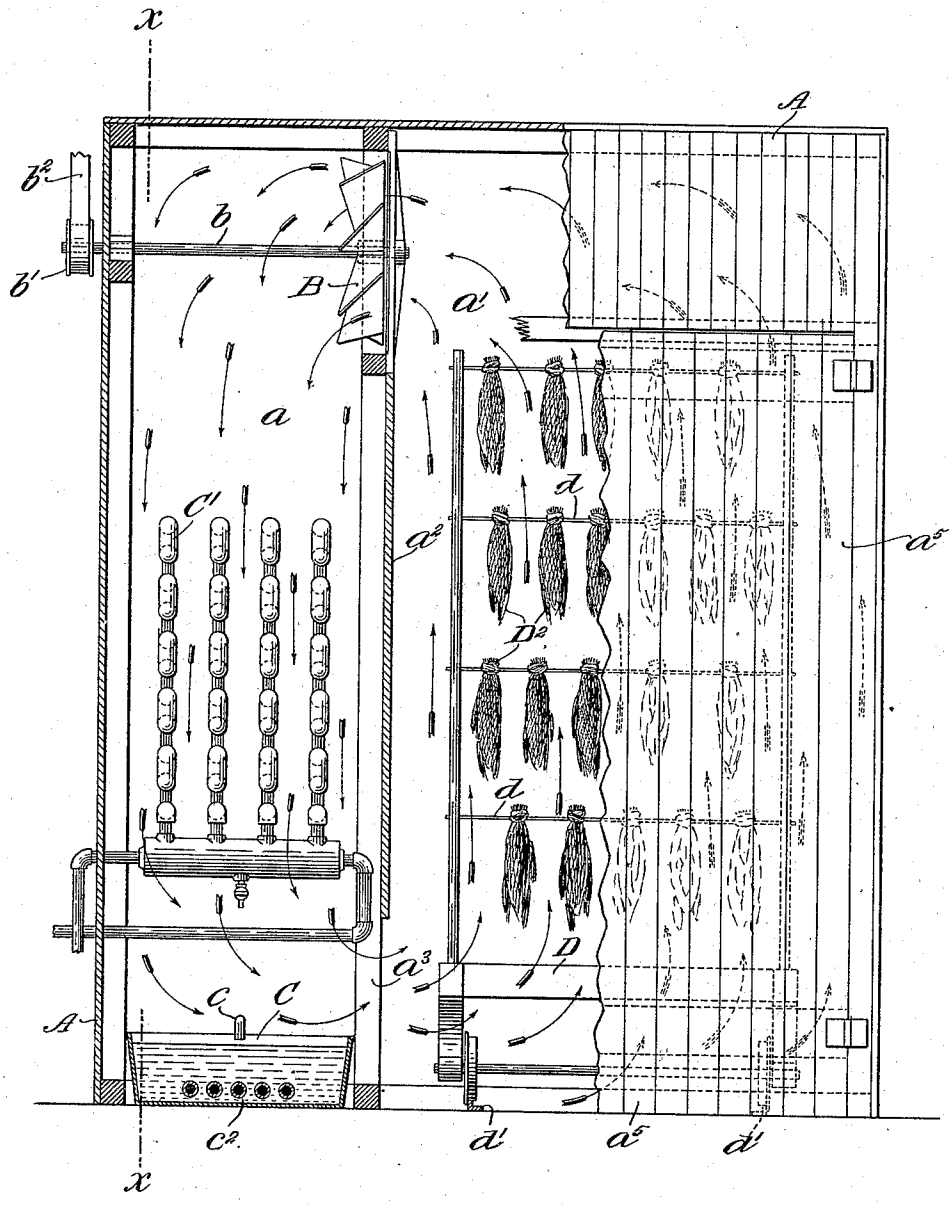
(No Model.) 6 Sheets—Sheet 1.

C. W. SCHWARTZ, Jr.

METHOD OF AND APPARATUS FOR ORDERING TOBACCO.

No. 535,175. Patented Mar. 5, 1895.

Fig. 1



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(No Model.) 6 Sheets—Sheet 2.

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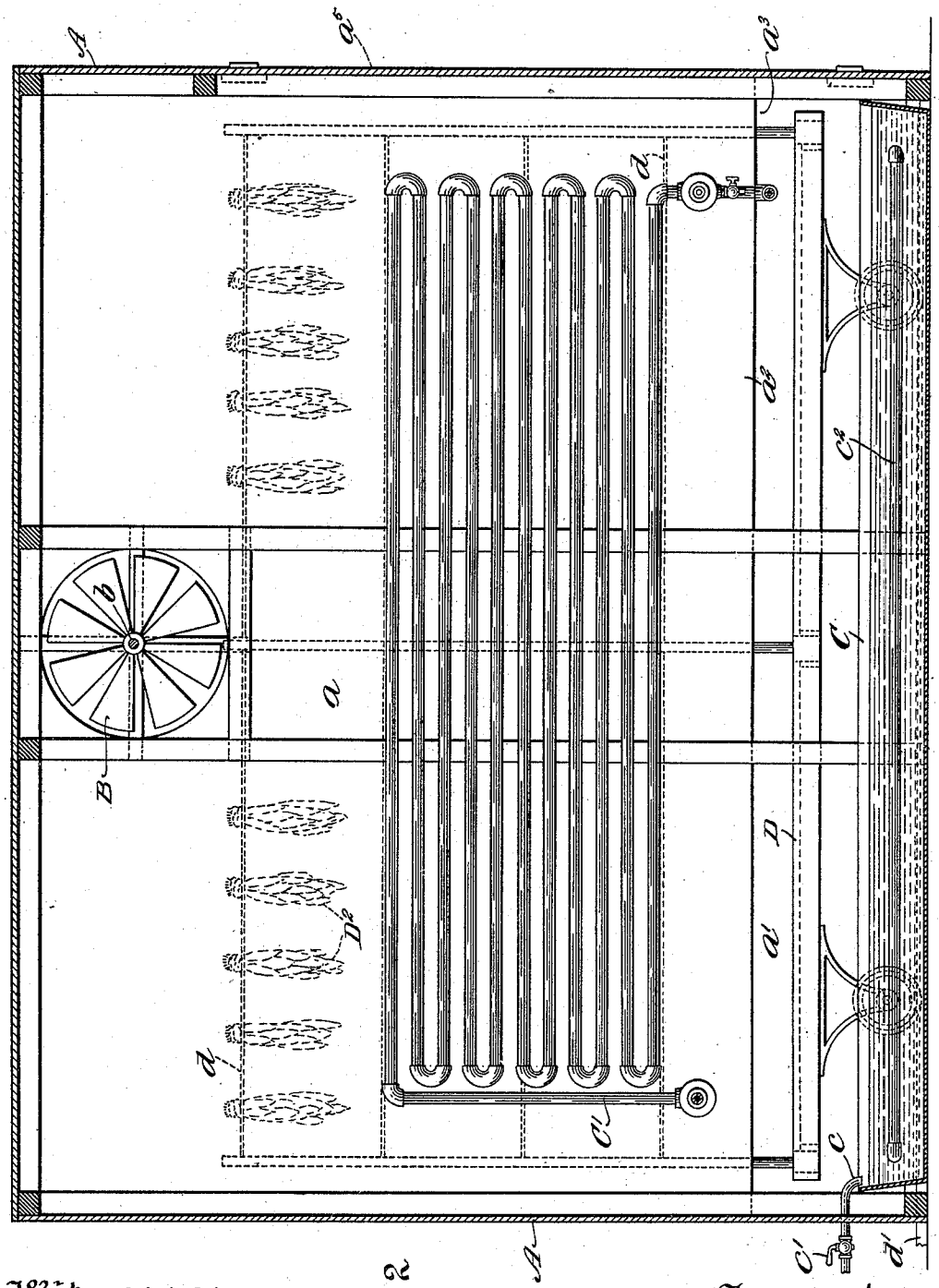

Fig. 2.

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(No Model.) 6 Sheets—Sheet 3.

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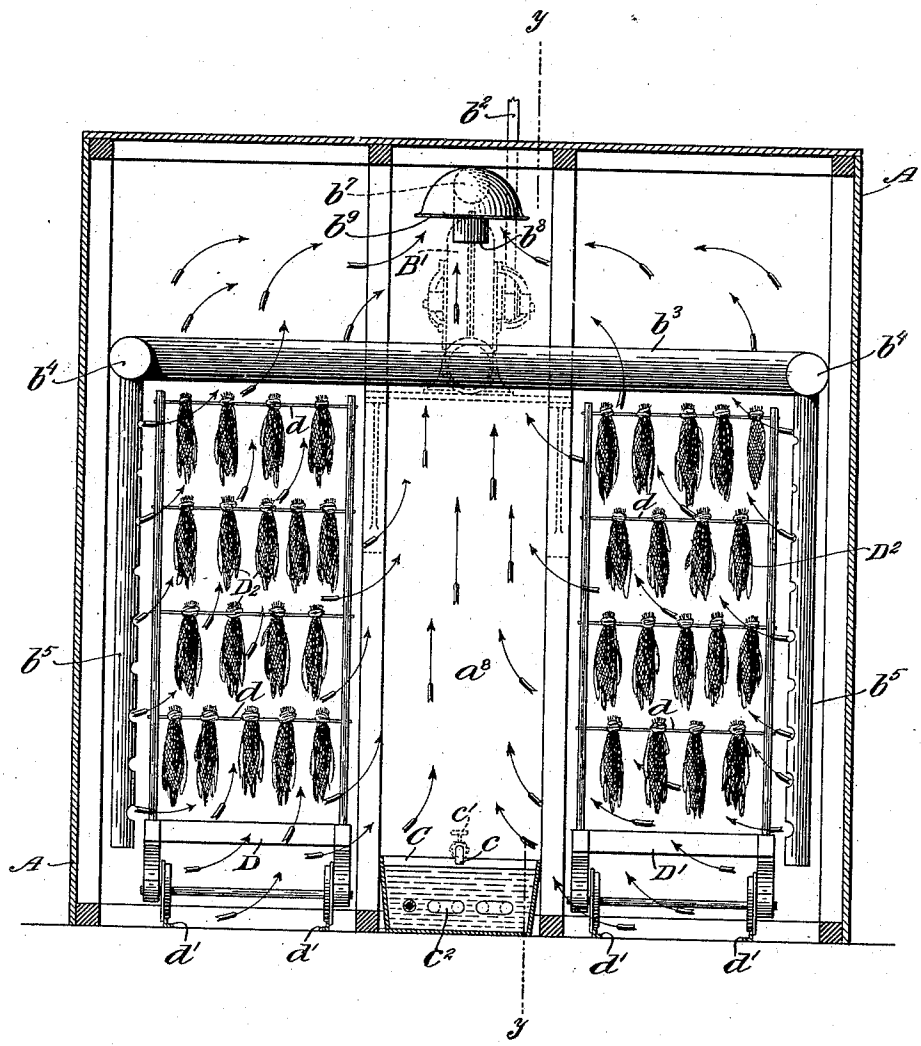
Fig. 3.



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(No Model.) 6 Sheets—Sheet 4.

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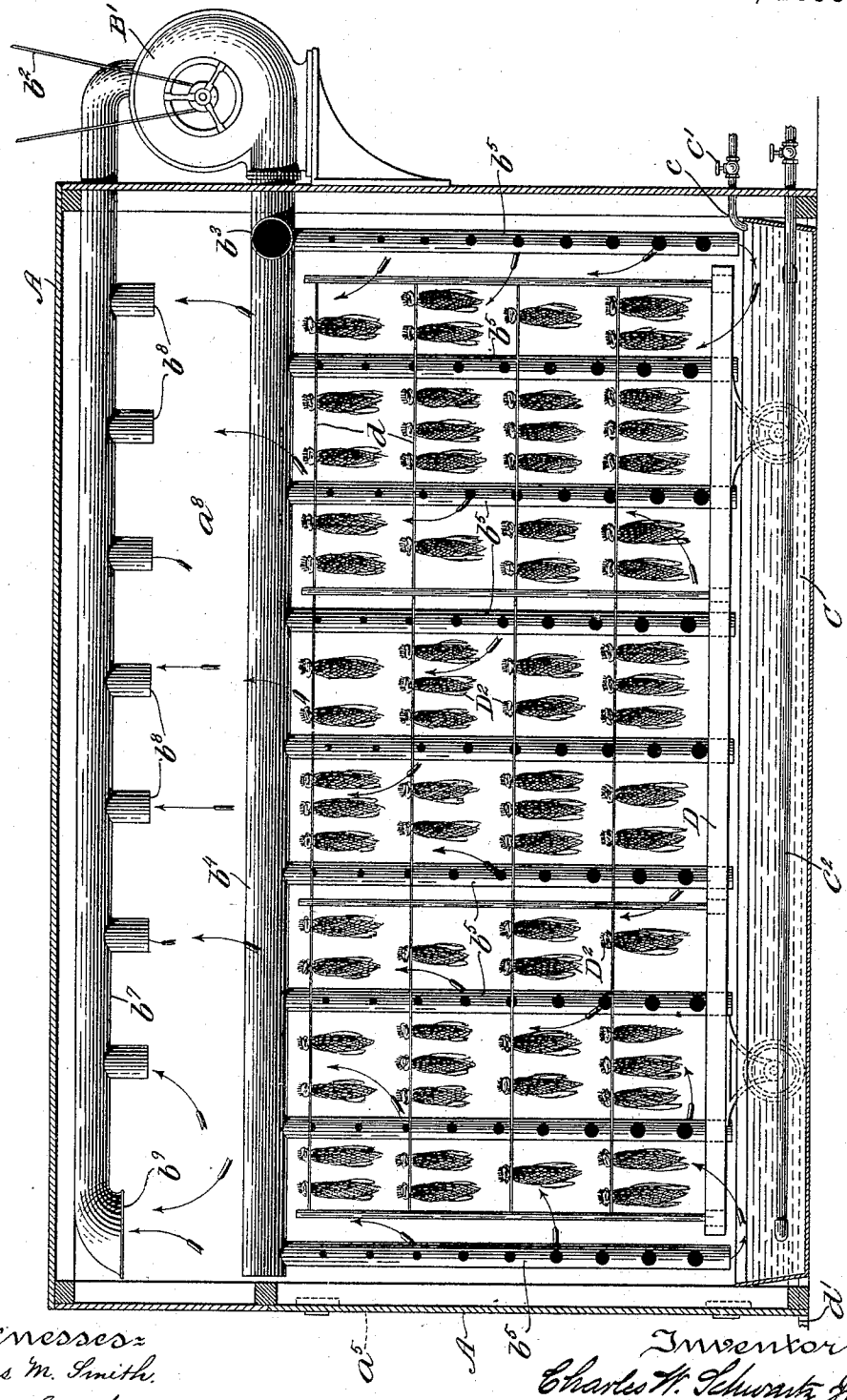

Fig. 4.

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(No Model.) 6 Sheets—Sheet 5.

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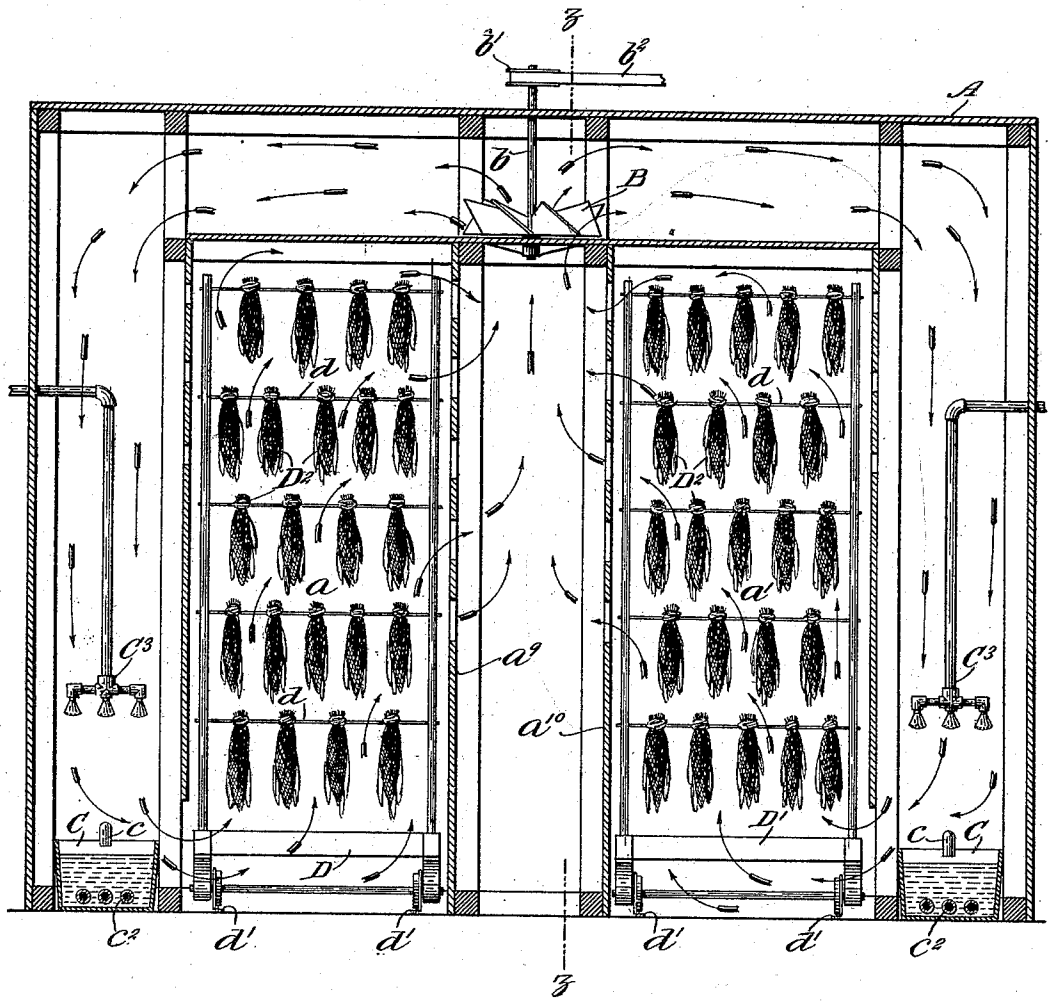
Fig. 5



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(No Model.) 6 Sheets—Sheet 6.

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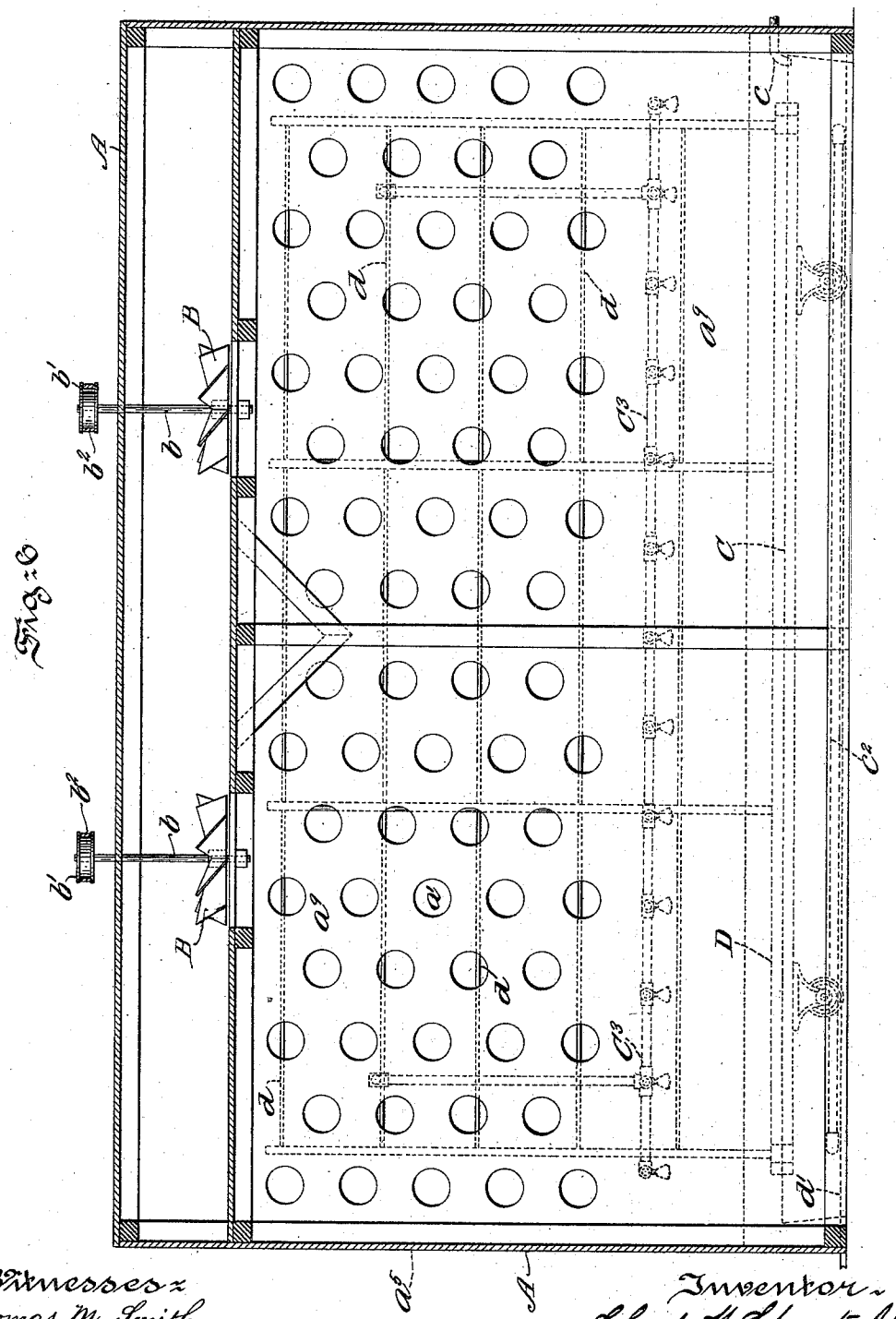

Fig. 6.

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UNITED STATES PATENT OFFICE.

CHARLES W. SCHWARTZ, JR., OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE PHILADELPHIA TEXTILE MACHINERY COMPANY, OF SAME PLACE.

METHOD OF AND APPARATUS FOR ORDERING TOBACCO.

SPECIFICATION forming part of Letters Patent No. 535,175, dated March 5, 1895.

Application filed November 6, 1894. Serial No. 528,041. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. SCHWARTZ, Jr., a citizen of the United States, residing at Germantown, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Methods of and Apparatus for Ordering Tobacco, of which the following is a specification.

My invention relates to a method of and apparatus for ordering tobacco.

The principal objects of my invention are, first, to provide a simple and effective method of hastening the ordering of tobacco so that any tendency to scorching or scalding of the same is entirely prevented and the tobacco rendered sweet in taste and subsequent handling permitted with perfect safety and without fear of crushing the leaves thereof; second, to provide an efficient method of ordering tobacco by circulation and recirculation, which consists in presenting air of one temperature to water of a different temperature in a chamber to cause the latter to be combined so as to produce a humid atmosphere which is forced into the presence of the tobacco absorbing the humidity of the air and again conveying the same into the presence of water to revivify the same and presenting to the tobacco to effect the complete ordering thereof, and, third, to provide suitable apparatus for the conduct of the method of ordering tobacco of my invention.

My invention stated in general terms comprises a method of ordering tobacco by circulation and recirculation which consists in presenting air of one temperature in the path of water of a different temperature to produce a humid atmosphere and presenting to suspended tobacco in such manner as to cause an absorption of the humidity of the air thereby and conveying the air deprived of its humidity to water to supply the same with humidity and presenting again to the tobacco to effect complete or thorough ordering of the same.

My invention further consists in the method of ordering tobacco, of forcing air of one temperature into the presence of water of higher temperature to produce a humid atmosphere and presenting to tobacco, which absorbs humidity therefrom, then presenting to water to revivify the same and under pressure forcing again into the presence of the tobacco to effect the complete ordering thereof.

My invention further consists of the method of ordering tobacco by circulation and recirculation, which consists in subjecting air brought to a low temperature into the presence of water maintained at a high temperature to produce a humid atmosphere and presenting continuously to tobacco and successively to water to permit of absorption in the one instance by the tobacco of the humidity of the air and in the other of the supply of the air with humidity so as to again present to the tobacco to effect the complete ordering thereof.

My invention further consists of suitable apparatus for the conduct of the method of ordering tobacco of my invention, constructed and arranged in substantially the manner hereinafter described and claimed.

The nature and general features of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, and in which—

Figure 1, is a central vertical section through one form of apparatus embodying features of my invention, and such as in practice has been found well adapted for the conduct of the method of ordering tobacco of my invention. Fig. 2, is a longitudinal section through the apparatus on the line x—x, of Fig. 1. Fig. 3, is a vertical central section through a modified form of apparatus to that of Fig. 1, for carrying into effect the method of my invention. Fig. 4, is a vertical longitudinal section on the line y—y, of Fig. 3. Fig. 5, is a vertical central section through a still further modified form of apparatus of my invention; and Fig. 6, is a vertical longitudinal section on the line z—z, of Fig. 5.

Referring to the drawings A, is a housing provided with internal chambers a and a', partially separated from each other by a partition a^2, with reference to Figs. 1 and 2, of the drawings. In the partition a^2, at the upper portion thereof is provided an opening, into which is mounted a propeller fan or agi-

tating device B, mounted on a cross shaft b which extends through the housing A, and carries a pulley b', and a belt b^2, for effecting the rotation of the said fan or agitating device B.

a^3, is an opening in the lower portion of said partition a^2, for a purpose to be presently explained.

In the bottom of the chamber a, is mounted an oblong trough or tank C, adapted to contain water introduced into the same by means of a spigot c, having a stop-cock c'. In the bottom of the trough or tank C, is provided a coiled pipe c^2, for heating the water therein in such manner as that the same will be maintained at a higher temperature than the air caused to circulate around or about the water of this trough C. Above the tank or trough C, is provided a cooling or refrigerating coiled or other appliance C', for reducing the temperature of the air caused to circulate in the chambers of the housing A, and so that it may be maintained at such a temperature as to intimately blend or combine with the water of a higher temperature traveling in the path thereof and thereby producing the required humid atmosphere for presenting by circulation and recirculation to the tobacco to be absorbed by it in whole or in part to dampen and order the same.

D, is a truck adapted to be introduced into the chamber a', and provided with cross rods d, for supporting bunches of tobacco D^2, therefrom.

d', are rails over which the truck is moved into and out of the housing A, through a door a^5, provided in one of the side or end walls of the same.

In the operation of the apparatus of Figs. 1 and 2, the air is forced by means of the propeller or agitating device B, into the chamber a, and the temperature of the water in the chamber a, being raised by means of the steam coil c^2, so as to cause the air therein freed from the agitating influence of said device D, and in a more or less calm state and brought to and maintained at a lower temperature than the water by the cooling or refrigerating appliance C', in the chamber a, and until it is caused to associate with the water to produce a humid atmosphere in the chamber a, of the housing A, and which after the starting up of the apparatus is continuously conducted through the chambers a and a', into the presence of the tobacco D^2, in the latter chamber a', and the humidity of the air is absorbed by the tobacco suspended from the truck D, therein and under the influence of the propeller fan or agitating device B, the air having the humidity dissociated therefrom is carried back again into the chamber a, where it becomes again a humid atmosphere and is conveyed into the presence of the tobacco to effect first the moistening or dampening of the surface or body thereof and by continuous circulation and recirculation of the air supplied with moisture, complete ordering of the tobacco.

With reference to Figs. 3 and 4, the apparatus is substantially the same as that of Figs. 1 and 2, with the following exceptions:—The blowing or agitating device B', in the present instance, is provided with a transverse conduit b^3, extending substantially the width of the housing A, and connected therewith are longitudinal pipes or conduits b^4, on each side provided with depending perforated pipes b^5, as clearly illustrated in Fig. 4. Within the housing A, are mounted two trucks D and D', on rails d', secured to the floor thereof, and with a water tank or trough C, located in a central chamber a^8, and having a heating coil extending through the tank or trough for not only heating, but also maintaining the water therein at a different temperature from that of air caused to circulate through the internal chambers of the housing A, and becoming associated with the water to produce a humid atmosphere, for being presented to the tobacco in bunch or other form suspended from the trucks D and D', as fully illustrated in Fig. 3.

b^7, is a pipe or conduit located beneath the roof of the housing on the inside thereof and connected with the rear of the blowing device B'. This pipe or conduit b^7, is provided with a series of depending inlets b^8, and at the left hand end thereof is provided a large inlet or throat b^9, for sucking air into the same deprived of its moisture or humidity through its absorption by the tobacco and which air is also drawn through the series of inlets b^8, of said conduit b^7, thereby and conducted rearwardly into the blowing device B', and by which latter means the air is again conveyed through the transverse conduit b^3, and then longitudinally and downwardly through the perforated depending pipes or conduits b^4 and b^5, in such manner as that the presence of the air of one temperature from said perforated pipes b^5, on both sides of the interior of the housing, then in a more or less calm state or condition, will be brought into the path of water in the tank or vat C, of a different temperature, thereby receiving moisture therefrom and thus converting the air into a humid atmosphere which is presented by circulation and recirculation to the tobacco suspended from the trucks D and D', to effect first moistening of the body or surface of the tobacco and then complete ordering of the same.

It may be here remarked that the cooling or refrigerating appliance may be in the nature of a sprayer or any other somewhat similar means to be further explained to reduce the temperature of air circulating in and about the interior of the housing below the temperature of the heated water of the tank or trough C.

With reference to Figs. 5 and 6, the apparatus therein differs from that hereinbefore described in the following particulars:—Instead of providing on the interior of the housing A, a series of depending perforated tubes

b^5, connected with pipes or conduits b^4, and with a main conduit b^3, in which air is conducted therethrough by means of a blowing device B', propeller fans B, as illustrated in Figs. 1 and 2, are employed in the top of the housing and the air is forced therefrom and thereby in different directions as indicated by the arrows in Fig. 5, and in a more or less calm state by this time, into the presence of water maintained at a different temperature from the air, so that the latter may effectually absorb the water and thus create a humid atmosphere for presenting to the tobacco supported from the trucks D and D', in the chambers a and a', which are separated from each other by means of partitions a^9 and a^{10}. These partitions are provided with staggered openings, as clearly illustrated in Fig. 5. The cooling or refrigerating appliance for reducing the temperature of circulating air in this instance is in the nature of a water sprayer or atomizer c^3, as fully illustrated in Figs. 5 and 6. In other respects the apparatus is the same as that hereinbefore fully explained and the devices associated with the apparatus operate in the same manner as they do with reference to Figs. 1 to 4, of the drawings.

It will be manifestly obvious to those skilled in the art to which my invention appertains that still further modifications as to details of construction of the apparatus and arrangement of the devices connected therewith may be made, without departing from the spirit and scope thereof; and hence I do not wish to be understood as limiting myself to the precise arrangements of all the parts of the apparatus as illustrated; but

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The method of ordering tobacco, which consists in continuously presenting air of one temperature in a chamber to water of another temperature to produce a humid atmosphere, conveying the same into the presence of tobacco to effect dampening thereof, and causing successively the air deprived of its humidity to be revivified and again presented to the tobacco to effect ordering thereof, substantially as described.

2. The method of ordering tobacco, which consists in forcing air into the presence of water of a temperature differing from the air to become associated therewith by producing a humid atmosphere, conveying the same to tobacco which absorbs the humidity thereof, conducting the air deprived of its humidity to the water to revivify the same and then presenting the air recharged with moisture to the tobacco to effect ordering thereof, substantially as described.

3. The method of ordering tobacco, which consists in presenting under pressure air of a low temperature to water of a high temperature to create a humid atmosphere, conveying the same to tobacco, reconveying into the presence of water and presenting again to the tobacco to effect ordering thereof, substantially as described.

4. The method of ordering tobacco, which consists in presenting air artificially lowered in temperature in the path of heated water to cause association of one with the other so as to produce a humid atmosphere which is presented to tobacco, successively revivifying the air deprived of its moisture by the absorption of the same by the tobacco and recirculating the same through the tobacco, substantially as and for the purposes described.

5. The method of ordering tobacco, which consists in presenting air artificially changed as to its temperature beyond the point of agitation thereof to water maintained at a different temperature and by association of one with the other producing a humid atmosphere, continuously presenting to tobacco and successively revivifying the same deprived of its humidity through its absorption by the tobacco and again presenting thereto, substantially as and for the purposes described.

6. An apparatus for ordering tobacco, comprising a housing provided with a water tank or trough having means for heating said water, a cooling or refrigerating appliance, and a blowing or forcing device for circulating and recirculating air in the path of the water of said tank or trough, substantially as and for the purposes described.

7. An apparatus for ordering tobacco, comprising a housing provided with two communicating chambers, a blowing or forcing device for circulating and recirculating air, a water tank or trough provided with a heating device, and means for supporting tobacco in said housing, substantially as and for the purposes described.

8. An apparatus for ordering tobacco, comprising a housing provided with means adapted to contain water and maintain the same at a different temperature from that of the air therein, means for circulating and recirculating the air through said housing, and means for supporting tobacco in said housing and subjecting the same to the influence of the generated humid atmosphere therein, substantially as and for the purposes described.

9. An apparatus for ordering tobacco, comprising a housing having internal chambers, means for containing water in one of said chambers and a cooling appliance, means for circulating and recirculating the air through said housing in each instance anterior to its being presented to the water, and means for supporting tobacco in the other chamber of said housing, substantially as and for the purposes described.

10. An apparatus for ordering tobacco, comprising a housing divided into internal communicating chambers having openings in the partitions thereof, a water trough or vats with heating means therein, a forcing or blowing

device for circulating and recirculating air within said housing, means for supporting tobacco in certain of said internal chambers, and means for cooling the air located in the other of said chambers, substantially as and for the purposes described.

In witness whereof I have hereunto set my signature in the presence of two subscribing witnesses.

CHARLES W. SCHWARTZ, JR.

Witnesses:
THOMAS M. SMITH,
RICHARD C. MAXWELL.