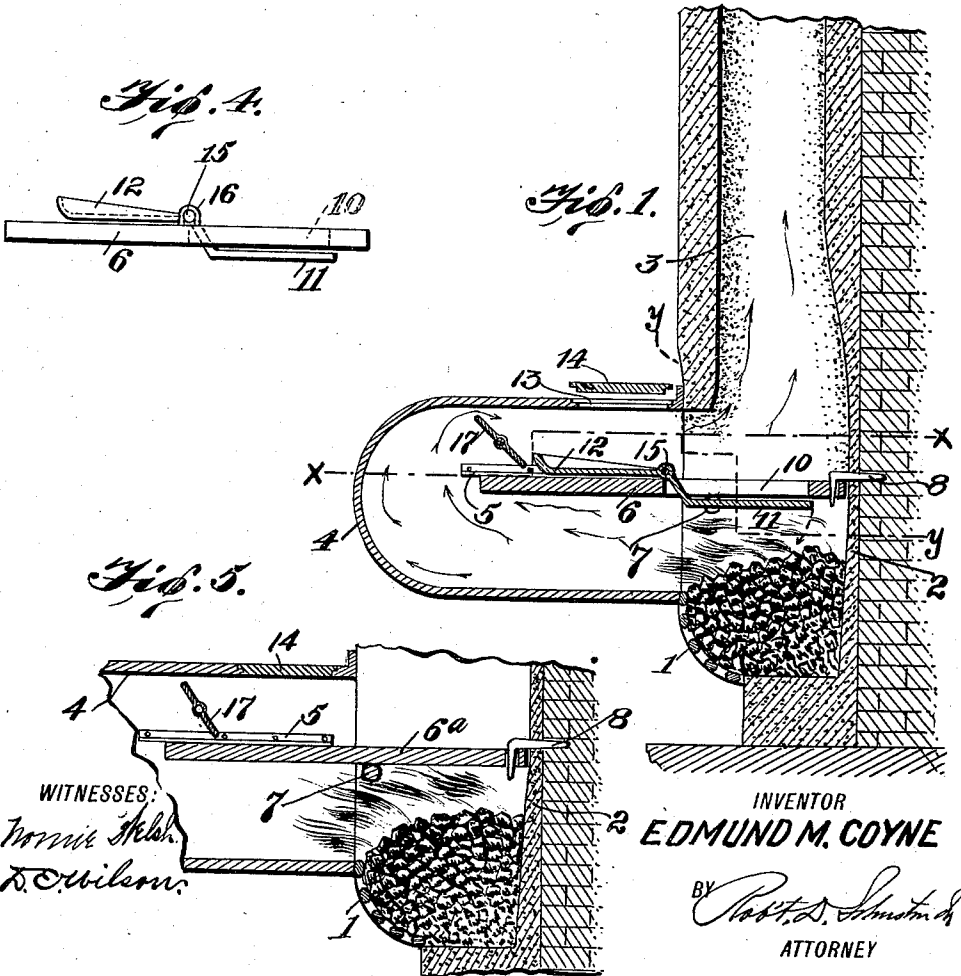


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COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDMUND M. COYNE, OF ENSLEY, ALABAMA.

GRATE-RADIATOR.

996,703.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDMUND M. COYNE, a citizen of the United States, residing at Ensley, in the county of Jefferson and State of Alabama, have invented new and useful Improvements in Grate-Radiators, of which the following is a specification.

My invention relates to a device to obtain the maximum heat from the fires in grates and open fire places, to regulate the heat, to protect the fire place from children or articles falling therein as well as to protect the house from being set on fire from burning coals or sparks falling from the fire, and finally, to provide a grate radiator attachment which may be used for cooking purposes. These several advantages are all obtained by my novel fire place attachment, which in a simple embodiment thereof is illustrated in the accompanying drawings, in which:—

Figure 1 is a vertical sectional view through a fire place equipped with my improved radiator attachment. Fig. 2 is a horizontal sectional view along the line $x-x$ of Fig. 1. Fig. 3 is an end elevation looking into the open end of the radiator attachment. Fig. 4 is a detail view of the baffle plate provided with a fuel feed opening therein. Fig. 5 is a detail view of a modification showing the baffle plate without the fuel opening.

Similar reference numerals refer to similar parts throughout the drawings.

I have illustrated my invention in connection with a fire place having a grate 1, a back wall 2, and a chimney 3.

The attachment in the form illustrated comprises an elongated radiating casing 4 having walls of approximately the same width as the fire place and open at its inner end, which in size approximately corresponds to the open space of the fire place between the grate and the front sides and top of the fire place. Two horizontal angle irons 5 are attached to the side walls of the casing, preferably above the center lines thereof, and serve to support the radiator by engaging and resting upon a metal baffle plate 6, which is of slightly less width than the casing so as to make a sliding fit therein. This plate extends horizontally across the space in the fire place above the grate and is intended to conform to the fire place so as to form a horizontal partition or baffle therein above the grate. Metal supporting pins 7

are driven into the side walls of the fire place near the front to engage the plate on the underside thereof and support it in connection with the pin 8 which is driven into the rear wall of the fire place above the plate 6 and is provided with a downwardly disposed point which engages in a notch or opening 9 provided at the inner end of the plate. This pin 8 holds the plate 6 against outward movement. A square opening 10 is provided near the inner end of the plate 6 immediately above the grate and is normally closed by the plate 11, the inner end of which is bent downwardly so as to pass through the opening 10 and which makes a close fit therein, engaging the plate 6 on the underside to close the opening 10. The plate at its outer end is enlarged to form a scoop 12 which rests on the outer end of plate 6 and is disposed under the top opening 13 in the radiator 4, which opening is normally closed by a plate 14, similar to a stove lid, the opening 13 being preferably made circular so that it will receive pots or cooking vessels. The rear end and side edges of the plate 12 are turned up to form a scoop, the plate being fixed to a transverse shaft 15, which passes through the walls of the radiator 4 above the plate 6 and is pivotally connected thereto by hook bolts 16, which are suitably secured to the plate 6. I provide a wing damper 17 controlled by a handle 18 which also projects from the casing and is preferably disposed above the outer end of the plate 6 just beyond the end of the scoop 12.

In applying and using my invention, I first drive the pins 7 and 8 into the side and back walls of the fire place, then insert the plate 6 so that it is rigidly supported by said pins and engaged by the hook pin 8. The drum 4 is then adjusted with its angle irons 5 resting on the outer end of the plate 6 and is slid forward until the edges of its inner open end engage the top and side walls of the fire place and the top of the grate. If the fire is now lighted, the draft will draw the flames as shown by the arrows around the partition 6 and back up the chimney. This gives a strong draft, causing the heat in the products of combustion to be almost entirely radiated from the casing 4 into the room, and by means of the damper 17 I am enabled to effectively regulate the heat and control the rapidity of the burning of the fuel.

To put coal on the fire without removing the casing 4, I lift the lid 14, pass the coal through the opening 13 so that it falls on the scoop 12 and then by lifting the handle 19 on the shaft 15, I cause the coal to fall from the scoop through the opening 10, the coal sliding over the depressed inner plate 11 and falling into the grate.

While I prefer to utilize this method of introducing the coal, it is nevertheless a part of my invention that the coal may be inserted by sliding the drum 4 outwardly a sufficient distance to enable the coal to be thrown into the grate between the bottom 15 of the drum and the grate, or the drum may be entirely removed and the coal thrown in under the baffle plate 6. In either of the last mentioned cases the baffle plate may be made solid, as plate 6^a in Fig. 5, without opening 10 or the scoop plate 11, 12.

The construction of parts of my mechanism may be varied in many ways without departing from the spirit of my invention.

Where this attachment is used for wood burning fire places, it is obvious that the construction shown in Fig. 5 will be all that is required as the fuel can be introduced into the fire place, passing same under the radiating casing.

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

1. A grate radiator comprising a baffle plate adapted to be mounted in the fire place above the fire, and a casing which is slidably mounted on and forms a by-pass around said baffle, said casing being adapted to project into the compartment to be heated, substantially as described.

2. A grate radiator comprising a baffle plate adapted to be interposed in the fire place above the grate and having a fuel opening, means to normally close said opening above the fire, projections in the fire place upon which said plate is detachably mounted, a casing which forms a by-pass around said baffle, said casing being adapted to project into the compartment to be heated, means to support said casing on said plate, and damper means to regulate the draft through said by-pass, substantially as described.

3. A radiating attachment for fire places comprising a horizontal baffle wall in the fire place above the fire, means to detachably mount said wall in the fire place, and a casing open at one end, which end fits over and

closes the upper portion of the fire place opening, said baffle wall projecting into and supporting said casing and forming a circuitous passage therein through which the products of combustion pass around the baffle wall to the chimney, substantially as described.

4. A radiating attachment for fire places comprising a horizontal baffle wall in the fire place above the fire, means to support said wall, a casing open at one end, which end fits over and closes the upper portion of the fire place opening, and means to support said casing on said baffle to permit it to slide thereon to and from the fire place, said casing when in operating position forming a radiating by-pass for the products of combustion, which are diverted therethrough by said baffle, substantially as described.

5. A radiating means for fire places comprising a casing which projects substantially horizontally into the compartment to be heated and has an opening therein, a lid for closing said opening, a baffle wall which extends over the fire and directs the products through said casing, said baffle wall having an opening therein, means to slidably support said casing on said wall, and a downwardly swinging plate which normally closes said opening, substantially as described.

6. A radiating means for fire places comprising a casing which projects into the compartment to be heated and has an open inner end which fits over and closes the upper portion of the fire place opening, a baffle wall which extends across the fire place and directs the products of combustion through said casing as a by-pass, said casing having a door in the top thereof and said baffle wall having a fuel opening therein above the fire place, a scoop plate pivotally mounted on said baffle and having its scooped end under the door in the casing and its other end normally closing the opening in said baffle wall, a handle to tilt said plate and discharge the fuel on the scoop through said opening in the baffle wall, and damper means to regulate the draft through said casing, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

EDMUND M. COYNE.

Witnesses:

R. D. JOHNSTON, Jr.,
NOMIE WELSH.