W. S. HASWELL.

ORCHARD HEATER.

APPLICATION FILED MAR. 18, 1909.

945,529.

Patented Jan. 4, 1910.

2 SHEETS—SHEET 1.

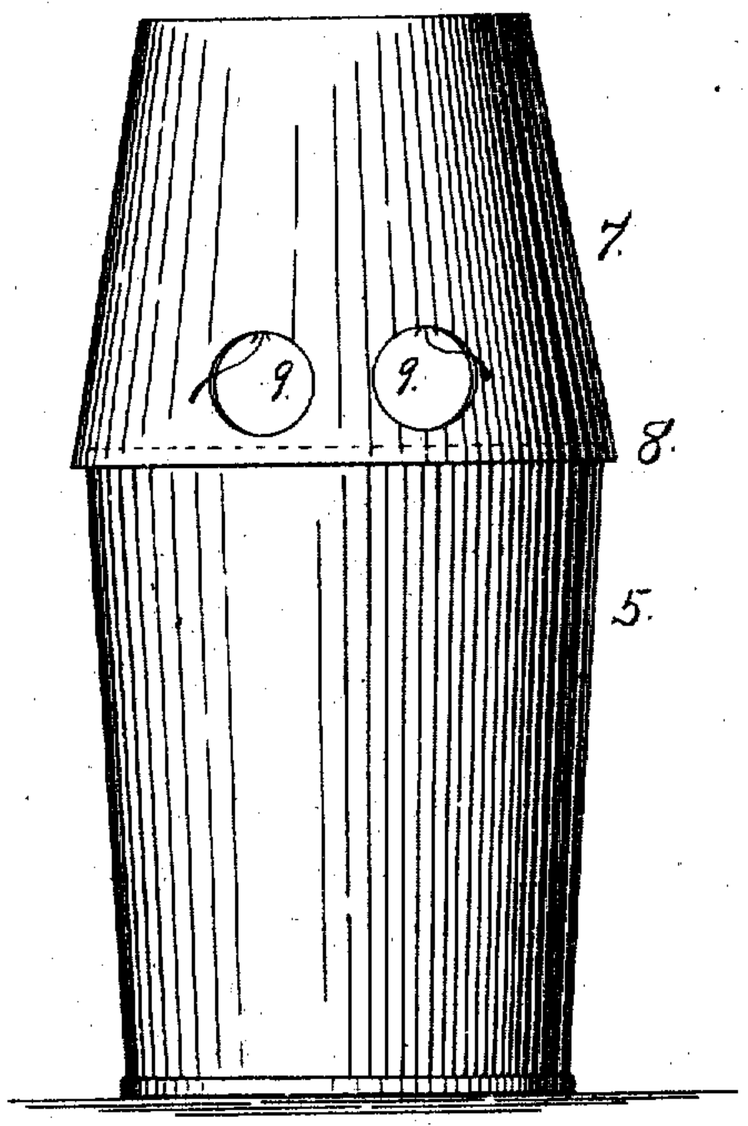

Fig. 1.

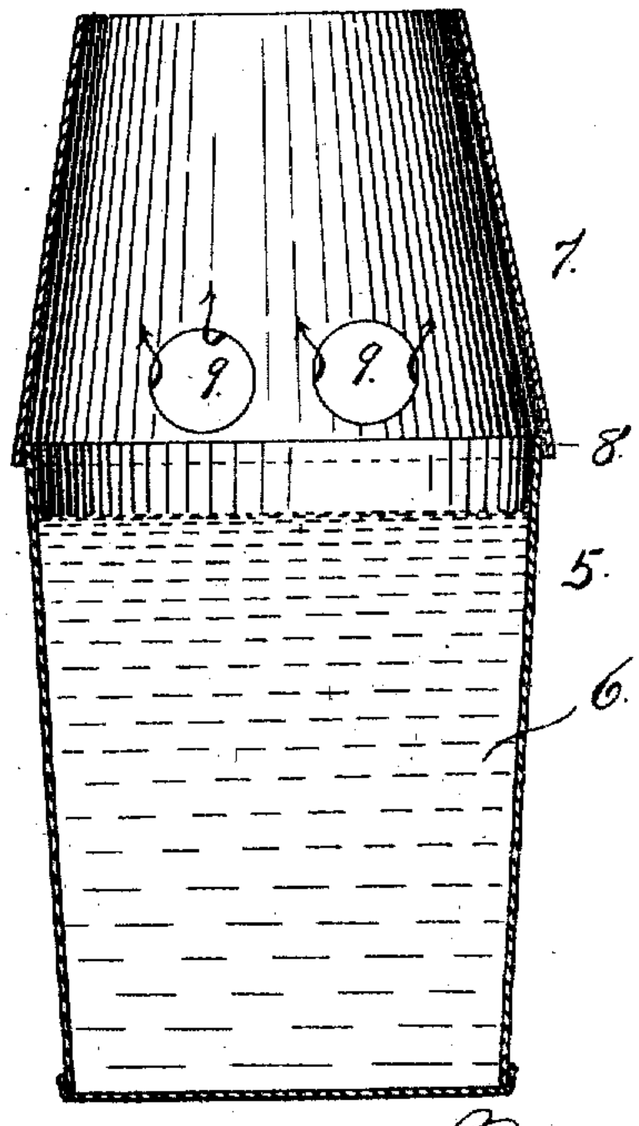

Fig. 2.

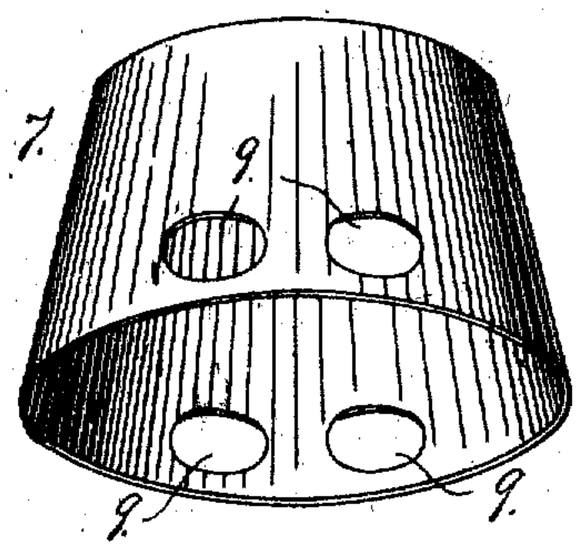

Fig. 3.

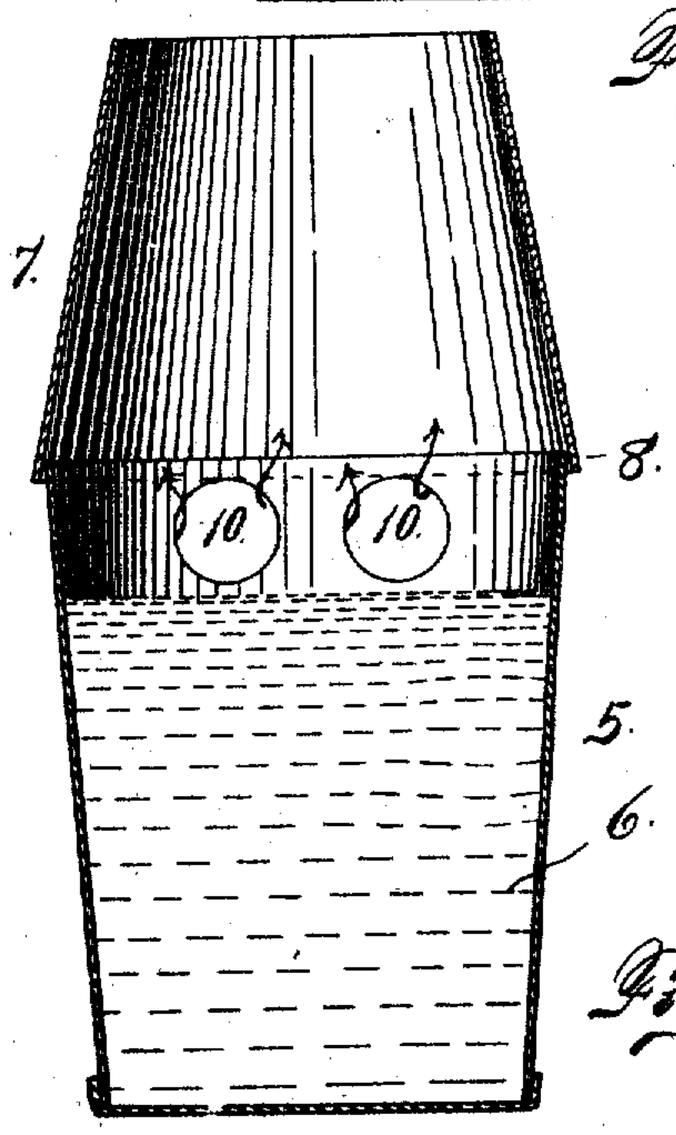

Fig. 4.

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2 SHEETS—SHEET 2.

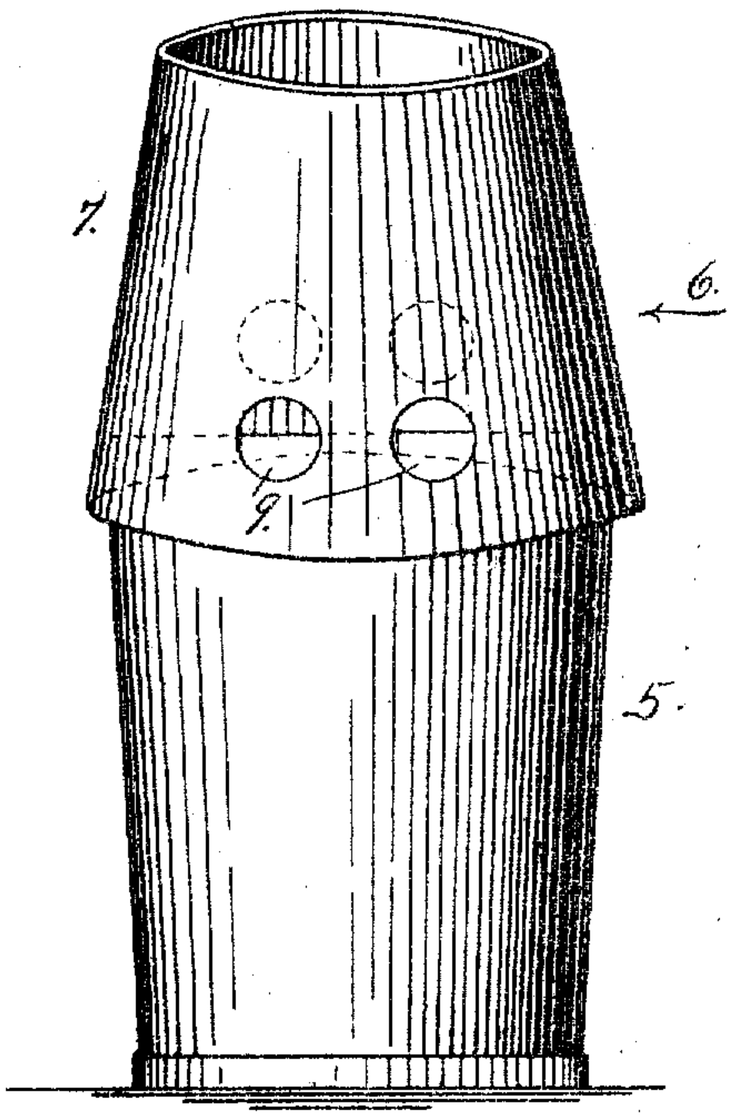

Fig. 5.

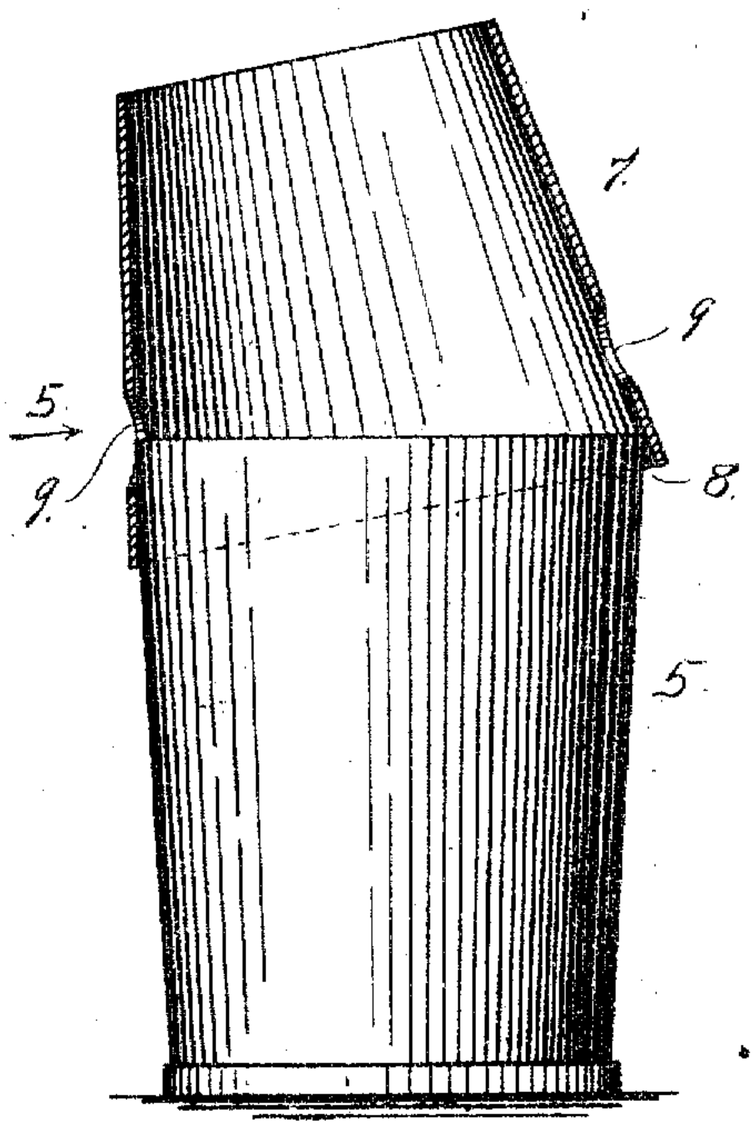

Fig. 6.

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UNITED STATES PATENT OFFICE.

WILLIAM S. HASWELL, OF DENVER, COLORADO.

ORCHARD-HEATER.

945,529. Specification of Letters Patent. Patented Jan. 4, 1910.

Application filed March 16, 1909. Serial No. 484,260.

To all whom it may concern:

Be it known that I, WILLIAM S. HASWELL, a citizen of the United States, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Orchard-Heaters; 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 figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in orchard heaters.

My improved device is adapted for use to prevent injury by frost to vegetation in various sections of the country, being more especially adapted for use in horticultural regions for the protection of fruit of various kinds from injury by late frosts in the spring and early frosts in the fall.

My improved device is adapted for use in burning liquid fuel as oil, the fuel receptacle in the preferred size of the device having a capacity adapted to burn four or five hours, or the period (generally during the night), when a heater of this character is required.

In using my improved device, the individual heaters are distributed at suitable intervals over the territory to be protected, and arranged in such proximity to each other as to raise the temperature throughout the entire area, sufficiently to prevent injury from the aforesaid cause.

My object is to provide a device which shall be exceedingly simple and, therefore, of economical construction, and which shall at the same time efficiently perform the function of protecting orchards and other vegetation from injury due to the said cause.

Specifically, the invention consists of a simple fuel receptacle, to the top of which is removably applied a hood of frusto-conical shape, its base having the greatest diameter and of such size as to fit over the top of the fuel receptacle, and maintain its position thereon.

In the preferred form of construction, the hood is provided with a number of orifices permitting the entrance of air to facilitate combustion. The upper part of the fuel receptacle, however, may be perforated, while the hood is plain or imperforate, if desired. It is preferred to make the apertures in the hood since if they are formed in the top of the fuel receptacle, they lessen the fuel capacity of the latter.

Having briefly outlined my improved construction, I will proceed to describe the same in detail, reference being made to the accompanying drawing in which is illustrated an embodiment thereof.

In this drawing, Figure 1 is a side elevation of my improved orchard heater. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a perspective detail view of the hood. Fig. 4 is a section similar to Fig. 2, showing a slightly modified form of construction. Fig. 5 is an elevation illustrating still another form of construction showing the hood tilted for draft regulating purposes. Fig. 6 is a view looking at Fig. 5 in the direction of arrow 6, the hood, however, being shown in vertical section.

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

Let the numeral 5 designate the body portion or fuel receptacle of my improved orchard heater. This receptacle as shown in the drawing is frusto-conical in shape, its smaller extremity being lowermost. This receptacle is adapted to hold a suitable quantity of liquid fuel 6, it being my intention to use crude petroleum for this purpose.

To the top of the fuel receptacle, is applied a hood 7 which is also frusto-conical in shape, its lower extremity, however, being largest. This hood has its larger extremity lowermost where the hood is formed of slightly larger diameter than the top of the fuel receptacle, whereby the hood is adapted to project a short distance below the top of the receptacle as shown at 8. The hood is equipped with a number of orifices 9 for the entrance of air to facilitate combustion. The function of the hood, is to provide the necessary draft for combustion purposes and this function is enhanced by the special construction or shape of the hood whereby its diameter diminishes in size from the bottom to the top of the hood.

In the form of construction shown in Fig. 4, the hood is plain or imperforate, while the upper portion of the fuel receptacle is provided with openings 10 for the entrance of air for combustion purposes. In this case, the hood performs the function of producing the required draft while the orifices 10 admit the necessary air for purposes of combustion. As heretofore stated, however,

it is preferred to form the air orifices in the hood since they perform the required function, without diminishing the capacity of the fuel receptacle.

In the construction shown in Figs. 5 and 6, the bottom of the hood 7 normally projects below the top of the receptacle somewhat farther than in the construction shown in the other views, thus making it practicable to tilt the hood to a considerable degree as shown in Figs. 5 and 6, for draft controlling purposes. It is evident that the tilting of the hood will have a tendency to check the draft by changing the direction of the air current. Moreover, by tilting the hood as shown in the last named views, the openings 9 on one side of the hood are partly closed against the entrance of air to the hood. This is important where it is desired to regulate the draft in a device of this character.

Having thus described my invention, what I claim is:

1. An orchard heater comprising a fuel receptacle and an open-ended draft hood tiltably and removably applied to the top thereof, the upper portion of the device above the fuel having orifices which may be partly closed when the hood is in the tilted position.

2. A heater of the class described comprising a fuel receptacle open at the top, and an open ended hood tiltably and removably applied to the top of the fuel receptacle and having orifices which may be partly closed when the hood is in the tilted position.

3. An orchard heater comprising a fuel receptacle open at the top and a hood of frusto-conical shape, having its larger extremity lowermost, said hood being open at both ends and having its interior entirely unobstructed, leaving a free draft passage, the hood being tiltably and detachably applied to the top of the fuel receptacle the hood having orifices which may be partly closed when it is in the tilted position.

4. An orchard heater comprising a fuel receptacle open at the top, and a draft hood of frusto-conical shape having its larger extremity tiltably and removably applied to the top of the fuel receptacle, the hood having orifices and having its interior entirely unobstructed, leaving a free draft passage, the orifices of the hood being in its lower portion and adapted to be partly closed when the hood is in the tilted position.

5. An orchard heater comprising a frusto-conical fuel receptacle having its greatest diameter at the top which is open, and a hood of frusto-conical shape having its larger extremity detachably applied to the top of the fuel receptacle its interior being entirely unobstructed, leaving a free draft passage, the hood being open at both ends and provided with orifices which may be partly closed when the hood is in the tilted position.

6. An orchard heater comprising a fuel receptacle and a draft hood tiltably applied to the top thereof for draft controlling purposes, the hood having orifices and its interior being entirely unobstructed, leaving a free draft passage, the orifices of the hood being arranged to be partly closed when the hood is in the tilted position.

7. An orchard heater comprising a fuel receptacle and a draft hood tiltably applied to the top thereof for draft controlling purposes, the lower part of the hood having orifices which may be partly closed when the hood is in the tilted position, substantially as described.

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

WILLIAM S. HASWELL.

Witnesses:
A. J. O'BRIEN,
JESSIE HOBART.