July 13, 1943. H. P. KATZ 2,323,916

GRATE

Filed Sept. 25, 1940

Fig. 1.

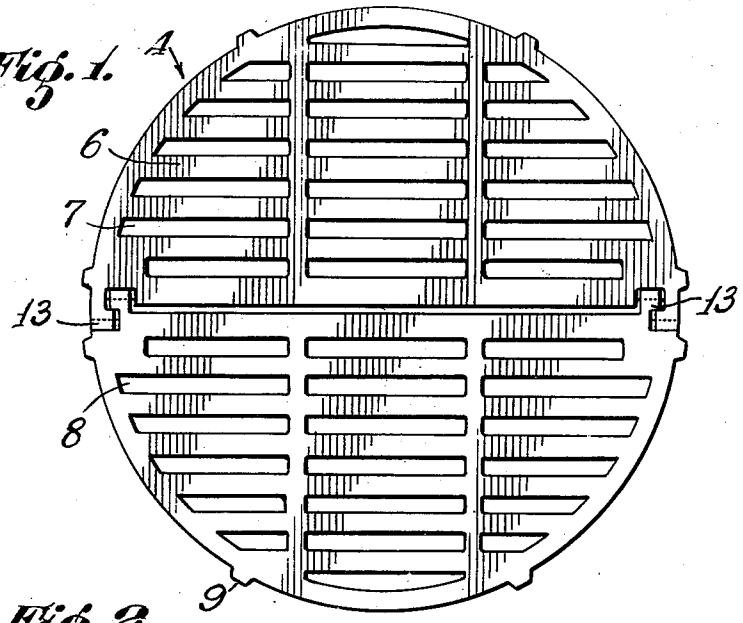
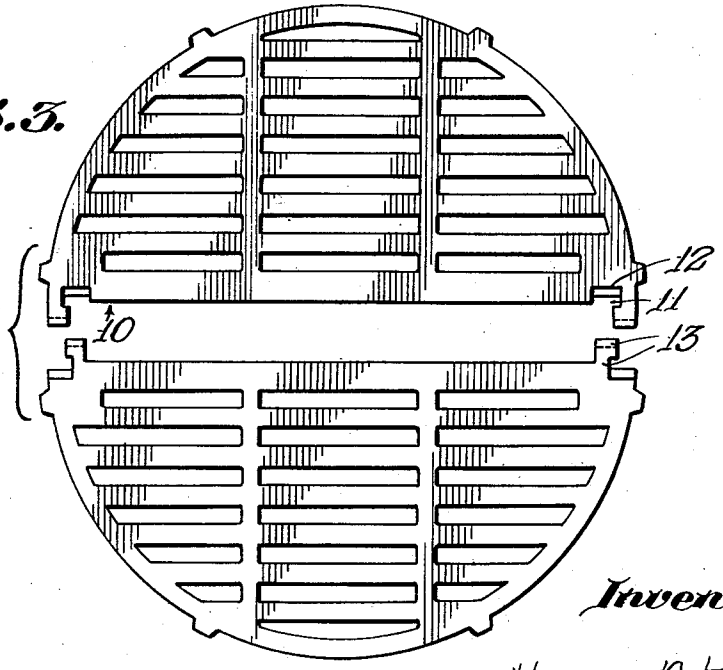


Fig. 2.



Fig. 3.



Inventor:

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GRATE

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Application September 25, 1940, Serial No. 358,257

1 Claim. (Cl. 126—152)

This invention relates to a grate designed for general use in which the finer and more economical forms of fuel can be used, for example, such as egg, nut, screenings, and the finer coal.

The objects of the improvement are:

First, to provide a grate made in two sections that can be installed or removed through the furnace door opening as well as a grate that can be operated and used on top of the grate already installed in the furnace.

Second, to provide a grate made in two sections with a lock-joint that holds the grate sections together.

Third, to provide a grate made in two sections with the ordinary grate bars spaced so they will support the finer sizes of coal.

Fourth, to provide a grate with lugs extended and spaced at various points on the periphery of the grate to provide air channels between the grate and the furnace wall.

Fifth, to provide a grate made in two sections which, when joined together, with the lock-joint, forms a round grate adapted to support the finer sizes of coal until consumed and, at the same time, permit the ashes to drop through; also permitting air to be supplied to all portions of the fuel mass in quantities sufficient to practically complete the combustion of the gases driven off and the carbon content.

The invention herein illustrated may be modified in various ways and made in different shapes, with the ordinary grate bars spaced to support the finer sizes of coal. This can be obtained without departing from my invention. One form of the invention is illustrated in the accompanying drawing, in which:

Figure 1 is a plan view of the grate.

Figure 2 is a view of the grate in edge elevation.

Figure 3 is a view of the grate shown in two sections, one-half opposite the other.

The grate of the present invention is intended to be exemplified in a circular grate indicated by the number 4, Figure 1. It is to be understood that it may apply to grates other than round. The grate is provided with the ordinary grate bars 6, spaced apart with the intervening spaces 7, for the introduction of air and the passage of ashes.

The grate is provided with lug members 9 extending on the periphery of the grate. The grate comprises two approximately identical sections, each having one straight edge 10, projecting arms 13 on the straight edge of one of said sections, said arms having the outermost edge thereof bevelled outwardly. Recesses 11 in the straight edge of the other of said sections are located so as to correspond to the said projecting arms on said first-mentioned section and shaped to receive the same. The innermost edges of the said recesses being undercut at 12 to mate with the bevelled ends of said projections 13, at least one portion of the straight edge of said first-named section being undercut on a bevel and corresponding portions of the edge of said second section being beveled outwardly to engage beneath the aforementioned corresponding undercut. The projections extending laterally from said arms with corresponding depressions in said recesses to prevent horizontal pulling apart of said grate sections when the projections are engaged in the recesses 11, but permitting disengagement of said sections when the grate sections are first hinged upwardly about said straight edges, completing the grate as indicated in plan Figure 1.

I am aware that prior to my invention, grates have been made in various forms with approximately one-half of the entire total area of the grate surface open for the passage of air. I therefore, do not claim such a combination broadly; but

I claim:

The combination, in a grate comprising two approximately identical sections, each having one straight edge, projecting arms on the straight edge of one of said sections, said arms having the outermost edge thereof bevelled outwardly, recesses in the straight edge of the other of said sections located so as to correspond to the said projections on said first mentioned section and shaped to receive the same, the innermost edges of the recesses being undercut to mate with the bevelled ends of said projections, at least one portion of the straight edge of said first named section being undercut on a bevel and corresponding portions of the edge of said second section being bevelled outwardly to engage beneath the beforementioned corresponding undercut, projections extending laterally from said arms with corresponding depressions in said recesses to prevent horizontal pulling apart of said grate sections when the projections are engaged in the recess, but permitting disengagement of said sections when the grate sections are first hinged upwardly about said straight edges.

HARRY P. KATZ.