

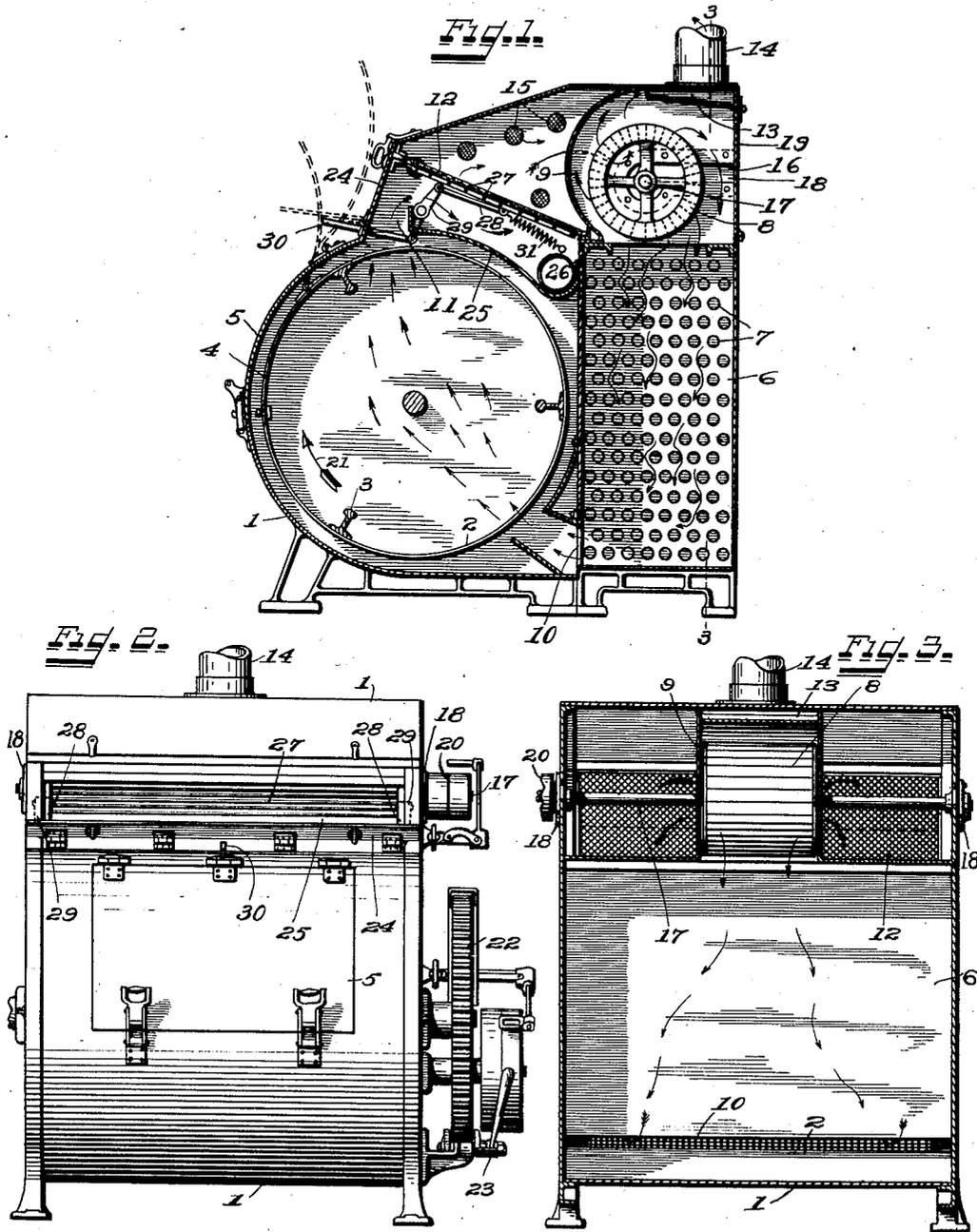
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DRYING TUMBLER

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UNITED STATES PATENT OFFICE.

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DRYING TUMBLER.

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To all whom it may concern:

Be it known that I, FRANK M. WATKINS, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Drying Tumblers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification.

My invention relates primarily to a device for use in laundries where large quantities of clothes are washed and wherein it is required to thoroughly dry the clothes in the shortest possible time, at the same time subjecting the clothes to a thorough aerating, though it is capable of advantageous use for a variety of other purposes as will be readily apparent to those skilled in the art to which my invention relates.

One object of my invention is to provide a screen in a machine of this character and to so arrange and locate this screen that it will collect all lint which may be removed from the articles being operated upon, and to arrange this screen in such manner that when the machine is at rest, the lint which has been collected thereon will be automatically removed therefrom without requiring the removal of the screen itself.

Another object of my invention is to provide a reservoir or trap for the reception of the lint from the screen, and to provide this receptacle or trap with proper means whereby the lint may be readily removed therefrom.

Another object of my invention is to provide such a machine with a suitable suction or vacuum producing fan, and to so arrange and mount the fan that it may be readily dismounted from the machine.

Another object of my invention is the provision of means whereby the moisture-laden-air is automatically conducted away from the machine.

Other objects of my invention will appear and be described throughout the specification.

In the drawing:—

Fig. 1 is a sectional side elevation of a machine embodying my invention.

Fig. 2, is a front elevation of the machine.

Fig. 3 is a sectional rear elevation of the machine taken approximately on the dotted line 3—3 of Fig. 1 the heating coil being removed.

The same numerals of reference are used to indicate identical parts in all the figures.

The general arrangement of the machine which I have illustrated is similar to machines now in use and comprises a frame 1 within which a cylinder 2 is mounted, the outside surface of the cylinder being preferably formed of a heavy wire mesh as shown in Fig. 3 where a small portion of the cylinder appears near the bottom of the figure, the cylinder 2 being provided with ribs 3 to assist in carrying the contents upward during the revolution of the cylinder. The cylinder 2 is also provided with a loading and unloading door 4 by means of which the contents may be introduced or removed.

The frame 1 is provided with a door 5 by means of which access is gained to the door 4.

The rear portion of the frame 1 is provided with a coil chamber 6 within which a suitable heating coil 7 is mounted.

The suction or vacuum producing fan 8 is mounted above the coil 7 and is enclosed in an eccentric case 9, the discharge from the fan 8 being conducted into the coil chamber 6, from the lower portion of which the air is drawn thru the opening 10 and thence thru the cylinder 2, and thru the contents therein, to the passage 11 which leads to the lint screen 12, from which the air is drawn to the suction opening of the fan 8 which thus completes the circuit.

In order to remove the greater quantity of the moist air from the machine a skimming chamber 13 is provided, this chamber being arranged preferably at the upper portion of the eccentric case 9 with its opening facing the direction of movement of air within the case and in position to receive the heavier and moist air and convey it to the discharge pipe 14.

To supply air to the machine a series of screened air inlets 15 are provided and arranged as shown in Fig. 1.

To permit the easy removal of the fan 8 from the machine, the end walls of the housing 9 and the end walls of the frame 1 are slotted as shown at 16, the fan shaft 17 be-

ing journaled in the plates 18 which cover the slots 16 and which are mounted there-over.

A door 19 covers the rear portion of the machine adjacent to the fan 8 and the construction and arrangement of the parts just described is such that when the door 19 is opened and the plates 18 loosened, the fan and its shaft 17 may be easily removed from the machine as will be apparent.

The fan 8 may be suitably driven thru tight and loose pulley mechanism 20 Fig. 2, so that its operation may be suitably controlled.

The cylinder 2 is preferably rotated in the direction indicated by the arrow 21 of Fig. 1 and a suitable driving mechanism 22 Fig. 2 is provided for this purpose.

A brake 23 is provided and adapted to engage part of the driving mechanism 22 to hold the cylinder 2 in proper position when the door 4 is opened for loading and unloading the machine.

A door 24 is provided to give access to the screen chamber so that the screen 12 may be removed from the machine should occasion require.

It will be observed by reference to Fig. 1 that the screen 12 is so arranged that the air, in passing thru it, passes from the under side of the screen and in so doing, the lint which may be carried by the air is deposited on the under side of the screen and it will be apparent that when the operation of the machine has been stopped, the lint which has been collected on the screen 12 will drop therefrom and into the lint trap 25 from which it may be removed thru clean-out doors 26, the trap 25 being so arranged that all of the lint drops thereinto, and partly conforms to the circular chamber within which the cylinder 2 is mounted.

If desired a grid 27 may be mounted immediately below the screen 12 and may be arranged to be automatically operated by the opening of the door 5, thru the medium of a connecting rod 28, crank arm 29 and finger 30, the latter projecting thru the front of the frame 1 to such a position that when the door 5 is opened it will strike the finger 30 and thereby move the grid 27 and positively remove any lint which may be adhering to the undersurface of the screen 12.

A spring 31 may be employed to return the grid 27 to its proper position after each operation.

The course of the air thru the machine is indicated by arrows and from these indications it will be seen that the machine operates on the up draft principle and that the contents are partly held in suspension during the operation of the machine by the upward movement of the air currents, the result being that a thorough aeration and

drying as well as a complete removal of all lint results.

Having thus fully described my invention, I claim:

1. In a machine the combination of a goods containing element, a lint screen positioned to collect lint on the underface thereof, a lint receptacle under said screen, and means for removing lint from said screen.

2. In a machine the combination of a centrifugal air moving element, a goods containing element, a lint screen, and a moisture-laden-air skimmer adjacent said centrifugal air moving element.

3. In a machine the combination of a centrifugal air moving element, a moisture-laden-air skimmer adjacent thereto, a goods containing element thru which the air handled by said centrifugal air moving element is drawn, and a lint screen positioned to collect lint on its undersurface.

4. In a machine the combination of a centrifugal air moving element, a moisture-laden-air skimmer adjacent thereto, a goods containing element through which the air handled by said centrifugal air moving element is drawn, a lint screen positioned to collect lint on its undersurface, and a lint receptacle below said screen.

5. In a machine the combination of a centrifugal air moving element, a moisture-laden-air skimmer adjacent thereto, a goods containing element, through which the air handled by said centrifugal air moving element is drawn, a lint screen positioned to collect lint on its undersurface, a lint receptacle below said screen, and means for removing lint from said screen.

6. In a machine the combination of a goods container, a lint screen adjacent said container, a fan housing adjacent said screen and provided with a door thru which a fan may be removed, a fan supporting portion provided with slotted openings, and removable fan support covering said slotted opening.

7. In a machine the combination of a fan, a housing for said fan provided with rearwardly extending slotted openings, a drive shaft for said fan, removable bearing plates forming journals for said drive shaft and coverings for the slotted openings, and a door at the rear of the fan housing through which the fan and its shaft may be removed.

8. In an up-draft tumbler the combination of a goods containing element, an air moving element for causing a circulation of air within the machine, and upward through the goods containing element and means for removing moisture-laden-air from the machine.

9. In an up-draft tumbler the combination of a goods containing element, an air moving element for causing a circulation of air within the machine, this circulation be-

ing upward through the goods containing element, means for removing moisture-laden-air from the machine, and a lint screen in the air outlet passage for removing lint from the moving air.

10. In an up-draft tumbler the combination of a goods containing element, an air moving element for causing a circulation of air within the machine, and upward through the goods containing element, means for removing moisture-laden-air from the machine, a lint screen in the air outlet passage from the goods containing element, and a lint receptacle below said screen.

15 11. In an up-draft tumbler the combination of a goods containing element, an air moving element for causing a circulation of air within the machine, means for removing

moisture-laden-air from the machine, a lint screen in the air outlet passage from the goods containing element, a lint receptacle below said screen, and means co-operating with said screen for removing the deposit of lint therefrom.

12. In an up-draft tumbler the combination of a goods containing element, an air moving element for causing a circulation of air within the machine, means for removing moisture-laden-air from the machine, a lint screen in the air outlet passage from the goods containing element, a lint receptacle below said screen, and means operable from outside the machine and co-operating with said lint screen to remove the deposit of lint therefrom.

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