Jan. 9, 1934. G. P. DAVIS 1,943,209

OPEN FIREPLACE GRATE

Filed Sept. 27, 1932 2 Sheets-Sheet 1

Fig. 1.

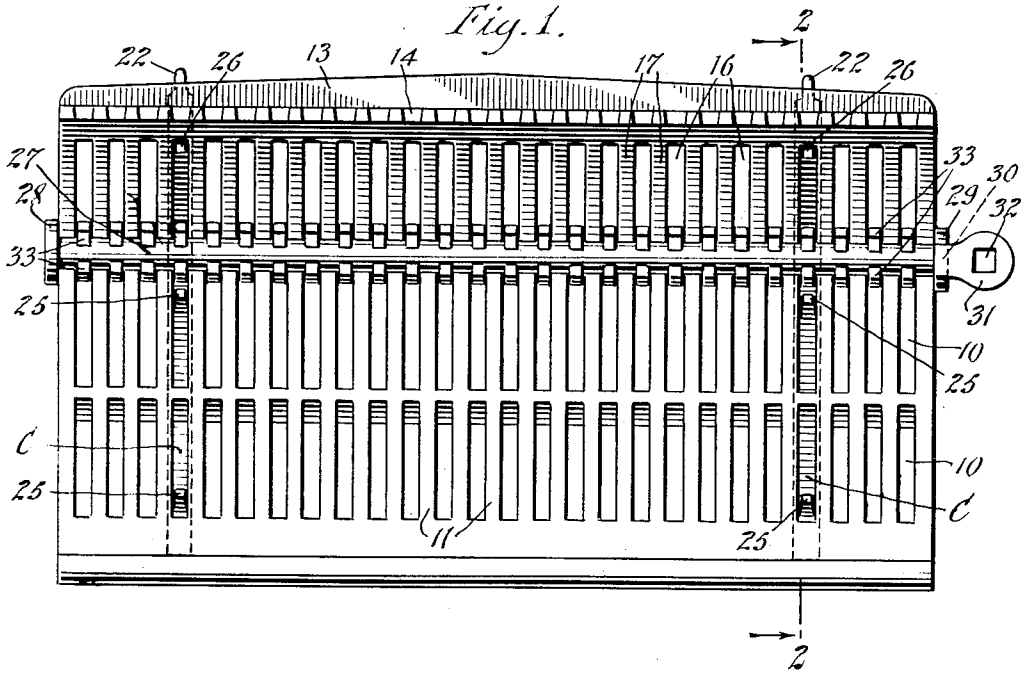


Fig. 3.

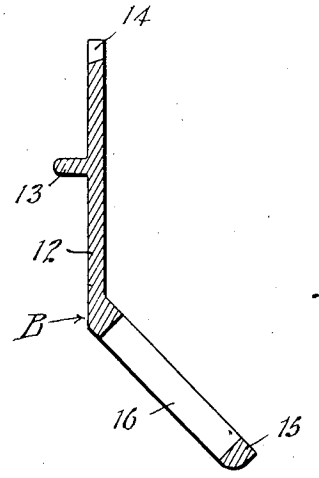


Fig. 4.

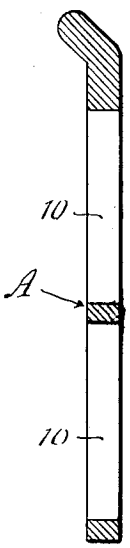
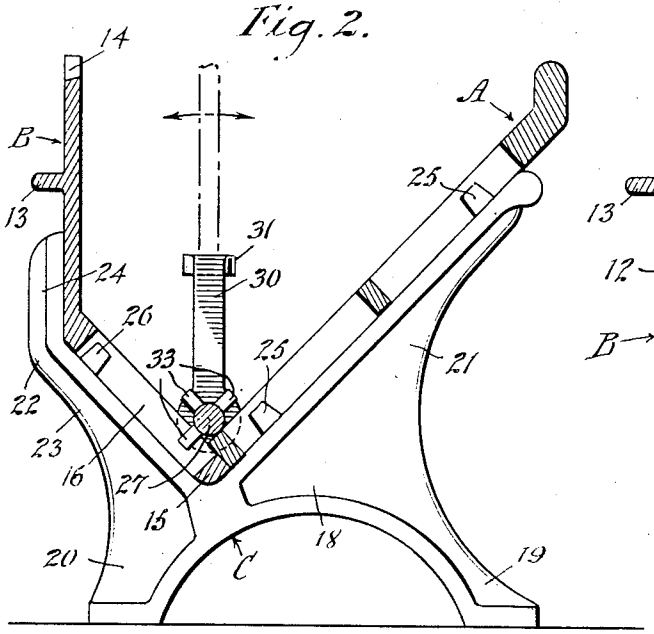


Fig. 2.



WITNESSES

Edw. Thorpe.

Hugh W. Ott

INVENTOR

Gervase P. Davis

BY

Munn & Co.

ATTORNEY

Jan. 9, 1934. G. P. DAVIS 1,943,209

OPEN FIREPLACE GRATE

Filed Sept. 27, 1932 2 Sheets-Sheet 2

Fig. 5.

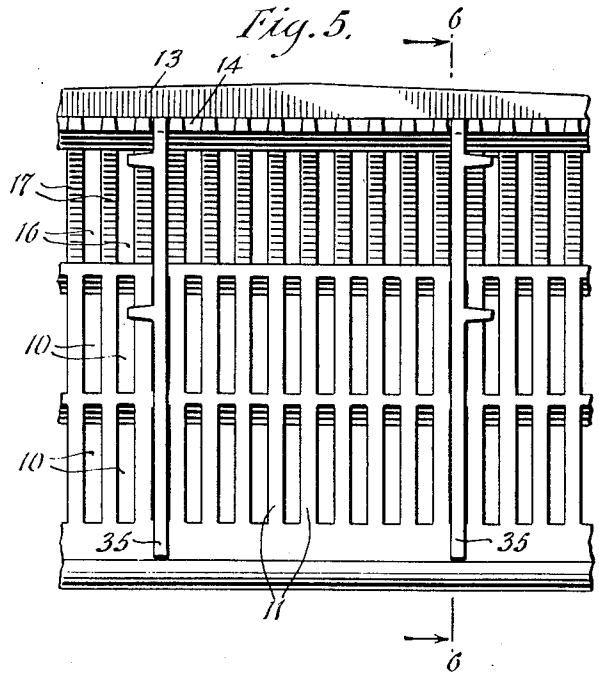
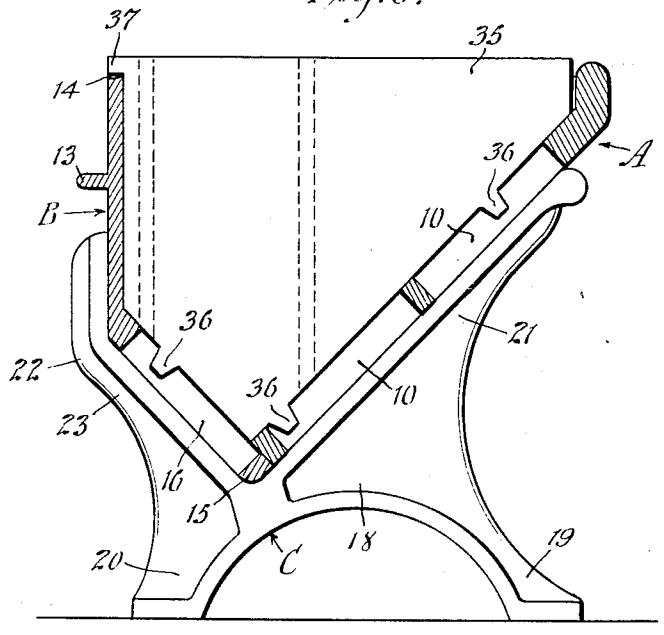


Fig. 6.



WITNESSES

Edw. Thorpe

Hugh H. Ott

INVENTOR

Gervase P. Davis

BY

Munn & Co.

ATTORNEY

Patented Jan. 9, 1934

1,943,209

UNITED STATES PATENT OFFICE

1,943,209

OPEN FIREPLACE GRATE

Gervase Peveril Davis, Lake Placid, N. Y.

Application September 27, 1932
Serial No. 635,106

4 Claims. (Cl. 126—164)

This invention relates generally to grates, and refers more particularly to a grate for open fireplaces.

The invention has for some of its objects to provide a grate which is so constructed and arranged that it may be optionally employed to burn wood or coal; that it effects a more thorough and complete combustion of the fuel; that it may be banked so as to insure the continuous burning of the fuel overnight or for even a longer period of time; that it may be adjusted to regulate the size of the fuel bed desired; and that it facilitates the agitation of the lower part of the fuel bed to remove the ashes and consumed fuel or clinkers or other non-combustible matter contained in the fuel.

Other objects of the invention reside in the simplicity of construction of the grate, the economy with which it may be produced, the ease with which it may be set up or knocked down to permit the nesting or packing of the parts for storage and transportation in a minimum of space and the general efficiency derived therefrom.

With the above recited and other objects in view, reference is had to the following description and accompanying drawings, in which there is exhibited one example or embodiment of the invention, while the claims define the actual scope of the same.

In the drawings:

Figure 1 is a top plan view of a grate constructed in accordance with the invention and arranged particularly to burn logs.

Figure 2 is a cross sectional view therethrough taken approximately on a plane indicated by the line 2—2 in Figure 1.

Figure 3 is a transverse sectional view of the rear grate wall removed.

Figure 4 is a similar view of the front grate wall removed.

Figure 5 is a fragmentary sectional plan view illustrating the grate equipped with partition elements for the purpose of burning coal.

Figure 6 is a sectional view therethrough taken approximately on a plane indicated by the line 6—6 in Figure 5.

Referring to the drawings by characters of reference, the grate includes a front substantially flat grate wall, designated generally by the reference character A, and a rear grate wall B, which is of angular cross sectional configuration. The structure further includes a pair of supporting members designated generally by the reference character C. The front grate wall A is formed with a plurality of transverse slots 10, preferably arranged in a plurality of rows so as to define between the slots the grate bars 11. The rear grate wall B includes an upper vertically disposed portion 12, which is preferably solid and provided with a rear medially disposed longitudinally extending strengthening rib 13 and with a notched upper edge 14. The rear wall further includes an angularly and forwardly inclined lower portion 15 which is formed with a plurality of slots 16 defining therebetween the grate bars 17.

The supporting members C are each fashioned to provide a body 18 having front and rear legs 19 and 20 and front and rear arms 21 and 22, the former arm 21 extending upwardly and forwardly at an angle and the latter having a lower portion 23 which extends upwardly and rearwardly at an angle and an upper portion 24 which extends vertically and corresponds approximately to the shaping of the rear grate wall B. The forward arm 21 of each member C is provided on its upper face with projecting lugs 25, while the angularly disposed lower portion of the rear arm 22 is formed on its upper surface with a projecting lug 26.

In practice, the walls A and B and supporting members C of the grate are assembled by seating the rear wall B on the rear arms 22 of the supporting members C with the lugs 26 extending into the slots 16. The front wall A is then seated with its lower edge abutting or superimposed upon the lower portion 15 of the rear wall and with its lower surface resting in flat contact with the front arms 21 of the supporting members, the lugs 25 engaging in the slots 10 of the front grate wall. When thus assembled, the parts of the grate will be sustained in place, and in burning logs the same are laid lengthwise in the grate. In order to facilitate agitation of the lower portion of the fire to dislodge ashes or consumed fuel, an agitator may be employed in the form of an elongated rod 27 which approximates the length of the grate and which is seated in the re-entrant angle defined by the lower portions of the front and rear grate walls. The rod is provided at its opposite ends with enlarged heads 28 and 29 which bear against the end edges of the grate walls, and the head 29 may be formed with a radial upwardly projecting manipulating crank 30 having an outturned terminal 31 formed with an aperture 32 for the reception of a poker or other suitable implement for swinging the crank arm. The agitator rod 27 throughout its length is provided with a plurality

of rows of radially disposed agitator studs 33, by virtue of which agitation of the fuel bed is effected and certain of said studs are designed to engage with the slots 16 in the lower portion of the rear grate wall and the slots 10 in the front grate wall.

Where it is desired to use the grate structure for burning coal, partition elements 35 are employed and the agitator 27 is dispensed with. The partition elements 35 are shaped generally to conform to the cross sectional shape of the grate structure and are provided with projecting lugs 36 to engage in the front and rear grate wall slots and with an upper rear lug 37 to engage in the notched upper edge 14 of the rear grate wall. Obviously, the partition elements 35 may be associated with the grate structure in variously spaced relation, to define a fuel bed of the desired width in accordance with the size of the fire desired.

From the foregoing, it will be seen that a grate has been designed which presents a restricted lower end, through the slots or between the grate bars of which a poker may be inserted to dislodge the ashes, consumed fuel, clinkers or other noncombustible matter contained in the fuel. Furthermore, due to the configuration and inclined disposition of the grate bar walls, gravitational feeding of the fuel is effected. Due to the gravitational feeding of the fuel, it is apparent that even a log fire may be banked with green logs so as to insure a continuous burning of the fuel overnight or for even a longer period of time if desired. Furthermore, due to the construction of the grate, it is apparent that the parts or elements thereof may be readily disassembled and conveniently nested or packed to occupy a minimum amount of space for storage or transportation.

What is claimed is:

1. An open fireplace grate comprising a rear wall having an imperforate vertical portion, a forwardly and downwardly inclined lower slotted portion, a slotted front wall inclining upwardly and forwardly and a pair of spaced supporting members having arms fashioned to fit the front and rear grate walls and having lugs engaging in the slotted portions thereof to maintain the grate in assembled relation.

2. An open fireplace grate comprising a rear wall having an imperforate vertical portion, a forwardly and downwardly inclined lower slotted portion, a slotted front wall inclining upwardly and forwardly and a pair of spaced supporting members having arms fashioned to fit the front and rear grate walls and having lugs engaging in the slotted portions thereof to maintain the grate in assembled relation and elements defining side walls detachably associated with the front and rear walls and disposed in relatively spaced relation to define together therewith a fire bed open at the top.

3. An open fireplace grate comprising a portable knock-down structure including a pair of spaced base members adapted to be supported on the floor, and having diverging front and rear supporting members, a pair of slotted grate members mounted on the base supports with the edge of one grate member supported on the other, lugs on the base members positioned in the slots of the grate members whereby all of said parts are coupled together, a rotary agitator mounted on the grate members at their juncture, and enlarged ends on said agitator positioned at the ends of the grate members and acting to hold the agitator against longitudinal movement relative to the grate.

4. An open fireplace grate comprising a portable knock-down structure including a pair of spaced base members adapted to be supported on the floor, and having diverging front and rear supporting members, a pair of slotted grate members mounted on the base supports with the edge of one grate member supported on the other, lugs on the base members positioned in the slots of the grate members whereby all of said parts are coupled together, partition plates extending transversely of the grate members and having lugs projecting into portions of the grate members, a rotary agitator mounted on the grate members at their juncture, and enlarged ends on said agitator positioned at the ends of the grate members and acting to hold the agitator against longitudinal movement relative to the grate.

GERVASE PEVERIL DAVIS.