J. S. BRADLEY.

ORCHARD HEATER.

APPLICATION FILED MAY 13, 1915.

1,157,671. Patented Oct. 26, 1915.

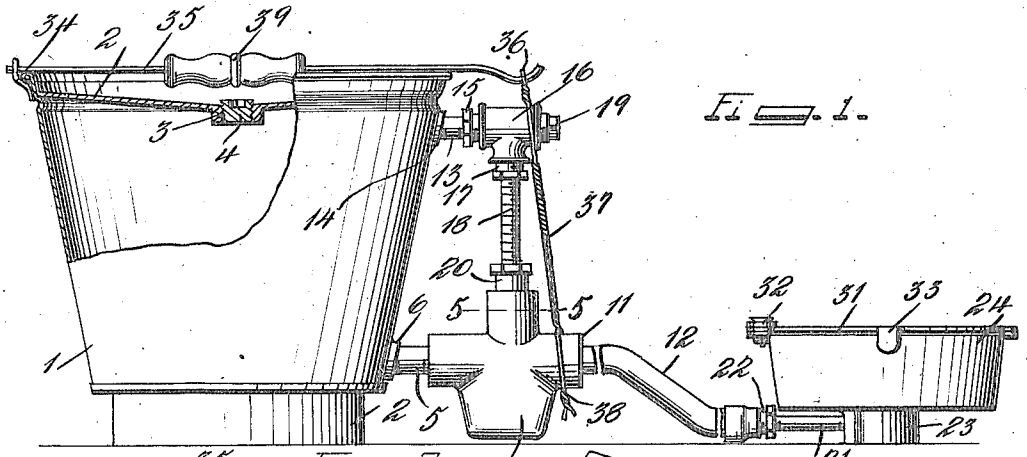


Fig. 1.

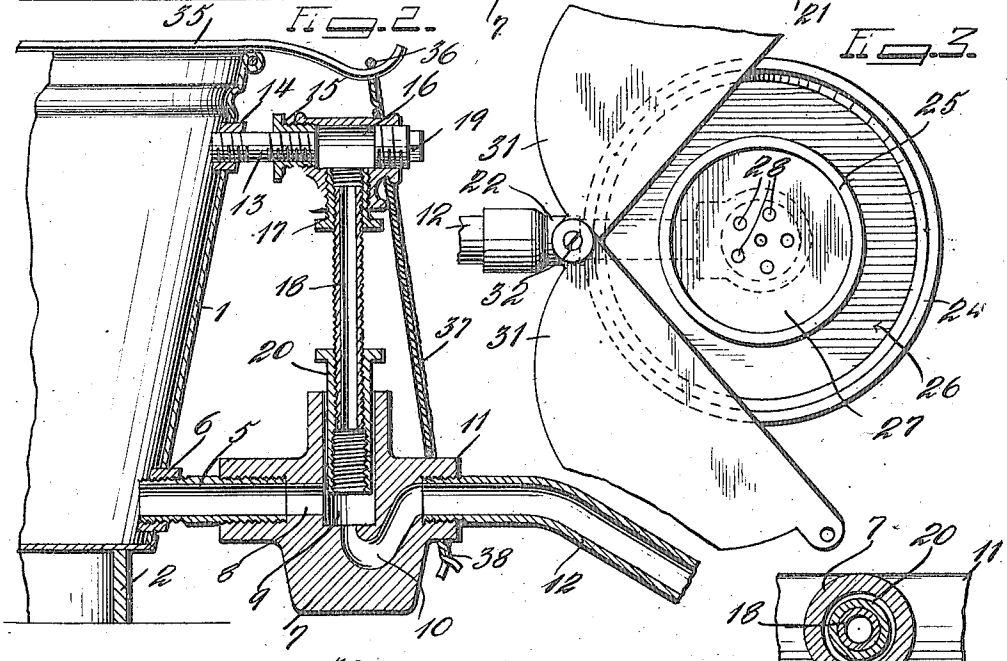


Fig. 2.

Fig. 3.

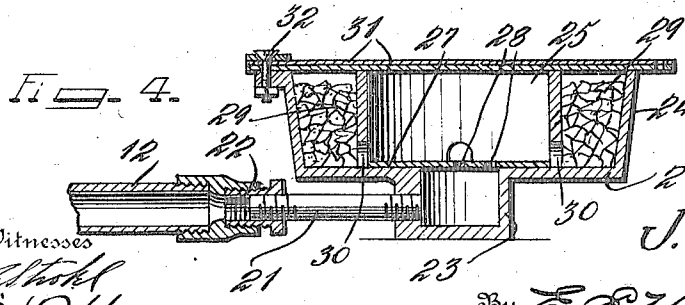


Fig. 4.

Fig. 5.

Witnesses

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ORCHARD-HEATER.

1,157,671. Specification of Letters Patent. Patented Oct. 26, 1915.

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To all whom it may concern:

Be it known that I, JOHN S. BRADLEY, citizen of the United States, residing at Delaware, in the county of Delaware and State of Ohio, have invented certain new and useful Improvements in Orchard-Heaters, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to orchard heaters, and has for its principal object the production of a simple and efficient means for producing a dense cloud of smoke for the purpose of reducing the chill in an orchard and thereby preventing the fruit from becoming frozen or frost-bitten.

Another object of this invention is the production of an orchard heater wherein the burner is so constructed as to carry a quantity of charcoal upon which the oil may be passed so that upon the igniting thereof a dense cloud of smoke may be produced.

Another object of this invention is the production of an orchard heater wherein the reservoir which carries the oil is provided with a valve mechanism so constructed as to increase or diminish the flow of oil as the occasion may require.

With these and other objects in view this invention consists of certain novel combinations, constructions, and arrangements of parts as will be hereinafter fully described and claimed.

In the accompanying drawing: Figure 1 is a side elevation of the orchard heater partly broken away and partly in section. Fig. 2 is a fragmentary sectional view through a portion of the orchard heater showing the specific construction of the valve mechanism used in regulating the flow of the oil. Fig. 3 is a top plan view of the burner showing the sectional cover partly broken away. Fig. 4 is a vertical section through burner. Fig. 5 is a section taken on the line 5—5 of Fig. 1.

Referring to the accompanying drawing by numerals it will be seen that the orchard heater comprises a reservoir 1 which is adapted to be supported upon a supporting ring 2. This reservoir 1 has an open top which is adapted to be closed by the removable cover 2 which is concaved toward its central portion so as to provide a filler opening 3. This filler opening 3 is adapted to be closed by means of the removable plug 4 whereby when so desired the reservoir may be filled with oil, at which time the plug 4 may be placed so as to close the opening 3 and prevent the passage of dirt or other refuse into the interior of the reservoir.

A short pipe 5 is threaded into engagement with the collar 6 carried by the reservoir 1, while the valve body 7 is mounted upon the outer end of this pipe. This valve body 7 is provided with a bore 8 connecting with the pocket 9. A curved passage 10 connects with the lower portions of the pocket 9 and extends to connect with the outer portions of the neck 11 within which one end of the feed pipe 12 is detachably mounted. A short pipe 13 is also carried by a collar 14 adjacent the upper portions of the reservoir 1 so as to be carried by the thimble 15 engaging the T-joint 16. This T-joint is also adapted to carry a second thimble 17 for the purpose of supporting an externally threaded air pipe 18. A plug 19 is used for the purpose of closing the outer end of the T-joint 16 whereby when so desired the plug 19 may be removed for allowing access to the inner portions of the T-joint. An internally threaded sleeve 20 is movably mounted upon the lower end of the air pipe 18 and extends into the pocket 9 of the valve body 7. This sleeve 20 is slightly smaller than the inner portions of the pocket 9 and therefore will be allowed to move within the pocket when necessary.

A stem 21 is secured to the outer end of the feed pipe 12 by any suitable connection as illustrated at 22. This stem 21 is secured to the base portion 23 of the burner 24. This base 23 is constructed so as to constitute a cup-like member having its upper portion opened. A circular wall 25 is carried within the burner 24 at a spaced distance from the inner side portions of the burner. This wall 25 is mounted upon the connecting portions 26 of the burner 24 and base 23. Therefore, sufficient space is provided for the mounting of the plate 27 which is provided with a plurality of openings 28. This plate is used for preventing the passage of large quantities of dirt or refuse into the cup and preventing the same from efficiently operating. A quantity of charcoal 29 is carried within the spaces between the inner

portions of the burner 24 to the wall 25 so that the oil which is admitted into the cup or base 23 will pass through the aperture 28 and then through the openings 30 so as to pass into the charcoal whereby when the oil is ignited the charcoal will act as a smudge for producing a quantity of smoke for preventing or reducing the chill in an orchard.

When the device is in operation it is necessary to place a quantity of oil within the reservoir 1. The sleeve 20 may then be rotated so as to be moved upwardly upon the air pipe 18 as shown in Fig. 2. This action will provide a free passage through the pipe 5, bore 8, pocket 9 and passage 10 whereby the oil may pass therethrough into the feed pipe 12. From this pipe it will pass through the stem 21 into the base or cup 23 so as to be discharged through the apertures 28 and openings 30 upon the charcoal 29. It is, of course, obvious that the quantity of oil supplied may be increased or diminished as desired by the adjustment of the sleeve 20 upon the air pipe 18. If the sleeve is rotated so as to move downwardly into the pocket, the supply of oil will be diminished or upon the engagement of the sleeve and the lower portions of the pocket 9 the supply of oil will be entirely cut off. It will be seen that the inner portions of the passage 10 are in direct alinement with the inner portions of the sleeve 20, and thereby the sleeve in fitting against the bottom of the pocket 9 will prevent the passage of oil thereinto. As the sleeve is rotated so as to move upwardly upon the air pipe 18 sufficient space is provided upon the side portions of the sleeve 20 for the passage of air into the pocket 9. The air will then pass around into the interior of the sleeve 20, through the air pipe 18, the T-joint 16 and short pipe 13 into the interior of the reservoir 1 for preventing a suction therein, and allowing free passage of the air therefrom.

When it is desired to protect the inner portions of the burner 24, the sectional top 31 carried by the bolt 32 may be swung to a closed position as indicated in Figs. 1 and 4, this inward movement being limited by the over-hanging lips 33. It will further be seen that the reservoir 1 is provided with an ear 34 through which one end of the lifting rod 35 may pass, while the opposite end of the lifting rod 35 is carried by the eye 36 of the wound strand 37 mounted upon the neck 11 of the valve body 7 as shown at 38. A grip 39 may be carried upon this rod adjacent the central portions, whereby the heater may be easily lifted and carried from place to place as the occasion may require.

From the foregoing description it will be seen that a very simple and efficient orchard heater has been produced wherein a valve is provided for the purpose of increasing or diminishing the flow of oil from the reservoir as the occasion may require, while an efficient burner has been provided which will produce a quantity of smoke when the oil which is fed thereto is ignited.

What is claimed is:

1. In an orchard heater, the combination of a reservoir, a valve member connected with said reservoir, said valve member provided with an internal pocket, said valve member also provided with a passage communicating with the lower portion of said pocket and with the outer portions of said valve member, a feed pipe carried by said valve member and communicating with the outer portions of said passage, a T-joint supported by said reservoir adjacent its upper portions, an air pipe carried by said T-joint, a sleeve adjustably mounted upon said air pipe and extending into said pocket, said valve member and said sleeve being smaller than the inner portions of said pocket whereby the sleeve may be moved upon said air pipe so as to move within said pocket for increasing or diminishing the amount of air passing into said pocket, whereby the air passing through said air pipe and T-joint into said reservoir may be increased or diminished for regulating the flow of oil from said reservoir, and a burner connected to the outer end of said feed pipe.

2. In an orchard heater, the combination of a reservoir, a valve member connected with said reservoir, said valve member provided with an internal pocket, said valve member also provided with a passage communicating with the lower portion of said pocket and with the outer portions of said valve member, a feed pipe carried by said valve member and communicating with the outer portions of said passage, an externally threaded air pipe connected to the upper portions of said reservoir and communicating with the interior thereof, an internally threaded sleeve movably mounted upon said air pipe and extending into said pocket, said valve member and said sleeve being smaller than the inner portions of said pocket whereby the sleeve may be moved upon said air pipe so as to move within said pocket for increasing or diminishing the amount of air passing into said pocket, whereby the air passing through said air pipe and into said reservoir may be increased or diminished for regulating the flow of oil from said reservoir, and a burner connected to the outer end of said feed pipe.

3. In an orchard heater, the combination of a reservoir, a valve member connected with said reservoir, said valve member provided with an internal pocket, said valve member also provided with a passage communicating with the lower portion of said pocket and with the outer portions of said valve member, a feed pipe carried by said

valve member and communicating with the outer portions of said passage, an air pipe connected to the upper portions of said reservoir and communicating with the interior thereof, and means for regulating the passage of air through said air pipe and into said reservoir, whereby the flow of oil through said valve member may be regulated, and a burner connected to the outer end of said feed pipe.

4. In an orchard heater, the combination of a reservoir, a valve member connected with said reservoir, said valve member provided with an internal pocket, said valve member also provided with a passage communicating with the lower portion of said pocket and with the outer portions of said valve member, a feed pipe carried by said valve member and communicating with the outer portions of said passage, an air pipe connected to the upper portion of said reservoir and communicating with the interior thereof, said air pipe extending into said pocket, means carried by said air pipe and extending into said pocket for regulating the passage of air through said air pipe and into said reservoir, whereby the flow of oil through said valve may be regulated and a burner connected to the outer end of said feed pipe.

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

JOHN S. BRADLEY.

Witnesses:
GEO. E. CAYLOR,
WILLIAM WATTERS.