April 30, 1929. C. E. DAVIDSON 1,711,226

STOVE

Filed Dec. 4, 1925 2 Sheets-Sheet 1

Fig. 1.

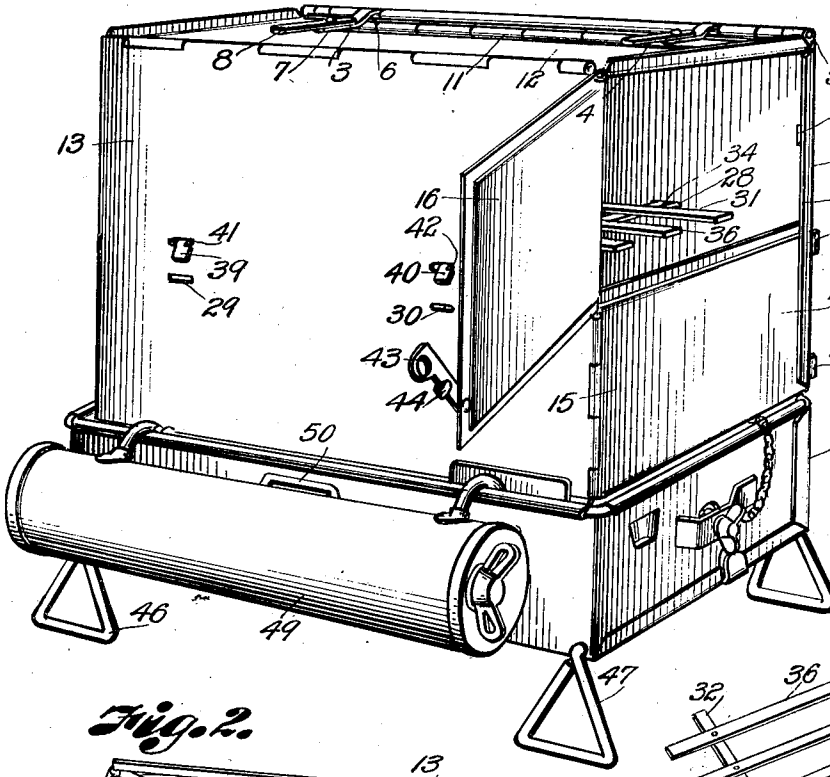


Fig. 3.

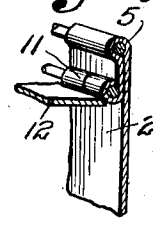


Fig. 4.

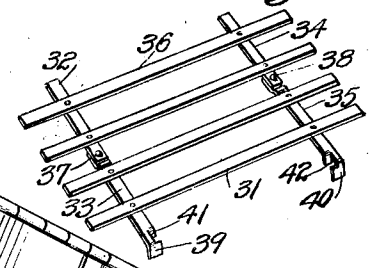
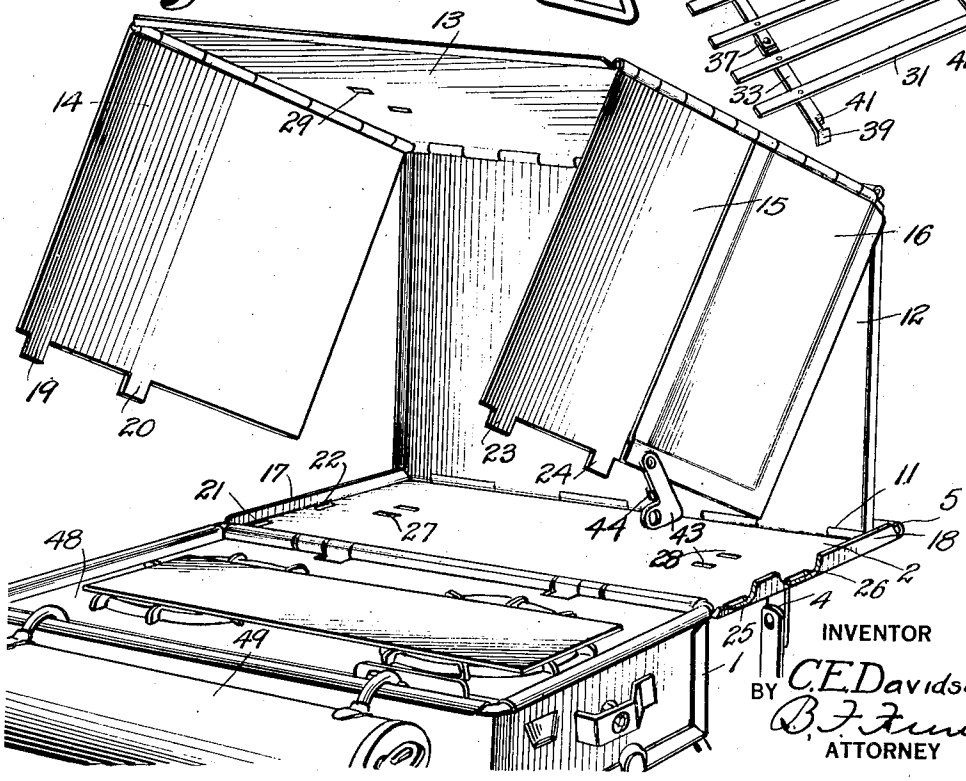


Fig. 2.



INVENTOR

BY C.E. Davidson

B. F. Lemmons

ATTORNEY

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STOVE

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Fig. 5.

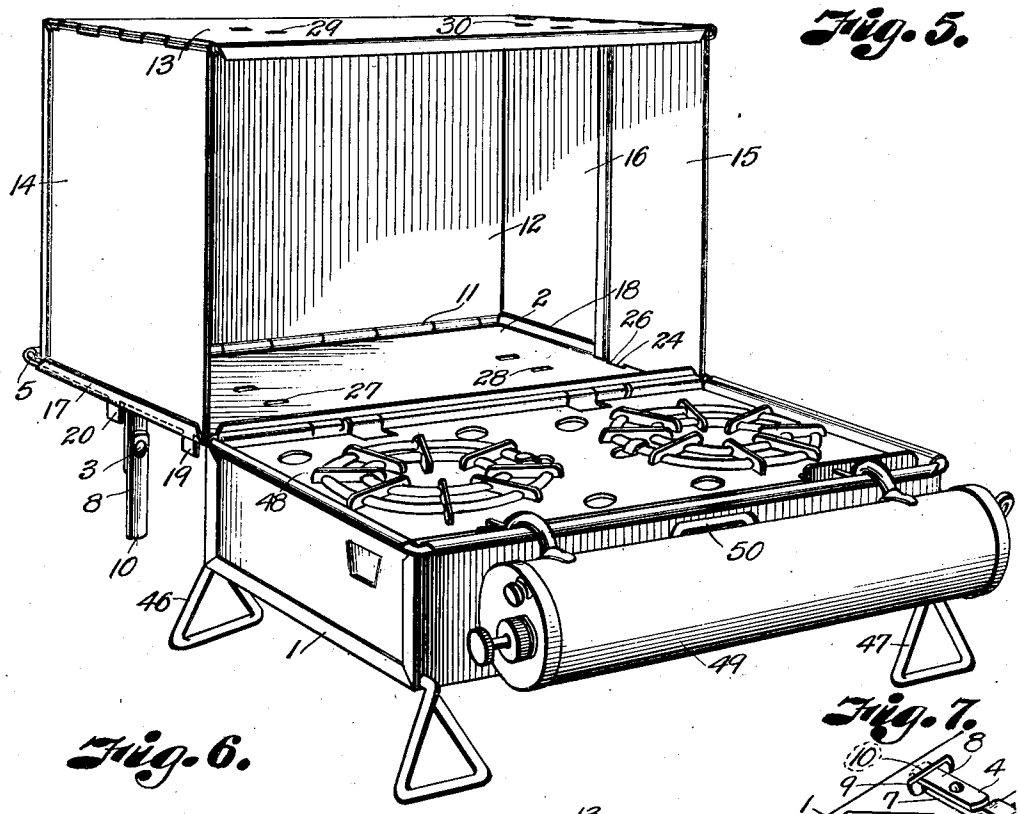


Fig. 6.

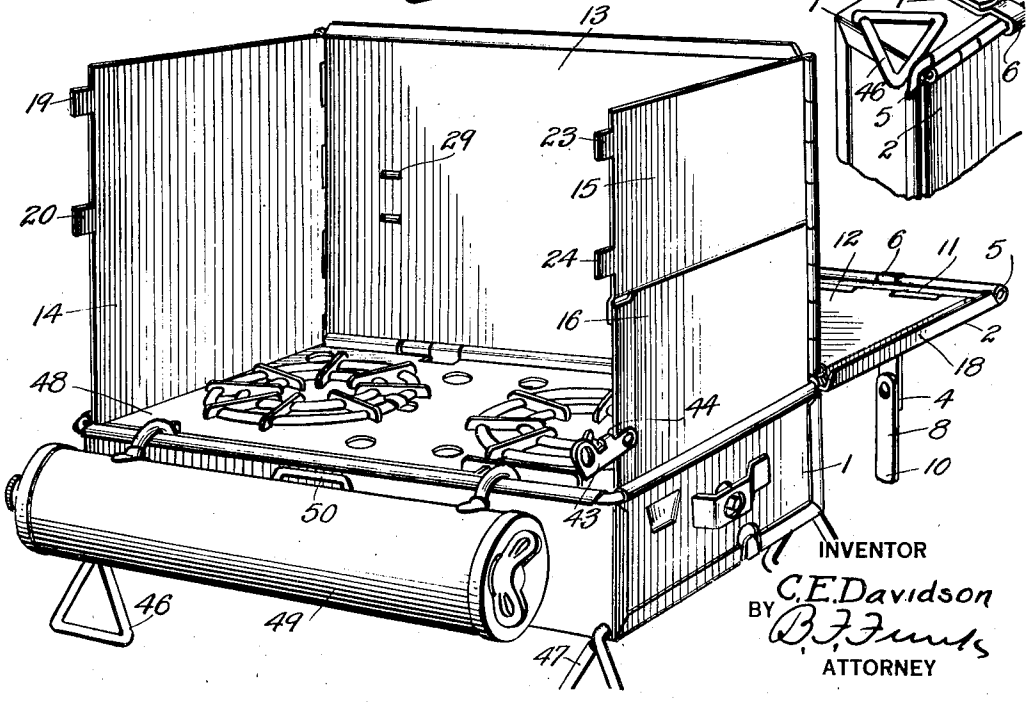
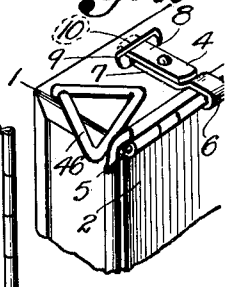


Fig. 7.



INVENTOR

BY C.E.Davidson

B.F.Finch

ATTORNEY

Patented Apr. 30, 1929. 1,711,226

UNITED STATES PATENT OFFICE.

CHARLES E. DAVIDSON, OF WICHITA, KANSAS, ASSIGNOR TO COLEMAN LAMP AND STOVE CO., OF WICHITA, KANSAS, A CORPORATION OF KANSAS.

STOVE.

Application filed December 4, 1925. Serial No. 73,114.

This invention relates to stoves, and particularly to stoves employing collapsible or knock down ovens adapted to be conveniently set up into functional position and as readily collapsed for ease in transportation. The particular novelty of this invention resides in providing a camp stove with oven consisting of a plurality of hinged or loose connections permanently fastened to the stove base as an unitary structure, the panels being adapted to form an oven or wind break, with a supporting shelf extending outwardly from the base, or they may be folded one upon the other to be received over the burner space of the case and secured there by one of the panels constituting a cover for the case when the oven is entirely collapsed.

The construction of the preferred embodiment of my invention illustrated in the accompanying drawings, will be clearly understood by reference to the following description, it being apparent that changes in form, proportion and minor details of construction may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

In drawings Fig. 1 is a perspective view of a stove equipped with oven constructed in accordance with my invention, the oven door being shown in open position.

Fig. 2 is a detailed perspective view of the oven applied to the stove with the parts in position to be connected to form a rectangular oven and in the position which they will assume prior to forming a combined wind break and shelf.

Fig. 3 is a sectional view through a portion of the back wall of the oven and through a portion of the top showing a special form of hinge.

Fig. 4 is a perspective view of the oven grate or shelf associated with the vertical walls of the oven when the oven is set up.

Fig. 5 is a perspective view showing the oven swung back as a warming receptacle to receive food after it is cooked.

Fig. 6 is a perspective view showing the panels folded to provide a combined wind break and shelf and:

Fig. 7 is a detailed perspective view of one corner of the stove showing the parts in collapsible position.

In so far as the oven is concerned, it is immaterial what the construction of the burner mechanism is, or how the fuel tank is supported, for supplying fuel to the burner mechanism, so I am not attempting to illustrate that part of the stove in detail.

Referring now to drawings by numerals of reference: 1 designates the bottom or case portion of the stove in which of course will be suitable burner mechanism having appropriate source of fuel supply. I have shown the cover or lid 2 hinged to the case, the cover constituting one vertical wall of the oven when the oven is set up, in this particular instance, the back wall. The cover or lid 2 is provided with latches 3 and 4 to engage the slots in the case 1 when the parts of the stove are folded, that is, when the oven is in collapsible position. The latches are swingingly connected to the top edge of the lid 2 through the medium of the rod 5. Each latch is shown as having a loop 6 embracing the rod 5, each latch being provided with a flat portion 7 to lie against the case. The flat portion 7 of each latch carries a pivoted latch member 8 so that when the lid or cover 2 is in cover serving position, that is when it is folded over on the base or burner case 1, the flat portion 7 will lie against the case. The toe 10 of member 8 to engage slot 9 may be slipped into the slot as may be clearly seen in Fig. 7.

Since the latch member 8 is pivoted to the flat portion 7 of latch 3 and since the latch member 8 has a toe offset with respect to flat portion 7, it is obvious that the toe may spring against the wall of the case when member 8 is in latching position so that a frictional latching effect will be produced, this being effective to hold the latch in engagement with the case.

By referring to the drawings, it will be seen that the upper edge of the cover or top 2 is bent parallel with the main portion of the cover and then at a right angle to the main portion of the cover, the edges being bent or curled to provide an inset hinge 11 spacing inwardly from the upper edge of the cover 2. The hinge 11 is provided to support a top panel 12 substantially co-extensive with cover 2. Hinged to the panel 12 is a front panel 13. The end panels may be secured to panel 13 by hinges, it being the purpose of this invention to securely fasten all of the panels one to the other so that

they are non-detachable but co-operatively secured as a unit to the base structure. In the present instance I have shown one end panel 14 substantially the width of panel 13, fastened to the panel 13 by hinged connections at one end of the panel 13. I have also shown two panels 15 and 16 hinged to the end of panel 13. Each of the latter two panels being substantially one-half the width of panel 13, therefore one of the latter two panels, in this instance the panel 16 constitutes a door for the oven as will be explained hereinafter.

The cover or panel 2 has flanges 17 and 18 which act as abutments or stays for panels 14, 15 and 16. The end panel 14 as shown is provided with means for attachment to the panel 2, shown as fingers or projections 19 and 20, adapted to engage the slots 21 and 22 in panel 2. The projections 23 and 24 on panel 15 engage the slots 25 and 26 in the opposite end of panel 2. The panel 2 has slots 27 and 28 to coincide with slots 29 and 30 in panel 13. It is obvious of course that there may be as many slots 27 and 28, 29 and 30 as may be necessary to afford adjustment for the collapsible grate 31 shown in Fig. 3.

The grate is shown as consisting of members 32, 33, 34 and 35 and the bars 36. The member 33 is hinged to the member 32 at 37. The member 34 is hinged to member 35 at 38, so it will be seen that members 32 and 33 constitute sectional cross bars at one end of the grate, while members 34 and 35 constitute a sectional cross bar at the other end of the grate. There may be as many longitudinal bars 36 as are necessary to provide the proper grate. These bars 36 are all pivoted to the grate members, 32, 33, 34 and 35 and since member 32 is pivoted to member 33 and member 34 is pivoted to member 35 and all longitudinal bars are pivoted to the cross bars, it will be seen that the grate or shelf may be collapsed or folded within a small compass to be conveniently received within the hollow base or case structure 1.

In the present embodiment of my invention, I have shown ends of bars 33 and 35 folded over at 39 and 40 and notched at 41 and 42 so that the bars may latch in the openings 29 and 30 to prevent accidental disengagement of the grate when the ends of the bars 32, 33, 34 and 35 engage the openings 27, 28, 29 and 30. The panel 15, while hinged to the front wall or panel 13, may be made rigid with panel 2 by inserting the fingers 23 and 24 into the openings 25 and 26. The panel 14 is made rigid with panel 2 by inserting the fingers 19 and 20 in the openings 21 and 22. The panel 16 constitutes a door hinged to the panel 13 and it is provided with a latch 43, having a finger 44 to engage slit 45 in panel 2 to hold the door closed.

It is desirable to support the stove referred to a suitable distance above the ground because the bottom of the case is generally perforated to supply air to the burner structure and because the stove may be more conveniently used if it is supported off of the ground. Therefore I have provided swinging loop base legs 46 and 47 which may fold over the ends of the case when the stove is to be transported. The construction of the legs, in so far as this present invention is concerned, is immaterial. The detail of construction of the burner mechanism constitutes no part of my present invention, so I deem it unnecessary to more than merely indicate the presence of the burner mechanism in the case.

The latches 3 and 4 serve a dual purpose in that they not only hold panel 2 (which in the present case constitutes the cover) fast to case 1, but they can be swung back to the position shown in Fig. 5 to constitute supporting legs for the oven when the oven is tilted back to expose the burner of the stove and assume a position where it can be utilized as a warming oven or when occupying the position shown in Fig. 6 when the panels are so folded that they constitute a wind break and shelf structure.

The cover or lid, in the present instance, the panel 2, may be made of slightly heavier material than the panels 13, 14, 15 and 16 since it is the enclosing panel and since it receives the panels 13, 14, 15 and 16, thus not necessarily an essential part of my invention however.

If the parts are in position shown in Fig. 1, that is set up constituting a baking oven, and it is desired to collapse the oven, the grate should first be removed, the fingers 19, 20, 23 and 24 may then be disengaged from their slots. The panel 12 may now be folded into the space confined by the flanges 17 and 18. The panel 13 may be folded back on panel 12 then the panels 14, 15, and 16 can be folded down onto the panel 13, the grate having been previously collapsed and stored on the hinged burner case frame 48 with tank 49 folded in under the top 48, the legs 46 and 47 may be swung to the position shown in Fig. 5. The latches can be caused to engage the slots 9 as shown in Fig. 7, whereupon the stove will be contracted in a relatively small space.

By reference to Fig. 1 it will be seen that the tank 49 partly covers handle 50 of approved construction, so that the stove can be conveniently carried. The tank is provided with a hinged tubular connection with a pipe which communicates with the generator of the burner. Such a connection is shown in U. S. patent to Wm. C. Coleman, #1,483,159, dated February 12, 1924.

If the oven is set up as shown in Fig. 1 and it is desired to use it as a warming

oven, it can be swung back to the position shown in Fig. 5. If it is desired to use the panel structure as a combined wind break and shelf, the fingers 19, 20, 23 and 24 will be disengaged from their slots as shown in Fig. 2, then the panel 12 will be folded over flat upon the panel 2, the panel 13 being in a vertical position with the panels 14, 15 and 16 also in vertical positions with their free edges directed forwardly, as shown in Fig. 6. The legs consisting of the latches 3 and 4 have the same relative position that they occupied in Fig. 2 so that they constitute supports for the panels 2 and 12 in shelf serving position.

Of course when it is desired to collapse the oven, that is to confine it into the space above the burners, the panels will be folded as above described for collapsible position. The legs will be folded up to position shown in Fig. 5.

From the foregoing, it will be apparent that I have provided an oven which may be easily set up and conveniently tilted over to warming oven position or partly collapsed to a combined wind break and shelf serving position, or the panels may be expeditiously folded to permit the oven to become collapsed for ease in transportation.

What I claim is:

1. A stove comprising a burner-carrying case, and a collapsible combined oven and wind break structure including side walls, end walls and a top, all permanently connected with respect to the case, one of the walls, when the oven is collapsed constituting a cover to maintain the remaining walls within the confines of the burner-carrying case and means for supporting one of the walls in horizontal shelf serving position while at least three of the remaining walls are in vertical position to provide a windbreak.

2. A stove comprising a burner-carrying case, and a collapsible oven structure having an open bottom, the oven structure including side walls, end walls, and a top wall all permanently non-detachably associated with the burner-carrying case, the oven, when set up, being superposed with respect to the case with its open bottom above the burner, and when collapsed one of the walls constituting a cover to retain the remaining walls within the case, the parts being so connected that they may be folded to provide a wind break on three sides of the case, an outstanding shelf projecting from one edge of the case, and means for supporting the shelf.

3. A stove comprising a burner-carrying case and a plurality of panels permanently associated with the case, the panels, when set up, forming an oven over the burner space of the case, the panels when the oven is partly folded, constituting a wind break having an open front and an outstanding horizontal shelf, one of the walls, when the oven is collapsed with their panels lying one upon another, constituting a cover for the case, means for supporting the shelf in horizontal position and means for fastening the cover to the case.

4. The combination with a case having an open top and a burner within the case, of a combined oven, wind break and shelf secured to the case, comprising a plurality of hinged wall panels, a cooperating as a unit to provide an oven, certain of the panels being foldable one upon the other to provide a combined windbreak and shelf, one of the panels constituting a cover, which when the oven is collapsed will confine the remaining panels within the case, and means for fastening the cover to the case.

5. The combination with a case having an open top and a burner within the case, of a plurality of hinged panels carried by the case, connected together as a unit, the panels being movable into oven forming position with the bottom of the oven open over the burner space, two of the panels being foldable one upon the other, with a third panel standing out from the case, to provide a shelf, all of the panels being foldable one upon the other when the oven is collapsed, one of the panels constituting a cover to retain the remaining panels within the case, means for supporting the above mentioned third panel in shelf-serving position and means for fastening the cover to the case.

6. In a stove, a case, a cover for the case, hinged thereto and movable into a vertical plane to provide an oven wall, a second wall spaced from and parallel with the first, a top wall and end walls, all permanently operatively asociated with the cover, having means of connection to form a hollow rectangular oven, the oven elements being foldable one upon the other adjacent to the cover and means for fastening the cover to the case.

7. In a stove, a case, a flanged cover, a top panel, a vertical panel and end panels operatively connected to the cover and foldable one upon the other to be received in the space between the flanges of the cover and means for permanently fastening one of the panels to the case.

8. A stove comprising a burner carrying case, a vertical wall hinged to said case, a top wall hinged to one longitudinal edge of the vertical wall, a vertical wall hinged to the top wall, end walls hinged to the ends of the second mentioned vertical wall and means on the end walls for engagement with the first mentioned vertical wall to form an oven, the connected end walls, vertical walls and top wall being adapted to be folded so that the top wall, second mentioned vertical wall and end walls lie parallel with the first

mentioned vertical wall and means on the first mentioned vertical wall for fastening it to the burner carrying case.

9. A stove comprising a burner carrying case, a cover hinged to the case, an oven top panel hinged to the cover, a vertical wall member hinged to the top, end wall members hinged to the vertical wall member at the respective ends thereof, one end wall comprising a plurality of members so that one may serve as a door and means for securing the hinged members together to provide an oven.

10. In a stove, a base, a cover for the base, hinged thereto and movable into a vertical plane to provide an oven back, an oven front wall and end walls all operatively carried by the cover and having means of connection to form a hollow rectangular oven, the oven elements being foldable one upon the other adjacent to the cover and means for fastening the cover to the stove base.

11. In a stove, a base, a flanged cover hinged to the base, a top panel, a vertical panel and end panels operatively connected to the cover and foldable one upon the other to be received in the space between the flanges of the cover and means for fastening the cover to the base.

12. A stove comprising a case having a burner therein, the case having an open top, and an oven structure comprising a top panel, said panels and end panels permanently hinged together, foldable one upon another to provide a cover for the case, the panels when unfolded constituting an oven structure, the top panel being hinged to its complementary vertical side panel in spaced relation to its longitudinal edge.

13. A stove comprising a case having a burner therein, the case having an open top, a plurality of panels permanently hinged together to provide an oven when extended and a cover for the case when collapsed, the connected panels as a unit being hinged to one edge of the case, one of the panels being connected to its complementary panel by an offsetting hinge so that there is an appreciable space between the edges of the two complementary panels.

14. A stove comprising a burner-carrying case, and a collapsible combined oven, wind break and cover, consisting of a plurality of panels all permanently hinged, one to another, and all as a group permanently fastened to the case, the oven when set up fitting over the burner space, the panels as a group being partially collapsible to provide a wind break with an open front and completely collapsible so that all the panels except the cover are confined between the cover and case, and means for fastening the cover in panel confining position.

15. A stove comprising a case having burner mechanism therein, a collapsible oven including side walls, end walls and a top wall all permanently hinged together and permanently associated with the case, means for holding the panels in oven forming positions, the oven when so formed being adapted to be swung from oven forming position to one side of the case in rear of the burner mechanism with its open portion facing the space above the burner mechanism so that the oven while out of line with the burners will constitute a warming oven and a wind break.

In testimony whereof I affix my signature.

CHARLES E. DAVIDSON.