No. 695,382. Patented Mar. 11, 1902.

C. FROUDE.

DEVICE FOR HEATING ORCHARDS.

(Application filed Sept. 26, 1901.)

(No Model.)

Fig. 1.

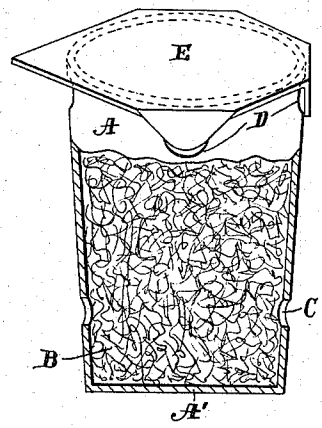


Fig. 2.

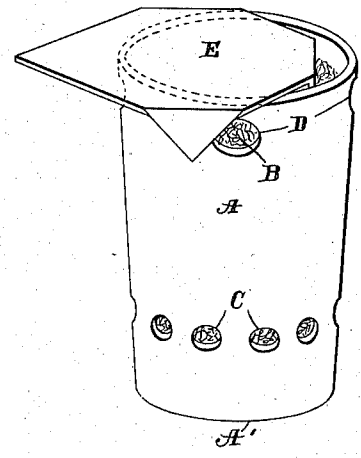
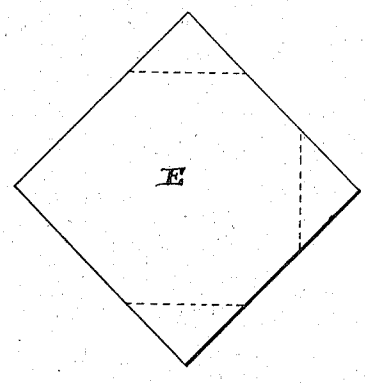


Fig. 3.



WITNESSES

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CHARLES FROUDE, OF RIVERSIDE, CALIFORNIA.

DEVICE FOR HEATING ORCHARDS.

SPECIFICATION forming part of Letters Patent No. 695,382, dated March 11, 1902.

Application filed September 26, 1901. Serial No. 76,661. (No model.)

To all whom it may concern:

Be it known that I, CHARLES FROUDE, a citizen of the United States, residing at Riverside, in the county of Riverside, State of California, have invented a new and useful Improvement in Devices for Heating Orchards, of which the following is a specification.

My invention relates to devices used in raising the temperature in an orchard; and the objects thereof are to provide a simple and inexpensive device which is portable, has no chimney or pipe, which occupies but little space, and may be filled with fuel and stored under the trees until wanted for use.

In raising fruits, and particularly citrus fruits, there are times when the normal temperature in the orchard becomes so low that some of the fruit on the trees will freeze unless the temperature in the orchard is raised artificially. This has been done in various ways by means of devices more or less cumbersome and expensive. As it is uncertain just when these cold periods will occur, it is necessary that the devices for raising the temperature in the orchard shall be convenient and easily used, as but little time is allowed for lighting the devices after the thermometer shows that the danger-point in the temperature has arrived.

Another object is the production of a device that will use cheap fuel.

I have combined these desirable features in my improved portable device described herein and illustrated in the accompanying drawings, in which—

Figure 1 is a side view of my device, partly broken away to show the fuel therein. Fig. 2 is a perspective view of the same, showing it ready for use. Fig. 3 is a plan of the blank from which the cover is made.

In the drawings, A is a sheet-iron receptacle in which the fuel B is placed. It is preferably in shape the frustum of a hollow cone, so that they may be packed together when not in use, the larger end thereof being open and the smaller end closed by a bottom A'. A short distance above the bottom the sides are perforated by a row of perforations C, which preferably extend all around the same to admit air to the fuel contained in the receptacle when the fuel is burning. Near the top of the sides are a plurality of larger perforations D, preferably four in number, which provide draft-openings when the fuel is burning and the cover E is placed on the receptacle, as shown in Fig. 1. The cover is formed from a square piece of sheet-iron and is bent at three corners on the dotted lines shown in Fig. 3, so that the bent portions shall stand at right angles to the main body and shall pass down over and just outside the top of the receptacle. The fourth corner is not bent, for convenience in handling, but may be bent, if desired. The fuel which I prefer to use in my stove is cotton-waste saturated with the very heaviest crude petroleum. Petroleum residuum left after distilling illuminating-oils from the crude oil may be used. In making my device the joints are so tight that such heavy fuel-oil will be retained in the bottom thereof below the lower perforations. The cover when placed on the receptacle, as shown in Fig. 1, protects the fuel contained therein, so that the device may be charged with fuel, the cover placed thereon, and then placed under a tree in the orchard. Excessive cold sometimes follows a rain, and when the stove is in the orchard the cover protects the fuel in the receptacle from being damaged thereby.

When it is necessary to use the device, it is quickly removed from under the tree and the fuel therein lighted. Then the cover is adjusted on the top, as shown in Fig. 2, so that the fuel shall not be allowed to burn too quickly. From time to time the opening at the top may be enlarged or diminished, as occasion shall require. By this construction a light cheap portable device is provided which will protect the fuel therein when not in use and in which the consumption of the fuel is easily regulated. I have found in practice that the fuel in such devices will burn about four and one-half hours and that a sufficient number—from thirty to fifty to the acre—will in almost all cases prevent the temperature from falling so low in the orange-groves of southern California that the fruit will be injured by the cold.

I have illustrated my stove as conical-shaped; but any other shape may be used without departing from the spirit of my invention, which consists of a fuel-holding receptacle with a tight bottom and having air-

inlets near the bottom thereof and draft-openings near the top thereof, and having a cover having turned corners, which cover may be used to protect the fuel at one time and as a regulator in burning the fuel at another time.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An orchard-heating device, comprising a receptacle for holding the fuel, open at the top and closed at the bottom, and provided with air-vent holes in the sides near the bottom thereof, and draft-openings near the top thereof; and a cover for said receptacle, adapted to be moved along and across the top thereof to regulate the burning of the fuel in said receptacle; the cover consisting of a blank sheet of metal in a square form, three of the corners thereof being bent at right angles to the plane of the body portion.

2. In an orchard-heating device, a cover for said device, formed from a blank, with three corners turned at an angle to the main body of the cover, to hold the cover on the device at different points, and being in area sufficient to cover the top opening in the device.

3. An orchard-heating device, comprising a fuel-holding receptacle, in shape the frustum of a cone, the larger and top end of which is open, and the smaller or lower end closed; air-vents and draft-openings in the sides of said receptacle near the bottom and top thereof, respectively, and a cover for said receptacle having three of the corners thereof bent at an angle to the other portions to hold the cover in place over the top opening of said receptacle.

In witness that I claim the foregoing I have hereunto subscribed my name this 17th day of September, 1901.

CHARLES FROUDE.

Witnesses:
E. P. WARNER,
R. O. SIMPSON.