July 19, 1938. R. E. MAYO 2,124,074

HEATING DEVICE FOR TOBACCO BARNS

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Fig. 1.

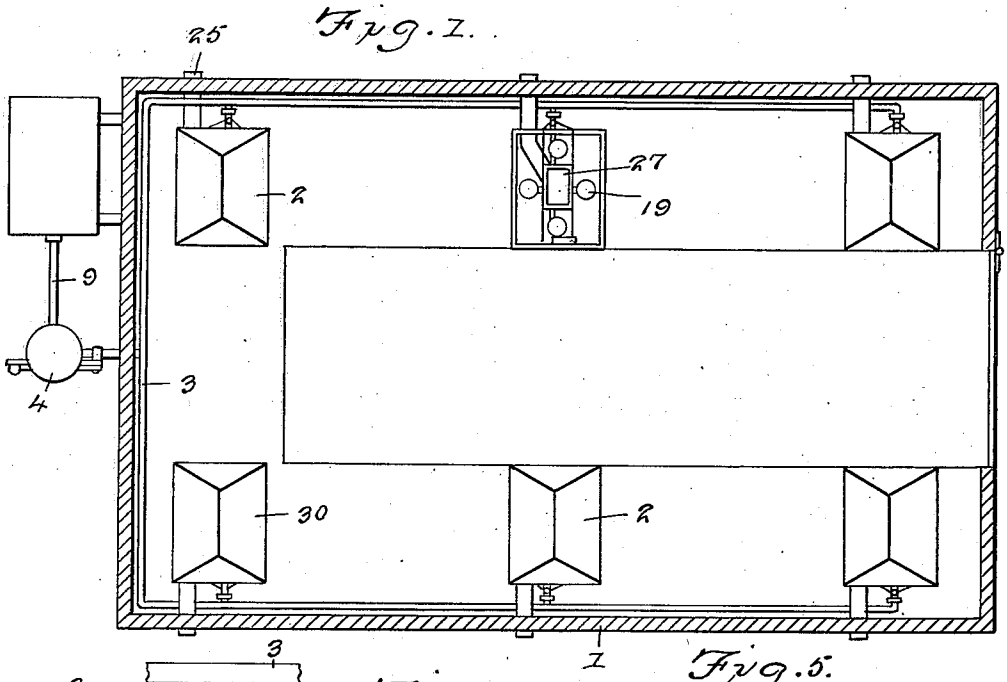


Fig. 2.

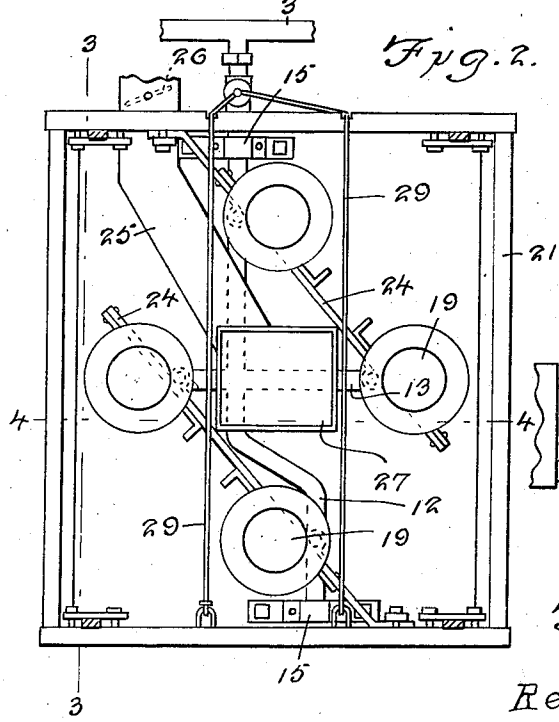


Fig. 5.

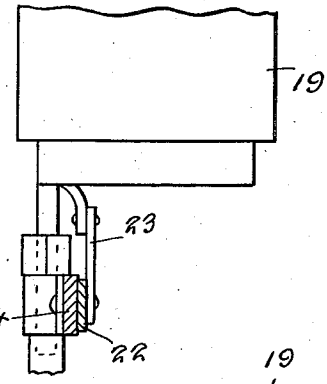
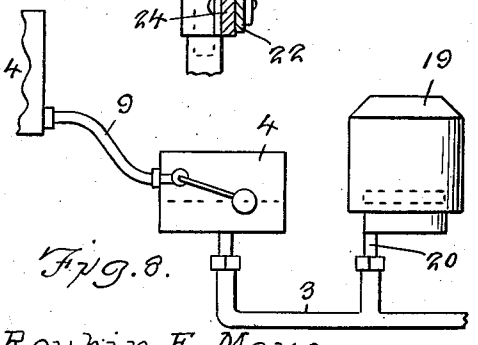


Fig. 8.



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Fig. 3.

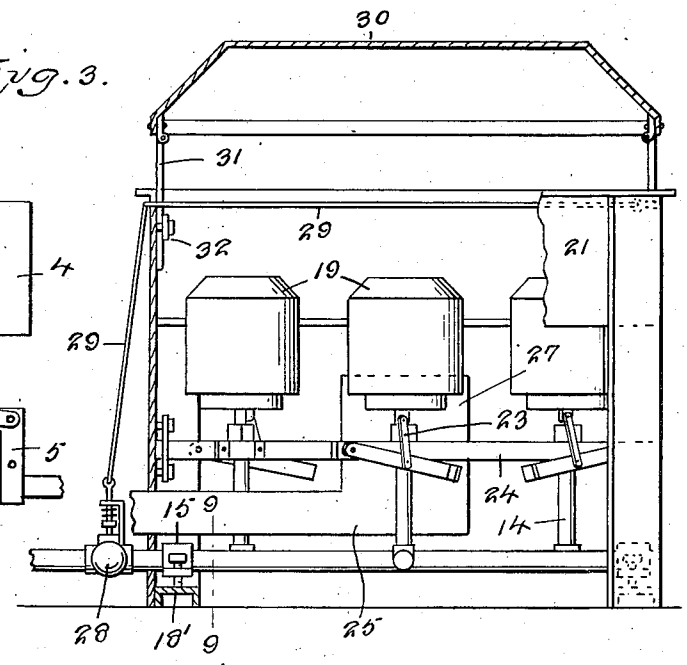


Fig. 6.

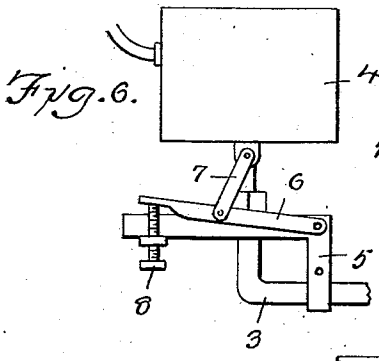


Fig. 4.

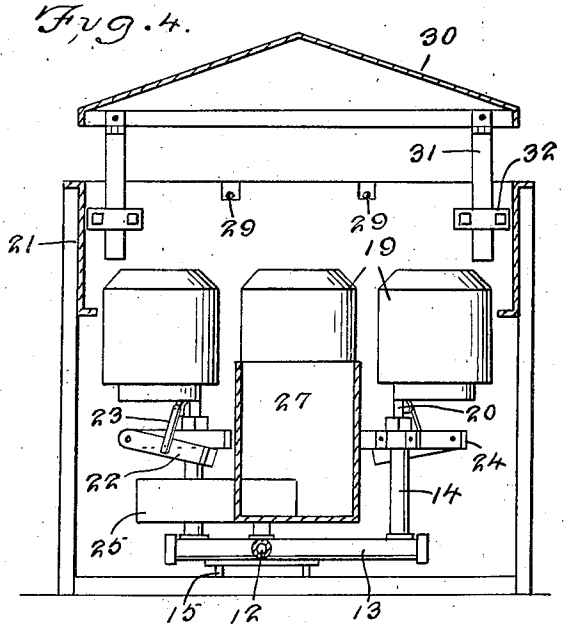


Fig. 7.

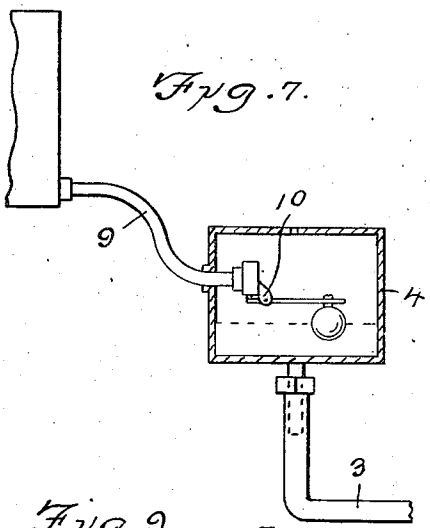
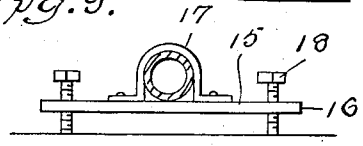


Fig. 9.



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Patented July 19, 1938 2,124,074

UNITED STATES PATENT OFFICE

2,124,074

HEATING DEVICE FOR TOBACCO BARNS

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Application October 7, 1936, Serial No. 104,540

3 Claims. (Cl. 34—19)

This invention relates to heating devices for tobacco barns for the curing of tobacco and has for the primary object the provision of a device of this character which employs a plurality of heating units positioned at selected places within the barn, so that the heat derived therefrom will be most advantageous for the curing of tobacco with the loss of heat reduced to a minimum and each heating unit consisting of a plurality of oil burners of a well known type wherein the flame and heat therefrom may be increased and decreased by varying the elevation of the burners with respect to the fuel supply tank, means being provided whereby each burner may be controlled independently of the other burners and all burners regulated simultaneously when desired by adjusting the fuel supply tank relative to the burners and from a point exteriorly of the barn.

Another object of the invention is the provision of means for supplying air to the heating units and the burners thereof to assure proper burning of the fuel to produce a maximum amount of heat therefrom and to aid in directing the heat out of the heating units into the barn and away from the fuel supply pipes of the burners to prevent overheating of the fuel prior to reaching the burners.

A further object is the provision of a safety device for each heating unit to cut off or close the burners to the fuel supply should the flame or heat become excessive to any one of the burners as to endanger the barn or the tobacco being cured therein.

A further object of this invention is the provision of means for conveniently leveling the burners of each heating unit.

A still further object is the provision of heat deflectors for the heating units which may have their elevations varied and also each may be disposed at various inclinations with respect to the heating unit.

With these and other objects in view, this invention consists in certain novel features of construction, combination and arrangement of parts to be hereinafter more fully described and claimed.

For a complete understanding of my invention, reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a horizontal sectional view illustrating a tobacco barn equipped with a heating device constructed in accordance with my invention.

Figure 2 is a horizontal sectional view illustrating one of the heating units with the deflector thereof removed.

Figure 3 is a sectional view taken on the line 3—3 of Figure 2.

Figure 4 is a sectional view taken on the line 4—4 of Figure 2.

Figure 5 is a fragmentary side elevation, partly in section, showing one of the burners and the means of varying the elevation thereof.

Figure 6 is a fragmentary side elevation illustrating means of varying the elevation of the fuel supply tank.

Figure 7 is a fragmentary side elevation, partly in section, illustrating the connection between the fuel supply tank and an oil drum or like container.

Figure 8 is a fragmentary side elevation showing the level of the fuel in the burners seeking the level of the fuel in the fuel supply tank.

Figure 9 is a detail sectional view taken on the line 9—9 of Figure 3.

Referring in detail to the drawings, the numeral 1 indicates a conventional type of tobacco barn and situated within the barn at selected places is a plurality of heating units 2 forming the subject matter of the present invention. The heating units 2 are of the oil burning type and are connected to a fuel supply pipe 3 extending exteriorly of the barn and connected to a fuel supply tank 4. The connection between the pipe 3 and the supply tank 4 is of a slidable character so that the supply tank may be raised and lowered. A bracket 5 is secured to the pipe 3 adjacent the tank and has pivoted thereto a lever 6 connected to the supply tank by a link 7. The link is pivoted to the lever 6 and to the supply tank so that by raising and lowering the lever 6 the elevation of the supply tank may be varied. An adjusting bolt 8 is carried by the bracket 5 and engages with the lever 6 whereby said lever may be raised and lowered with accuracy.

A flexible pipe 9 is connected to the fuel supply tank 4 and is equipped with a float controlled valve 10 operating within the tank 4, the latter being of the vented type. The flexible pipe 9 is adapted to be connected to a fuel drum or like container supported in a plane above the supply tank 4 so that the fuel of the drum may gravitate to the supply tank, the float valve acting to maintain the level of the fuel in the supply tank 4 at a predetermined height.

The heating units 2 are connected to the pipe 3 by fuel distributing pipes 12 each including horizontal portions 13 having connected thereto

vertical portions 14. The horizontal portions 3 are supported by leveling devices 15 each consisting of a plate 16 connected to a horizontal portion 13 by a clamp 17 and having threaded thereto legs 18 in the form of headed bolts. The legs engage with members 18' of the unit and by raising and lowering the plate 16 on the legs the supply pipes 12 may be leveled.

Connected with the vertical portions 14 of the supply pipe are oil burners 19 of a conventional construction. Slip joints 20 are provided for connecting the burners to the vertical portions 14. The burners 19 are of the type wherein the raising and lowering thereof increases and decreases the flame of the burning fuel.

Each heating unit consists of a housing 21 in which the burners 19 are located preferably in staggered relation, as shown in Figure 2. The elevation of the burners 19 may be varied through the pivotal movement of levers 22, the levers being connected to the burners by links 23 and are carried by supports 24 mounted on the housing 21. The levers 22 provide means whereby any one of the burners may be regulated without affecting the other burners and when it is desired to regulate the burners simultaneously the elevation of the fuel supply tank 4 may be varied through the operation of the lever 6.

Air pipes 25 lead into the heating units from the exterior of the barn and are provided with dampers 26. The pipes 25 within the heating units terminate in discharge chambers 27, the upper ends of which terminate in a plane slightly below the upper ends of the burners. The discharge ends of the pipes 25 have the burners grouped thereabout so that the incoming air passing upwardly past the burners give them sufficient air to create proper combustion of the fuel and also aid in carrying the heat from the burners outwardly of the housing. The air pipes are positioned over the horizontal portions 13 of the fuel supply pipes 12 and the air discharging upwardly carrying the heat therewith aids in keeping the fuel supply pipes cool and thereby prevents overheating of the fuel prior to reaching the burners.

Self-closing valves 28 connect the fuel supply pipes 12 with the main fuel pipe 3 and are held open by fusible elements 29. The fusible elements extend across the upper ends of the housing directly above the burners so that when excessive amount of flame or heat from any one of the burners or unit occurs the fusible elements 29 will be destroyed permitting the valve to close and cut off the fuel to the burners of that unit. Each housing 21 carries a deflector 30. The deflector may be raised and lowered with respect to the housing and also may be tilted to assume different inclinations. Legs 31 are hinged to the deflector and are slidably and detachably connected to the housing 21 by clamps 32. The legs being hinged to the deflector and slidably connected to the housing 21 permits the deflector to be adjusted as before described. By having the deflectors adjustable will permit a person to bring about a better distribution of heat from the heating units to the tobacco in the barn.

Having described the invention, I claim:

1. A heating system for tobacco barns comprising a housing open at its upper end, a plurality of burners grouped within the housing, a fuel supply pipe extending into the housing and located below the burners, means connecting said burners to the fuel supply pipe, and an air conduit extending into the housing and arranged above and adjacent to the fuel supply pipe and having the discharge end thereof arranged between the burners and below the upper ends of the latter.

2. A heating system for tobacco barns comprising a housing open at its upper end, a plurality of burners grouped within the housing, a fuel supply pipe extending into the housing and located below the burners, means connecting said burners to the fuel supply pipe, an air conduit extending into the housing and arranged above and adjacent to the fuel supply pipe and having the discharge end thereof arranged between the burners and below the upper ends of the latter, a deflector overlying the open end of the housing, and legs hinged on said deflector and slidably connected on said housing whereby the deflector may be adjusted vertically and at various inclinations with respect to said housing.

3. A heating system for tobacco barns comprising a housing open at its upper end, a fuel supply pipe extending into said housing, a self-closing control valve in said pipe, burners grouped in said housing, means connecting said burners to the supply pipe, a fusible element connected with said valve and extending across the upper end of the housing and secured to the latter and acting to normally retain the valve in an open position.

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