

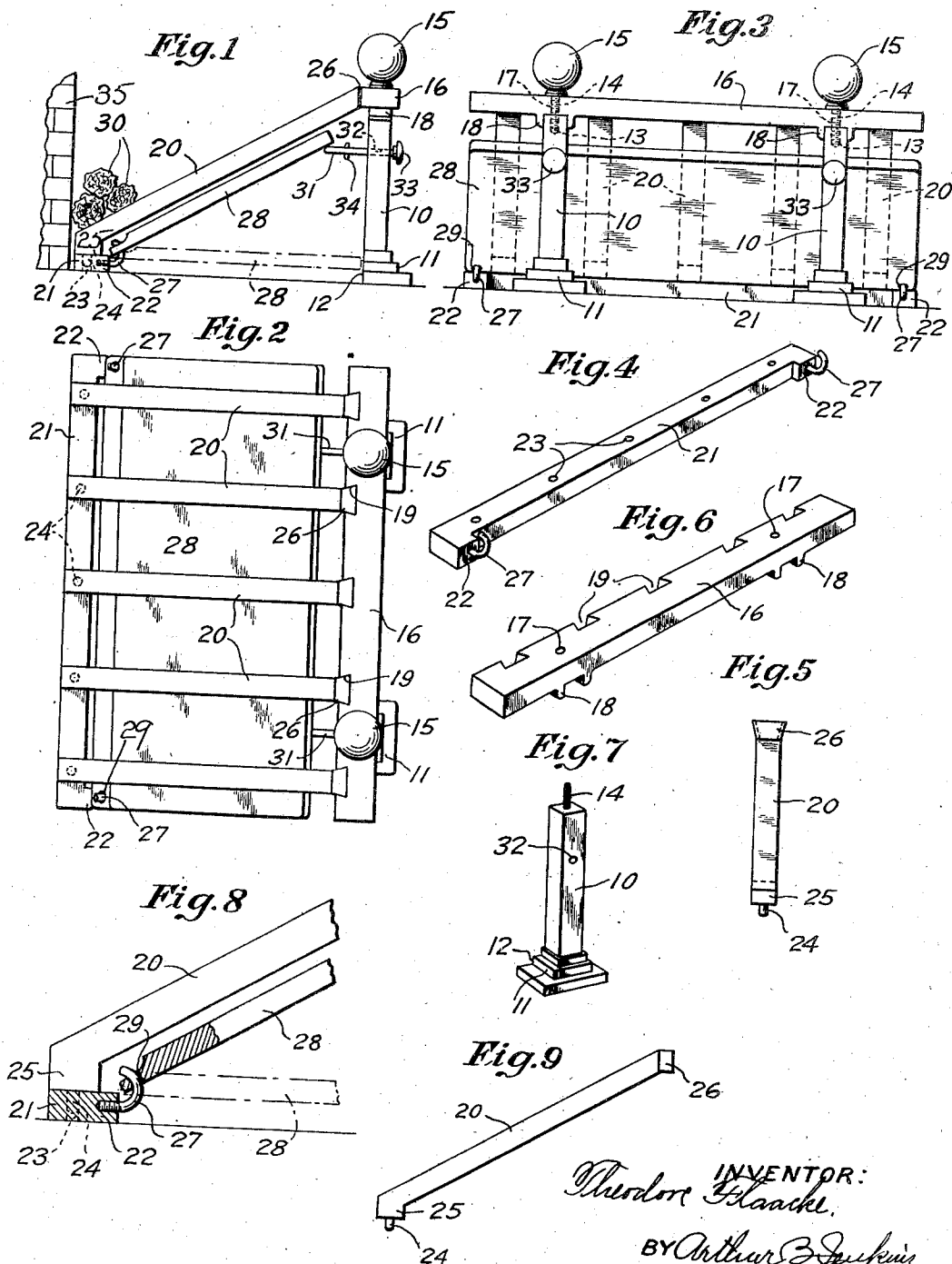
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FIREPLACE GRATE

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FIREPLACE GRATE

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2 Claims. (Cl. 126—164)

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My invention relates to the class of devices employed for supporting fuel within a fireplace for combustion purposes, and an object of my invention, among others, is the production of a grate especially designed for supporting fuel in the shape of sticks or logs; a further object of the invention is the production of a grate composed of parts which may be readily assembled or taken apart; a further object of the invention is the construction of such parts in a manner to avoid the effects of heat to an extent to prevent separation of the parts or relative movement thereof for operation; and a further and particular object of the invention is the provision of a mechanical heating device designed and constructed to utilize the ashes of fuel for the purpose of checking, retarding, and controlling the draft, assuring even, steady heat and prolonging the life of the fire.

One form of a grate embodying the invention and in the construction and use of which the objects herein set out, as well as others, may be attained is illustrated in the accompanying drawing, in which—

Figure 1 is a view in side elevation of my improved fireplace grate.

Figure 2 is a top plan view of the same.

Figure 3 is a view in front elevation.

Figure 4 is an isometric view of the back or base plate.

Figure 5 is a view of the fuel supporting ribs or bars looking from the back.

Figure 6 is an isometric view of the top plate or bar.

Figure 7 is an isometric view of one of the posts or standards.

Figure 8 is a side view on enlarged scale, partially in section, showing the manner of attachment of the damper plate to its support.

Figure 9 is a side view of a fuel supporting rib or bar.

In the accompanying drawing the numeral 10 denotes two posts each having stepped bases 11 extending around three sides of the bottom of the post but cut off at the back as at 12 for a purpose to be hereinafter described. The top of each post is provided with a threaded hole 13 to receive a pin or bolt 14 which passes through the top plate and receives a ball or other device 15 which binds the two parts together.

A top or front plate 16 rests upon the top of the posts 10 and is secured thereto by means of said ball screw threadedly engaged with said pins or bolts extending through holes 17 in the plate. Lugs 18 spaced apart the width of the posts 10 project from the under side of the plate 16 and

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lie on opposite sides of the posts 10 at the top to assist in preventing endwise movement of the plate.

A series of tapered dove-tail notches 19 are formed in the back edges of the plate 16 to receive dove-tail shaped upper ends of ribs or bars 20 which fit in to said notches and thereby secure the upper ends of said ribs or bars to said top plate.

A back plate 21 is formed to rest flat upon the floor of the fireplace, said plate having back-turned ends or hooks 22 and openings 23 in its upper side to receive studs 24 projecting from the angularly formed ends 25 at the bottom ends of the ribs 20, said ribs each having angularly shaped top ends 26 that are of dove-tail tapered form to fit within the notches 19 hereinbefore referred to.

Backturned hooks 27 project from the ends of the angularly shaped ends of the back plate, as shown in Fig. 1, and a damper plate 28 is provided with holes 29 in its lower edge near opposite sides thereof to receive the hooks 27, said hooks and the holes in the damper plate being so formed that they may be engaged when the damper plate is raised to a proper position, and then when lowered to its normal position, said plate is locked against removal, and may be swung downwardly into horizontal position or raised to the position shown in Fig. 1, in the latter case the damper when closed forcing ashes into all open spaces and thus shutting off draft to fuel resting upon the ribs or bars 20. Pins 31 insertable through holes 32 in the posts 10 are of a length to project beyond the posts sufficiently to underlie the upper edge of the damper plate 28 and thereby retain it in its upper or closed position, said pins having heads 33, and stops 34 extend through the pins at the ends opposite the heads 33 to secure the pins against accidental removal. The cut-off portion at the back of the base of the posts or standards 10, herein referred to, is for the purpose of permitting the damper plate 28 to be lowered to horizontal position.

The damper plate may be engaged with the hooks 27 by positioning said plate in a more or less vertical position so that the ends of the hooks may be passed through the holes in the damper plate, and before the bars or ribs 20 are attached to the back of the base plate 21, and the damper being then lowered it will be secured to the hooks against removal but may be swung freely thereon and the ribs or fuel supporting bars may then be placed in position and attached to the back or base plate and to the top plate.

An important feature of my invention consists

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in the utilization of the accumulated ashes collected on and supported by the damper plate which underlies the grate bars, said plate collecting the ashes which pass through the grate bars causing such ashes to fill the space between said bars and permitting ashes to be placed over the burning wood 30 or fuel and against the back wall 35 of the fireplace, so that the passage of air through between the bars and to the fuel therein is effectually prevented, thereby enabling a fire to be banked and to be retained in the fireplace with the use of my improved grate for maximum periods of time. I have by actual test thus maintained a fire for a period of thirty-six hours and sufficiently for renewal by simply placing more fuel upon the embers thus retained.

This in fact I consider to be the main feature of my invention, the frame comprising the supporting posts, grate bars, and other parts being so arranged that the bars will be disposed at such angle relatively to the damper plate 28 that the latter when positioned against the under side of the grate bars will maintain ashes at an angle less than the angle of repose so that the latter will not slide to the lower edge of the plate but will remain on the plate in a mass thereon as originally placed.

I am aware that it has been proposed to place a damper plate underneath grate bars in a fireplace for the purpose of increasing draft through fuel disposed in the grate bars, but in such cases the damper plate is disposed at an angle to prevent accumulation of ashes thereon, but purely to promote the flow of air for combustion purposes to the fuel on the grate bars, whereas it is my purpose to enable the retention of the ashes on the damper plate and to prevent the circulation of combustion air to fuel upon the grate bars.

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In accordance with the provisions of the patent statutes I have described the principles of operation of my invention together with the device which I now consider to represent the best embodiment thereof; but I desire to have it understood that the device shown is only illustrative and that the invention may be carried out by other means and applied to uses other than those above set out.

I claim:

1. A fireplace grate comprising a frame, said frame including standards at the front thereof, a top plate secured at its opposite ends to said standards, bars having their upper ends removably attached to said top plate and sloping downwardly to the rear, a base plate, means for removably securing said bars at their lower ends to said base plate, a damper plate pivotally attached at its lower end to said base plate and adapted to be raised in proximity to said bars, and means for maintaining said bars and said damper plate in close proximity thereto at an angle from a horizontal plane to maintain ashes on said damper plate at an angle less than the angle of repose to reduce circulation of air between said bars.

2. A fireplace grate comprising a frame, a plurality of bars supported by said frame and sloping downwardly from the front for the retention of fuel thereon, a damper plate pivotally attached to said frame closely underlying said bars for the deposit thereon of ashes to close the openings between said bars and in said fuel and thereby prevent draft to said fuel, and means for supporting said bars and damper plate at their front ends to maintain said ashes at an angle less than the angle of repose on said plate.

THEODORE FLAACKE.