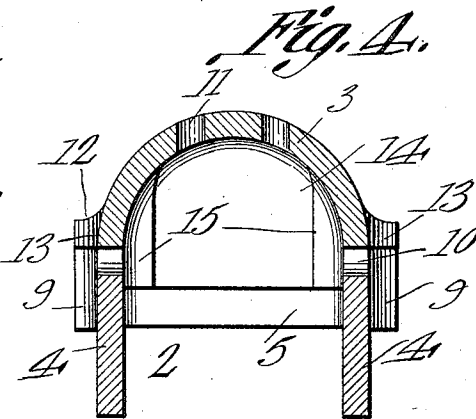
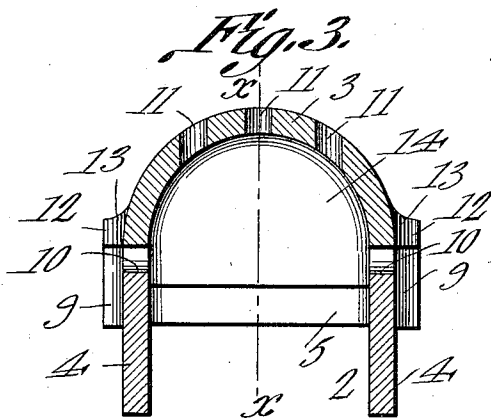
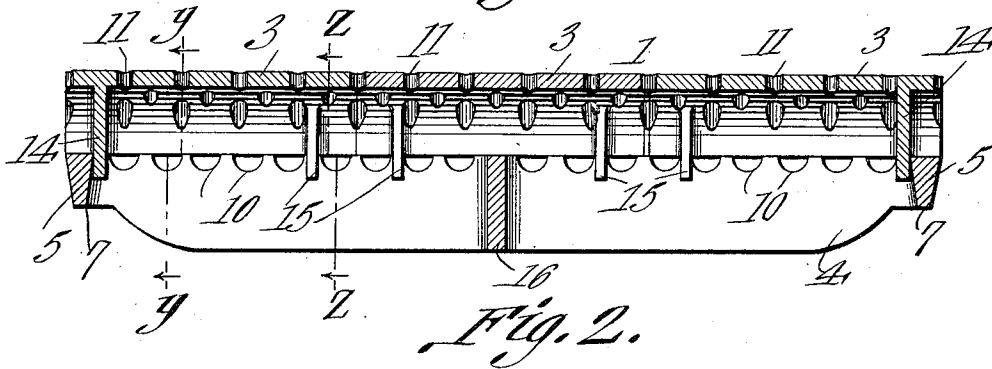
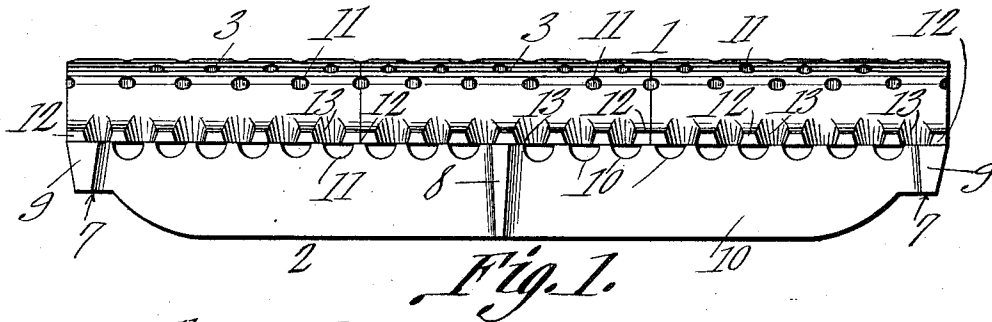


W. M. ROSS.
GRATE BAR.

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1,033,736.

Patented July 23, 1912.



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Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM M. ROSS, OF JACKSONVILLE, FLORIDA.

GRATE-BAR.

1,033,736.

Specification of Letters Patent.

Patented July 23, 1912.

Application filed November 27, 1911. Serial No. 662,717.

To all whom it may concern:

Be it known that I, WILLIAM M. ROSS, a citizen of the United States, residing at Jacksonville, in the county of Duval and State of Florida, have invented a new and useful Improvement in Grate-Bars, of which the following is a specification.

This invention relates to improvements in grates, more especially grate bars.

Objects of the invention are, first, to render the grate-bars readily renewable, the same being in sections. Secondly, to enable the grate bars to have an automatic clearing action. Thirdly, to increase the heat-resisting qualities of the grate-bars, as well as to prevent the premature warping or burning out of the same, thus promoting longevity of use, as well as relatively economizing expense or cost to the purchaser. Fourthly, to advantageously distribute or deliver the draft, more especially with respect to the grate-bars.

The invention consists of certain instrumentalities and features thereof substantially as hereinafter fully disclosed and defined by the claims.

In the accompanying drawing, illustrating the preferred embodiment of my invention wherein it will be understood that various changes and modifications may be made as relates to the detailed construction and arrangement of the parts without departing from the spirit of the invention, Figure 1 is a side view of the grate-bar. Fig. 2 is a longitudinal section taken on the line $x-x$ of Fig. 3. Fig. 3 is a transverse section taken on the line $y-y$ of Fig. 2; and Fig. 4 is a transverse section taken on the line $z-z$ of Fig. 2.

In carrying out my invention, I provide a grate-bar, designated generally as 1, which includes a cooling or base member 2 and a plurality of upper-surface rounded sections or members 3. The base-member 2 itself includes parallel longitudinal walls 4 and end walls 5, and cast therewith is a central strengthening transverse brace or web 16, the end-walls of said member being adapted, as at 7, to suitably rest upon the usual ledges or offsets within the furnace or stove base. The longitudinal walls 4 of the base-member 2 have cast upon their outer surfaces, directly in alinement with the web or brace 16, additional strengthening and spacing offsets 8, and like spacing offsets 9 at their ends, forming extensions of their end-walls

5. The longitudinal or side walls 4 of the member 2 have their upper edges provided with numerous notches or recesses 10 facing upwardly to form passages or outlets for the draft or air-currents from within the member laterally out through the same, for its further passage upwardly to, and through the fuel for aiding combustion.

The upper-surface rounded fuel-supporting sections 3 are superposed with respect to the base member 2, their lower edges resting upon the upper edges of the longitudinal walls of said base-member, thus serving to span the upwardly facing notches or recesses 10 of the latter. The upper rounded surface of the sections 3 allows the forming ash to precipitately leave or be readily dislodged therefrom while through said rounded surface are produced numerous apertures, or orifices 11 for the passage or delivery of the ash therethrough, the grate-bars thus having an automatic cleaning action, as is apparent. Said sections 3 are also cast or provided with numerous outstanding projections or offsets 12 at their longitudinal basal edges, said offsets having preferably their upper-surface outline formed in continuation of the outline of the upper surface of said sections, the resultant intervening spaces or intervals 13 providing for the ready downward passage of the ash as it leaves or falls from the rounded surface of said sections, the offsets or projections providing primarily for spacing apart the grate-bars. The upper or fuel-supporting surface of the grate-bar thus being in sections, it is apparent that the same may be readily renewed piece-meal or in sections when required and avoid substituting the same in its entirety, which would be much more expensive and undesirable. Also it is apparent that by the upper or fuel-supporting surface of the sections being rounded or convex the same is not so liable to become prematurely warped or burnt out, as would otherwise be the case, accordingly promoting longevity of use or wear.

The end sections are provided, each with an imperforate end-wall 14 for forming a closure for that end of the chamber or space resulting from the outline of the sections in order to baffle the passing out of the air-currents or draft at those points and to direct the same laterally and upwardly through the grate-bar as before indicated. The end walls 14 of the end-sections depend

a short distance as seen in Figs. 1 and 3 within, and below the upper-edges of the member 2, and the intermediate sections are provided or cast with dependable offsets or
 5 studs 15 also extending within, and below said edges of said member 2, all serving to hold the sections in place thereon, as against casual lateral and endwise displacement.

What is claimed is:

- 10 1. A grate-bar including a base-member having notched upper edges and offsets upon its outer lateral surfaces, at its ends, and a fuel supporting member having an arched upper surface and superposed with respect
 15 to said base-member and having spaced-apart offsets upon its outer lateral surfaces, at the base of its arched upper surface, said fuel-supporting member being in sections, said sections having additional offsets de-
 20 pendable within said base-member, below its upper edge, the end-sections having imperforate outer-end walls dependable within said base-member, below the top edges of its end walls.
- 25 2. A grate-bar, including a base-member comprising parallel longitudinal walls integral with end walls, said longitudinal walls having upper notched edges and a fuel-supporting member comprising a plu-
 30 rality of upwardly rounded hollow sections whose lower edges are superposed with respect to the upper notched edges of the longitudinal bars of said base member, said sections having spaced apart offsets upon
 35 their outer lateral surfaces, at their base-edges, for the removal of said offsets to a distant point below the main rounded portion of the fuel-supporting surface of said sections, said sections having additional off-
 40 sets depending within said base-member,

below its upper edge, the end-sections having imperforate outer end-walls depending within said base-member, below the top edges of its end-walls the spaces between
 said offsets forming passages in continua-
 45 tion of the air or draft passages formed by the notches in the upper edges of the longitudinal walls of said base-member.

3. A grate-bar including a base-member comprising parallel longitudinal walls and
 50 end-walls integral with said longitudinal walls, said longitudinal walls having series of draft or air-passage-forming notches in their upper edges and end offsets upon their outer surfaces, and an upper fuel-support-
 55 ing member including a plurality of sections, each having a rounded upper perforated surface, with its bottom-edges resting upon the upper notched edges of the longi-
 60 tudinal walls of said base-member, each end-section of said fuel-supporting member having upon its inner surface, an imperforate end forming wall depending below the end-
 walls of said base-member, said fuel-sup-
 65 porting member-sections having upon their outer surfaces, at the base, offsets spaced to form passages in continuation of the air or draft passages formed by the notches in the upper edges of the longitudinal walls of
 70 said base-member, said fuel-supporting member-sections having upon their inner lateral surfaces offsets depending below the inner upper edges of said base-member.

In testimony that I claim the foregoing as my own, I have hereto affixed my signa-
 75 ture in the presence of two witnesses.

WILLIAM M. ROSS.

Witnesses:

T. K. HATCHER,
 F. M. SMOAK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."