April 13, 1937. E. L. JONES 2,076,783

COLLAPSIBLE STOVE

Filed Feb. 11, 1936 2 Sheets-Sheet 1

Fig. 1.

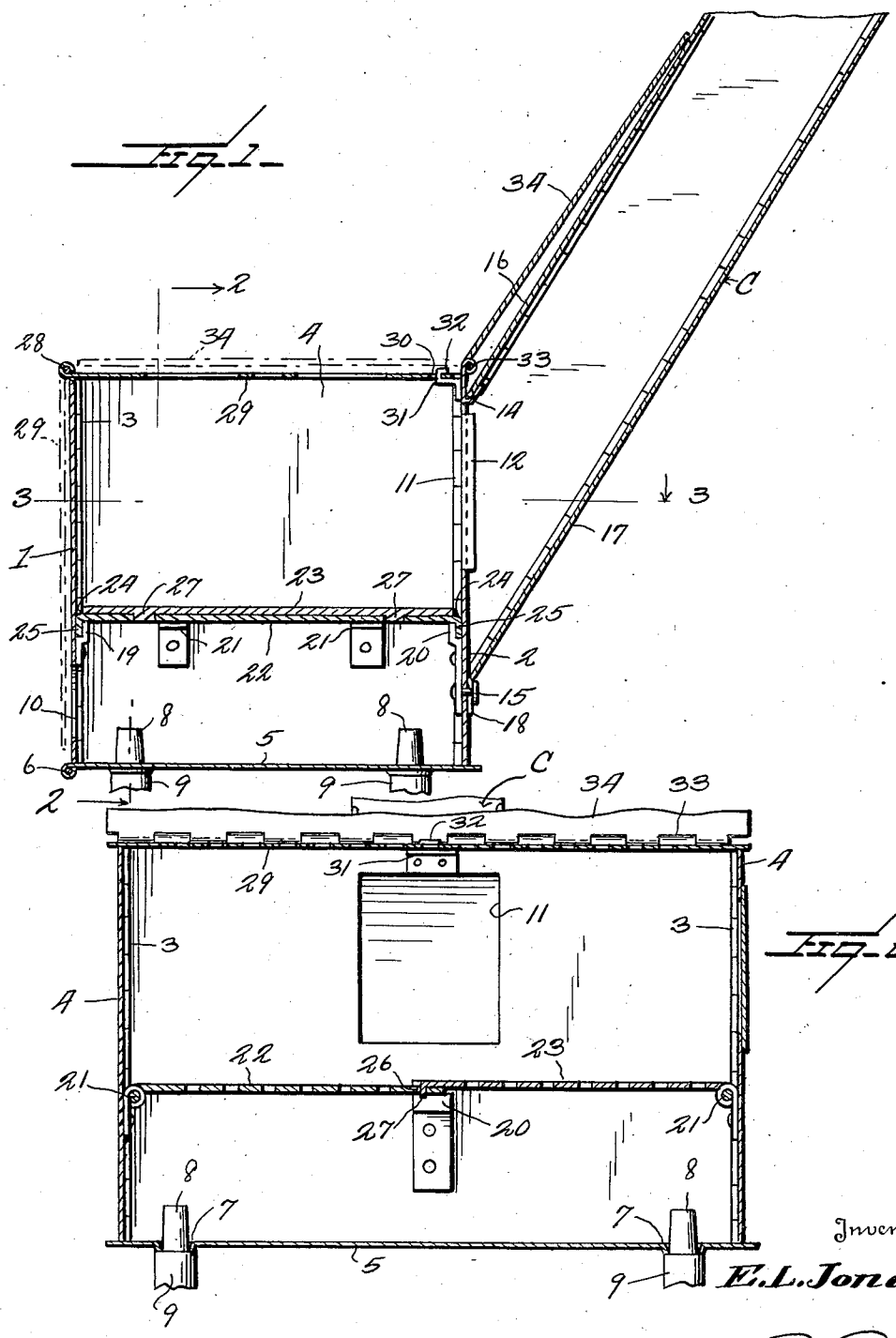


Fig. 2.

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Filed Feb. 11, 1936 2 Sheets-Sheet 2

Fig. 3

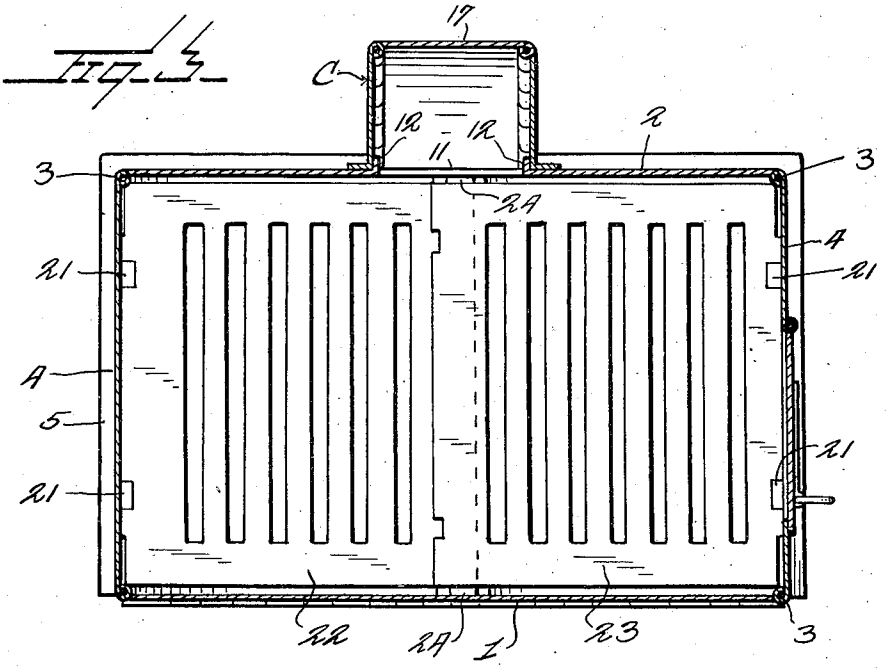


Fig. 4

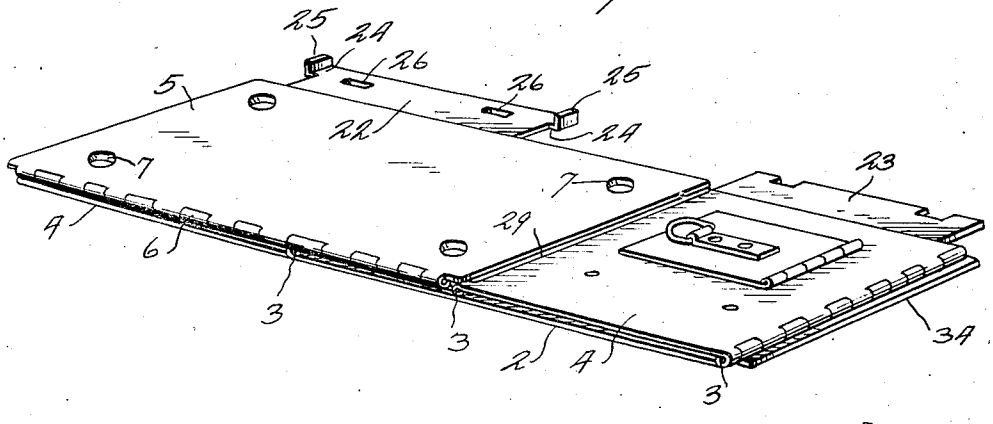
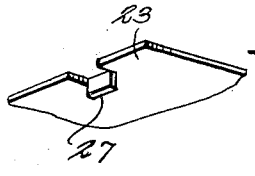


Fig. 5



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UNITED STATES PATENT OFFICE

2,076,783

COLLAPSIBLE STOVE

Everett L. Jones, Twila, Ky.

Application February 11, 1936, Serial No. 63,429

7 Claims. (Cl. 126—9)

This invention relates to a collapsible stove, and it is primarily an object of the invention to provide a device of this kind which is of especial advantage in camping, and the invention further has for an object the provision of a stove which can be used with equal advantage for ordinary cooking purposes, broiling or in preparing food of a barbecue style.

A still further object of the invention is to provide a stove constructed in a manner which, when not in use, may be compacted to occupy a minimum of space to facilitate either storage or transportation and which can be readily extended into adjustment without requiring any particular skill.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved collapsible stove whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein:—

Figure 1 is a transverse vertical sectional view taken through a stove constructed in accordance with an embodiment of my invention, certain of the parts having a second position indicated by broken lines;

Figure 2 is a sectional view taken substantially on the line 2—2 of Figure 1 looking in the direction of the arrow, certain of the parts being in fragment;

Figure 3 is a horizontal sectional view taken substantially on the line 3—3 of Figure 1 looking in the direction of the arrow;

Figure 4 is a view in perspective of the stove in its folded or compacted adjustment;

Figure 5 is a fragmentary view in perspective of a portion of one of the grate sections as herein comprised.

As disclosed in the accompanying drawings, 1 denotes a front panel of the stove and 2 the rear panel, both being made of sheet metal and of required dimensions. The end portions of these panels 1 and 2 are hingedly connected, as at 3, with the end panels 4 also of sheet metal and of preferred size. The hinge connections 3 between the panels 1, 2, and 4 permit a collapsing of the panels as indicated in Figure 4 with the bottom panel 5 and the front panel 1 in overlying relation. This adjustment of the bottom panel 5 is permitted as a marginal portion of the bottom panel 5 is hingedly connected, as at 6, to the lower marginal portion of the front panel 1, said hinge connection permitting the bottom panel 5 to be readily swung into the compacted or folded position as indicated in Figure 4, or to be adjusted in the opposite direction to bridge the space or area defined by the panels 1, 2 and 4 when the stove is extended for use as illustrated in Figures 1 and 2.

The bottom panel 5 is also of sheet metal and is of such dimensions as to have the panels 1, 2 and 4 resting thereon from above when the structure is extended for use. The corner portions of the bottom panel 5 are also provided with the openings 7 through which are inserted from below the reduced portions 8 provided at the upper ends of the stakes 9. These stakes 9 are of any length desired and are adapted to be driven into the ground to provide means for supporting the stove structure in working position. These stakes 9 are of particular advantage in placing the stove for use upon a hillside as, of course, the required level of the stove may be attained by selectively driving the stakes the required distances into the ground. These stakes 9 may be of any material which is believed to best meet the requirements of practice.

The panel 1 in its central part and closely adjacent to its lower margin is provided with a draft opening 10 of suitable size while the central part of the rear panel 2 in its top portion is provided with a flue opening 11. The side marginal portions of the opening 11 are defined by the outstanding flanges 12 substantially perpendicular to the panel 2 while the upper margin of the opening 11 is defined by an upwardly inclined flange 14. The panel 2 at a point below the opening 11 and substantially central thereof carries an outstanding headed member 15.

A collapsible chimney C is comprised in my improved stove structure and is adapted when in position for communication with the interior of the extended stove structure through the flue opening 11. When applied the chimney C extends upwardly and laterally from the rear panel 2 on a predetermined angle of inclination. When the chimney C is applied the flanges 12 of the rear panel 2 are snugly received within the lower end of the chimney while the lower end portion of the top wall 16 of the chimney engages over the upwardly and outwardly inclined flange 14. The lower end of the bottom wall 17 of the

chimney carries a slotted depending portion 18 which engages over the headed shank 15 and has close contact with the rear panel 2. By this means the chimney C is effectively maintained in applied or working position yet can be readily removed as desired.

The panels 1 and 2 substantially midway their ends have secured to their inner faces the upstanding lugs 19 and 20 inwardly offset with respect to their associated panels 1 and 2. The lug 19 of the panel 1 is above the draft opening 10 and the lug 20 of the rear panel 2 is below the flue opening 11 but their upper ends are substantially coplanar.

The end panels 4 have hingedly connected thereto, as at 21, the outer end portions of the grate sections 22 and 23, said sections substantially snugly fitting between the front and rear panels 1 and 2 of the stove when the structure is extended for use and said sections also being of a length slightly in excess of one-half the distance between the end panels 4 when in operative position so that the free end portions of one of the sections, as 23, will lap or overlie the free end portion of the second grate section 22. The free end portion of the grate section 22 is provided with short outstanding lateral extensions 24 terminating in the perpendicularly related lugs 25 which engage between the lugs 19 and 20 and the associated panels 1 and 2 whereby the grate section 22 is supported in proper position for use, and at the same time the central portions of the front and rear panels 1 and 2 are effectively held against outward separating movement while of course said front and rear panels also have their central portions held against inward flexing.

The free end portion of the grate section 22 is also provided with the transversely spaced openings or slots 26 which receive the lugs 27 struck from the outer end portion of the grate section 23. By this means the extended grate sections 22 and 23 are held in assembled position and at the same time means are provided for further effectively maintaining the panels 1, 2, and 4 in proper extended or working adjustment.

The upper marginal portion of the front panel 1 has hingedly connected thereto, as at 28, a grill plate 29 which is of a length slightly in excess of the space between the end panels 4 when the stove is extended so that when said grill plate 29 is swung across the top of the open top of the stove such plate will be effectively supported by the end panels 4. The marginal portion of this grill plate 29 opposite its hinge connection 28 is provided in its central part with a slot 30 through which is insertable an upstanding lug 31 and its head 32 carried by the adjacent portion of the rear panel 2. The head 32 of the lug 31 is disposed at the side of the lug 31 toward the rear panel 2 and in order to permit the passage of the lug 31 and its head 32 through the opening or slot 30 it is necessary that the upper central portion of the rear panel 2 be forced or flexed inwardly, and as such portion of the panel 2 returns to its normal position the head 32 will be thrown over the adjacent portion of the grill plate 29 whereby said grill plate is effectively held in working position.

When the grill plate 29 is not in use and the stove is extended, it may be readily swung entirely free of the open top of the stove and to a position overlying the outer face of the front panel 1 as is indicated by broken lines in Figure 1.

The upper marginal portion of the rear panel 2 has hingedly connected therewith, as at 33, a marginal portion of a solid stove top plate 34 of sheet metal and also of a length slightly greater than the space between the end panels 4 of the extended stove. This plate 34 when disposed over the open top of the stove is used for ordinary cooking purposes and while it can be thrown across the top of the stove with the grill plate 29 in its exterior adjustment, said stove top plate 34 may be adjusted over the top of the grill plate 29 while said grill plate is still in applied position over the top of the stove as indicated by broken lines in Figure 1.

When the top plate 34 is not in use it swings entirely to one side of the open top of the stove and, as illustrated in Figure 1, is supported in its non-working position by contact with the top wall 16 of the applied chimney C.

Should it be desired to cook food in a barbecue style, the grill plate 29 is thrown into its position as indicated by broken lines in Figure 1 while the top plate 34 is thrown into its position as illustrated by full lines in the same figure. This leaves the top of the stove entirely open and the food to be cooked may be placed upon a spit and readily supported above the fire carried by the grate sections 22 and 23. Furthermore, in camp should it be desired to have the benefit of the stove purely as a camp fire, the plates 29 and 34 will be adjusted in the same manner just mentioned when desired to cook in barbecue style.

My improved stove can be employed in connection with different kinds of fuel such as wood, coal, or charcoal, and in view of the foregoing description it is believed to be apparent that when desired it can be readily compacted to facilitate transportation or storage. It is also believed to be equally obvious that if desired it can be extended for use without requiring any particular skill.

From the foregoing description it is thought to be obvious that a collapsible stove constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice except as hereinafter claimed.

I claim:—

1. A stove of the class described comprising a front panel, a rear panel, end panels hingedly connected with the ends of the front and rear panels, a bottom panel hingedly connected to the lower marginal portion of one of the first two panels and upon which the front, rear and end panels are imposed when extended for use, the rear panel having a flue opening, grate sections hingedly connected with the end panels at points below the flue opening when the stove is extended for use, means carried by the side panels for detachable engagement by the grate sections to maintain said grate sections in working position, a grill plate hingedly connected to the upper marginal portion of one of the first named panels and adjustable to a position across the open top of the stove or to a second position overlying the outer face of the panel to which it is hingedly connected, and means carried by the second of

the first two named panels to engage the grill plate when disposed across the open top of the stove to hold the grill plate in such position and to hold said two first named panels in position.

2. A stove of the class described comprising a front panel, a rear panel, end panels hingedly connected with the ends of the front and rear panels, a bottom panel hingedly connected to the lower marginal portion of one of the first two panels and upon which the front, rear and end panels are imposed when extended for use, the rear panel having a flue opening, grate sections hingedly connected with the end panels at points below the flue opening when the stove is extended for use, means carried by the side panels for detachable engagement by the grate sections to maintain said grate sections in working position, a grill plate hingedly connected to the upper marginal portion of one of the first named panels and adjustable to a position across the open top of the stove or to a second position overlying the outer face of the panel to which it is hingedly connected, means carried by the second of the first two named panels to engage the grill plate when disposed across the open top of the stove to hold the grill plate in such position and to hold said two first named panels in position, and a stove top plate hingedly connected to the second of the first two named panels for swinging movement across the open top of the stove or to a second position entirely to one side of said open top.

3. A collapsible stove comprising front and rear panels, end panels hingedly connected to the extremities of the front and rear panels, grate sections hingedly connected to the end panels, each of said sections being of a length to permit the outer end portions of said sections to overlap when said grate sections are extended into working position, lugs carried by the front and side panels and inwardly offset therefrom, the outer end portions of one of the grate sections having lugs at the opposite sides thereof to engage between the first named lugs and the panels to which said first named lugs are connected.

4. A collapsible stove comprising front and rear panels, end panels hingedly connected to the extremities of the front and rear panels, grate sections hingedly connected to the end panels, each of said sections being of a length to permit the outer end portions of said sections to overlap when said grate sections are extended into working position, lugs carried by the front and side panels and inwardly offset therefrom, the outer end portions of one of the grate sections having lugs at the opposite sides thereof to engage between the first named lugs and the panels to which said first named lugs are connected, and coacting means carried by the lapping end portions of the grate sections to interlock said end portions.

5. A stove of the class described comprising a front panel, a rear panel, end panels hingedly connected with the front and rear panels, grate sections hingedly connected to opposed panels of the stove, the axes of the hinged mountings for the grate sections being substantially at right angles to the axes of the hinged connections between the end panels and the front and rear panels, and means for maintaining the grate sections in working position, each of said grate sections when the stove is compacted lying close to the panel to which the grate section is hingedly connected.

6. A stove of the class described comprising a front panel, a rear panel, end panels hingedly connected with the front and rear panels, grate sections hingedly connected to opposed panels of the stove, the axes of the hinged mountings for the grate sections being substantially at right angles to the axes of the hinged connections between the end panels and the front and rear panels, and means for maintaining the grate sections in working position, each of said grate sections when the stove is compacted lying close to the panel to which the grate section is hingedly connected, each of the grate sections when the stove is collapsed being positioned between an end panel and a front or rear panel.

7. A stove of the class described comprising a front panel, a rear panel, end panels hingedly connected with front and rear panels, grate sections hingedly connected to opposed panels of the stove, the axes of the hinged mountings for the grate sections being substantially at right angles to the axes of the hinged connections between the end panels and the front and rear panels, means for maintaining the grate sections in working position, each of said grate sections when the stove is compacted lying close to the panel to which the grate section is hingedly connected, each of the grate sections when the stove is collapsed being positioned between an end panel and a front or rear panel, and a top panel hingedly connected with one of the first two panels, said top panel when the stove is collapsed being swing into a position to overlie the outer face of the panel to which it is hingedly connected.

EVERETT L. JONES.