No. 620,139. Patented Feb. 28, 1899.

A. V. HYSORE.

MACHINE FOR TREATING TOBACCO.

(Application filed June 29, 1897.)

(No Model.) 2 Sheets—Sheet 1.

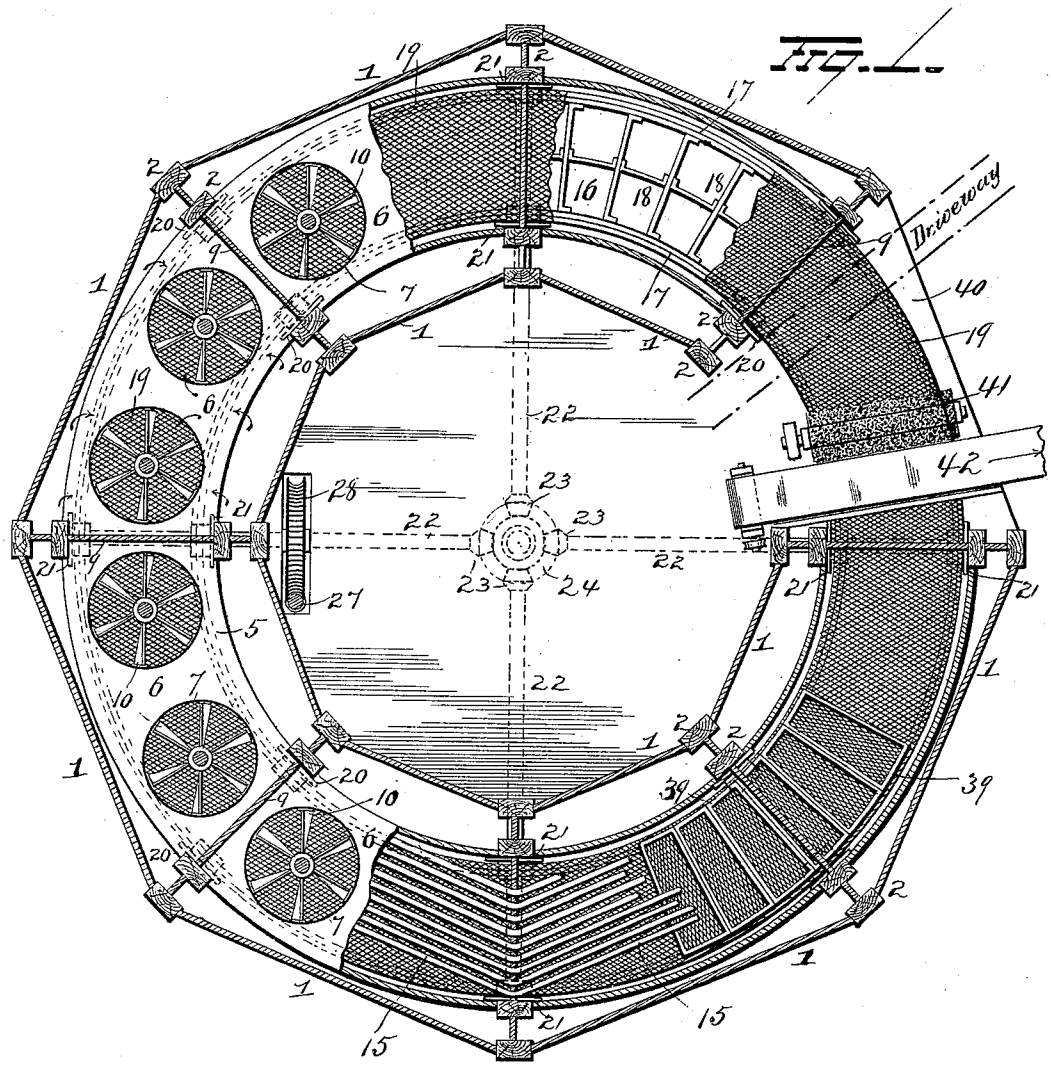

FIG. 1.

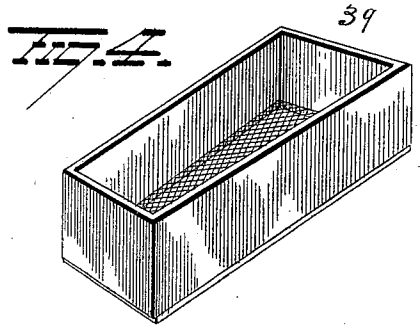

FIG. 4.

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(No Model.) 2 Sheets—Sheet 2.

FIG. 2.

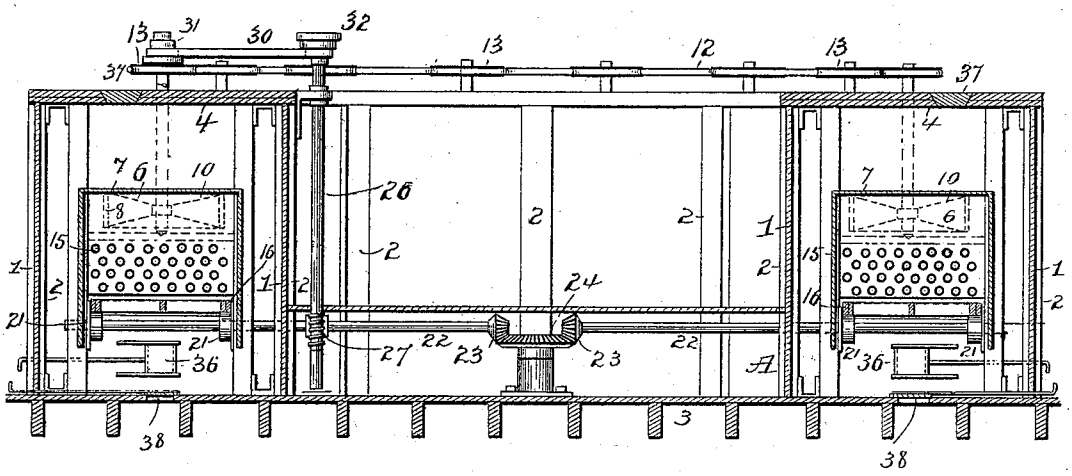
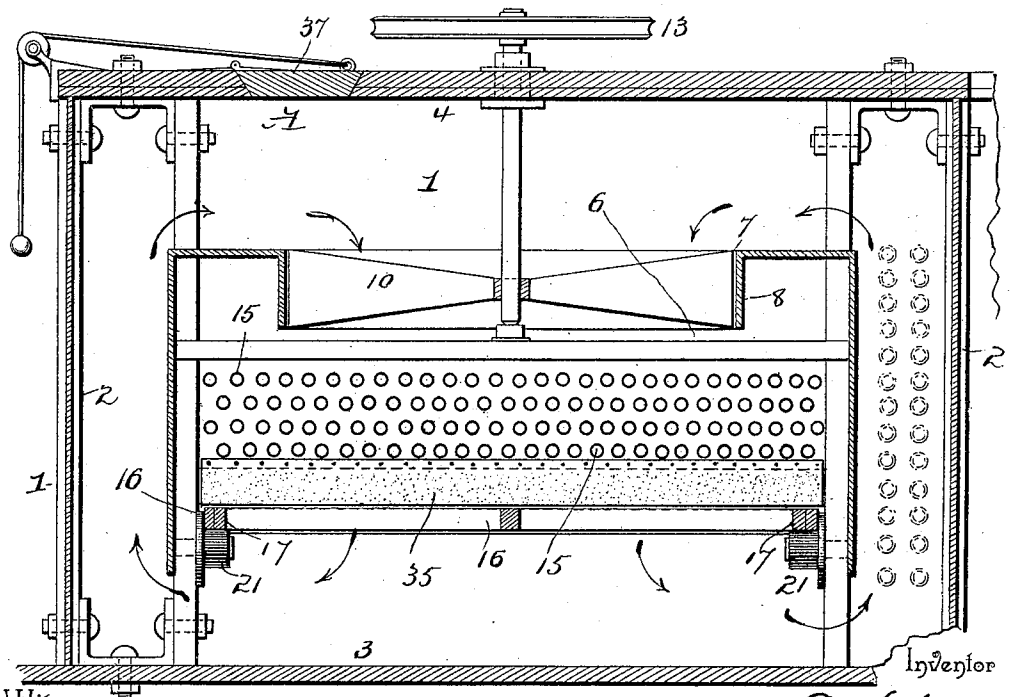


FIG. 3.



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UNITED STATES PATENT OFFICE.

ALPHENAS V. HYSORE, OF RICHMOND, VIRGINIA, ASSIGNOR OF TWO-THIRDS TO S. P. MAYO AND W. J. WHITEHURST, OF SAME PLACE.

MACHINE FOR TREATING TOBACCO.

SPECIFICATION forming part of Letters Patent No. 620,139, dated February 28, 1899.

Application filed June 29, 1897. Serial No. 642,819. (No model.)

To all whom it may concern:

Be it known that I, ALPHENAS V. HYSORE, of Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Machines for Treating Tobacco; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in machines for treating tobacco; and it consists in certain novel features of construction and combinations of parts, which will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a horizontal section, different parts being broken away to disclose different parts of the machine. Fig. 2 is a vertical section through the entire machine. Fig. 3 is an enlarged vertical section through a portion of the machine. Fig. 4 is a view of one of the trays.

A represents the frame of the machine. For convenience and economy in construction this is polygonal in form in horizontal section, so that the sides may be made of comparatively short straight boards 1 1, secured to the upright timbers 2 2. This superstructure is built on a suitable floor 3, and the polygonal portion is covered over with a top 4. Within this polygonal frame is formed an annular chamber 5. This chamber 5 is closed at the top and sides and open at the bottom. This chamber is subdivided into several separate compartments 6 6 by means of the partitions 9 9, and in the top are formed a series of round openings 7 7, preferably two to each compartment 6, guarded by depending annular flanges 8 8. Fans 10 10 are revolubly supported in each of these openings, and they are driven by the endless belt 12, passing, preferably, in a zigzag direction around the sheaves 13 13 on the several fan-shafts and to the main drive-wheel. (Not shown.) Immediately beneath these fans are the heating-coils 15 15, by which the air is heated.

The conveyer 16 is annular in form and is located immediately below the coils. This conveyer may be constructed in any approved manner. For instance, as I have constructed it two bars 17 17 are bent into circular form, one constituting the inside and the other the outside rim of the conveyer, and these bars are secured together by the cross bars or braces 18 18, making a rigid framework. Over this framework is secured the netting 19, on which the tobacco is placed. The conveyer is supported on rollers 20 21. The alternate pairs 21 of these rollers are active, being secured to four shafts 22 22, which extend radially from a common center, where they are provided with bevel gear-wheels 23 23, which mesh with the large central gear 24. One of these shafts 22 is driven positively in any convenient manner. The plan I have adopted and which is very satisfactory is to provide a vertical shaft 26 with a worm 27, which engages and drives a worm-gear 28 on one of the shafts 22. Shaft 26 receives its motion from the nearest fan-shaft through an endless belt 30, and to regulate the speed cone-pulleys 31 and 32 are secured on the fan-shaft and the vertical worm-shaft 26.

As the several figures of the drawings indicate, an air-circulating space is formed all around chamber 5, and the currents of air are circulated by the rapidly-rotating fans in the direction indicated by the arrows—that is to say, from the top of the room or building directly downward through the coils and thence through the conveyer for drying, coaling, and ordering the tobacco on the conveyer as it passes. As there are several of these compartments—seven in the present instance—and as one or more fans are in constant revolution in each compartment all the while and the conveyer travels continually beneath them, every particle of tobacco is subjected several times to the air-blast, so that the treatment is uninterrupted from beginning to end, and by the time the tobacco passes out of the machine it is ready for use. After its passage downward through the tobacco the air passes off at each side, thence upward, and it is again sucked in by the fans and forced through the tobacco, it being reheated and dried during each circuit just prior to its passage through the tobacco. Should more heat be required, additional pipes may be located at the sides, as indicated by the dotted lines.

The several compartments being practically separate from each other and the flap or valve 35 closing the passage between them, the temperature may be regulated in each compartment irrespective of the rest, and should the heat become too great in one and not enough in another, or if it is desired to equalize it throughout the entire chamber 5, this may be done by opening or closing the doors or valves 36 36 in the partitions between the compartments. To take in more air at any time or to let it out, doors or valves 37 and 38 are provided at the top and bottom, respectively.

Frequently there are small bits of tobacco which would blow through or off of the netting 19 of the conveyer. These are generally thrown away, because heretofore there has been no successful way of treating them. To provide for these, the trays 39 39 are utilized. The small bits of tobacco are placed in these trays, and the latter are placed on the conveyer as it passes through the space 40 between the ends of the machine. In fact, all the feeding is done at this point, the tobacco being placed on the conveyer as it passes through this open space.

As a convenient means of removing the tobacco after treatment a rotary brush 41, extending across the conveyer, brushes the tobacco back and upward. It is caught by an endless belt 42, which also traverses the conveyer immediately adjacent to the brush, conducting the tobacco off to some convenient repository. The belt is sufficiently high above the conveyer, so that the trays when used will pass beneath it, and the brush 41 may be easily raised or removed on such occasions. In this way the entire treatment is continuous and automatic. It is susceptible of regulation at any moment to change the temperature, the air, the speed, or what not. In short, it is perfectly within the control of the operator and withal most effectual in the performance of its functions.

To utilize all the space, the interior of the machine may be used for storage purposes, and to get a truck or other conveyance over it a bridge or runway, as indicated in dotted lines in Fig. 1, may be built from the floor over it, as the whole height is only about fourteen inches.

It is evident that slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth; but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a drying-compartment closed to the admission of outside air, a conveyer and means for moving said conveyer continuously through said compartment, of a blower disposed in said compartment at a point above the conveyer and a heater disposed between said blower and conveyer and in close proximity to both, whereby air is continuously circulated downwardly, first through the heater and then immediately through the material on the conveyer, substantially as set forth.

2. The combination with a frame or body, of a chamber therein having an air-space all around it, said chamber having closed top and sides and open bottom, and provided with fan-openings in its top, fans operating in these openings, and a conveyer traveling in this chamber in position to receive a direct blast of air therethrough from the fans.

3. The combination with a frame or body, and a circular chamber therein divided into compartments, of a circular conveyer constantly traveling through the several compartments, heating means immediately above the conveyer and fans for circulating air and forcing it downward through the heating-space and then through the conveyer.

4. The combination with a frame or body divided into compartments, and chamber therein also divided into compartments with their bottoms opening into the frame or body, of a circular conveyer passing through the chamber, heating-coils, means for forcing air downward upon the conveyer, and means for removing and supplying air and opening one compartment into another.

5. The combination with a frame or body having an open space, of a circular conveyer traveling through the frame and the open space, means for conducting the material from the main conveyer and means for throwing this material from the main conveyer onto the conducting means.

6. The combination with a polygonal frame or body having an open center and side section and divided into compartments and a chamber therein also divided into compartments and having air-space all around it into which it opens, at the bottom, of a circular conveyer which travels continuously through the compartment, and means for circulating air in the compartments and forcing it downward through the conveyer.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ALPHENAS V. HYSORE.

Witnesses:
GEO. CRUTCHFIELD,
A. D. CRUTCHFIELD.