G. W. FERDON.

COLLAPSIBLE STOVE.

APPLICATION FILED JULY 13, 1916.

1,199,257.

Patented Sept. 26, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

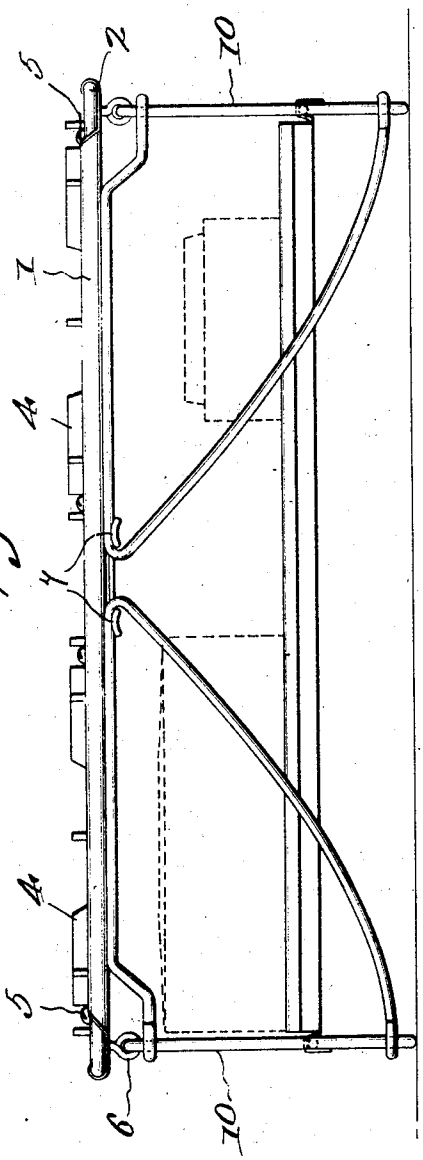
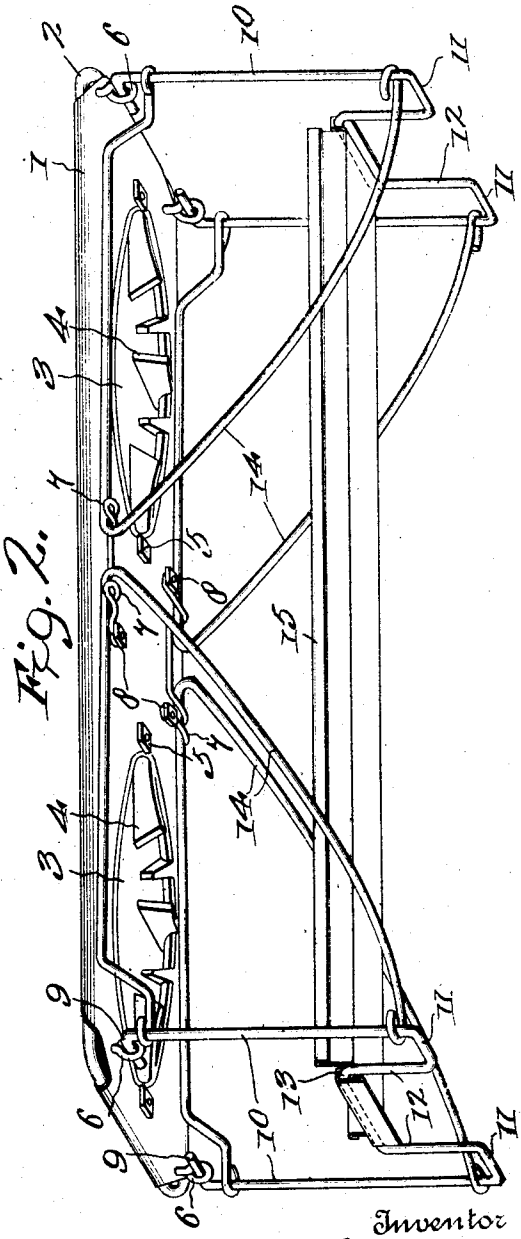


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

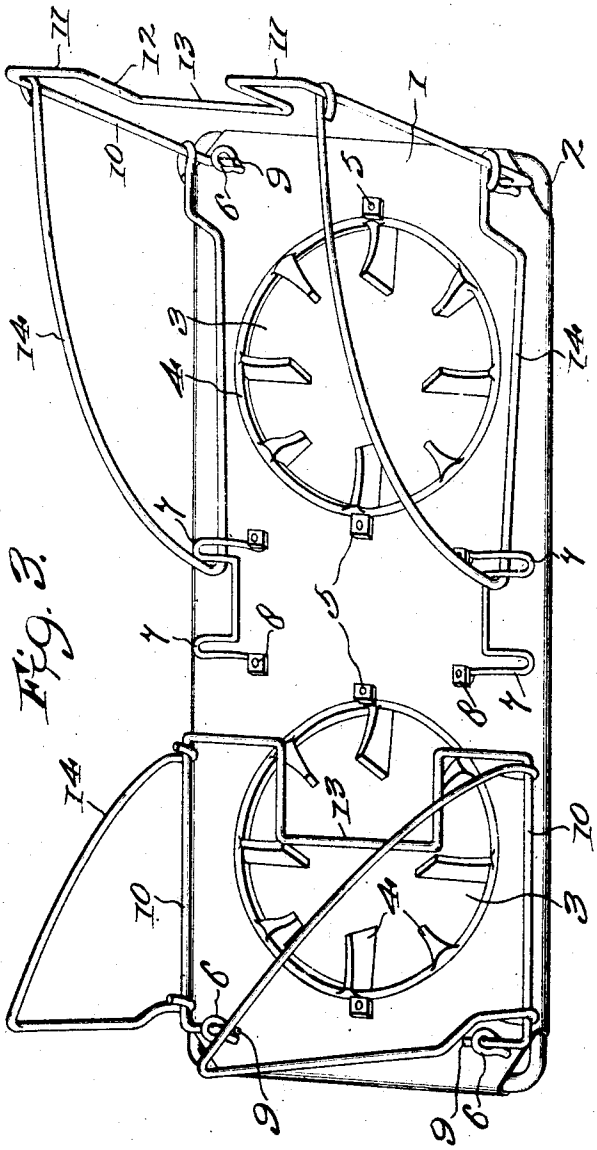


Fig. 3.

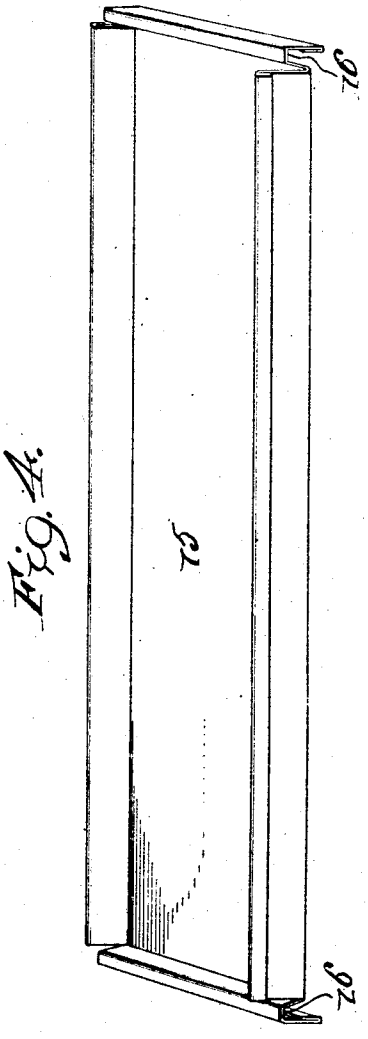


Fig. 4.

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UNITED STATES PATENT OFFICE.

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COLLAPSIBLE STOVE.

1,199,257. Specification of Letters Patent. Patented Sept. 26, 1916.

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To all whom it may concern:

Be it known that I, GUY W. FERDON, a citizen of the United States, residing at Cresskill, county of Bergen, State of New Jersey, have invented certain new and useful Improvements in Collapsible Stoves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to collapsible stoves or heaters, and particularly relates to a device adapted to be used for cooking with alcohol lamps, whether the lamps be those which use solid or liquid alcohol; though the device is not restricted to the use of this particular fuel, but burners or lamps supplied with other solid, liquid, or gaseous fuel may be employed in connection with my device.

My invention particularly relates to a folding stove of the kind that can be folded into a small package and carried about in an automobile kit, by hand, or as an article of luggage, which may be instantly set up and used for picnic or other cooking.

In the drawing: Figure 1 is a side view of my device; Fig. 2 is a perspective view looking upward from beneath, showing the device set up and ready for use; Fig. 3 is a bottom view showing the device partly set up and partly in folded position; and Fig. 4 is a perspective view of my lamp supporting and frame bracing shelf or support.

My stove consists of a hot plate 1, formed of thin sheet metal. For strengthening and rigidity, this sheet metal plate is bent or turned around the stiffening wire 2, except at the corners, whereby the plate is kept stiff. In the top of this plate I provide grate openings 3, and grates 4, of a common type. These grates are bolted into place by the bolts and nuts 5. The grate openings and grates may be omitted, if desired, or other grates of different form may be substituted. The number may vary. To the under part of said hot plate I secure, at each end, a pair of eyelets 6; about midway of said plates, on each side, I provide a pair of clips 7, secured in place by bolts 8. I form supporting legs, one for each end of said plate, out of a single piece of wire, bent as shown in Fig. 2 and Fig. 3; that is, the upper part of each leg is provided with two horizontal portions forming pintles 9, which engage the eyelets 6. Extending from these pintles, and at practically right angles thereto, are the long reaches 10, and at right angles to these are the feet 11. Extending vertically from these feet 11 and, as shown, practically in the plane of the rest of the legs or supports, are the short reaches 12. Connecting these short reaches, at their upper ends, is, for each pair of legs, a single horizontal reach 13, for a purpose to be referred to later.

It will be seen that each pair of legs, or each support, is pivoted upon the plate and adapted to swing in such pivots. To brace such legs and support them rigidly, I provide two means. One of these is a pair of brackets 14, each one of a single piece of wire, and hinged at the top and bottom of each respective long reach 10. This hinging is effected by bending the ends of the bracket into rings or eyelets, as shown. The general contour of the bracket, as shown in Fig. 2, consists of a forward horizontal reach extending from the upper end of the leg reach, and the diagonal reach extending from the lower end of the leg reach. Each of these brackets may be swung into position beneath one of the clips 7, as shown in Figs. 2 and 3, and is thus held pinched against the under side of the plate with sufficient rigidity to keep the legs stiff. When the legs are folded down against the plate these brackets are swung in behind the legs and rest against them. In order to be able to make a neat and compact folding, the length of each bracket should not be much more than the width of each pair of legs. It will be noted that the eyelets at the end of each bracket are so bent that the bracket, when swung backward, will rest neatly and compactly against its support. The upper reach of the bracket may be in contact with the plate. It is provided with an offset to enable it to clear the eyelet 6, as shown.

In addition to the brackets, I provide a lamp supporting shelf 15, which, in the form shown, extends between the horizontal reaches 13. This bracket shelf is formed also of a piece of sheet metal, the edges of

which are turned up to impart rigidity. The end of each shelf is turned downward, as shown in Fig. 2, part of the way, so that the turned down end forms a loop 16, as shown in Fig. 4. These loops are of the same length approximately, as the length of the horizontal reaches 13, and fit snugly over said reaches, so that when these loops are placed in position the plate extends between the two reaches and aids in supporting and giving stiffness to the whole device.

When the stove is knocked down, or reduced to folded condition, the shelf 15 is, of course, removed and laid alongside the parts folded together. When the stove is set up, the shelf 15 affords a support for any of the alcohol burners or lamps of the usual market type, or for the solid alcohol cans, such as are in common use, the distance between the shelf and the hot plate and grate openings being such as to suit the use of such lamps or fuel.

I have illustrated by outline, two solid alcohol cans in position on the shelf. It will be observed that the stove is adapted to use any of these, whether large or small. Moreover, the position of the lamps need not necessarily be under the grate openings. The entire shelf may be heated, if desired, and, as intimated previously, the grate holes may be omitted.

In setting up the device the legs are first bent to the position shown in Fig. 2, the brackets turned and placed under the clips 7, and the shelf 15 placed in position. All this is the work of but a moment, and the stove is ready for the reception of the alcohol burner, which is placed on the shelf 15.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is:

1. In a support for heaters, in combination, a hot plate, legs hinged to the under side of said plate and adapted to be folded against said plate, means adapted to fold against said legs for keeping said legs in open position, and means when the device is in use, for supporting heating devices in proper relation to said hot plate.

2. In a stand for supporting heaters, in combination, a hot plate, legs hinged to the ends of said plate and adapted to fold inward against the under side of said plate, brackets hinged to said legs and adapted to be folded when said legs are folded and to be opened to supporting position when said legs are unfolded to supporting position, and clips with which said brackets are adapted to engage.

3. In a stand for supporting heaters, in combination, a hot plate, legs hinged thereto and adapted to be folded against the plate, brackets attached to said legs and adapted to be folded upon the legs, and clips on the under side of the plate with which said brackets engage when the legs and brackets are unfolded.

4. In a support for holding heating devices, in combination, a sheet metal hot plate, eyes secured to the under side of said plate at the ends, bent wire legs, mounted pivotally in said eyes, bent wire brackets pivoted upon the legs and adapted to fold backward upon said legs, and wire clips upon the under side of said plate and adapted to hold said brackets in position to hold the legs rigid when unfolded.

5. In a support for holding heating devices, in combination, a sheet metal hot plate, eyes secured to the under side of said plate at the ends, bent wire legs, mounted pivotally in said eyes, bent wire brackets pivoted upon the legs and adapted to fold backward upon said legs, wire clips upon the under side of said plate adapted to hold said brackets in position to hold the legs rigid when unfolded, and a support adapted to be mounted upon said legs to support said heating devices in heating relation to said plate.

6. In a collapsible stove for holding alcohol lamps, in combination, a metal top plate provided with grate openings, and grates in said openings, a pair of eyelets at each end of the plate, detachable wire legs hingedly mounted in said eyelets, said legs bent from a continuous piece of wire to form two feet with a shelf support between them, each foot consisting of two upright reaches and one horizontal reach of wire, a wire bracket hinged to each upright reach and adapted to be turned backward to rest upon its leg, when the latter is folded forward into engagement with the plate when the leg is unfolded, and a recessed lamp supporting shelf engaging a shelf support at each end.

7. In a collapsible stove, in combination, a heating plate provided with grate openings and grates, eyelets at each end of the plate, legs made of bent wire, adapted to be sprung into said eyelets and to turn therein, said legs being each bent symmetrically into two horizontal pintles, two perpendicular reaches extending from the pintles downward, two horizontal reaches extending toward each other to form feet, two short perpendicular reaches, and a horizontal reach connecting the two short reaches, to form a support for a lamp holding shelf, and stiffening brackets between the legs and plate.

8. In a collapsible stove, in combination, a heating plate provided with grate openings and grates, eyelets at each end of the plate, legs made of bent wire adapted to be sprung into said eyelets and to turn therein, said legs being each bent symmetrically into two horizontal pintles, two perpendicular reaches extending from the pintles down-

ward, two horizontal reaches extending toward each other to form feet, two short perpendicular reaches, and a horizontal reach connecting the two short reaches, to form a support for a lamp holding shelf, and a wire stiffening bracket, pivoted upon each long vertical leg reach, said brackets each being formed of a single piece of wire bent to have a horizontal and an oblique reach, the ends of the wire being bent to form eyelets with which each bracket engages said vertical leg reach.

In testimony whereof, I affix my signature.

GUY W. FERDON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."