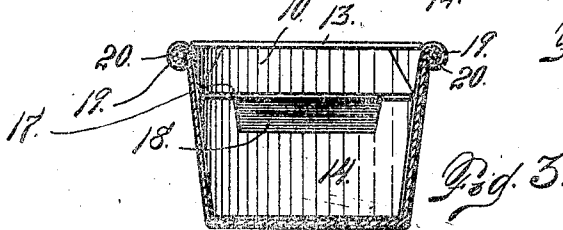
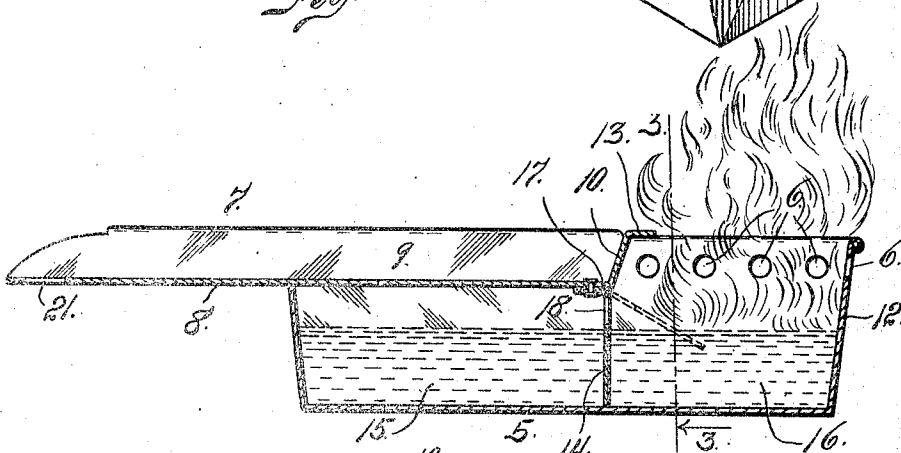
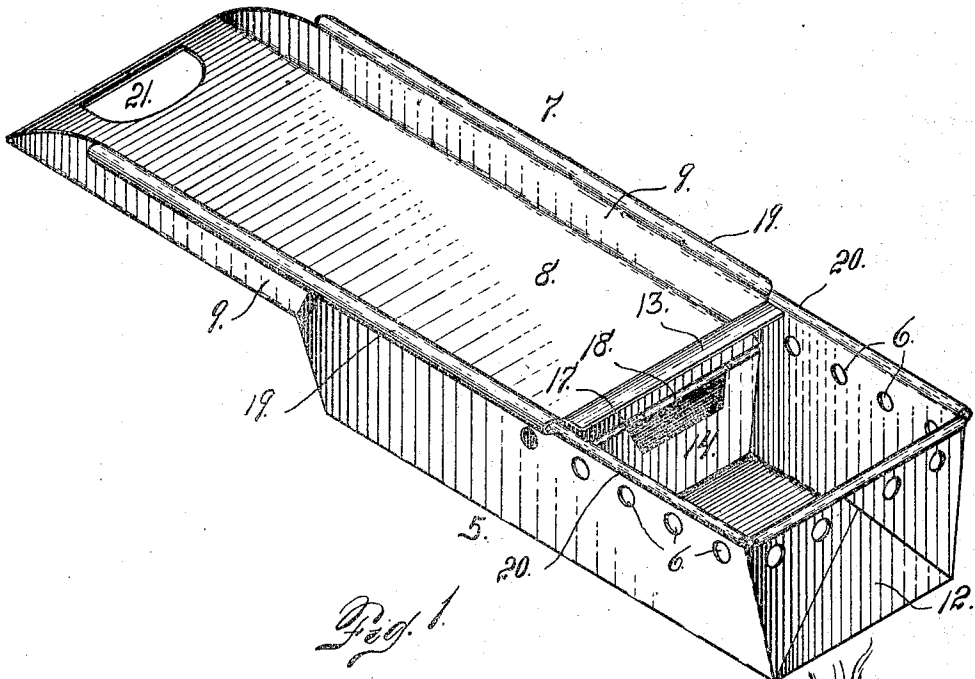


J. L. HAMILTON.
ORCHARD HEATER.
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970,044.

Patented Sept. 13, 1910.



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JAMES L. HAMILTON, OF GRAND JUNCTION, COLORADO.

ORCHARD-HEATER.

970,044.

Specification of Letters Patent. Patented Sept. 13, 1910.

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To all whom it may concern:

Be it known that I, JAMES L. HAMILTON, a citizen of the United States, residing at Grand Junction, county of Mesa, 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 letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in orchard heaters, and the invention consists of a device adapted for use to prevent injury by reason of frost or a lowering of the temperature in fruit sections to such a degree as to injure the blossoms upon the trees, or other shrubs or vegetables which are susceptible to injury from this cause. Devices of this character are more commonly needed in fruit sections of the West, where sudden changes of temperature are common.

My present invention may be considered an improvement upon the construction set forth in my previous application, Serial Number 470,546, and the novel features will now be described in detail, reference being made to the accompanying drawing, in which is illustrated an embodiment thereof.

In this drawing: Figure 1 is a perspective view of my improved orchard heater, the cover being shown partly withdrawn, exposing a part of the fuel receptacle. Fig. 2 is a vertical longitudinal section of the device shown in the same position, but with liquid fuel in place, the portion thereof in the exposed compartment of the fuel receptacle, or chamber, being ignited. Fig. 3 is a cross section taken on the line 3-3, Fig. 2, viewed in the direction of the arrow.

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

Let the numeral 5 designate the fuel receptacle, which is provided near the top on two sides and one end with perforations 6, to receive air for combustion purposes during the operation of the device. The opposite end of the fuel receptacle is cut away or made somewhat shorter than the front

end or that where the perforations are located. Upon this rear end, rests the slidable cover 7, which is trough-shaped, having a bottom 8, upwardly-projecting sides 9, and a forward end 10, which is slightly inclined to harmonize, or approximately harmonize with the inclination of the forward end 12, of the receptacle. At the upper edge of the forward end 10, of the cover, is located a horizontally-arranged, transverse lip or flange 13, adapted to overlap the upper edge of the forward end 12, of the receptacle, to form a reasonably tight joint to prevent the entrance of dirt or foreign particles of matter, when the cover is closed as when the device is not in use.

The sides 9, of the cover project downwardly into the receptacle a sufficient depth to cover the perforations 6, on the inside, when the cover is closed, or when the sides 9, thereof are opposite the said openings, or perforations. Hence the sides, as well as the end 10 of the cover, serve to close the perforations 6, of the fuel receptacle, when the cover is in the closed position.

Hinged to the bottom of the cover and at the forward extremity thereof, is an apron, or swinging projection 14, which separates the fuel 15, in the one compartment of the receptacle from the fuel 16, in the other compartment. This apron, though loose and allowed to swing forwardly during the opening movement of the cover, still forms such a division or separation between the combustion compartment and the compartment in the rear of the apron, as to prevent the ignition of the fuel in the rear of the apron. At the same time the apron is loosely hinged within the receptacle and adapted to swing forwardly or to the dotted line position in Fig. 2, as the cover is moved rearwardly, or toward the left, referring to Fig. 2.

As shown in the drawing, the apron is hinged, as shown at 17, to the cover at the exterior angle formed by the bottom of the cover and the upwardly-projecting front end 10, thereof. Just below this hinge pin, at the central top portion of the apron, there is formed an opening 18, in the latter to permit the escape of the gases from the receptacle in the rear of the apron, in case the fuel 15, therein should become suffi-

ciently hot for gas generating purposes. Should this occur, these gases will flow freely from the body of the receptacle through the opening 18, and serve to feed the fire within the combustion compartment, thus preventing the possibility of an explosion.

Upon the upper edges of the sides 9, of the cover, sleeves 19, are formed, which fit over beads 20, formed upon the upper side edges of the receptacle 5, whereby the cover is held in sliding engagement with the upper side edges of the receptacle. The cover is further supported, as heretofore explained, by virtue of the fact that its bottom 8, rests upon the upper edge of the rear extremity of the receptacle. In order to further facilitate the manipulation of the cover, the rear extremity of the latter is provided with a hand opening 21.

From the foregoing description, the use and operation of my improved orchard heater will be readily understood. These heaters should be distributed through the orchard, or locality to be protected from the frost or cold at such intervals, as may be determined by experiment suitable for the purpose. By virtue of the adjustable fire or combustion chamber, whereby the sized fire needed can be instantly had, the owner of the orchard, where my improved devices are located, is in position to adjust his heating facilities to any condition that may arise. If the temperature drops but a few degrees below the freezing point, the covers of the devices are only slightly drawn, since a relatively small combustion compartment will, under the conditions estimated, produce the required result. If, however, a heavier freeze is imminent, the cover is drawn farther back, producing a larger combustion compartment, or greater fire area. In case of an extremely low temperature, the full opening of the heater should be resorted to, in order to save the tender blossoms from a temperature as low as 15 degrees above zero.

When the heaters are not in use, the oil receptacle may be charged with the necessary quantity of oil which it is estimated may be needed during any one firing of the device. However, if necessary, the devices may be made sufficiently large to hold larger quantities of fuel, thus making the heaters serve as storage receptacles for the fuel oil. When the cover is completely closed, it serves to close the perforations 6, from the inside, and thus prevent the oil from becoming dirty by reason of the entrance of dust or other foreign particles of matter, as heretofore explained. By virtue of the swinging apron 14, the cover may be opened quickly without any tendency to cause the overflow of the liquid from the receptacle, since the apron will swing forwardly and

allow the level of the liquid fuel to quickly equalize within the two compartments.

Having thus described my invention, what I claim is:

1. An orchard heater comprising a fuel receptacle and a cover slidably mounted thereon, the cover having an apron hinged thereto forming a swinging partition adapted to divide the receptacle into two compartments and arranged to allow the fuel to pass from one compartment to the other, the said apron having an opening above the fuel of the receptacle, for the purpose set forth.

2. An orchard heater comprising a substantially rectangular fuel receptacle having draft openings along the sides thereof and a slidable cover mounted on the receptacle and adapted to successively close the draft openings as it is adjusted to its closed position.

3. An orchard heater comprising a substantially rectangular fuel receptacle with draft openings along the sides thereof and a slidable cover mounted on the receptacle adapted to successively close the draft openings as it is adjusted to its closed position, the rear extremity of the receptacle forming a support for the bottom of the cover which is provided with sides projecting upwardly from its bottom and fitting the interior of the receptacle.

4. An orchard heater, comprising a fuel receptacle having draft openings at the sides and the forward end thereof, the opposite end of the receptacle being relatively short, an adjustable cover having a bottom resting upon the upper edge of the rear end of the fuel receptacle, the said bottom having upwardly projecting side members and an upwardly-projecting forward end member, the sides and end members of the cover serving to close the draft perforations of the receptacle on the inside, when the cover is in the closed position, and an apron hinged to the cover at the exterior angle formed by the front end of its bottom and the upwardly projecting front end member, the said apron being arranged to divide the receptacle into two compartments.

5. An orchard heater, comprising a fuel receptacle, a cover slidably mounted thereon and an apron hinged to the cover serving to separate the receptacle into two compartments and adapted to allow the fuel to pass from one compartment to the other, the apron having an opening in its upper portion for the escape of any gases that may accumulate within the storage compartment of the receptacle, when the device is in use, substantially as described.

6. An orchard heater, comprising a fuel receptacle and a cover having a depressed bottom member, upwardly-projecting side members and an upwardly-projecting end member, the side members having sleeves shaped to engage beads formed upon the up-

per edges of the fuel receptacle, whereby the cover is allowed to slide freely upon the receptacle, the rear end of the receptacle being cut away to form a support for the bottom of the cover, the forward end of the latter being equipped with a swinging apron adapted to divide the receptacle into two compartments having an opening in its up-

per portion above the fuel for the purpose set forth.

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

JAMES L. HAMILTON.

Witnesses:

C. N. REYNOLDS,

W. C. MICHAEL.