E. D. HAWLEY.

GRATE-FENDERS.

No. 194,430. Patented Aug. 21, 1877.

Fig. 1.

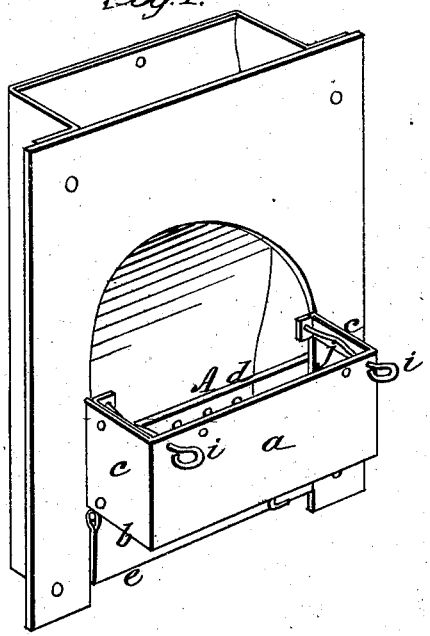


Fig. 2.

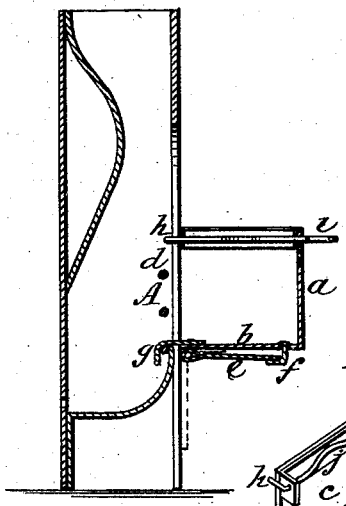


Fig. 3.

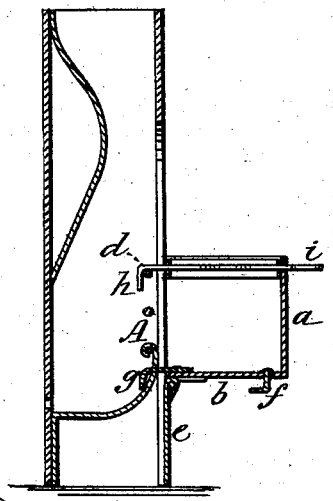
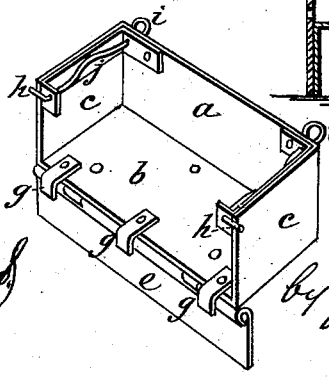


Fig. 4.



Witnesses;

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UNITED STATES PATENT OFFICE.

EDWARD D. HAWLEY, OF SALEM, OHIO.

IMPROVEMENT IN GRATE-FENDERS.

Specification forming part of Letters Patent No. **194,430**, dated August 21, 1877; application filed January 31, 1877.

To all whom it may concern:

Be it known that I, EDWARD D. HAWLEY, of Salem, in the county of Columbiana and State of Ohio, have invented a new and useful Improvement, being a Grate Fire Fender and Preserver, of which the following is a specification:

My object is to produce a safety attachment for grates, stoves, and furnaces, and to control or check the combustion of the fuel, in keeping the fire through the night or day.

The device is complete for attachment to the grate or other part, to prevent the burning coals falling out or being thrown upon the floor from any cause; to prevent accidents to children, and the accidental contact of dresses of persons moving near the grate; while it can be made effective in almost entirely checking combustion, and thereby saving fuel. It is adapted for ready attachment and detachment, like a blower, but its function and design are essentially different. It is adapted for partially or entirely closing the draft-passage by its adjustment, in connection with a depending damper, in relation to the grate.

The essential matter of this safety fire-fender consists of a box having two closed and two open sides, with closed ends, the open sides being contiguous and joining the grate or door opening, so as to bring one of them at the top, and both opening into the fire-chamber, so that the fender stands out with an open topway for the heat, and a closed bottom and outer side. The attachment and detachment in such position is made by hooks and catches, or any suitable means may be devised for holding the device in the desired position. A damper depends from the closed bottom, and is adapted to close, or partially close, the draft-passage, according to the adjustment of the fender, which is adapted for vertical adjustment, whereby to accomplish this result.

The dampered fender may be furnished to the trade as a new article of manufacture, and its use at night renders it an important grate auxiliary in preventing accidents and preserving the fire.

In the accompanying drawings, Figure 1 represents a view in perspective of a fire-place grate with my fire fender and preserver applied thereto; Fig. 2, a vertical cross-section of the same, showing the fender device adjusted in its highest position with respect to the grate, and its damper raised to give draft; Fig. 3, a similar view, showing the adjustment of the device and damper in position to entirely cut off the draft from the fire; and Fig. 4 the fender attachment detached, to show more clearly its construction as an entirety.

The grate may be of the usual or any approved construction. In the example shown the fender is adapted for use with grates having horizontal front bars A, upon which the fender is supported; but it is obvious that in stoves and furnaces any suitable adaptation may be made for a proper support and fastening for the fender to obtain the desired object.

The fender consists of a sheet-iron or other metal box, of such shape or form that when applied, it will cover the entire width of the grate-opening, and occupy such relation to the grate as to receive any coals that may fall therefrom, or be thrown out by explosions, or from any other cause. It has a closed front and bottom, sides *a* and *b*, and closed ends *c c*, forming thereby an open top and inner side, which confront the grate or fire-chamber, and leave an open way at the top for the heat into the room, while catching and holding any coals falling or flying out, and guarding against accidents from clothes taking fire. For this purpose the fender is adapted for adjustment to bring its closed bottom above the bottom of the grate, so as to leave the draft clear. The top of the closed front may extend a little above or below the top bars *d* of the grate, as may be desired.

The fender-damper *e* is hinged to and depends from the inner edge of the closed bottom *b*, in position to hang against or nearly against the front side of the grate-bars. It is of a width to leave a partial draft beneath the grate when the fender is adjusted in its highest position, as shown in Fig. 1, and to close such draft when the fender is adjusted to its lowest position, as shown in Fig. 3. In the latter position it is designed to be placed in keeping the fire during the night; but it may be also used in its partially-closed position for keeping a moderate fire during the day. It

is intended, however, to open the damper by turning it up in horizontal position, and holding it by means of a hook, *f*, against the closed bottom of the fender, so as to leave the draft clear for a good fire.

The means for holding the fender in position consist of hooks *g* projecting from the inner edge of the closed bottom, so as to hook over the lower grate-bar or other part, while catches *h* are arranged at each end of the open top of the fender in positions to be turned, so as to catch on the inner sides of the open fire-place, or other part of a stove or furnace, and thus secure the fender in place. These catches may be so formed as to hold them in place when fastened, and they may be turned to fasten and unfasten them by handles *i*, outside of the closed sides of the fender in any suitable way. As shown, these catches pass through eyes near the closed ends of the fender and have bends or projections *j*, in positions to bear against the inner sides of the closed ends to hold them from turning when fastened.

The damper, while serving to check the draft of air, and prevent too rapid combustion, also serves as a guard against sparks being thrown from the lower part of the grate or furnace by the explosion of gas or other causes.

The practice of house-keepers, of keeping up fires during the night, renders this invention of great utility in preventing accidents by fire.

An important matter is the economy resulting from the use of the attachment, as it changes the usual draft which passes through the burning coal, and causes it to pass over the fire through the open door, almost entirely arresting the process of combustion, and saving much fuel that would otherwise burn out, besides keeping the fire in condition to be revived, by simply raising the fender or the damper, or both.

When the fender is adjusted in its lowest position, the hooks are simply removed from the grate-bar, and the fender is suspended and held against the sides of the fire-place by placing the catches over the upper grate-bar, so as to hold like the hooks, and bring the lower edge of the damper so as to close the space beneath the grate, as shown in Fig. 3.

I claim—

1. A grate fire fender and preserver, having a closed bottom and outer side with contiguous open inner side and top, in combination with a grate from which it extends to obtain the advantages stated.

2. A grate fire-fender, having a closed bottom and outer side, with contiguous open inner side and top, suspended upon and removably attached to and in front of the grate-bars or other part, for the purpose herein set forth.

3. A grate fire fender and preserver, having a closed bottom and outer side, and contiguous open inner and top sides, and combined with a bottom damper for use with a grate, as herein set forth.

4. A grate fire fender and preserver, having a closed bottom and side, with contiguous open inner side and top, and adapted for vertical adjustment in relation to the grate, to obtain the advantages stated.

5. The grate fire fender and preserver, constructed substantially as described, provided with hooks *g* and catches *h*, whereby it is secured in place upon the grate-bars, substantially as herein set forth.

6. As a new manufacture, a grate fire fender and preserver, constructed with open top and inner side, and closed bottom and outer side, a bottom damper and suitable fastening devices, for use with grates, as herein set forth.

In testimony whereof I have affixed my signature in the presence of two witnesses.

EDWARD D. HAWLEY.

Witnesses:

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PETER AMBLER.