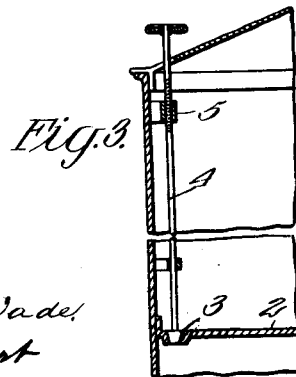
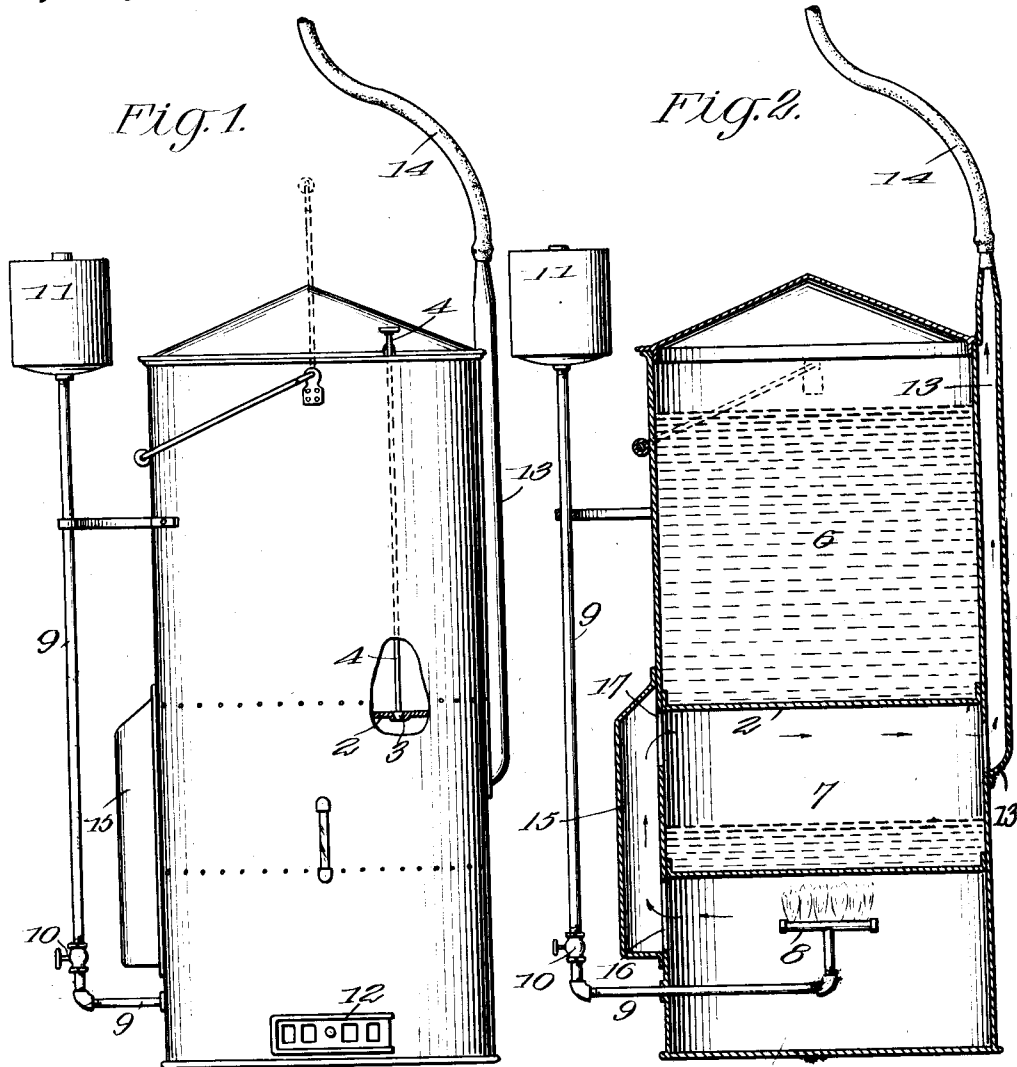


M. B. FITTS.
 PORTABLE ORCHARD HEATER.
 APPLICATION FILED JAN. 26, 1912.

1,034,991.

Patented Aug. 6, 1912.



WITNESSES
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UNITED STATES PATENT OFFICE.

MORTON B. FITTS, OF MINNEAPOLIS, KANSAS.

PORTABLE ORCHARD-HEATER.

1,034,991.

Specification of Letters Patent.

Patented Aug. 6, 1912.

Application filed January 26, 1912. Serial No. 673,518.

To all whom it may concern:

Be it known that I, MORTON B. FITTS, a citizen of the United States, and a resident of Minneapolis, in the county of Ottawa and State of Kansas, have invented an Improved Portable Orchard-Heater, of which the following is a specification.

My invention is intended for generating steam and discharging the same along with hot air and heated products of combustion for any purpose for which this may be desired; but it is particularly adapted for use as an orchard heater, that is to say, for preventing injury by low temperature to fruit and other trees, also to plants and vegetables.

The details of construction, arrangement and operation of parts are as hereinafter described, and illustrated in the accompanying drawing, in which—

Figure 1 is a side view of my improved heater. Fig. 2 is a central vertical section of the same. Fig. 3 is a detail vertical section.

The body of the heater is a can or vessel in the form of an elongated cylinder, the same being preferably constructed of tin or other sheet metal, so that it may have the requisite lightness and cheapness of construction. It is provided with a removable cover and a hinged bail, as shown.

The interior is divided by two horizontal partitions 1 and 2 into three chambers or compartments, the lowest one being for combustion of gasoline or other fuel, the one next above for holding water and generating steam, and the uppermost and largest one serving for containing water which is supplied intermittently to the second or next lowest chamber in such quantity as required. That is to say, the can is provided, as shown in Figs. 1 and 3, with a valve 3 which is seated in a hole provided in the partition 2, and provided with a rod 4 extending up through the cover and having a hand-wheel at the top for convenience of operation. A portion of the valve rod is screw-threaded, as indicated at 5 in Fig. 3, and works in a threaded bracket, so that by rotating the rod, the valve may be adjusted higher and lower as required to admit water from chamber 6 into the chamber 7.

Heat is supplied to the lower partition 1 by means of a burner 8 to which gasoline or

other hydrocarbon fluid is conducted by a pipe 9 having a valve 10 and leading to a reservoir 11 that is located adjacent to the top of the can. While gasoline or an equivalent hydrocarbon fluid is preferably employed, it is to be understood that any other kind of fuel suitable for the purpose may be utilized. Air is admitted at 12—Fig. 1—where openings are provided and controlled by an apertured slide of a well known construction.

The steam generated in the chamber 7 is conducted off by a pipe 13 arranged alongside the can and having a flexible hose 14 attached, as shown in Figs. 1 and 2. On the side of the can opposite the pipe 13 is arranged another pipe 15 which is shorter and of larger capacity, and the same communicates with the lower or combustion chamber through an opening 16 and with the middle or steam chamber 7 through an opening 17. Thus heated air and the unconsumed gaseous products of combustion pass from the lower chamber through the pipe 15 into the steam chamber 7 and thence escape into the pipe 13 and are discharged through the flexible hose 14 at any desired point, it being understood that such hose may be of any length conditions require and is used for directing the steam and other heated products among the branches of a tree, or upon, over, or near plants and vegetables.

My improved heater is thus very effective for preventing injury to vegetation by frost, and, being easily portable, it may be quickly transported from place to place. The regulation of the discharge of water from the upper chamber or compartment to the one below serves to keep the latter supplied with a small quantity of water, so that steam may be constantly generated, and this, mingled with the heated products of combustion from the lower compartment, forms a very efficient heating agent. Any soluble substance, which, when vaporized, will serve as a fungicide, insecticide, or germicide, may be placed in the water and the resulting solution may then be sprayed upon trees or other vegetation as required.

What I claim is:—

The improved portable heater comprising a receptacle having two separated horizontal partitions dividing the chamber into

three compartments, the lowest one serving
as a combustion chamber and the others as
water-holders, the two lower chambers hav-
ing lateral openings and a connecting side
5 pipe, the middle compartment having also
an exit and escape pipe for steam and prod-
ucts of combustion, and a valve seated in the

upper partition and controlling the delivery
of water into the upper or middle compart-
ment, substantially as described.

MORTON B. FITTS.

Witnesses:

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C. W. NESTER.