Dec. 12, 1944. J. A. THARRINGTON 2,365,119

TOBACCO CURER

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Fig. 1.

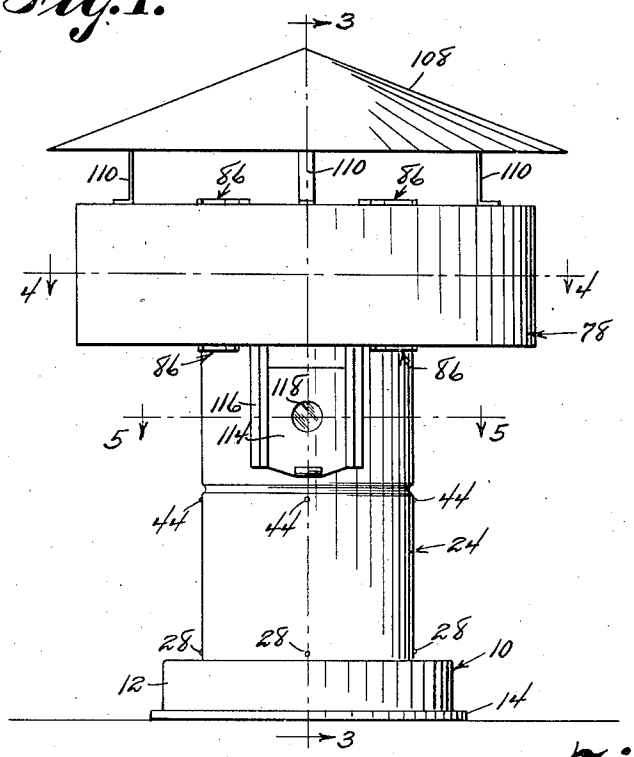

Fig. 2.

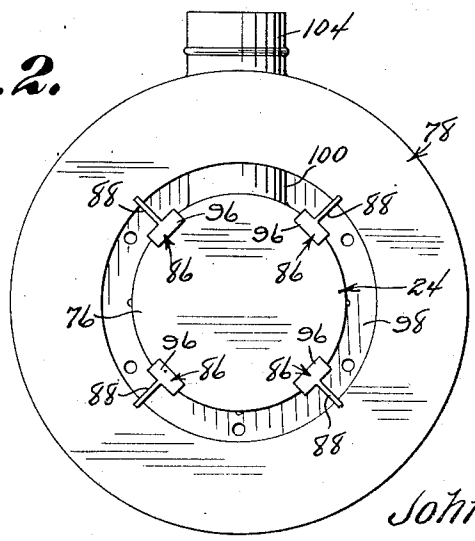

Fig. 7.

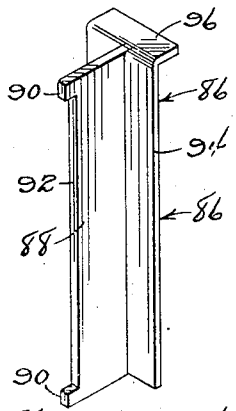

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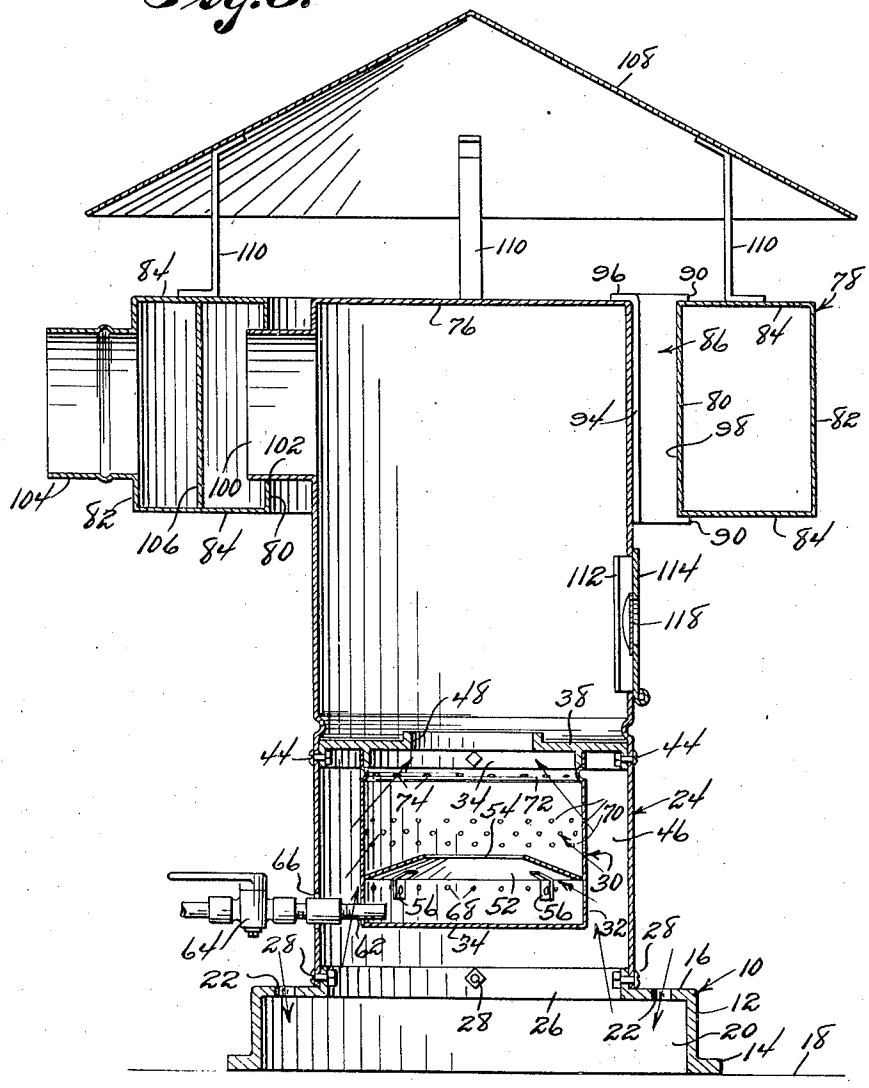
Fig. 3.



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TOBACCO CURER

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Fig. 4.

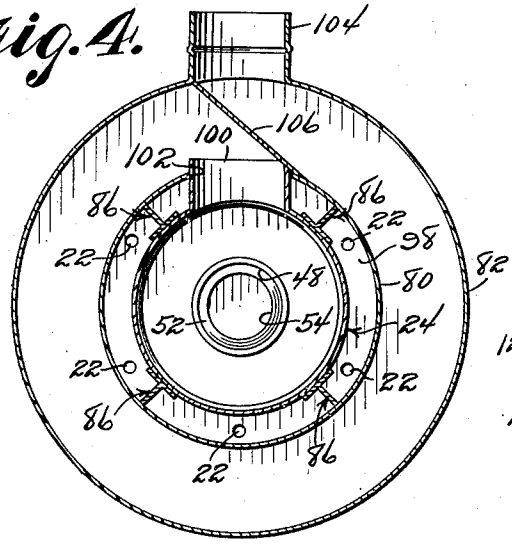


Fig. 5.

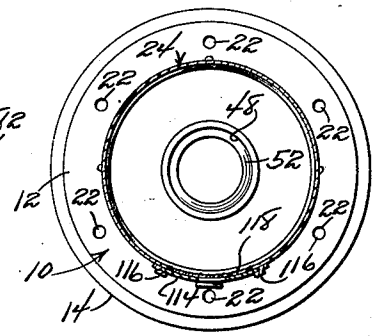
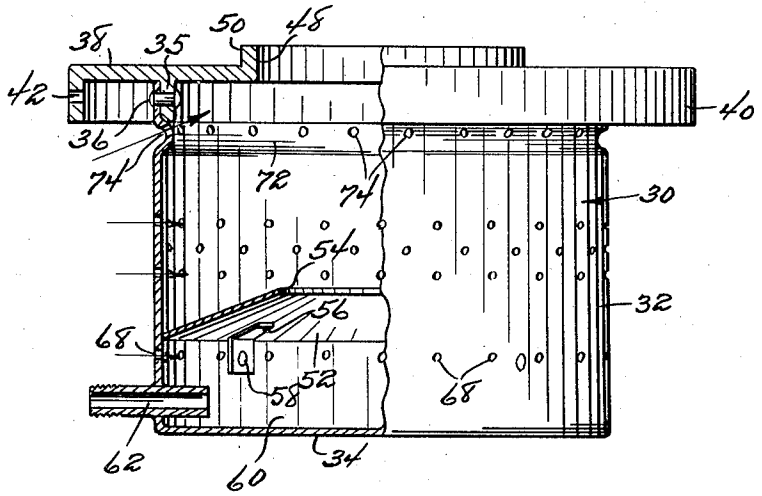


Fig. 6.



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Patented Dec. 12, 1944

2,365,119

UNITED STATES PATENT OFFICE

2,365,119

TOBACCO CURER

John A. Tharrington, Rocky Mount, N. C.

Application May 4, 1942, Serial No. 441,687

2 Claims. (Cl. 126—94)

My invention relates to heating devices of the type employed in tobacco curing barns, and has among its objects and advantages the provision of an improved heater embodying an efficient burner and an assembly of simple and durable construction, with the parts of the device designed for easy assembly and detachment.

In the accompanying drawings:

Figure 1 is an elevational view of the burner;

Figure 2 is a top view with the hood removed;

Figure 3 is an enlarged sectional view along the line 3—3 of Figure 1;

Figure 4 is a sectional view along the line 4—4 of Figure 1;

Figure 5 is a sectional view along the line 5—5 of Figure 1;

Figure 6 is a partial sectional view of a burner pot; and

Figure 7 is a perspective view of a holding member.

In the embodiment selected for illustration, I make use of a base 10 comprising a tubular and upright wall 12 provided with a floor or support engaging flange 14. To the upper end of the wall 12 is connected a horizontal wall 16 spaced some distance from the floor line 18 to provide an air circulating chamber 20. Perforations 22 in the wall 16 permit entrance of air into the chamber 20.

Upon the base 10 is mounted an upright tubular body 24 having its lower end secured to a flange 26 on the wall 16 by bolts 28. Inside the body 24 and a short distance upwardly of the base 10 is mounted a burner pot 30. Referring to Figure 6, the burner pot 30 includes a tubular wall 32 provided with a bottom wall 34. The upper end of the wall 32 embraces an annular flange 35 and is fixedly secured thereto by rivets 36, the flange 35 depending from a plate 38. This plate is provided with an annular flange 40 fitting snugly against the inner face of the body 24. Openings 42 are provided in the flange 40 for the reception of bolts 44, see Figure 3, which are passed through openings in the body 24 for fixedly securing the plate 38 inside the body 24. The wall 32 of the burner pot is of less diameter than the body 24 and is arranged coaxially therein to provide an air circulating space 46 extending about the wall 32 of the burner pot. A large central opening 48 is provided in the plate 38, which opening is surrounded by an annular and upstanding flange 50 on the plate 38.

Inside the burner pot is arranged an annular baffle plate 52 having a relatively large central opening 54 and inclined upwardly. The outside periphery of the plate 52 has snug fitting engagement with the wall 32 and is supported on brackets 56 riveted at 58 to the wall 32. The plate 52 is spaced some distance from the wall 34 of the burner pot to provide a combustion chamber 60 for oil admitted therein through a feed pipe 62 extending to a source of fuel supply and provided with a control valve 64. Figure 3 illustrates the feed pipe 62 as extending through an opening 66 in the body 24. One row of air inlet perforations 68 is provided in the wall 32 in a straight line extending circumferentially of the wall and located underneath the deflecting plate 52. Perforations 70 are provided in the wall 32 above the deflecting plate 52, which perforations are preferably arranged in three rows extending circumferentially of the wall.

An annular deformation is made in the wall 32 circumferentially thereof and adjacent the flange 35 to provide an inwardly extending bead 72. This bead is substantially semicircular in cross section and is provided with a line of perforations 74 located slightly above the horizontal medial plane of the bead, with their axes angled upwardly at a slight angle to the horizontal, so that air passing through the perforations enters the burner pot in jets angled upwardly. I have found that these jets provide more thorough combustion and coact with all the other perforations in the burner pot to provide a highly efficient oil burner.

The body 24 is preferably of uniform diameter throughout its entire length and is provided with a wall 76 closing its upper end. Upon the body 24 is mounted a heater drum 78 of annular contour and preferably rectangular in cross section. This drum comprises an innner wall 80, an outer wall 82 and two side walls 84. The diameter of the drum 78 is somewhat larger than the body 24 so as to space the inner wall 80 from the body 24. The drum is detachably mounted on the body 24 through the medium of four supports 86. Figure 7 illustrates one of the supports 86, which comprises a flange 88 provided with lugs 90 at its ends and spaced to have free fitting engagement with the respective side walls 84 of the drum, with the inner wall 80 lying in engagement with the edge 92 of the flange. This flange is fixedly secured to a strap-like body 94, as by welding, which body is bent to provide a right angular flange 96 to rest on the wall 76 of the body 24.

In placing the drum 78 on the body 24, the supports 86 are placed in position on the drum

and the drum and the supports are then lowered relatively to the body **24** to bring the flanges **96** to rest on the wall **76**. Thus the flanges **96** support the drum in the position of Figure 3, and the flanges **88** maintain the drum in concentric relationship with the body **24** so that an annular air circulating space **98** is provided between the drum and the body **24**.

A tubular flue **100** has communication with the body **24** and extends through an opening **102** in the wall **80** of the drum. The drum **78** is provided with an outlet flue **104** for connection with a chimney or the like. The flue **104** is connected with the wall **82** of the drum. Adjacent the flue **100** is arranged a diagonal wall **106** constituting a partition inside the drum **78**, see Figure 4. Thus burnt products of combustion enter the drum **78** adjacent the partition **106** and are constrained to flow circumferentially throughout the entire length of the drum and exist by way of the flue **104**.

The flue **100** may be extended through the opening **102** in the drum **78** by shifting the necessary number of supports **86** to such position as to permit the drum to be shifted laterally of the body, after which the supports are shifted to relative positions of equal spacing.

On the drum is mounted an air deflecting hood **108** of conical shape with its base paralleling but spaced some distance above the drum **78**. Legs **110** are secured to the hood **108** and rest on the upper wall **84** of the drum **78**.

An opening **112** is provided in the body **24** above the plate **38**. This opening is normally closed by a door **114** slidable vertically in guides **116** attached to the body. A window **118** is provided in the door **114**. In starting the heater, the fuel may be ignited after opening of the door **114**.

A heater in accordance with my invention embodies relatively few parts so designed as to facilitate assembly. Air is effectively heated through the medium of the body **24** and the air circulating space **98**, in addition to the heating surface of the drum **78**. The burnt products of combustion are constrained to flow throughout the entire circumferential length of the drum so as to derive the benefits from the burnt products of combustion which are ordinarily passed directly to the atmosphere.

Without further elaboration, the foregoing will so fully illustrate my invention, that others may, by applying current knowledge, readily adapt the same for use under various conditions of service.

I claim:

1. A heater having a combustion chamber and a rectangular cross-section outlet conduit encircling and spaced from the chamber and having communication with the latter, a plurality of supports each comprising an elongated body disposed vertically against the side wall of the chamber, a right angular flange at the upper end of the body disposed to rest on the top of the chamber to support the body thereon, a flange extending lengthwise of the body and projecting outwardly therefrom, and projections on the last named flange extending transversely from its outer edge for engaging the conduit to support the same on the chamber.

2. A heater having a combustion chamber and a rectangular cross-section annular conduit encircling and spaced from the upper portion of the chamber and having outlet connection therewith, a plurality of supports each comprising an elongated flat body disposed vertically against the exterior of the chamber, a right angular horizontally extending flange formed at the upper end of the body disposed to rest on the top of the chamber to support the body thereon, a vertically arranged flange extending the full length of the body and projecting at right angles therefrom, and projections formed on the last named flange extending transversely from its upper and lower ends providing a recess in the outer edge of the last named flange disposed to engage the inner portion of the annular conduit.

JOHN A. THARRINGTON.