July 25, 1933. E. B. WOOD 1,919,407

VEGETABLE AND ORCHARD HEATER

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Fig. 1.

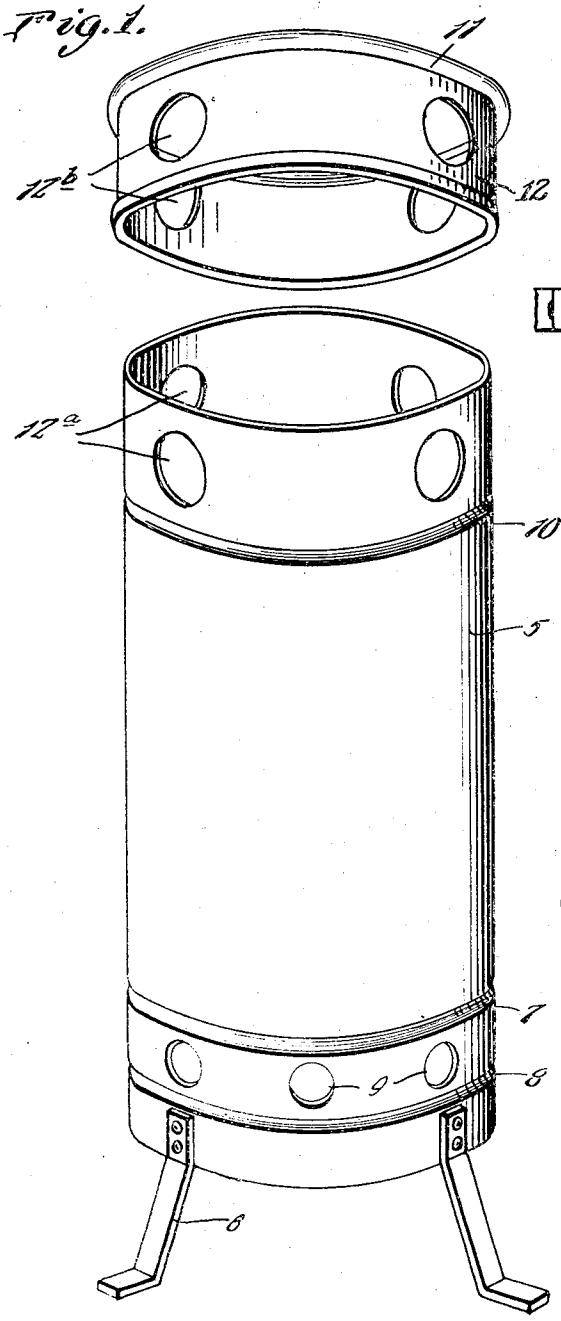
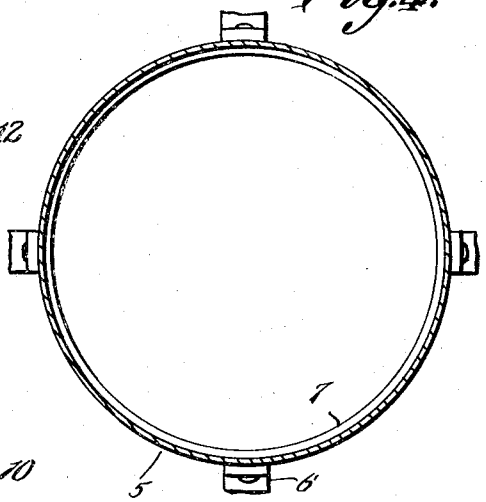


Fig. 4.



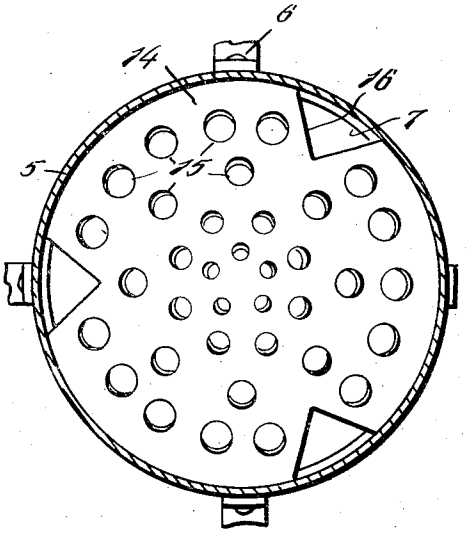


Fig. 3.

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Fig. 2.

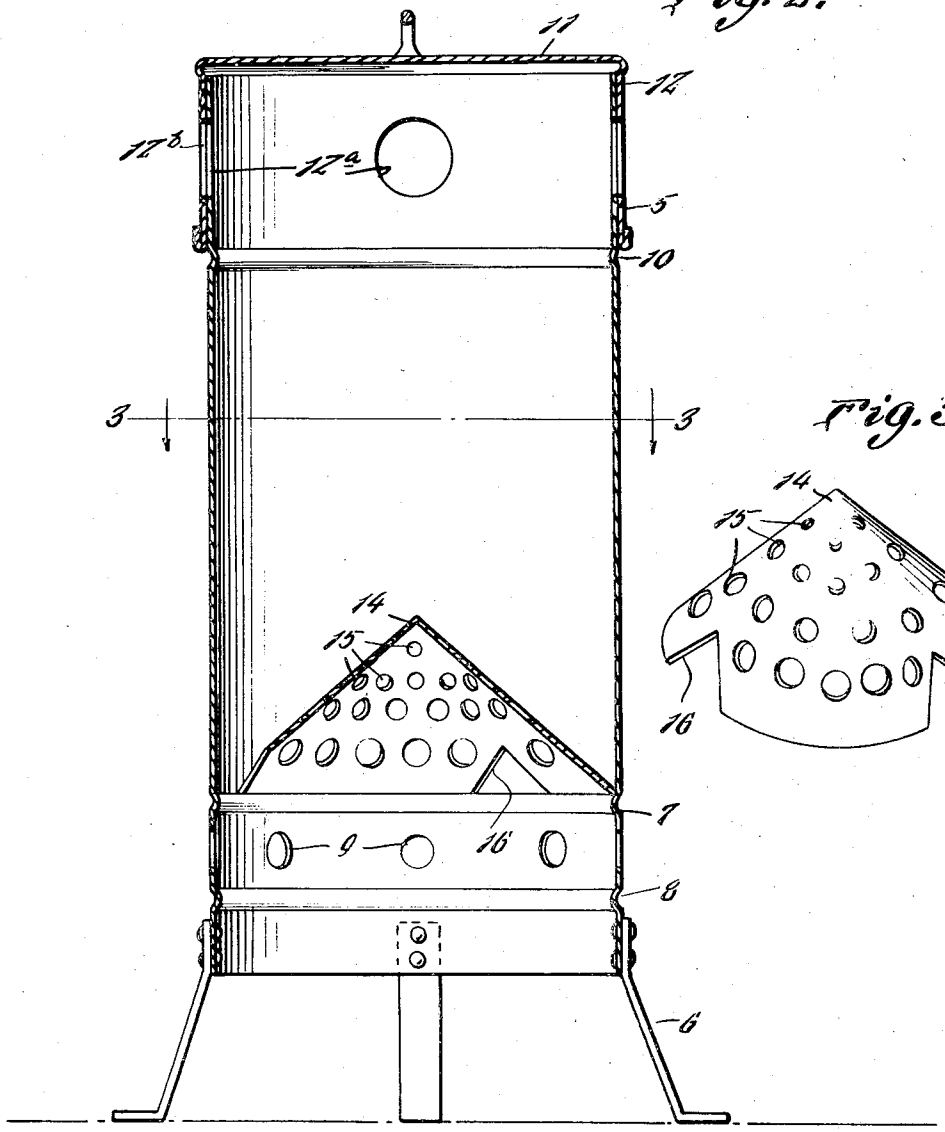


Fig. 5.

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UNITED STATES PATENT OFFICE

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VEGETABLE AND ORCHARD HEATER

Application filed December 3, 1929. Serial No. 411,309.

My present invention contemplates the provision of a charcoal burning heater for heating orchards and use in proximity to vegetables, the said heater being constructed on the principle that the fuel is ignited at the top of the fuel in the heater, and as the combustion goes down principally around the edge of the fuel the combustion in a comparatively short time will reach the grate, and the combustion will continue at said point until the charge of fuel is consumed. Toward the end of the operation the lower twelve inches, approximately, of the heater, becomes red hot and above that point very little heat is generated so that during the latter consumption of the charge the upper part of the heater turns black and combustion above the apex of the grate practically ceases. This action is due to the fact that immediately after the charge is initially ignited carbon dioxide is generated, and as it is practically impossible for combustion to take place in carbon dioxide the relative amounts of carbon dioxide and air remain unchanged as the heat is generated. The volume of carbon dioxide becomes greater as combustion continues down the heater, and until oxygen is supplied by the apertures in the conical grate so combustion can continue and the entire charge be consumed. Incident to the operation of the heater the temperature is greater two feet out from the heater at the bottom than it is directly over the top of the heater.

With the above and numerous other objects in view as will appear as the description proceeds, the invention resides in certain novel features of construction, and in the combination and arrangement of parts as will be hereinafter more fully described and claimed.

In the drawings:—

Figure 1 is a perspective of the heater embodying the features of the invention.

Figure 2 is a vertical sectional view therethrough.

Figure 3 is a transverse horizontal section taken substantially on the line 3—3 of Figure 2,

Figure 4 is a similar view showing the grate removed, and

Figure 5 is a perspective of the grate which forms an important part of the invention.

Referring to the drawings in detail, it will be seen that the numeral 5 denotes a cylindrical body disposed vertically and supported by legs 6 depending from the lower end thereof. The lower portion of the body 5 is swaged inwardly at 7 and 8 respectively for forming shoulders and the portion between these shoulders is provided with openings 9 which form breathers for oxygen.

A strengthening swaged formed shoulder 10 is provided adjacent the top of the body 5. A lid 11 is formed with a flange 12 to telescope outside the upper end of the body.

Apertures 12*a* are provided in the upper portion of the body 5, and the said flange 12 is apertured at 12*b*. Manifestly by turning the lid 11 about its axis the oxygen for supporting combustion can be nicely controlled.

At 14 is the cone-shaped grate which offers a baffle to draft and afford a support for charcoal. In the preferred embodiment of my invention the said grate 14 is provided with a plurality of annular series of openings 15 the diameter of the openings in the series being graduated to become smaller as the openings approach the apex of the cone.

In the operation of the heater the fuel is ignited at the top of the heater and the fuel is consumed in the manner hereinbefore explicitly set forth. Incident to the operation and as demonstrated by experience the temperature is greater at substantially two feet outwardly from the heater at the bottom than it is directly over the top of the heater, this being due to the construction of the grate as described. From this it follows that the heater will afford a low heat calculated to protect vegetables adjacent to the heater; also, that the heater will dry ground surrounding the heater for a considerable distance which makes the heater peculiarly advantageous where winter vegetables are raised.

It is thought that the construction, utility and advantages of this invention will now be quite apparent without any more detail description thereof. It will be seen that by burning charcoal on the grate, said grate will tend to maintain itself clean because of the

arrangement of the openings 15 and the notches 16, said notches allowing the sifting out of burnt charcoal.

The structure may be manufactured at a low cost, and made light and durable so as to be thoroughly efficient and reliable in use in orchards and other desired places.

The present embodiment of the invention has been disclosed in considerable detail merely for the purpose of exemplification since in actual practice it attains the features of advantage enumerated as desirable in the statement of invention and the description.

It will be apparent that changes in the details of construction, and in the combination and arrangement of parts may be resorted to without departing from the spirit or scope of the invention as hereinafter claimed or sacrificing any of its advantages.

Having thus described my invention, what I claim as new is:—

The herein described heater for burning charcoal, comprising a hollow upright body, and a grate therein supported only at its lower edge and extending throughout the transverse area of the hollow upright body, said body adapted at its upper portion for the passage of gases and open at its portion, below the grate, for the passage of air; said grate being in the form of a thin wall which interiorly and exteriorly describes an upwardly extending cone, and being provided in its edge with spaced, comparatively large openings which extend inwardly from said edge, and being also provided throughout the remainder of its area with outer apertures smaller than said edge openings and inner apertures smaller than said outer apertures.

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