Oct. 9, 1951 B. B. BALKEMA 2,570,508

GRILLE UNIT AND CARRYING CASE FOR PORTABLE STOVES

Filed July 1, 1948 2 Sheets-Sheet 1

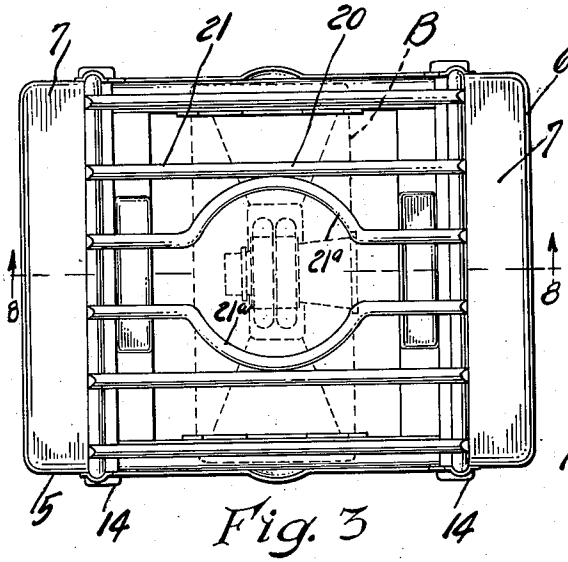


Fig. 3

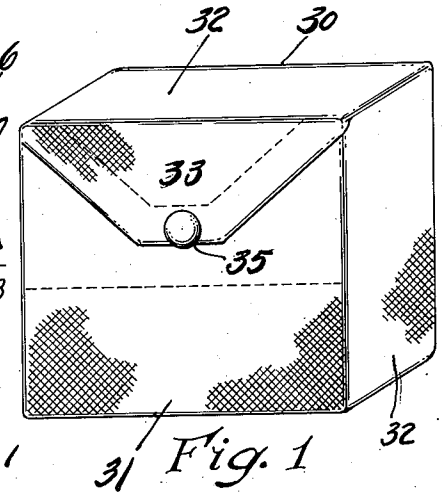


Fig. 1

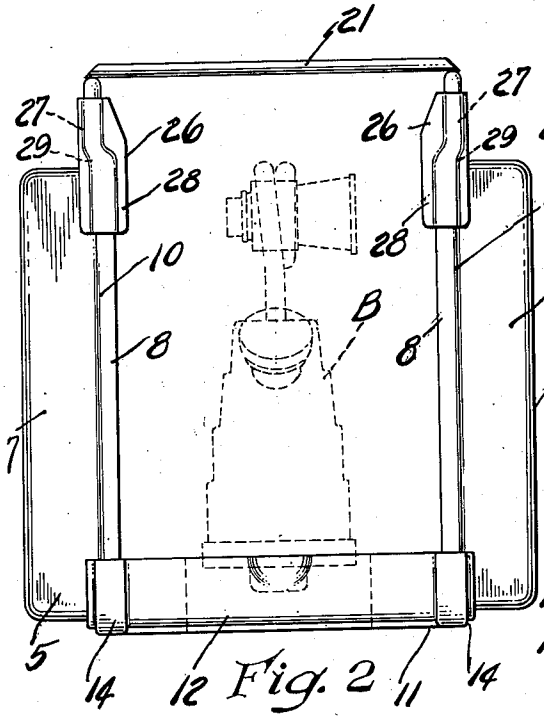


Fig. 2

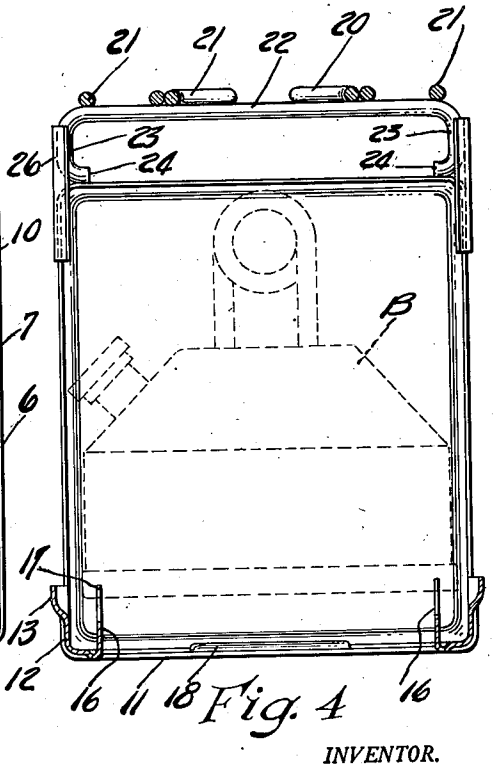


Fig. 4

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Oct. 9, 1951 B. B. BALKEMA 2,570,508

GRILLE UNIT AND CARRYING CASE FOR PORTABLE STOVES

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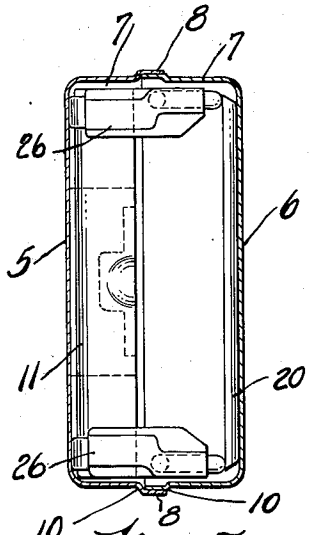


Fig. 7

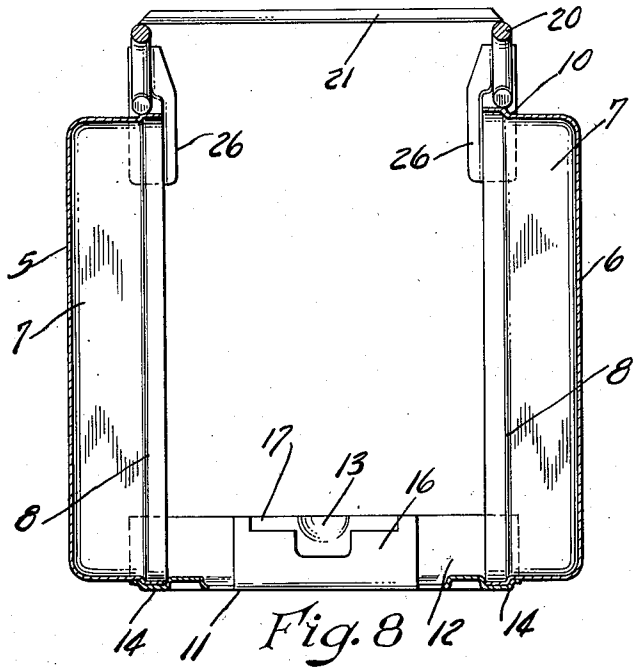


Fig. 8

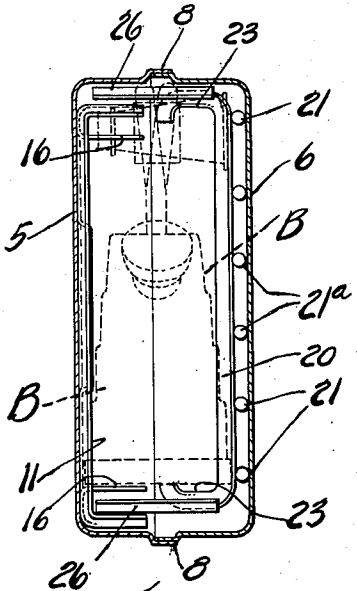


Fig. 6

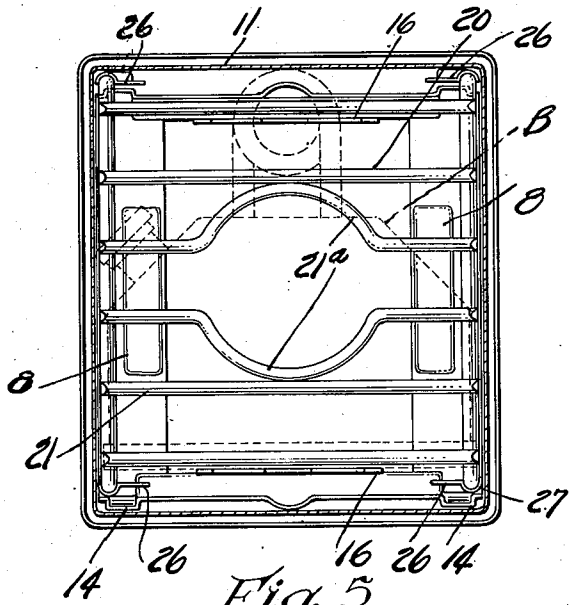


Fig. 5

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GRILLE UNIT AND CARRYING CASE FOR PORTABLE STOVES

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Application July 1, 1948, Serial No. 36,536

3 Claims. (Cl. 126—9)

1

The present invention relates to portable cooking stoves for outdoor field use, and in particular to a combined grille unit and carrying case for the grille unit and stove burner.

The primary object is to provide a combined carrying case and grille which can be easily converted from a grille unit to a carrying case for the stove burner and the grille for said unit.

Another object is to provide a combined carrying case and grille unit which will withstand relatively heavy loads when the grille unit is set up to operate as a cooking stove.

Another object is to provide a combined carrying case and grille unit for portable cooking stoves in which the grille and supporting base can be conveniently nested in the sections of the carrying case, along with the stove burner so that the cooking stove can be easily and readily carried in the pocket of the user.

Another object resides in the provision of a combined carrying case and grille unit for portable cooking stoves in which the sections of the carrying case form the sides of the grille unit when the stove is set up for field use.

Another object is to provide a convertible carrying case and grille unit for portable cooking stoves in which the utensil supporting grille rests upon the separable sections of the carrying case when the stove is in operation.

Another object resides in the provision of a portable cooking stove in which the side portions of the stove are adapted to form a container for the various elements of the stove when the stove is carried in the pocket of the user.

Another object is to provide a portable cooking stove and carrying case therefor in which the carrying case forms the side supports for the stove grille when the stove is set up for use, and to provide means on the carrying case and grille unit elements for separately and slidably connecting the various parts together when it is desired to set the stove up for outdoor use.

Another object of the invention resides in the provision of a flexible container for receiving the cooking stove and carrying case when the stove is collapsed and folded for storage.

Another object of the invention is to form the various elements of the cooking stove so that they can be conveniently stored when not in use, with the side members of the stove forming a carrying case when said members are placed in frictional engagement one with the other.

Another object is to provide a portable collapsible cooking stove in which the grille member is supported a slight distance above the side

2

supports to prevent excessive heat radiation in the direction of the burner.

Another object is to provide a portable collapsible cooking stove in which the base member is designed to support the liquid fuel burner and simultaneously maintain the side members (carrying case sections) in rigid fixed relationship when the stove is in use.

Other objects and advantages of the invention will become apparent during the course of the following description of the accompanying drawings wherein:

Figure 1 is a perspective view of the flexible fabric case into which the portable cooking stove is adapted to be stored when not in use.

Figure 2 is an end elevational view of the cooking stove set up for operation and illustrating the liquid fuel burner in dotted lines.

Figure 3 is a top elevational view of the portable cooking stove showing the general structure of the utensil supporting grille.

Figure 4 is an end elevational view showing the manner in which the base and grille are removably secured to the casing sections.

Figure 5 is a vertical sectional view of the stove in its folded position when the base and grille are nested within the separable casing sections.

Figure 6 is a transverse cross sectional view taken at right angles to Figure 5, further showing the manner in which the grille and base are nested within the casing sections with the liquid fuel burner disposed therebetween.

Figure 7 is a horizontal cross sectional view showing the portable cooking stove in its folded position with the base and grille member nested therein, and

Figure 8 is a vertical cross sectional view of the portable cooking stove showing the same assembled for use with the casing sections forming the sides of the stove, and the base and grille member removably affixed thereto for holding the sides in spaced relation and forming a cooking stove for field use.

In the drawings, and more in detail, the portable field cooking stove is shown as being composed of four separably connected sections and a liquid fuel burner which is shown and disclosed in detail in a co-pending application for Liquid Fuel Burner for Portable Stoves, filed July 1, 1948, Serial No. 36,537. For convenience of illustration, the portable cooking stove comprises a pair of complimentary casing sections 5 and 6 which are identical in construction and are of slightly different dimensions to permit sliding

interfitting of one within the other. Each casing section includes a marginal flange 7 which terminates in a pressed bead 8 extending about the entire perimeter of the flange. The pressed bead portions 8 are adapted to slidably interfit to form a closed storage chamber when the portable field stove is folded in a compact position. At the point where the marginal bead 8 connects with the flange 7, there is formed a shoulder 10 which is engaged by the edge of the opposing flange 7, thereby limiting sliding movement beyond the shoulder 10 but yet providing a sliding frictional fit between the adjacent bead surfaces.

The base of the portable cooking stove is formed of a pressed metal section 11 having upturned end portions 12, and said end portions are spaced a distance equal to the width of the casing sections to enable the casing sections to be interlocked therewith when the stove is in use. Each upstanding end portion 12 is pressed outwardly as at 13 to form a finger engaging projection to permit the easy and quick separation of the base member 11 when dismantling the various parts of the stove.

Formed adjacent each edge of the supporting base member 11 is a pressed rib 14 adapted to provide internal recessed grooves of a width equal to the width of the pressed bead 8 so that the base member can be frictionally and slidably affixed to the lower ends of the casing sections as shown in Figure 2. Thus, the pressed beads 8 and pressed ribs 14 provide mutually engaging friction surfaces for holding the casing sections 5 and 6 in spaced apart relation.

In order to support the liquid fuel burner B, Figures 2 and 4, a pair of uprights 16 are struck up from the bottom wall 11 of the base and said uprights are spaced apart such that the burner B will be supported thereon adjacent the ends thereof. The upper edge of each upright 16 is cut away as at 17 a distance equal to the width of the burner base for reception of the base of the burner, to thereby hold the same in place against lateral movement caused through accidental shocks or jars.

Suitable reinforcing ribs 18 (Figure 4) are formed in the bottom wall 11 of the base by pressure or the like to add rigidity thereto and prevent bending of the base in a direction to cause the casing sections when in place to move either inwardly or outwardly.

Mounted on the upper portion of and supported by the spaced apart casing sections 5 and 6 is a grille structure generally designated 20, and said grille structure is formed of a series of wire rods 21 arranged in longitudinal spaced apart relation, and have their ends welded or otherwise affixed to a pair of spaced apart end supports 22, likewise formed of wire rod stock of substantially the same diameter as the grille wires 21. The centralmost grille rods 21 are arcuately bent as at 21*a* to prevent interruption of the flame from the burner. The free ends of the supporting members 22 are bent downwardly as at 23 and terminate in inwardly bent foot portions 24 (Figure 4), which are adapted to engage the upper edge of the respective casing section flanges and rest thereon when the stove is assembled for use.

Each of the downwardly depending portions 23 of the grille wire supports has affixed thereto a plate-like member 26 which has its upper portion depressed as at 27 to fit the curved contour of the depending leg portions 23. The plate-like members 26 are welded or otherwise attached

to the depending leg portions 23 of the grille wire supports so that the upper ends will terminate a slight distance below the horizontal plane of the grille wires 21, and thus be removed from the path of cooking utensils placed on said grille. The lower portion of the plate-like members 26 are also pressed or stamped as at 28 to provide internal recesses or grooves of a width substantially equal to the width of the offset beaded portion 8 of the casing sections so that the grille structure will frictionally fit on said casing sections.

The depressed portions 28 are actually of a width slightly greater than the width of the beaded portion 8 so that a snug frictional fit will result when the parts are assembled as a stove structure.

It is to be noted, that the depressed or stamped portions 27 and 28 are offset as at 29 so that the inwardly bent foot portions 24 of the grille supporting legs 23 will engage slightly in back of the shoulder 10 and add rigidity to the grille structure. Thus, as pointed out in connection with the depressed portions 14, the depressed or stamped portions 28 will form with the beaded portions 8 mutually engaging friction surfaces of channel-like section to permit the grille to be easily applied and removed from the casing sections without resorting to complicated fastener elements and the like.

All of the parts of the portable cooking stove including the casing sections 6 and 5 are formed of Monel metal or similar composition alloy, having relatively low heat radiating characteristics so that heat will not be reflected in the direction of the burner B and cause irregular burner operation.

When it is desired to store the stove in the pocket, the base 11 and grille structure 20 are removed by sliding the same in a direction away from the casing sections. After the base and grille structure are removed they are nested in the casing sections, with the base in one section and the grille structure in the other as shown in Figures 6 and 7. By then placing the complementary casing sections together (also Figures 6 and 7) so that the pressed bead portions 8 frictionally interfit in overlapping relation the stove will be folded to a compact unit which can be easily stored in the pocket of the user.

The portable cooking stove is adapted to be placed in a receptacle after the same has been folded, and as illustrated in Figure 1, the receptacle includes a flexible container formed of duck or other material of general rectangular outline. The container 30 includes a bottom (not shown) having side and end walls 31 and 32 respectively. One of the side walls is provided with a flap closure 32 which forms the top wall of the receptacle, and said flap is provided with a tab 33 adapted to be held in place by a separable snap fastener 35. When the portable cooking stove has been folded as shown in Figures 6 and 7, with the burner B also stored therebetween, the same is slipped into the receptacle 30 and the flap closure 32—33 is fastened in place by the snap fastener 35.

It will thus be seen, that the invention provides a portable cooking stove which can be conveniently carried in the pocket, and which can be easily assembled and dismantled without requiring considerable effort or time.

I claim:

1. In a portable cooking stove, a pair of relatively flat casing sections having side flanges provided with ribbed edge portions, said casing

sections being adapted when separated to form the side walls of a stove, a base having upturned ends provided with depressed portions of channel section for receiving the ribbed edges at the lower portions of said casing sections, a grille for supporting utensils adapted to be removably affixed to the upper edges of said casing sections, and connecting members on the grille having channel-shaped recesses for receiving the ribbed edge portions of the casing sections.

2. In a portable cooking stove, a pair of relatively flat casing sections having side flanges provided with ribbed edge portions, said casin sections being adapted when separated to form the side walls of a stove, a base having upturned ends provided with depressed portions of channel section for receiving the ribbed edges at the lower portions of said casing sections, a grille for supporting utensils adapted to be removably affixed to the upper edges of said casing sections, and connecting members on the grille having channel-shaped recesses for receiving the ribbed edge portions of the casing sections, the channel recesses on the base and grille forming with the ribbed edge portions of the casing sections mutually engaging friction surfaces to retain the stove in an assembled position.

3. In a portable cooking stove having a liquid fuel burner, a pair of separable casing sections having ribbed edge portions adapted to be received one within the other when the casing sections are closed, said casing sections being

adapted to form the side walls of the stove when opened, a base removably secured to the lower edges of said casing sections to hold the same in spaced apart relation, a grille for supporting cooking utensils removably affixed to the upper edges of said casing sections, and a pair of struck up supporting members on said base for supporting the liquid fuel burner, said base and grille being provided with recesses of channel section adapted to cooperate with the ribbed edge portions of the casing sections and form mutually engaging friction surfaces.

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