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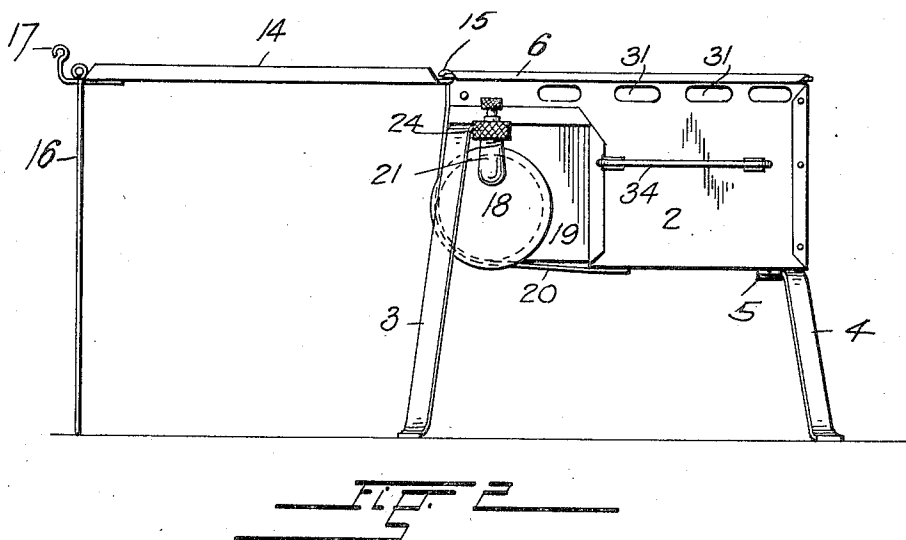
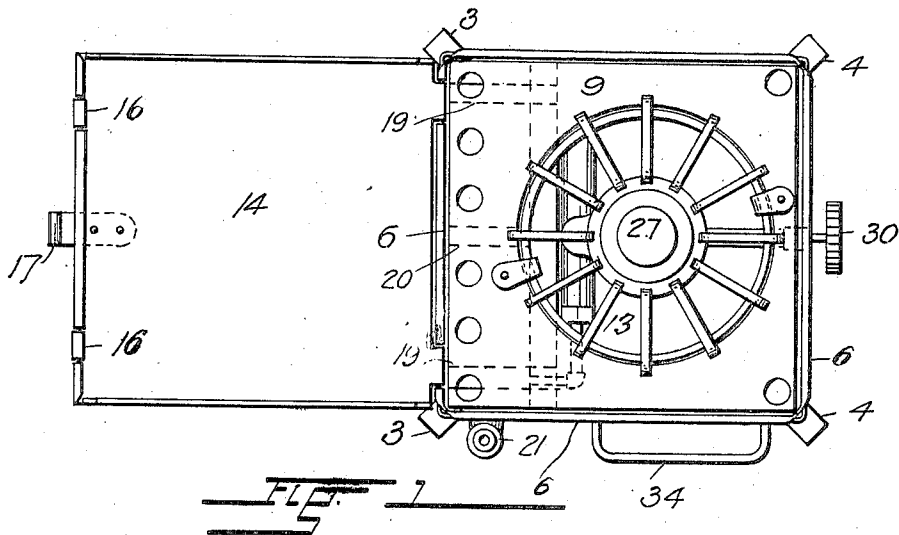
1,448,900

E. C. MOATS

VAPOR STOVE

Filed Aug. 16, 1920

2 sheets-sheet 1



INVENTOR.
E. C. MOATS.

BY
[Signature]
ATTORNEY.

Mar. 20, 1923.

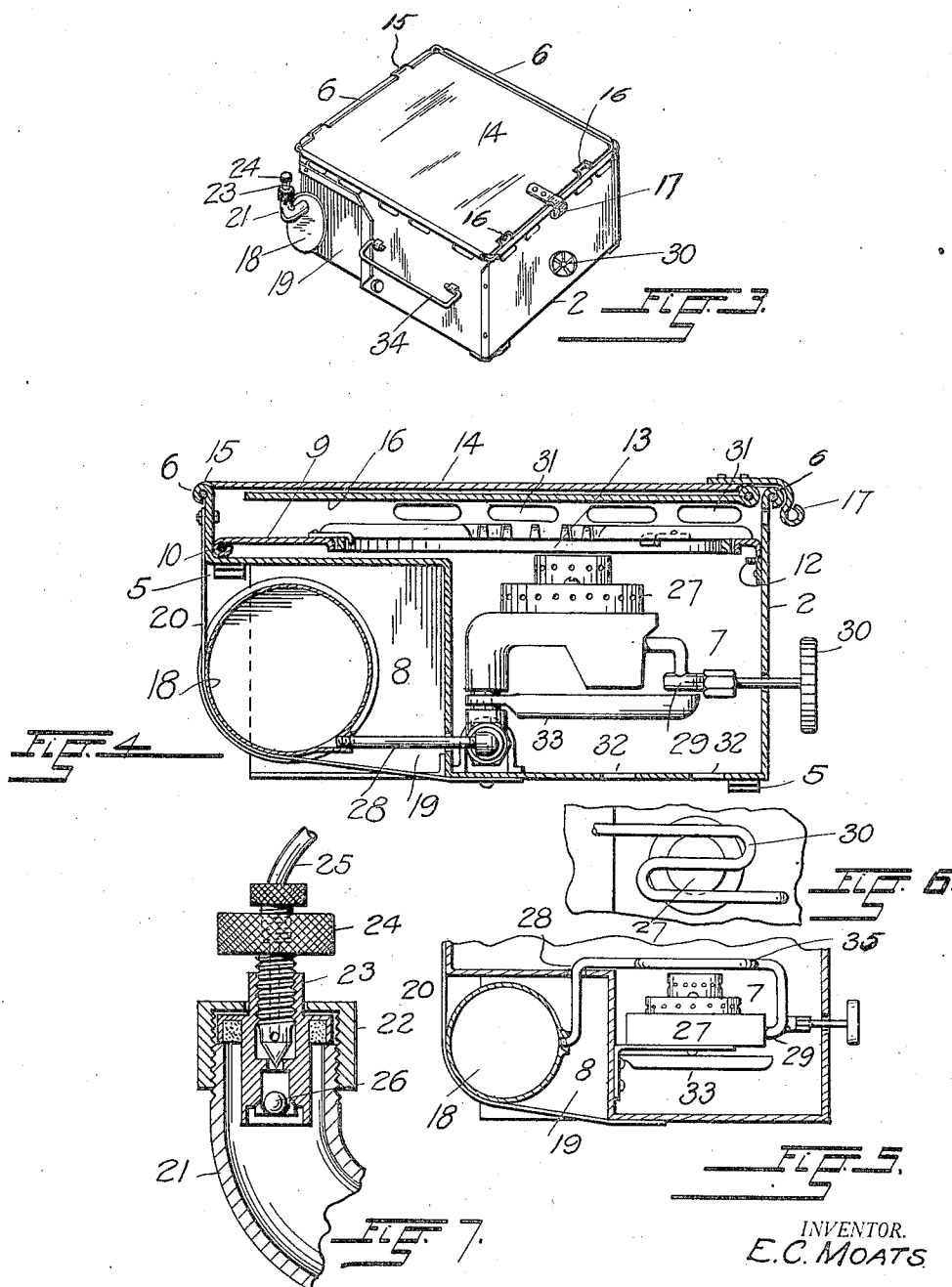
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2 sheets-sheet 2



UNITED STATES PATENT OFFICE.

EDWIN C. MOATS, OF DENVER, COLORADO; MATTIE E. McELROY ADMINISTRATRIX OF SAID EDWIN C. MOATS, DECEASED.

VAPOR STOVE.

Application filed August 16, 1920. Serial No. 403,660.

To all whom it may concern:

Be it known that I, EDWIN C. MOATS, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Vapor Stoves, of which the following is a specification.

The invention relates to folding vapor stoves and its primary object is to provide a portable stove of simple and light construction which can be folded in compact form for use of automobilists, campers and tourists in general.

Other objects of my invention reside in providing a stove of the above described character which is safeguarded against the danger of fire or explosion by the position of its fuel reservoir below and separated from the burner, and in providing a folding vapor stove which is self contained to the extent that every part required in its operation including the fuel reservoir and its connections, is within the confines of a box of small dimensions when the stove is folded.

Still another object of my invention resides in providing a connection between the fuel reservoir and the burner or burners of the stove, which is superposed with relation to the burners to produce a rapid and complete vaporization of the volatile liquid.

With the above and other objects in view, all of which will fully appear in the course of the following description, my invention consists in the construction and arrangement of parts shown in the accompanying drawings in the various views of which like parts are similarly designated, and in which Figure 1 is a plan view of my improved vapor stove in its operative condition;

Figure 2, is a side elevation of the same;

Figure 3, a perspective view of the stove in the folded condition drawn to a reduced scale;

Figure 4, a vertical section through the stove in its folded condition;

Figure 5, a fragmentary vertical section of a stove showing a modified form and arrangement of the connection between its fuel reservoir and its burner;

Figure 6, a fragmentary plan view of the parts shown in Figure 5, and

Figure 7, an enlarged section through the filler tube and air valve of the fuel reservoir.

Referring to the drawings, the reference

numeral 2 designates the box-shaped base of the stove, which in its set-up condition is supported upon four legs 3 and 4 detachably connected in sockets 5 at the under side thereof.

The box, which is preferably made of sheet metal, has a reenforced bead 6 along the upper edges of its walls and it is recessed at one of its sides to provide an interior combustion chamber 7 and an exterior space 8 in which the fuel reservoir is contained.

A top-plate 9 hinged at one of its ends in the upper portion of the box, as at 10, rests at its opposite end upon a ledge 12 on one of the side walls of the same and it is provided with the usual grid-covered hole or holes 13 which register with the burner or burners of the stove for the conveyance of heat to superposed kettles, pans and other cooking utensils.

A lid 14 hinged at the upper edge of the box, as at 15, closes the same when the stove is in the folded condition and it is adapted to serve as a table for the support of cooking utensils and other articles needed in the preparation of food, when the stove is set up for operation.

The lid is to this end provided with two hinged legs 16 which fold against its under side within the box when the stove is folded as shown in Figure 4 and which are turned at right angles to the lid for its support upon the ground when the stove is in its operative condition as illustrated in Figures 1 and 2.

A spring catch 17 at the free end of the lid fastens it in its closed position by embracement of the reenforced bead 6 at the upper edge of the box.

A cylindrical reservoir 18 for liquid fuel is mounted within the recess 8 of the box on two brackets 19 fastened against the upright wall thereof and it is secured by an embracing strap 20 which is attached at its ends to the adjacent side wall and at the bottom of the box.

The reservoir has at one of its ends a filler-tube 21 closed by a screw cap 22 which secures a nipple 23 adapted for the introduction of air under pressure.

The intake of air through the passage of the nipple is controlled by an adjustable screw valve 24 which has a screw threaded socket for the attachment of the tube 25 of a force pump of the type used for inflat-

ing pneumatic tires, and the outflow of air is prevented by an automatic valve 26 which normally closes the passage by the pressure of air within the reservoir.

5 The reservoir is connected with one or more burners 27 placed within the box below the hole or holes of its top plate, by means of a conduit 28 in which the volatile liquid is vaporized by the heat in the combustion chamber.

10 In the construction shown in Figure 4, the conduit passes through the burner head and discharges the vapor through a nozzle 29 the opening of which is regulated by a valve 30.

In the preferred form of my invention, shown in Figures 5 and 6, the conduit by which the gaseous fluid is conducted from the reservoir is partially disposed above the burner where it is exposed to the direct contact of the burning gases.

The portion of the conduit above the burners may be made in the form of a sinuous coil 35 to increase its capacity for the vaporization of liquid conducted from the reservoir.

Oblong air holes 31 in the walls of the stove-box adjacent its upper edge and air holes 32 in the bottom of the box, provide for the constant supply of oxygen to the burners and at the same time permit of the escape of excess heat from the combustion chamber.

In the operation of the stove, the box 2 is supported on legs 3 and 4 inserted in the sockets on its under side and the lid 14 in its open position extends in horizontal alinement with the upper edge of the box and is supported upon the folding legs 16.

40 At the initial point in the operation the burner is primed by the combustion of a small quantity of liquid fuel placed in a pan 33 beneath it and the valve 30 is opened to admit combustible vapors to the burner through the nozzle 29.

The liquid fuel contained in the reservoir is continuously forced into and through the conduit 28 under pressure of air introduced into the reservoir through the valve-controlled nipple by the use of an ordinary tire pump.

50 During the passage of the liquid through the heated portion of the conduit it is converted into vapor which upon entering the burner is ignited and by its combustion produces the heat required in the preparation of eatables in vessels placed over the openings in the top plate of the stove.

The position of the reservoir below the top plate of the stove and separated from the burners removes all danger of fire or explosion and it furthermore eliminates the use of jointed conduits and separate parts as are required in folding vapor stoves in which the reservoir is placed at an eleva-

tion above the burners to feed fuel thereto by gravitation.

The lid of the box provides in its open position a convenient and useful table for the support of utensils and ingredients used in the preparation of food, and the box in its closed condition forms a receptacle for the detached legs of the stove and any other objects that can be placed within the same.

The stove in its folded condition may be conveniently carried by means of a folding handle 34 on the outside of the box and its compactness permits of its being placed in an automobile or camping wagon when not in use.

The recess of the box places the reservoir entirely within its confines and eliminates the storage of separate parts and the labor and annoyance of mounting and demounting the reservoir each time the stove is used.

What I claim and desire to secure by Letters-Patent is:

1. A vapor stove comprising a box providing a combustion chamber and having the upper portion thereof laterally extended to form a recess exteriorly of said chamber, a top plate hinged in said extension and extending over the burner; a hinged lid closing the combustion chamber and its extension, a burner in the combustion chamber, and a fuel tank in the recess, in connection with the burner.

2. A vapor stove comprising a box having within the area of its top, a combustion chamber and a space partitioned off said chamber, a burner in the combustion chamber, and a fuel tank inside said space, in connection with the burner.

3. A vapor stove comprising a box providing a combustion chamber and having the upper portion thereof laterally extended to form a recess exteriorly of said chamber, a burner in the combustion chamber, a top plate over the burner, a hinged lid closing the combustion chamber and its extension, and a fuel tank in the recess, in connection with the burner.

4. A vapor stove comprising a box having a combustion chamber and an exterior recess formed by a lateral extension at the top of said chamber, a burner in the combustion chamber, a fuel tank mounted in the recess in connection with the burner, and a top plate in the combustion chamber and its said extension.

5. A vapor stove comprising a box having a combustion chamber and an exterior, partially open recess formed by an extension of the top thereof, a burner in the chamber, and a fuel tank mounted in the recess in connection with the burner.

In testimony whereof I have affixed my signature.

EDWIN C. MOATS.