated in dotted lines.

A indicates the basket-grate of a fireplace, which basket may be of usual construction, but will have fair access of air to the fuel at the rear part thereof through openings in the basket.

B indicates the back of the "fireplace," so called. This is generally of tile and is suitably supported within the chimney either on the basket or otherwise.

B′ is the back base-plate, usually of metal.

C indicates the top plate of the fireplace. In this case said plate C is pivoted at D D, near the front plate or mantel-facing E of the fireplace, so that the plate may serve as a damper and may swing up to open position, as indicated at dotted lines, Fig. 4, thus fully opening the smoke-flue, or may be closed down to close said flue, as indicated in full lines, same figure. The plate C has large openings F near its edge. A second plate G slides on top of plate F and may be moved out and in by handle H, so as to cover the openings F in whole or in part. Plate G is guided by undercut or dovetail guides I I. The handle H has a scale or index H′ thereon, so that the projection of the handle will show the position of the slide-plate G, and its inclination will show the position of damper C, and therefore of damper K. It will thus appear that the top plate C may be swung either up or down by means of handle H, and by the same handle the openings F may be either closed or left open, as plate G is slid farther out or in. Thus a very complete control of the upper damper is had by the construction described. The top plate C is connected to the lower damper K by means of draw-rod L, connected to a pin or other device at one end of plate C and extending to a crank-arm M, connected to the pivot P of said damper K. The crank-arm M may be weighted, as shown by the counterweight projection on the side of the damper-pivot remote from the damper, so as to maintain the dampers in any position to which they may be adjusted, or other usual means may be used to retain the dampers in adjusted position. The damper K swings up to close opening O in base-plate B′ at the time that top plate C is raised to open the upper flue. When plate C is turned down, damper K will be open to admit air to the lower part of basket A; but when plate C is turned down its openings F may be more or less open or closed by the sliding of the damper-plate G. Thus both upper and lower dampers may be fully controlled by movement of handle H. It will thus be seen that the inclined back plate extends upward in inclined direction from about the level of the surface of a body of coal on the grate and terminates nearly over the middle of the grate, thus deflecting the updraft well forward. The top plate, hinged at the front, can be lifted to make a large and direct opening to the smoke-flue, directly in front of said back plate and over the fire-bed. The opening below the back plate being about on a level with the bed of coals in the grate when the grate is filled causes the gases which pass through such damper-opening to pass downwardly through the coal, thence behind the back plate, and so up the flue.

In most fireplaces much heat goes up the chimney. The waste of such heat can be quite well controlled by the above-described device.

The amount of air admitted to the fire can be very perfectly regulated by this device, and the conditions of different chimneys and flues can be considered in changing the dam-

per positions. Thus it is unnecessary to resort to trouble and expense in adapting the fireplace to the flue or stack, as is often the case.

When a fire is first started in this grate, the upper damper should be fully opened and the lower damper closed. After the fire is well burning the upper damper can be closed in whole or in part, and the lower damper will conform in position to the requirements of the situation, as has been explained. Thus a downdraft is created, and the heat is radiated into the room, with little loss by escape up the flue. Gas-escape may be prevented by moving plate G.

It will be observed that the damper K is below the top of the grate or basket and that the draft to such damper is in the main downward through the bed of coals and thence upward in rear of the fireplace proper. This induces a different kind of a draft from that in which two dampers are arranged above the coals in the basket, as has been done before.

What I claim is—

1. In an open-grate fireplace, the combination of the basket for coals, an inclined back plate terminating at its front above said basket, a pivoted top plate provided with openings and a slide-piece guided and held on said top plate, by which the openings may be closed and the damper swung, a damper below the back plate connected to the top plate by a draw-rod, so as to close when the top plate is lifted, and a handle connected to said slide-piece and extending to the front of the fireplace proper, whereby all the dampers may be adjusted by the movement of a single handle, substantially as described.

2. In an open fireplace having a basket-grate for coals, an inclined plate extending upward and forward from the rear surface of said basket, a top plate pivoted near the mantel and closing down on said inclined plate to serve as a damper, openings in said top plate and a sliding piece thereon to close said openings, a swinging damper closing into an opening below the top of the grate and a counterweight connected thereto, a draw-rod connecting the top plate and the lower damper so as to close the one as the other opens, and a handle connected to the slide on the top plate and extending to the front of the mantel, so that all the dampers may be operated by one handle, substantially as described.

3. An open fireplace having a basket, an inclined back plate extending upward and forward from the top thereof, a top plate pivoted near the mantel and closing down onto said inclined plate, openings in said top plate and a slide held thereon by guide-pieces so as to slide over such openings, a handle extending outside the mantel from said slide and provided with a graduated index, and a damper in rear of and below the top of the basket, connected to the top plate by a draw-rod, all the specified elements combined, substantially as described.

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

GEORGE W. BUCK.

Witnesses:
CHAS. P. BEECHER,
GEORGE YOUNG, Jr.