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GAS COOKSTOVE BURNER GRATE

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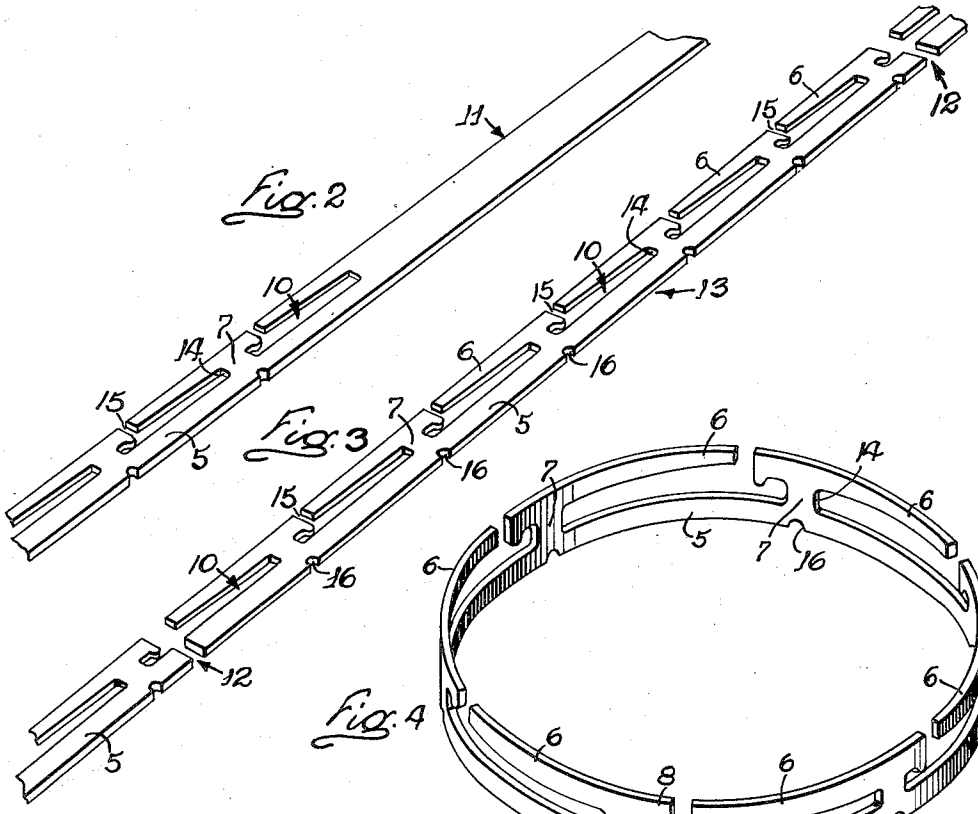


Fig. 2

Fig. 3

Fig. 4

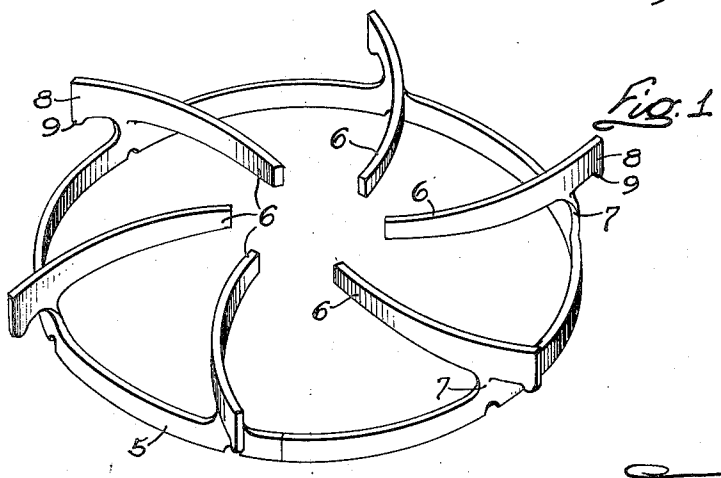


Fig. 1

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GAS COOKSTOVE BURNER GRATE

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1 Claim. (Cl. 126—214)

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The invention relates to improvements in cooking tops for gaseous fuel cook stoves and more particularly to a novel utensil support or grate for use therewith and to a novel method of making the grates.

The general object of the invention is to provide a novel grate structure of simple and rugged construction which is attractive in appearance, efficient in operation and capable of being produced at relatively low cost.

More specifically, it is an object of the invention to provide a novel grate adapted to be fabricated from sheet metal in accordance with a novel method of construction which materially reduces manufacturing costs while producing a structure having greater strength and higher operating efficiency than conventional cast iron grates.

Another object is to provide a novel grate capable of being produced from sheet metal stock by means of simple stamping and bending operations..

A further object is to provide a grate in which the mass of metal subjected to the heat of the burner is materially less than that of cast iron grates with a corresponding reduction in heat loss due to conduction and which is not only stronger than such cast iron grates but is substantially unbreakable.

Other objects and advantages of the invention will become apparent from the following detailed description of the preferred embodiment illustrated in the accompanying drawing in which:

Figure 1 is a perspective view of a grate embodying the features of and constructed in accordance with the novel method of the present invention.

Fig. 2 is a perspective view of a partially formed blank from which the improved grate is fabricated.

Fig. 3 is a perspective view showing the manner in which the blanks are formed from a continuous strip of stock.

Fig. 4 is a perspective view showing an intermediate stop in the method of fabricating the improved grate.

While the invention is susceptible of various modifications and alternative constructions, I have shown in the drawings and will herein describe in detail the preferred embodiment, but it is to be understood that I do not thereby intend to limit the invention to the specific form disclosed, but intend to cover all modifications and alternative constructions falling within the spirit

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and scope of the invention as expressed in the appended claim.

Referring to the drawings, the improved grate in the preferred form shown in Fig. 1 is of more or less conventional form comprising a body member 5 adapted to fit within the burner well of a gaseous fuel cook stove and provided with a series of uniformly spaced generally radially disposed utensil supporting fingers 6. In carrying out the invention, the improved grate is fabricated from sheet metal which provides ample strength and rigidity while greatly reducing the mass of metal exposed to the flame of the burner and correspondingly reducing the heat loss through conduction. Moreover, by reason of this construction, a grate may be made by a novel method utilizing simple stamping and bending operations which materially reduces the cost of the grate.

In the exemplary grate, as shown in Fig. 1, the body 5 is annular in form but it can of course be made in any desired shape to fit a selected burner well. The term annular as used herein is intended to cover such other shapes. The fingers 6, herein shown as generally arcuate in the direction of their length, are formed to present their upper edges in a common horizontal plane for engagement with the bottom of a utensil to be supported over the burner.

Relatively narrow upright standards or webs 7 integral with the band 5 and fingers 6 rigidly connect the lower edges of the latter with the adjacent upper edge of the band, the webs being twisted about vertical axes to position the fingers generally radially of the body 5. Preferably, the spacing of the webs with respect to the ends of the fingers is such that the major portion of each finger projects inwardly toward the center of the grate leaving a shorter portion or extension 8 projecting outwardly to support the grate upon the top of the stove structure. To provide a point contact with the stove top, the extensions 8 are conveniently formed with depending rounded lugs 9.

By reason of its novel construction, as above described, the improved grate can be produced very economically in accordance with an improved method utilizing only simple stamping and bending operations. Thus according to the preferred method, a flat elongated blank is initially formed by stamping a series of appropriately shaped notches 10 along one edge of a strip 11 of sheet metal of a width corresponding to the overall height of the grate. The unnotched edge portion of the blank which forms the band

or body 5 of the grate is then cut transversely at spaced points 12 (Fig. 3) into sections 13. The length of the sections is determined by the circumferential dimensions of the finished grate as are likewise the length and spacing of the notches 10. Each of the sections 13 constitutes a complete blank for the fabrication of a grate.

The stamped sections 13 are rolled or otherwise bent into annular configuration as shown in Fig. 4. In this intermediate form of the blank, it will be observed that the fingers 6 are arcuately bent similar to the band portion 5 of the blank and that the ends of the latter abut. The abutting ends are rigidly secured together as by butt welding thus providing a strong and rigid structure. In the final step of the fabricating method, the webs 7 connecting the band 5 with the fingers 6 are twisted about axes parallel to the axis of the band to position the fingers generally radially of the grate structure as shown in Fig. 1.

In the blank for the exemplary grate, the notches 10 are generally L-shaped each consisting of an elongated slot 14 extending longitudinally of the blank and having one edge located substantially on the center line of the same. A transverse slot 15 extends from the other edge of the slot 14 to the adjacent edge of the strip to separate the forward or inner end of one finger from the rear or outer end of the adjacent finger. The slot 15 is located with reference to the ends of the slot 14 so that the stamping of the notch 10 forms the inwardly extending end portion of one finger and the outwardly extending portion of the adjacent finger.

The spacing of the notches 10 longitudinally of the strip 11 is such as to leave a relatively narrow web 7 connecting the band 5 with each finger 6. It will be understood, of course, that the notches 10 may be stamped singly or in groups as preferred. In either case, a small, generally semi-circular notch 16 may be stamped simultaneously in the lower edge of the strip 11 substantially in alinement with the web 7 for convenience in locating the strip for the stamping of the next notch or notches.

In the particular grate illustrated, the notches 10 are dimensioned and spaced apart to form six of the fingers 6 in each blank section 13. The dimensions of the notches may be varied, if desired, to form more or less of the fingers 6 although under such conditions, the length of each finger must be suitably proportioned to the circumferential dimension of the grate.

It will be apparent from the foregoing that the invention provides a grate structure for burners of gaseous fuel cook stoves which is simple and rugged in construction and attractive in appearance. The use of sheet metal in the construction of the grate provides substantial strength while materially reducing the amount of metal subjected to the heat of the burner. The operating efficiency of the grate is thus increased as there is less heat loss from conduction.

The novel grate structure lends itself particularly well to production in accordance with a novel method utilizing only simple stamping and bending operations. Thus the cost of producing such grates is reduced to a very low figure yet the resulting grate structure is superior to grates heretofore available.

I claim as my invention:

A grate for gaseous fuel cook stove burners comprising, in combination, a continuous annular band of relatively thin sheet metal, a plurality of narrow upwardly projecting standards integral with said band and spaced apart circumferentially around the upper edge of the band, a like plurality of elongated utensil supporting fingers disposed in a plane parallel to the plane of the band and spaced upwardly therefrom, each of said fingers overlying one of said standards and being integrally joined intermediate its ends to the upper end of that standard, said standards being twisted about axes parallel to the central axis of the band to position said fingers generally radially of the band with opposite end portions projecting respectively inwardly and outwardly relative to the band, the outwardly projecting portions of said fingers serving to support the grate on a stove structure.

HERBERT M. REEVES.

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