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C. I. GILL

1,728,053

TOBACCO HEATER

Filed July 10, 1928

Fig. 1.

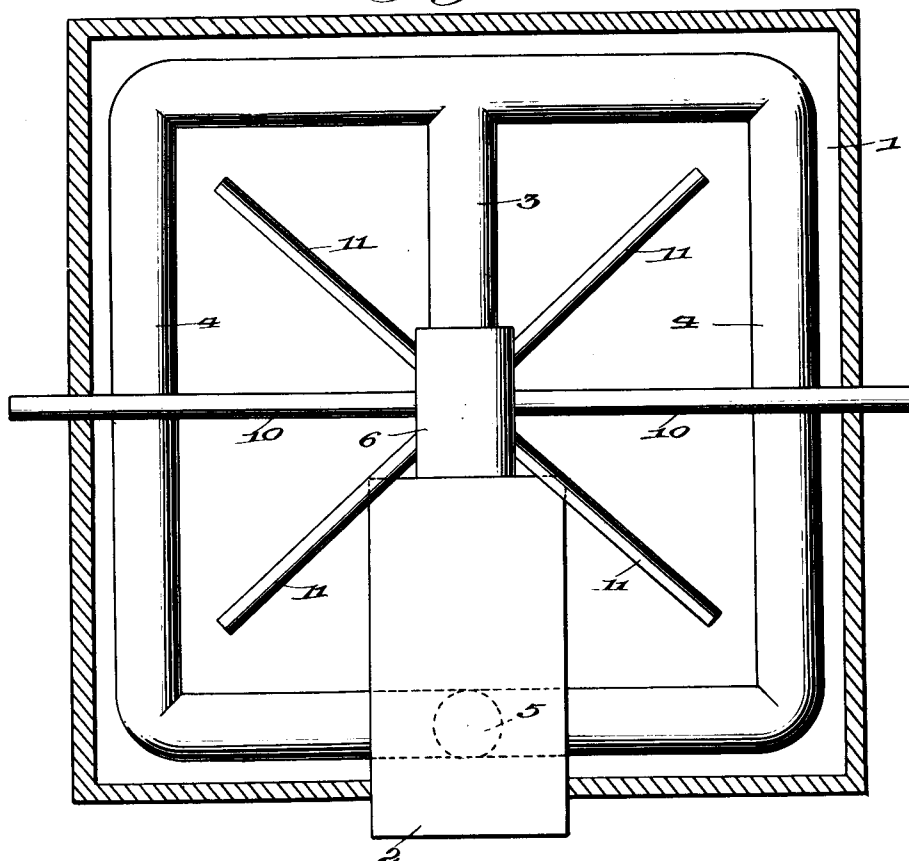


Fig. 2.

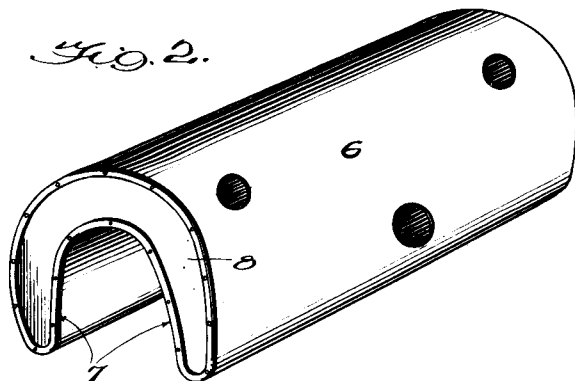
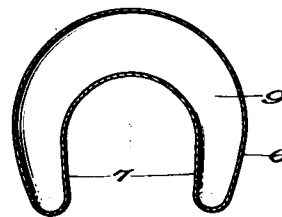


Fig. 3.



Inventor
Charles I. Gill

By *J. Preston Swecker*
his Attorney

UNITED STATES PATENT OFFICE.

CHARLES I. GILL, OF EDENTON, NORTH CAROLINA, ASSIGNOR OF ONE-HALF TO
ALBERT SIDNEY SMITH, OF EDENTON, NORTH CAROLINA.

TOBACCO HEATER.

Application filed July 10, 1928. Serial No. 291,644.

This invention relates to an improvement in tobacco heaters.

The object of the invention is to provide for an even distribution of heat through a tobacco barn or drying room so as to maintain an approximately uniform and constant drying condition in every part of the room.

It has been found that this may be done by the present invention which has proved highly satisfactory in this connection, after many successful tests.

A further object of the invention is to introduce fresh outside air into the drying chamber and to heat this air for effecting the proper drying conditions within the chamber. This fresh outside air is necessary for the proper drying conditions and to replace the foul or still air which must necessarily pass off from the drying chamber. At the same time that this fresh outside air is heated and distributed through different parts of the drying chamber, provision is made for decreasing the possibilities of complete destruction to the barn or tobacco by fire.

The heating or flue pipe which extends from the furnace through the drying chamber usually becomes red hot at a point immediately beyond the furnace where there is a serious possibility of creating a fire. The heat at this point is utilized for heating the fresh outside air as it is drawn into the drying chamber for distribution therethrough.

The heater embodying the present invention is placed over the flue pipe immediately beyond the furnace and pipes are used for drawing in the outside air to the heater, where the proper heat is maintained by contact with the flue pipe, and this air is distributed through additional pipes to the various corners of the room.

In the accompanying drawings:

Fig. 1 is a plan view partly in section illustrating the application of the invention;

Fig. 2 is a perspective view of the heater; and

Fig. 3 is a cross section through the same.

The numeral 1 indicates the drying chamber or room of the tobacco barn in which the tobacco is properly suspended to be dried and cured. This chamber is provided with

the usual furnace 2 for supplying the proper heat to the drying chamber through a flue pipe 3 leading therefrom and which branches out of the opposite side of the drying chamber into the return flues 4, which extend back along the side walls of the drying chamber to an outlet flue 5, shown by dotted lines in Fig. 1.

This heating system for the drying chamber is that usually employed for this purpose and is well known to those familiar with the art.

It has been found that while the heating system maintains the proper temperature approximately at the center of the drying chamber, yet, at the different corners thereof the heat is greatly reduced so that there is a quicker drying of the tobacco at or near the center than at the outer edges of the chamber, particularly the corners. There is also the possibility of fire being caused by the inner end of the flue 3 becoming approximately red hot by reason of the high temperature of the heat passing from the furnace 2. This frequently results in fire by accidental contact of the dried tobacco or other objects in contact with the flue 3.

The heater embodying the present invention is preferably constructed of an outer wall 6 and an inner wall 7, which are secured together as shown in Figs. 2 and 3, and made approximately semi-cylindrical so as to fit over the flue 3 and rest thereon with the inner wall 7 in contact or close relation with the flue. The ends of the heater are closed by the semi-circular end plates 8 which are secured in any suitable manner to the inner walls, as by riveting, etc. These plates form an inner air chamber 9 within the heater, which is heated by its relation to the flue 3. Extending laterally in opposite directions from the heater are the fresh air pipes 10 which communicate at their inner ends with the air chamber 9 and have their outer ends extending through the walls of the building communicating with the atmosphere for introducing fresh outside air into the air chamber 9.

Arranged approximately on opposite sides of the opposite ends of the heater, as shown

in Figs. 1 and 2, are a plurality of discharge ducts or tubes 11, which communicate at their inner ends with the air chambers 9 and extend toward the different corners or the outer edges of the drying chamber, as desired, terminating near those portions for delivering the heated air from the chamber 9 to the outer portions of the heater.

The operation of the main heating system for tobacco drying rooms or chambers is well known and need not be additionally described in detail. The heater embodying the present invention may be constructed very easily and inexpensively and may be placed within the drying chamber merely by sitting it over the flue pipe, where it may rest thereon, or on any suitable support in relation thereto, so that the radiation of the heat from the flue will maintain the proper condition of heat within the air chamber 9. As the drying progresses, any stale or foul air may pass off in any manner desired, and fresh air is drawn into the drying chamber through the fresh air ducts from where it passes into the air chamber 9, being heated therein, and it is then discharged through the ducts 11 to the far corners or sides of the drying chamber in order to maintain a proper and uniform drying condition at all such points. It has been found by actual tests that this result is accomplished and attained by the proper circulation of air within the drying chamber and the introduction of fresh outside air. At the same time, the heater acts to cover the red hot portion of the flue so as to prevent any accidental fire or the destruction of the building thereby.

I claim:—

1. In a drying chamber, the combination with a heating pipe, of a combined heat exchange and distributor having inner and outer spaced walls formed approximately semi-cylindrical in transverse, cross-section, to fit over the heating pipe, end walls connected between the inner and outer walls for enclosing a heating chamber, and delivering pipes communicating with the chamber and extending to the regions of the corners of the drying chamber.

2. A combined heat exchange and distributor for a drying chamber comprising inner and outer spaced walls formed approximately semi-cylindrical in transverse, cross-section to fit over a heating pipe, end walls of approximately the shape of the space between said walls and closing the ends thereof, and delivering pipes extending from said combined heat exchange and distributor to different portions of the drying chamber.

3. A combined heat exchange and distributor including an outer side formed in an inverted channel shape and having circulating air openings therein, and end walls approximately closing the ends thereof and having openings in the lower portions thereof to receive a heating pipe and permitting the com-

bined heat exchange and distributor to be placed over said pipe.

4. A combined heat exchange and distributor comprising an outer wall formed approximately semi-cylindrical in transverse cross-section to fit over a heating pipe and having circulating air openings therein, and segmental end walls approximately closing the ends thereof and having openings in the lower portions thereof for receiving the heating pipe.

5. A combined heat exchange and distributor comprising inner and outer spaced walls formed approximately semi-cylindrical in transverse cross-section and adapted to receive a heating pipe, and end walls of approximately the shape of the space between said walls and closing the ends thereof.

6. In a drying chamber, the combination with a heating pipe extending about the sides of said chamber, of a combined heat exchange and distributor located in the region of the middle of the drying chamber, and disposed in cooperating relation with a portion of the heating pipe, said combined heat exchange and distributor containing a heating chamber, and pipes communicating with said heating chamber and extending into the corners of the drying chamber.

In testimony whereof I affix my signature.
CHARLES I. GILL.

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