Nov. 19, 1946. G. W. ZIMBELMAN ET AL 2,411,313

HEATER

Filed Dec. 8, 1944 2 Sheets-Sheet 1

Fig. 1.

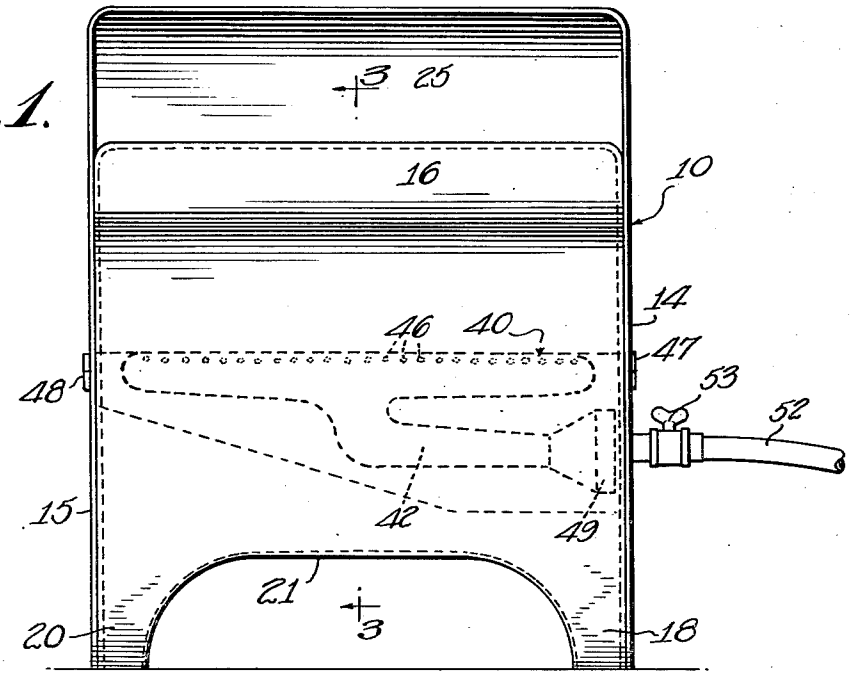


Fig. 2.

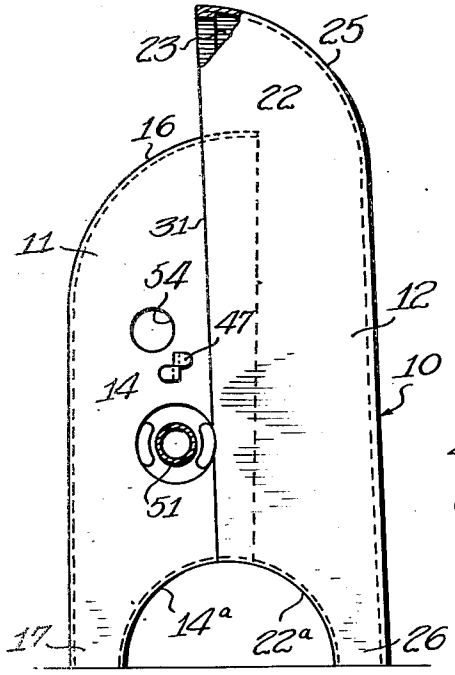


Fig. 5.

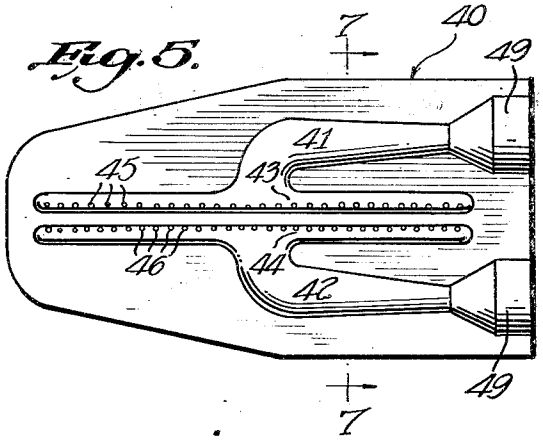
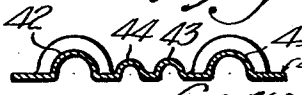


Fig. 7.



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HEATER

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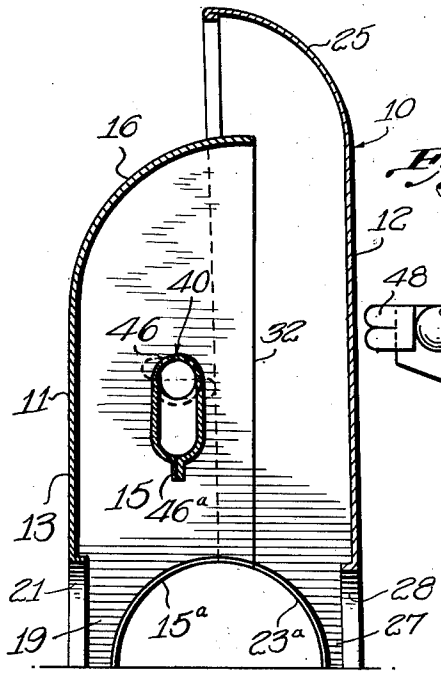
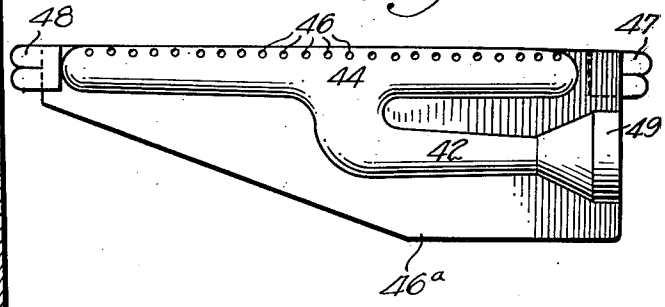


Fig. 3.

Fig. 6.



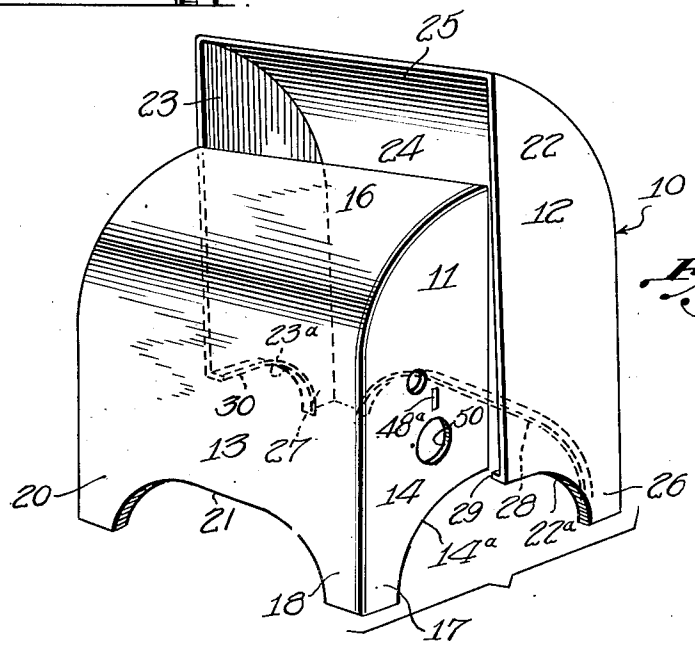


Fig. 4.

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HEATER

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Application December 8, 1944, Serial No. 567,215

4 Claims. (Cl. 126—85)

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The instant invention relates to portable heaters and more particularly to a heater formed of sheet metal and preferably utilizing a gaseous fuel.

One of the primary objects of the invention is the construction of a heater of the character aforementioned which is formed of only three sheet metal parts, namely a body or shell of two telescoping members and a burner member.

Still another purpose of the invention is the formation of a sheet metal heater in which the burner is not centered in the heater but under a curved portion of one of the sheet metal members whereby the curved portion acts as a baffle.

Still another aim is the fabrication of a sheet metal heater of the type specified having structural features in which the heat flow attains a high velocity with a tendency to spread at a low level over the floor of the room in which the heater is placed.

Yet another object is the making of a heater which is readily stamped from sheet metal, easily assembled and spot welded together and which is preferably given a porcelain-enamel finish to protect and embellish the sheet metal members.

The above and other aims and objects will be apparent from the detailed description hereinafter appearing when taken in conjunction with the appended drawings forming a part hereof and in which

Figure 1 is a front elevational view of the completed heater and showing the burner member in dotted lines;

Figure 2 is a side elevational view of the heater of Figure 1;

Figure 3 is a sectional view taken on line 3—3 of Figure 1;

Figure 4 is a perspective view showing the relationship of the two heater shells or sections prior to the telescoping and uniting thereof;

Figure 5 is a plan view of the burner blank;

Figure 6 is a side elevational view of the blank of Figure 5 after same has been bent to shape and provided with attaching lugs; and

Figure 7 is a sectional view taken on line 7—7 of Figure 5.

Referring first to Figs. 1 to 4, inclusive, the reference character 10 designates the heater as a whole, which it will be seen is formed of two sections or sheet metal shells 11 and 12. Shell 11 comprises a front wall 13, parallel side walls 14 and 15, the front wall 13 extending vertically and terminating at its upper end in a curved baffle portion 16. It will be noted that the wall 14 is cut away as at 14a forming a leg member

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17 angularly disposed to an adjacent leg member 18 of the wall 13. Similarly wall 15 is cut away as at 15a forming a leg member 19 angularly disposed to leg member 20 of front wall 13. The latter is cut away as at 21 forming the aforementioned leg members 18 and 20 thereof and it will be understood that section 11 has no rear and no bottom wall.

Shell section 12 is constructed similarly to shell section 11 but is of greater heighth and width. As in shell section 11, shell section 12 has parallel side walls 22 and 23, a rear vertically extending wall 24 terminating in a forwardly curved baffle portion 25. Also, each of walls 22 and 23 is cut away as at 22a, 23a, respectively, provided with a leg member 26 and 27, respectively, while rear wall 24 is cut away as at 28 similar to opening 21 of the section 11. By reference to Fig. 4 it will be seen that the walls 22 and 23 of the section 12 have an inwardly extending ledge 29 and 30, respectively. Fig. 4 shows the two sections 11 and 12 in position for assembly, section 11 being adapted to be telescopically positioned within section 12 with the wall 14 of section 11 in abutting parallel relationship inwardly of and with wall 22 of section 12 while similarly wall 15 of section 11 is in abutting parallel relationship inwardly of and with wall 23 of section 12. When thus assembled the sheet metal sections or shells 11 and 12 may be spot welded together inwardly and outwardly along substantially lines 31 and 32, see Figs. 2 and 3.

The burner member is shown in Figs. 5, 6 and 7 and comprises a sheet metal stamping designated in its initial form generally as 40. It is essentially a sheet or metal plate formed with similar raised portions 41, 42 and other similar raised portions 43 and 44 all symmetrically disposed about the longitudinal axis of the stamping. A second step in the formation of the burner member comprises perforating the adjacent raised portions 43 and 44 to provide a series of spaced ports 45 and 46. The next step comprises bending the stamping 40 along its longitudinal axis, the completed burner being shown in Fig. 6. The abutting edges of the burner are preferably united by spot welding as 46a and elsewhere and the opposed ends are provided with lugs 47, 48 spot welded thereto. The burner is now ready to be positioned within the telescoped united shell sections 11 and 12. By reference to Figs. 2 and 4 it will be seen that the lugs 47 pass through an opening 48a in wall 14 of shell member 11 while the annular conduit formed by abutting raised portions 41 and 42 terminating in an outwardly

flared entrance port **49** is positioned adjacent opening **50** in wall **14**, said opening being preferably provided with a conventional valve member **51** adapted to receive gas hose **52** provided with a conventional controlling valve **53**. Lugs **47**, after being inserted through opening **48***a* are reversely bent as will be seen in Fig. 2 of the drawings. Similarly, lugs **48** are positioned in wall **15** of section **11**. Finally, side wall member **14** may be provided with a small aperture **54** for igniting the gaseous fuel.

It will now be understood that upon ignition of the gaseous fuel issuing from the ports **45**, **46**, the heat flow will be directed against curved portion or baffle **16** of front wall **13** of the heater **10** and then deflected toward rear wall **24** of the heater. Convection currents are created by air entering through cut-away portions **14***a*, **15***a*, **21**, **22***a*, **23***a* and **28** of the shell sections **11** and **12** and serve to direct the heat flow against the baffle **25** which projects it with a high velocity forwardly into the room where the heat is spread at a low level adjacent the floor.

The surface of heater **10**, as well as the burner member, is preferably coated with a porcelain enamel so that the sheet metal is protected and the final product has an attractive finished appearance.

From the above it will be seen that there has been produced a burner well adapted to perform its intended functions. It is formed of very few and simple parts; may be manufactured at low cost and has proved to be efficient in use. Various changes in the specific details shown and described will be apparent to those skilled in the art and it is contemplated to cover all such and

to be limited in this respect only as may be necessary by the scope of the claims hereto appended.

What is claimed and desired to be secured by Letters Patent is:

1. A heater having a hollow body portion, said portion comprising a pair of sheet metal sections one of which is of less height and width than the other section, the smaller of said sections including a front wall, parallel side walls and an open rear portion, said front wall terminating in a rearwardly curved baffle portion, the larger of said sections including a rear wall, parallel side walls and an open front portion, said last mentioned rear wall terminating in a forwardly curved baffle portion, an open rear portion of the smaller section being telescopically positioned within the open front portion of the larger section, said sections being united to each other and having a burner mounted therewithin.

2. The structure of claim 1, said burner member being positioned within said smaller section below the baffle portion thereof.

3. The structure of claim 1, each of said parallel side walls of both of said sections having a cut-away portion adjacent the lower edge thereof, said burner having lugs, said lugs being secured to the side walls of the smaller section above its cut-away portions and below its baffle portion.

4. The structure of claim 1, the parallel side walls of said larger section having opposed inwardly extending ledges for partially supporting said smaller section.

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