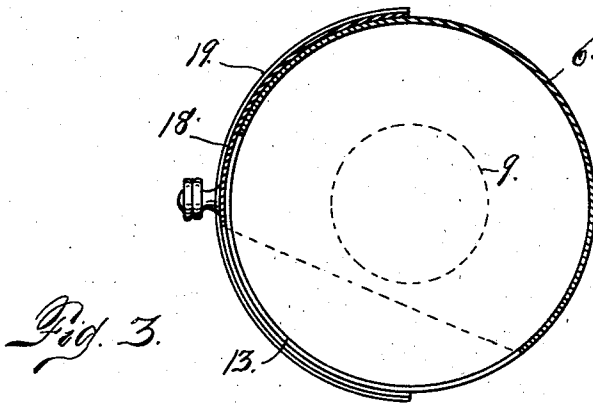
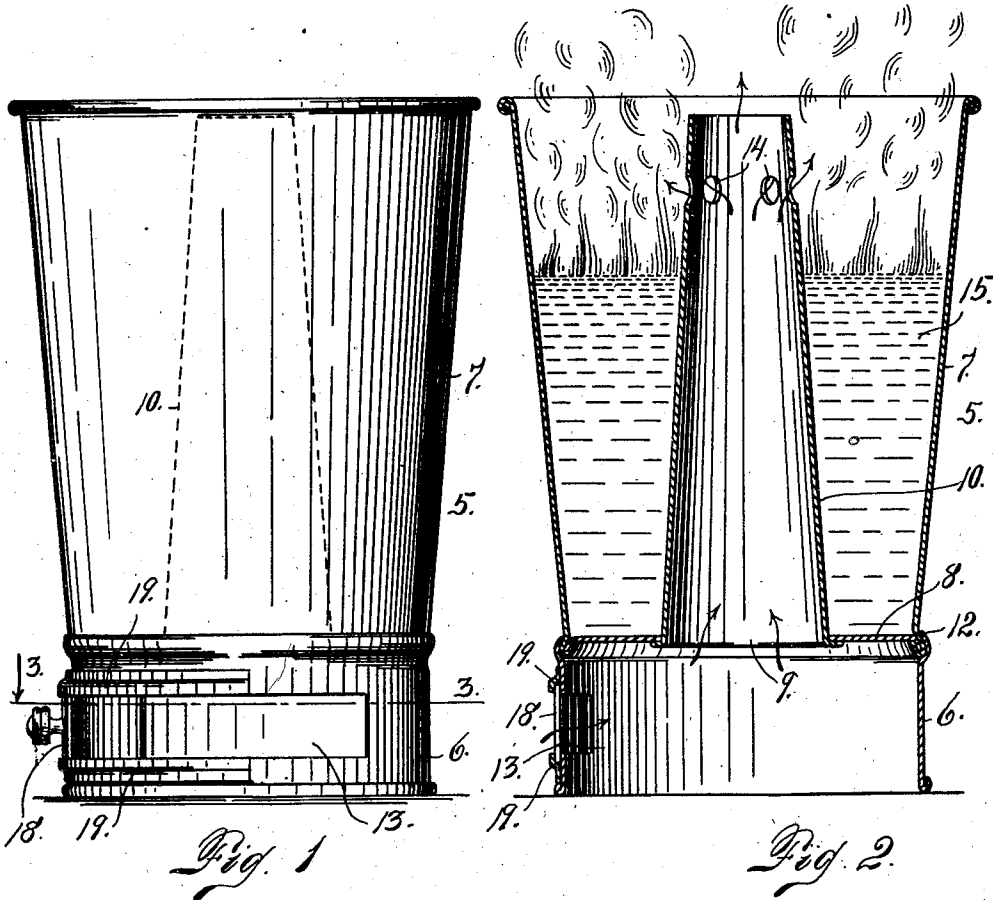


P. H. TROUTMAN.
 OPEN AIR HEATING DEVICE.
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1,009,603.

Patented Nov. 21, 1911.



Witnesses
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UNITED STATES PATENT OFFICE.

PERCIVAL HAMMER TROUTMAN, OF CANON CITY, COLORADO.

OPEN-AIR HEATING DEVICE.

1,009,603.

Specification of Letters Patent. Patented Nov. 21, 1911.

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To all whom it may concern:

Be it known that I, PERCIVAL HAMMER TROUTMAN, citizen of the United States, residing at Canon City, county of Fremont, and State of Colorado, have invented certain new and useful Improvements in Open-Air Heating Devices; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in heating devices adapted for open air use for the protection of orchards, gardens, etc., from the action of the frost during the periods when the latter will produce injury, as by killing the blossoms upon fruit trees and shrubbery.

My object is to provide a device adapted to hold a sufficient quantity of liquid fuel to last for a number of hours, constituting the periods during the night when frost is liable to produce damage of the above-named character, in horticultural localities.

My further object is to provide a device which shall be of simple and economical construction, reliable, durable and efficient in use, and to these ends the invention consists of the features hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawings in which is illustrated an embodiment thereof.

In this drawing Figure 1 is a side elevation of my improved heater. Fig. 2 is a vertical, longitudinal section taken through the same. Fig. 3 is a section taken on the line 3-3, Fig. 1.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate a heater considered in its entirety, and comprising a base 6, a casing 7, a bottom 8 provided with a central opening 9; and a centrally located, upwardly projecting chimney 10 located in the receptacle, its lower extremity being inserted in the bottom opening of the device. As shown in the drawings, the elements 6, 7, and 8 are suitably connected, as shown at 12. It is evident, however, that any other suitable construction may be employed. For instance, the upper part 7 and the base 6 may,

if desired, consist of an integral structure. The base 6 projects considerably below the bottom 8, and is provided with an opening 13 for the entrance of air for draft purposes. As shown in the drawing, the chimney 10 is frustum-shaped, being largest at the base and tapering upwardly. This particular shape is preferable, since it increases the draft. This chimney is open at both extremities and provided near its top with orifices 14 to allow the air to escape from the chimney at points nearer the fuel 15 than the extreme top of the chimney.

When my improved device is in use, as many of them are employed as may be necessary, to properly heat the desired area; and to this end they are distributed at such intervals as experiment may determine will be sufficient to raise the temperature in the vicinity of the said area or tract, to the desired degree. Each of the devices should be supplied with a sufficient quantity of fuel to last during the period of the night when frost is imminent, or when the temperature without the aid of artificial means would reach a point sufficiently low to produce injury.

The chimney serves to promote combustion, or utilize to the best advantage, the heat units of the fuel. The device, however, may be converted into a smudge pot when it is desired to produce smoke over a certain area. This is accomplished by retarding combustion by reducing the area of the draft opening 13 to any desired degree less than the area of the opening 9 in the bottom of the chimney. In the drawing I have indicated a slidable cut-off or damper 18, which engages ways 19, with which the base 6 of the device is provided, these ways being located both above and below the draft opening 13.

Having thus described my invention, what I claim is:

1. A heating device comprising a receptacle adapted to contain liquid fuel and having an opening in its bottom, a frustum-shaped chimney extending upwardly through the receptacle from the bottom opening thereof and forming a closed interior wall, the chimney being open at both extremities and largest at its lower end, the opening in the bottom of the receptacle being approximately the same size as the cross-sectional area of the lowermost end of the chimney, a base extending below the bottom of the

receptacle and forming a closed chamber beneath the receptacle, the said chamber being in communication with the frustum-shaped chimney, the base being provided with a draft opening equal at least to the draft opening in the base of the chimney, the portion of the chimney above the liquid in the receptacle being perforated to allow the air to escape from the chimney into the surrounding combustion chamber, and a damper controlling the said draft opening for reducing the area of the draft opening to any desired degree less than the area of the opening in the lower end of the chimney to convert the device into a smudge pot.

2. A heating device, comprising a fuel-containing receptacle having an opening in its bottom, a frustum-shaped chimney extending upwardly through the receptacle from the bottom opening thereof and forming a closed interior wall for the receptacle, the outer wall of the receptacle also being frustum-shaped and smallest at its lower end, a base extending below the bottom of

the receptacle and forming a closed chamber beneath the receptacle in communication with the chimney, the base being provided with an opening having an area at least equal to the cross-sectional area of the opening in the chimney at its lower extremity, the upper extremity of the chimney above the fuel having perforations to allow the air to escape into the combustion chamber before reaching the top of the chimney, the said perforations being of less area than the cross-sectional area of the chimney at its lower extremity, and means for regulating the area of the draft opening to any desired degree less than the area of the opening in the lower end of the chimney to convert the device into a smudge pot, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

PERCIVAL HAMMER TROUTMAN.

Witnesses:

ELIZABETH BOWEN,
A. EBERT O'BRIEN.