

T. H. STEWART.
ORCHARD HEATER.
APPLICATION FILED DEC. 20, 1910.

1,008,997.

Patented Nov. 14, 1911.

Fig. 1

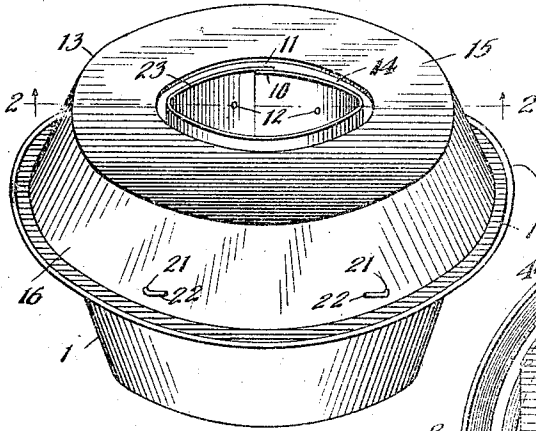


Fig. 2

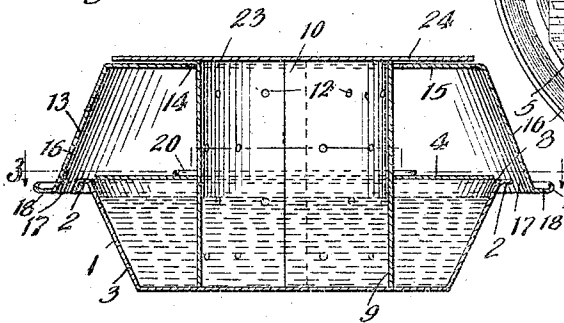


Fig. 3

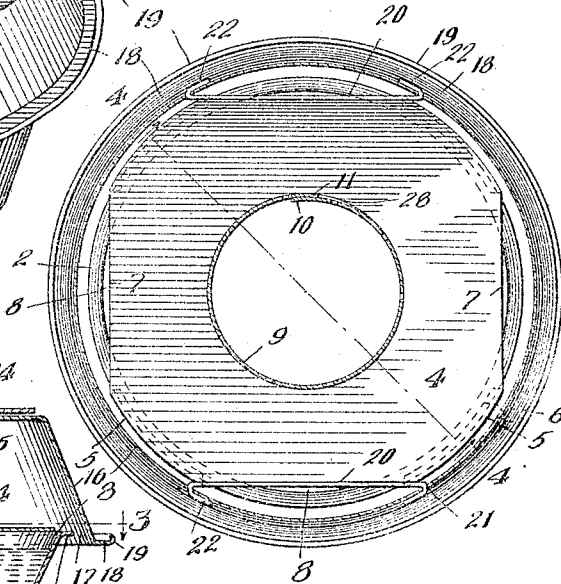
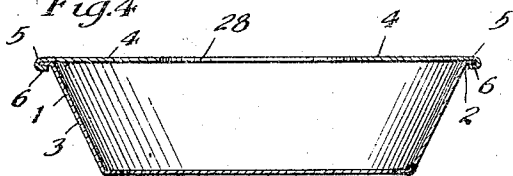


Fig. 4



Witnesses:

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UNITED STATES PATENT OFFICE.

THOMAS H. STEWART, OF ATLANTA, GEORGIA, ASSIGNOR TO AMERICAN CAN COMPANY,
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ORCHARD-HEATER.

1,008,997.

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To all whom it may concern:

Be it known that I, THOMAS H. STEWART, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented a new and useful Improvement in Orchard-Heaters, of which the following is a specification.

My invention relates to improvements in orchard heaters.

10 The object of my invention is to provide an orchard heater of a strong, simple, efficient and durable construction, composed of few parts, adapted to be cheaply manufactured and furnished at small cost, the parts
15 of which can be easily and quickly assembled, and which may be readily filled with fuel and lighted.

My invention consists in an orchard heater embodying in cooperative combination a
20 flaring or dish shaped, one piece, drawn sheet metal pot or fuel container, having an annular, outwardly projecting flange at its upper end; a square or rectangular cover plate having rounded corners provided with
25 flanges engaging the external flange at the upper end of the container, and furnished with a central opening to receive a flue member, the straight edges of the cover plate leaving openings or air passages between the
30 cover plate and the upper end of the fuel container; an inverted, dish shaped, one piece hood having a central opening in its integral flat or disk portion and provided with wires secured thereto and extending across its lower
35 end on the inside to engage the cover plate of the fuel container and support the hood with its flaring wall out of contact with the fuel container, and thus leave a free space for passage of air between the rim or enlarged end of the inverted hood and the rim
40 of the fuel container; and a cylindrical flue or chimney member furnished with openings or perforations for passage of air through the same and fitting within the central opening in the cover plate and projecting
45 at its upper end through the opening in the flat top or disk portion of the inverted dish shaped hood and resting at its lower end on the bottom of the fuel container. To
50 cover the opening in the hood and the upper end of the flue a flat cover plate is provided.

My invention also consists in the novel construction of parts and devices and in the novel combinations of parts and devices

herein shown and described and more particularly specified in the claims.

In the accompanying drawing forming a part of this specification, Figure 1 is a perspective view of an orchard heater embodying my invention, the cover plate at the
60 upper end of the hood and flue being removed. Fig. 2 is a central, vertical section on line 2—2 of Fig. 1. Fig. 3 is a horizontal section on line 3—3 of Fig. 2. Fig. 4 is a vertical section on line 4—4 of Fig. 3.

In the drawing, 1 represents a dish shaped
65 sheet metal fuel container drawn into shape from one seamless piece and having an externally projecting flat annular flange 2 at the upper end of its flaring frusto conical
70 wall 3. Secured to the upper end of the container 1 is a flat cover plate 4 of rectangular shape and having rounded truncated corners 5 furnished with flanges 6 crimped
under the flange 2 of the container to secure
75 the cover plate rigidly thereto. At the side edges 7 of the cover plate, openings 8 are formed beneath the cover plate.

9 is a flue or chimney consisting of a cylindrical coiled or curved rectangular piece of
80 sheet steel or iron, the edges 10, 11 of which loosely overlap, and which fits within the large central opening 28 in the cover plate, the spring of the sheet metal of the flue causing it to outwardly expand and snugly
85 fit the opening in the cover plate. The lower end of the flue 9 rests upon the integral bottom of the container 1, and the flue is open at both ends and provided with a series of holes or openings 12 extending around its
90 circumference and from end to end for passage of air therethrough. As the cover plate 4 is rigidly secured to the container 1 and as it engages the spring cylindrically coiled loose flue sheet at its periphery, while the
95 lower end of the flue rests upon the bottom of the container, the flue is thus held in an upright position by the cover plate 4 and prevented from tilting, so that the flue itself serves in turn as a centering device to
100 retain the upper end of the inverted dishpan shaped hood 13 in position and prevent the hood from tilting, as the upper end of the flue projects through the opening 14 in the disk portion 15 of the hood.

The inverted dish pan shaped hood 13 is made somewhat larger in diameter or size than the container so that its flaring or

frusto conical wall 16 may surround, without touching, the annular flange or rim 2 of the container 1 and leave an open space 17 therebetween for admission of air into the container and into the hood. The inverted dish pan shaped hood is made in one piece and is provided with a stiffening rim or flange 18 at its lower end, terminating in a curl 19. The inverted dish shaped hood is provided on the inside of its flaring wall near the lower end thereof with a pair of wire stays or supports 20, which are formed preferably of heavy wire, and which rest upon the flat cover plate of the container and thus support the hood in position. The wire stays or supports 20 are inserted through holes 21 in the flaring wall of the hood and have bent ends 22 to secure them rigidly in position.

The upper end 23 of the flue projects through the opening in the flat or disk portion 15 of the hood 13, but preferably only very slightly, so that this upper end of the flue is substantially flush with the upper face of the flat or disk portion of the hood. This adapts the flat rectangular flue cover plate 24 to cover and protect from rain not only the opening in the upper end of the flue, but also the opening in the upper end of the hood, and also enables this cover plate to be supported by the hood in a position partially covering the flue, while leaving a portion of the flue open as may be required in regulating the burning of the heater for different atmospheric conditions.

In operation, crude petroleum or other cheap liquid or semi-liquid fuel is poured into the container through the flue and then ignited, preferably by a torch or by putting a small quantity of waste or other fibrous material in the container through the flue. The air to support combustion enters under the hood and passes in part beneath the cover plate through the openings 8 between its side edges and the rim of the container and thence passes through the holes or perforations in the flue member into the flue chamber, combustion being confined or chiefly confined to the surface of the oil inside the flue. As the oil in the container is consumed, further holes in the flue are exposed for passage of air therethrough. The air entering under the hood in part passes into the flue through the holes therein above the cover plate, thus providing adequate draft and insuring a more perfect consumption of the fuel.

I claim:—

1. In an orchard heater, the combination with a one-piece sheet metal, dish pan shaped fuel container having an outwardly projecting flange at its upper end, of a rectangular cover plate having rounded corners provided with flanges securing it to the flange of the container, said container and

top plate having air passages between the side edges of the top plate and the upper end of the container, a perforated sheet metal flue open at its upper end and formed of a cylindrically coiled sheet with loose overlapping ends and fitting within the central opening of said cover plate, and a one piece inverted dish shaped sheet metal hood having a central opening in its flat disk portion to receive the upper end of the flue, and provided with supporting stays extending across the interior of the hood near its lower end to engage said cover plate and support the hood with an open space for passage of air between the upper end of the container and the lower portion of the hood, said opening in the hood forming an annular air passage between the hood and the upper end of the flue and said flat disk portion of the hood serving to deflect air inwardly over the upper end of the flue, substantially as specified.

2. In an orchard heater, the combination with a one-piece sheet metal dish pan shaped fuel container having an outwardly projecting flange at its upper end, of a rectangular cover plate having rounded corners provided with flanges securing it to the flange of the container, said container and top plate having air passages between the side edges of the top plate and the upper end of the container, a perforated sheet metal flue open at its upper end and formed of a cylindrically coiled sheet with loose overlapping ends and fitting within the central opening of said cover plate, and a one piece inverted dish shaped sheet metal hood having a central opening in its flat disk portion to receive the upper end of the flue, and provided with supporting stays extending across the interior of the hood near its lower end to engage said cover plate and support the hood with an open space for passage of air between the upper end of the container and the lower portion of the hood, the flat disk portion of the hood being substantially flush with the upper end of the flue to afford support for a common cover plate, said opening in the hood forming an annular air passage between the hood and the upper end of the flue and said flat disk portion of the hood serving to deflect air inwardly over the upper end of the flue, and a common cover plate adapted to cover both the opening in the hood and the upper end of the flue, substantially as specified.

3. In an orchard heater, the combination with a seamless sheet metal fuel container, of a seamless inverted dishpan shaped hood having a central opening at its upper end, a cover plate for the container having a central opening and supporting stays on the inside of the hood adapted to engage the cover plate and support the hood in spaced relation to the upper end of the container.

and a perforated flue open at its upper end and fitting within said opening in the cover plate and said opening in the hood, said hood having an annular horizontally and inwardly projecting portion surrounding said central opening therein and serving to deflect air inwardly over the upper end of the flue, substantially as specified.

4. In an orchard heater, the combination with a one piece drawn sheet metal fuel container having a flange at its upper end, of a cover plate having a central opening and rounded corner portions provided with flanges crimped under the flange of the container, an inverted dish pan shaped hood having an opening in its upper end and provided with stay wires extending across it on the inside in position to engage said cover plate and support the hood in spaced relation to the container, and a perforated expansible flue open at its upper end and fitting within said opening in the cover plate, said hood having an annular horizontally and inwardly projecting portion surrounding said central opening therein and serving to deflect air inwardly over the upper end of the flue, substantially as specified.

5. In an orchard heater, the combination with a one piece dish pan shaped sheet metal fuel container, of a sheet metal inverted dish pan shaped hood of larger size than the container, and provided with means for supporting it in spaced relation to the container, said hood having a central opening at its upper end, and a perforated expansible cylindrical flue open at its upper end and extending at its upper end within the central opening of said hood, said hood having an annular horizontally and inwardly projecting portion surrounding said central opening therein and serving to deflect air inwardly over the upper end of the flue, substantially as specified.

6. In an orchard heater, the combination with a one piece dish pan shaped sheet metal fuel container, of a sheet metal inverted dish pan shaped hood of larger size than the container, and provided with means for supporting it in spaced relation to the con-

tainer, said hood having a central opening at its upper end, a cover plate secured to said container and having a central opening, and a perforated, expansible, cylindrical flue open at its upper end and formed of a rectangular sheet coiled into cylindrical form with loosely overlapping ends, said hood having an annular horizontally and inwardly projecting portion surrounding said central opening therein and serving to deflect air inwardly over the upper end of the flue, substantially as specified.

7. In an orchard heater, the combination with a fuel container, of a cover plate therefor having a central opening, a hood having supporting stays extending across its interior near its lower end to support it in spaced relation to the container and adapted to engage the cover plate of said container, and a removable open topped flue having perforated walls and extending at its upper end within the central opening of said cover plate, said hood having an annular horizontally and inwardly projecting portion surrounding said central opening therein and serving to deflect air inwardly over the upper end of the flue, substantially as specified.

8. In an orchard heater, the combination of a fuel container, a cover plate secured to the upper edge of said container and formed with a central opening, air passages being formed between the outer edge of the cover plate and the rim of the container, a hood provided with an inwardly projecting flange at its upper end, air passages being formed between the lower end of the hood and the upper end of the container and a perforated flue fitted into the central opening of the cover plate, the upper end of said flue projecting through the hood and spaced from the said inwardly projecting flange, the lower end of said flue extending into the fuel container below the normal fuel level thereof.

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Witnesses:

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