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C. J. HUNT

DRYING TUMBLER

Filed Oct. 20, 1925

2 Sheets-Sheet 1

By *Watson E. Coleman*
Attorney

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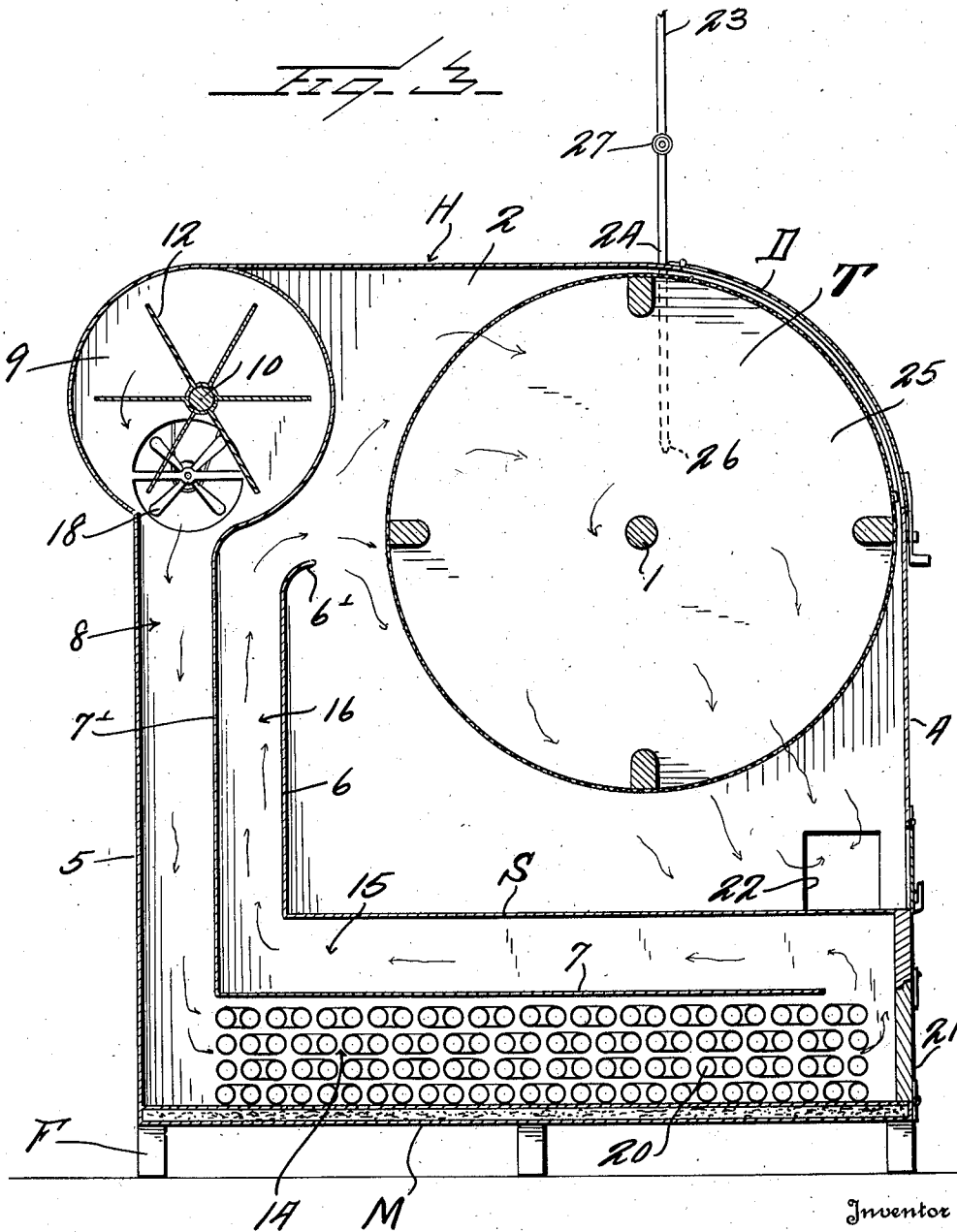
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Inventor

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UNITED STATES PATENT OFFICE.

CHARLES J. HUNT, OF BARNSDALL, OKLAHOMA, ASSIGNOR OF ONE-HALF TO WILLIAM L. CLEM, OF BARNSDALL, OKLAHOMA.

DRYING TUMBLER.

Application filed October 20, 1925. Serial No. 63,740.

To all whom it may concern:

Be it known that I, CHARLES J. HUNT, a citizen of the United States, residing at Barnsdall, in the county of Osage and State of Oklahoma, have invented certain new and useful Improvements in Drying Tumblers, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to drying tumblers and it is an object of the invention to provide a device of this kind with means whereby air is effectively applied to the articles being dried in order to facilitate the desired drying action together with means whereby such air may be effectively heated before entering the drying chamber.

15 Another object of the invention is to provide a machine of this kind wherein a blast fan is employed for creating the requisite delivery of air to the drying chamber together with a blower fan coacting with the blast fan to assure an effective delivery of air to the drying chamber and which also provides means to permit delivery to the drying chamber, when desired, of air of atmospheric temperature.

20 Furthermore, the invention has for an object the provision of means whereby the liability of fire is substantially eliminated and which means also serves to maintain the articles being dried free from static and thus avoiding such articles collecting lint.

25 The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved drying tumbler whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of my invention will hereinafter be definitely claimed.

30 In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein:—

50 Figure 1 is a view in front elevation of a drying tumbler constructed in accordance with an embodiment of my invention;

Figure 2 is a view in side elevation of the device as herein disclosed;

Figure 3 is an enlarged vertical sectional view of the device as herein disclosed, the heating unit being indicated in somewhat a diagrammatic manner.

As disclosed in the accompanying drawings, H denotes a housing the walls of which preferably constitutes galvanized iron suitably affixed to a supporting frame F of channel beams. The upper portion of the housing is provided with a loading door D of any desired construction and rotatably positioned within said housing H in close proximity to said door D is a tumbling drum or cylinder T of any desired type, the supporting shaft 1 of which extends beyond a side wall 2 of the housing and having engaged therewith the pulleys 3 one of which is tight and the other loose for coaction in a well known manner with a drive belt. I do not, however, desire to be understood as limiting myself to any particular driving means for the tumbling drum or cylinder T.

75 The lower portion of the housing H has arranged therein a supplemental floor S extending from the front wall 4 of the housing H to a predetermined point inwardly of the rear wall 5, the inner edge of the floor S being continued by an upwardly disposed partition 6 terminating at a point slightly below a horizontal plane disposed through the axial center of the drum or cylinder T. Below the floor S and the main floor M of the housing H is a horizontally disposed partition 7 the forward end of which is spaced from the front wall 4 of the housing and the inner end of said partition 7 terminates at a point substantially midway of the partition 6 and the rear wall 5. The inner edge of the partition 7 is continued by an upwardly disposed partition 7'. The space between the rear wall 5 and the partition 7' provides a downwardly disposed air duct 8 leading from an air chamber 9, said chamber constituting a substantially cylindrical casing extending entirely along the upper rear portion of the housing H.

100 Extending axially of the air chamber 9 is a shaft 10 rotatably supported by the side walls 2 of the housing H and extending outwardly beyond one of such walls, said extended portion of the shaft 10 being provided with the conventional pulleys 11 for coaction with the drive belt. The shaft 10

within the air chamber is provided therealong with the radial blades 12 which, upon rotation of the shaft 10, force a blast of air down through the air duct 8 through the chamber 14 between the floor M and partition 7 and through the duct 15 between the floor S and partition 7 and up through the duct 16 between the partitions 6 and 7' and discharging in a direction toward the drum T, said direction of discharge being obtained by the side portion of the wall of the air chamber 9 overlying the upper end of said duct 16 and the outward and upward curve of the upper portion 6' of the partition 6. One end of the air chamber 9 opens through a side wall 2 into a casing 17 carried by the housing H and in which is mounted a blower fan 18 in driven connection, as at 19, with the shaft 10, said blower fan rotating at a relatively high speed and serving to feed or deliver fresh air to the air chamber 9 so that it will be assured that an effective blast will be created by the blades 12.

The chamber 14 constitutes a heating chamber and, as herein disclosed, said chamber has arranged therein the steam coils 20 whereby the air, when the steam is within said coils, is raised to an extremely high temperature so that the action of the air blast upon the articles within the drum T is materially increased. The coils 20 preferably constitute a unit and the front wall 4 is provided with a door 21 whereby said unit may readily removed or applied.

Should it be desired that the air delivered to the drying chamber be cool, the steam is shut off from the coils 20 and said coils blown out whereupon the blower fan 18 will maintain the requisite amount of cool air or air at atmospheric temperature.

In communication with the lower forward portion of the drying chamber through the side walls 2 are the exhaust conduits 22.

Extending above the housing H at the forward portion thereof is a steam line 23 provided with the depending branch lines 24 which extend within the housing H between the heads 25 of the drum T and the side walls 2 of the housing, the lower or inserted ends of said branches being provided with the jet nozzles 26 permitting a slight discharge of steam within the housing, such steam serving to kill off any static that may occur during a working operation of the device to prevent fire and to also maintain the articles being dried free from static so that the same will not collect lint. Interposed in the steam line 23 at any desired location is a controlling or regulating valve 27.

From the foregoing description it is thought to be obvious that a drying tumbler constructed in accordance with my invention is particularly well adapted for use by rea-

son of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice except as hereinafter claimed.

I claim:—

1. A drying tumbler comprising, in combination, a housing, a rotating tumbler drum mounted within the upper portion of the housing, an air chamber disposed across the housing, an air duct leading therefrom and disposed in a tortuous path and discharging toward the drum, a blast fan arranged within the air chamber, and an air feeding fan delivering to the air chamber.

2. A drying tumbler comprising, in combination, a housing, a rotating tumbler drum mounted within the upper portion of the housing, an air chamber disposed across the housing, an air duct leading therefrom and disposed in a tortuous path and discharging toward the drum, a blast fan arranged within the air chamber, and an air feeding fan delivering to the air chamber and through one end of said chamber.

3. A drying tumbler comprising, in combination, a housing, a rotating tumbler drum mounted within the upper portion of the housing, an air chamber disposed across the housing, an air duct leading therefrom and disposed in a tortuous path and discharging toward the drum, a blast fan arranged within the air chamber, an air feeding fan delivering to the air chamber, and a heating unit interposed in the air duct.

4. A drying tumbler comprising, in combination, a housing, a rotating tumbler drum mounted within the upper portion of the housing, an air chamber disposed across the housing, an air duct leading therefrom and disposed in a tortuous path and discharging toward the drum, a blast fan arranged within the air chamber, an air feeding fan delivering to the air chamber, and means for discharging steam into the housing adjacent to the drum.

5. A drying tumbler comprising, in combination, a housing, a rotating tumbler drum mounted within the upper portion of the housing, an air chamber disposed across the housing, an air duct leading therefrom and disposed in a tortuous path and discharging toward the drum, a blast fan arranged within the air chamber, an air feeding fan delivering to the air chamber, and means for discharging steam into the housing adjacent to the opposite ends of the drum.

6. A drying tumbler comprising, in com-

ination, a housing, a rotating tumbler drum mounted within the upper portion of the housing, an air chamber disposed across the housing, an air duct leading therefrom and disposed in a tortuous path and dis-
5 charging toward the drum, a blast fan arranged within the air chamber, an air feed- ing fan delivering to the air chamber, said air feeding fan being in driven connection with the blast fan.

In testimony whereof I hereunto affix my signature.

CHARLES J. HUNT.