(No Model.)

A. GLUD.

FUEL SAVING APPLIANCE FOR GRATES.

No. 538,511. Patented Apr. 30, 1895.

Fig. 1.

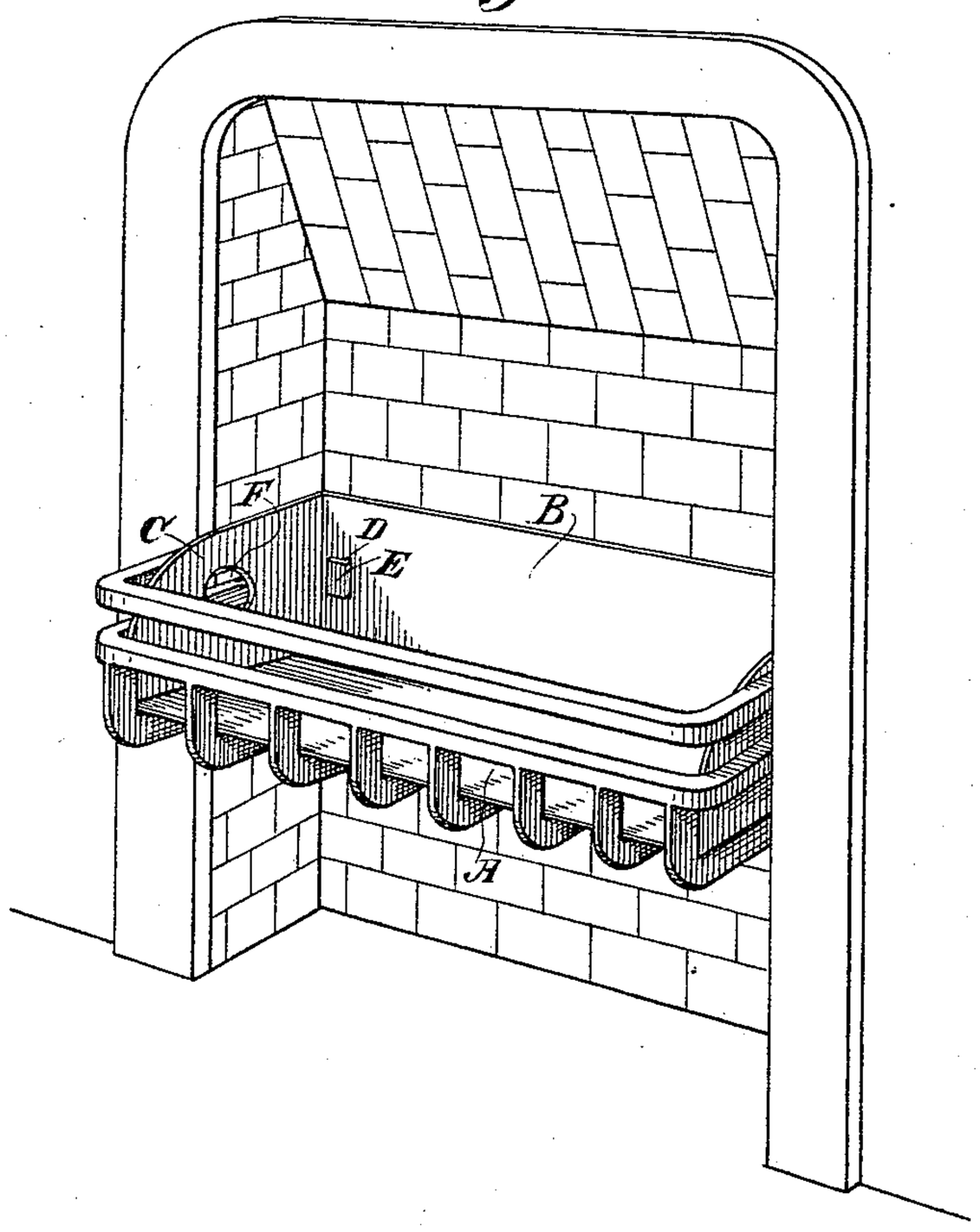
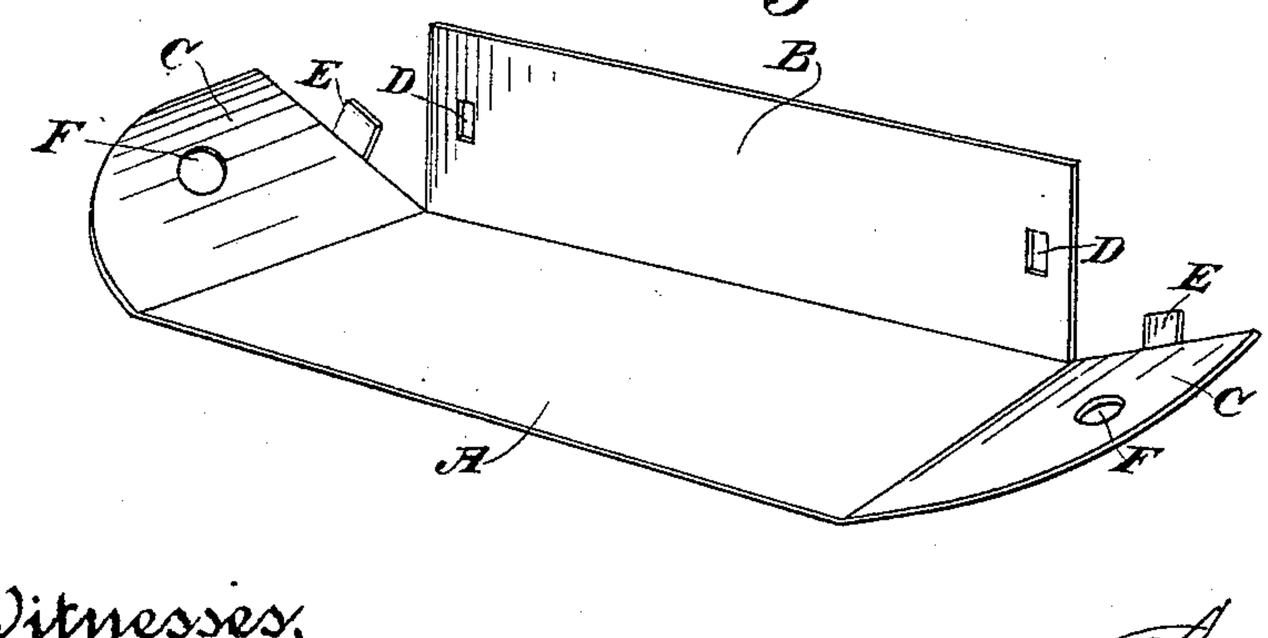


Fig. 2.



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UNITED STATES PATENT OFFICE.

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FUEL-SAVING APPLIANCE FOR GRATES.

SPECIFICATION forming part of Letters Patent No. 538,511, dated April 30, 1895.

Application filed February 12, 1895. Serial No. 538,097. (No model.)

To all whom it may concern:

Be it known that I, ANNIE GLUD, a citizen of the United States, residing in Oakland, county of Alameda, State of California, have invented an Improvement in Fuel-Saving Appliances for Grates; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a fuel saving appliance for grates.

It consists essentially of a peculiarly constructed box having a closed bottom, back, and ends, with an open segmental front adapted to be fitted into a fire-place grate; and in certain details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of my device, showing it in place within the grate. Fig. 2 is a view showing the construction of the appliance.

The object of my appliance is to provide a device which when fitted into a grate so changes the currents of the draft with relation to the fuel, as to make a perfect combustion not only of the body of the fuel but of the smoke and gases which ordinarily escape therefrom, to make a more constant fire without attention, and to increase the duration of the fire.

In carrying out my invention I make a box having a tight bottom A, a tight back B and tight curved or segmental ends C. The bottom of the box is of such area as to allow it to sit within the fire-place grate, resting upon the bottom thereof. In the construction of this box, for economy and simplicity, I prefer to cut it out of a single sheet of metal as shown in Fig. 2.

The back has perforations D made in it near each end. In the present case, these perforations are shown in the form of vertically elongated slits near the edge.

The ends C are formed with tongues E of such size as to enter the slits when the ends are folded up, and these tongues may then be folded against the back so as to retain the whole in a single structure.

The back and ends are folded to form a sharp angle at their junction with the bottom, and thus complete the box as shown in Fig. 1.

In each of the ends I make a hole F of sufficient size to allow for the introduction of a hook or other means for lifting the box out of the grate when it is desired to remove the ashes, and this is accomplished without spilling ashes into the space below the grate.

When the fire is to be made, the coal is first piled into the box until it is full. The kindling material is then placed upon the top of the coal, and a few small pieces of coal placed upon the top of the kindling material. When this is lighted, as soon as it becomes thoroughly ignited, the flame begins to burn downwardly, and falling into the fuel beneath, the whole mass is gradually ignited from the top along the front, and finally throughout the whole until it becomes an incandescent mass. From a great number of experiments I find that this construction produces a downward draft from the top and front, and thence inwardly beneath and through the incandescent fuel and finally up around the interior of the back of the box. By this peculiarity of draft all the smoke and gases which are liberated from the burning fuel, will be drawn in and carried through the incandescent mass, thus entirely consuming them so that after weeks of use, no soot or dirt will be found upon the chimney or any part near the apparatus.

From practical experience, extending over considerable time, I find that this device saves at least one-half of the fuel. It prevents the inconvenience of smoky chimneys, and insures a clear and steady fire which needs no shaking or stirring.

An important point to be observed, is to leave the fire alone after it is once lighted, until it requires a fresh supply of fuel which may be from eight to twelve hours according to the class of coal which is being used.

One of the great advantages and a reason for the economical results above indicated, lies in the fact that the great proportion of the smoke and gases from the coal is consumed as it is brought downward and obliged to pass through the fire on its way to the chimney instead of passing up from the top of the fuel in its crude and unconsumed state.

Bituminous coals and those which are usually productive of a great deal of smoke and gas are more perfectly consumed by this device than the best anthracite coal with ordinary grates.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A fuel saving appliance for grates consisting of a box fitted within the grate having a closed bottom, back and ends, and an open front and top as described.

2. A fuel saving device for fire-place grates consisting of a tight box having a bottom, back and ends formed from a single sheet of metal folded as shown, having clasps whereby the back and ends are locked and united as herein described.

3. As a new article of manufacture, a fuel saving device consisting of a metallic box having closed bottom, back, and segmental ends, formed from a single sheet of metal folded and having interlocking clasps by which the back and ends are united.

In witness whereof I have hereunto set my hand.

ANNIE GLUD.

Witnesses:
S. H. NOURSE,
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