Oct. 8, 1940. P. H. PALMER 2,216,783

VACUUM MOISTENING PROCESS

Filed Sept. 30, 1939

Fig. 1

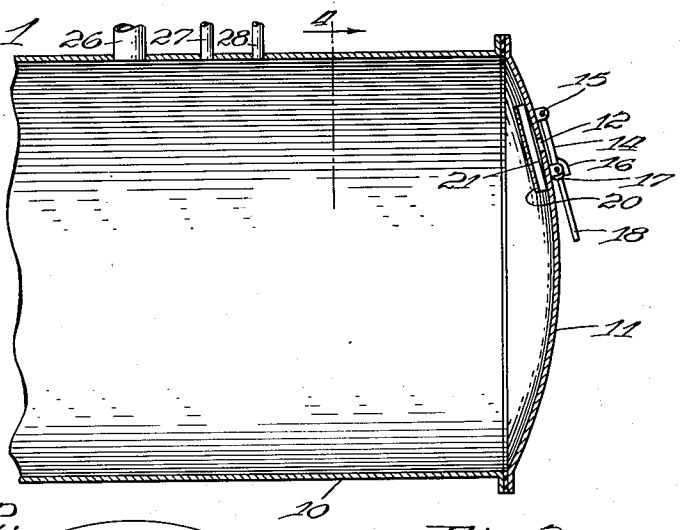


Fig. 2.

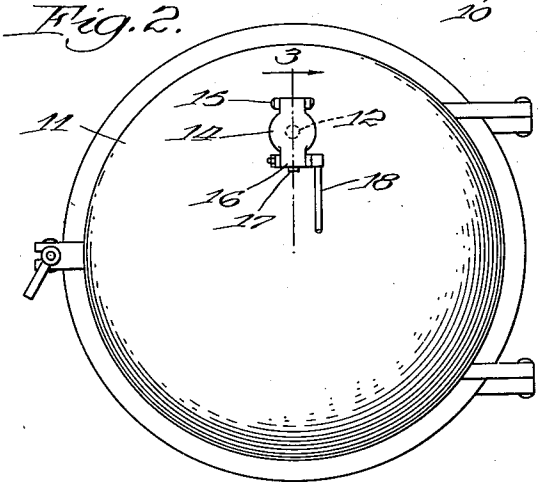


Fig. 3.

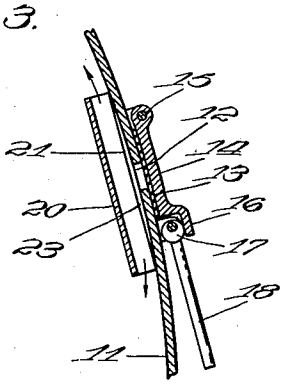


Fig. 4.

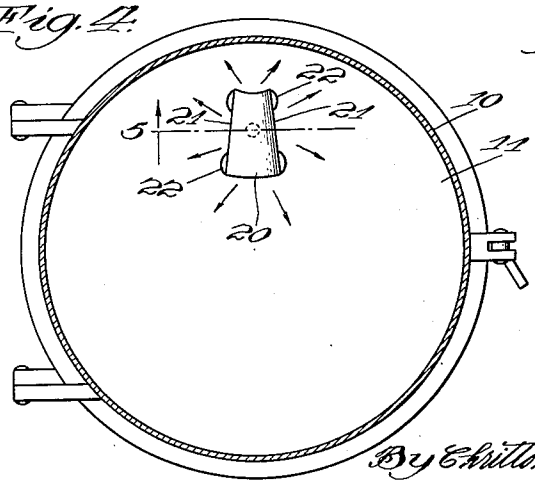
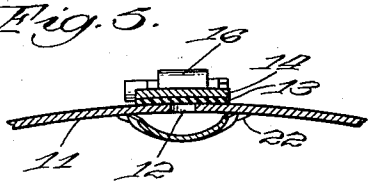


Fig. 5.



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UNITED STATES PATENT OFFICE

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VACUUM MOISTENING PROCESS

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Application September 30, 1939, Serial No. 297,351

2 Claims. (Cl. 131—140)

This invention relates to a vacuum moistening process.

In carrying out a vacuum process such as that disclosed in the Merriam and Wiles Patent 2,080,179, issued May 11, 1937 in which tobacco is treated in a chamber by successively subjecting it to a high vacuum and then by introducing steam thereto, the tobacco becomes moistened. However, on admitting air to the chamber the air expands and exerts a temporary drying influence upon the tobacco over which it passes.

By means of the present invention this difficulty is overcome by directing the incoming air along a moist surface of the tank. As a result the air picks up the moisture and becomes saturated before contacting any tobacco. The invention is illustrated in the drawing in which Fig. 1 is a diagrammatic sectional elevation partly broken away of a portion of a vacuum tank; Fig. 2 is an end elevation of the door of said tank; Fig. 3 is a section taken along the line 3 in Fig. 2; Fig. 4 is a section taken along the line 4 in Fig. 1; and Fig. 5 is a section taken along the line 5 in Fig. 4.

As shown in the drawing, the tank 10 is provided with a door 11 in which an opening 12 is provided. The opening 12 is sealed by a gasket 13 and a plate 14 which is pivotally mounted at 15. At the bottom of the plate an offset shoulder 16 is provided which abuts a cam 17 to which is secured a crank arm 18. On the inside of the door 11 a spreader plate 20 is provided which is a slotted and curved member. The door is in the form of a segment of a sphere so that the straight edges 21 of the plate 20 form four openings therewith, one on each side and one on each end. The plate is preferably welded to the door as indicated at 22 so that the size of the side openings 23 is reduced. The curved arrangement of the plate is best shown in Fig. 5.

Means are provided for evacuating the tank as through the line 26 and means are likewise provided for introducing steam as through the line 27 and for introducing hot water as through the line 28.

As an example of the process, dry binder tobacco was introduced to the tank, the door closed and a vacuum of approximately 28½ inches produced. The tobacco was then steamed and hot water introduced to produce a temperature of 187° F. after 24 minutes. The temperature was then held substantially at this point for 75 minutes after which the vacuum was broken by removal of the plate 14. The plate 14 is opened against atmospheric pressure by operation of the cam 17. The incoming air is directed fanwise over the door as indicated in Fig. 4. The inside of the door, which is steel, has been covered with water during the steaming and moistening processes and provides ample moisture for the saturation of the incoming dry air. At the same time the drying and cooling of the door avoids dripping of water therefrom.

I claim:

1. The method of treating an organic product which comprises subjecting the product to a high vacuum in a tank, steaming the product to increase its moisture content while maintaining a vacuum thereon whereby a surface of the tank becomes hot and wet, and then admitting air to break the vacuum and conducting the air over moist surfaces of the tank prior to bringing it into contact with the product.

2. The method of treating tobacco which comprises subjecting the tobacco to a high vacuum in a tank, steaming the tobacco to increase its prises subjecting the tobacco to a high vacuum thereon whereby a surface of the tank becomes hot and wet, and then admitting air to break the vacuum and conducting the air over moist surfaces of the tank prior to bringing it into contact with the tobacco.

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