

June 10, 1930.

J. W. SEIFERT

1,762,594

DRYING TUMBLER

Filed April 28, 1928

2 Sheets-Sheet 1

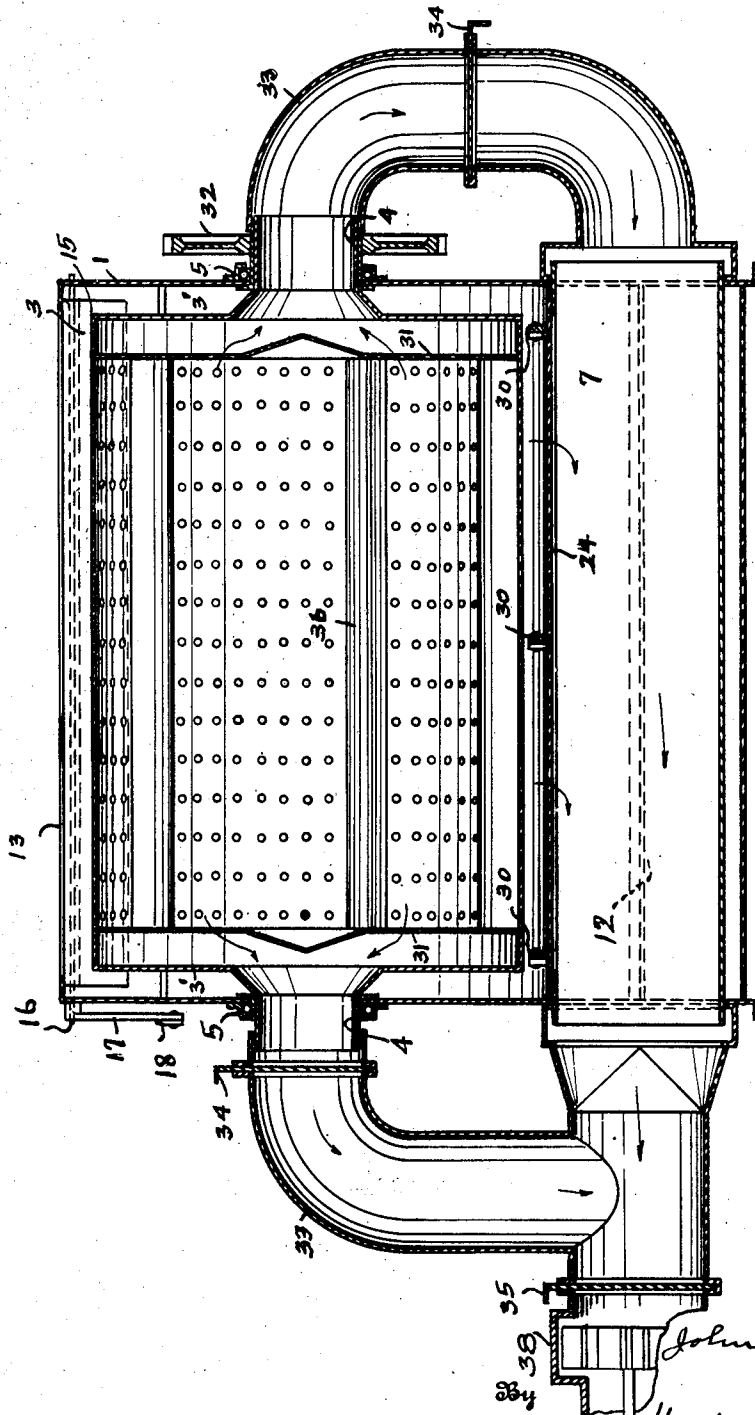


Fig. 1.

Inventor

John W. Seifert

Harding Cather
Attorney

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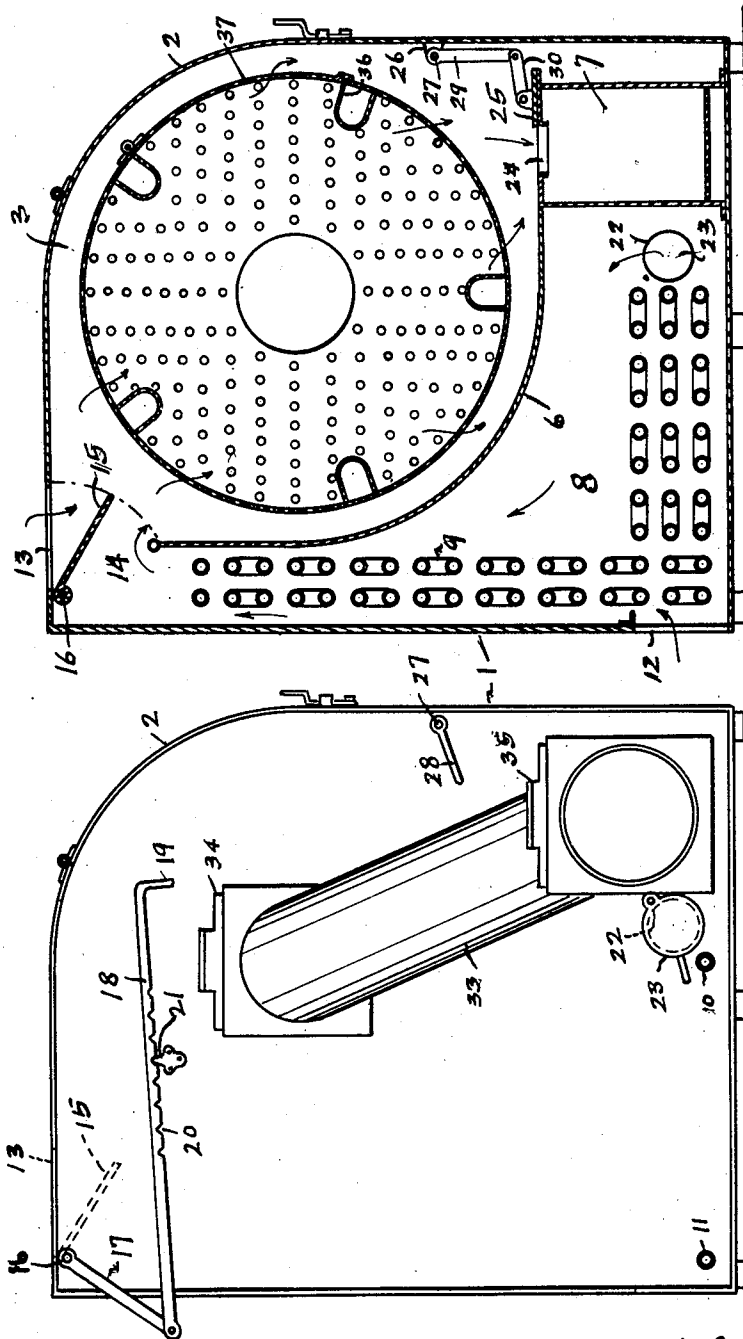


Fig. 3.

Fig. 2.

Inventor

John W. Seifert

384

Hardway Carter
Attorneys

UNITED STATES PATENT OFFICE

JOHN W. SEIFERT, OF HOUSTON, TEXAS, ASSIGNOR TO NATIONAL LAUNDRY MACHINE COMPANY, OF HOUSTON, TEXAS, A CORPORATION OF TEXAS

DRYING TUMBLER

Application filed April 28, 1928. Serial No. 273,537.

This invention relates to new and useful improvements in a drying tumbler.

One object of the invention is to provide a device of the character described particularly designed for use in laundries and dry-cleaning establishments for drying laundry, and for removing the odor of the cleansing agent from articles that have been dry cleaned.

Another object of the invention is to provide, in a device of the character described, a tumbler drum having lengthwise ribs arranged around the inner wall thereof whereby the clothes, in the drum are lifted and dropped, as the drum rotates said drum having its walls and ends perforated to permit the free circulation of air there-through so that the clothing will be subjected to a blast of air during the lifting and dropping operation.

A further feature of the invention resides in the provision of a plurality of air inlets, and an air outlet with means for effectively controlling the intensity of the blast to which the clothes in the drum are subjected, and means for supplying either hot, warm or cold air to said clothes.

With the above and other objects in view this invention has particular relation to certain novel features of construction, operation and arrangement of parts an example of which is given in this specification and illustrated in the accompanying drawings, wherein:—

Figure 1 shows a longitudinal vertical sectional view of the device.

Figure 2 shows an end view and

Figure 3 shows a transverse vertical sectional view.

Referring now more particularly to the drawings, wherein like numerals of reference designate similar parts in each of the figures, the numeral 1 designates a casing. This casing is approximately square, in cross section, but at the juncture of the front wall with the top is rounded and provided with the hinged shutter, or door, 2, preferably extending from end to end of the casing. This door is concentric with and spaced from the tumbler drum, generally

designated by the numeral 3, which is arranged within the casing and supported by the tubular trunnions 4, 4 extending through the end walls of the casing, and rotatable in the bearings 5, 5 of said end walls. Spaced from the other wall of the casing there is an arcuate partition 6, substantially concentric with, and spaced from, the drum 3. The lower end of the partition 6 terminates at the top of the lengthwise flue 7, arranged in the casing beneath the drum 3, and extending from end to end of the casing. Between the partition 6 and the rear wall of the casing there is a heating chamber 8, bounded by the rear, bottom and end walls of the casing and by the said partition 6 and the flue 7. In this chamber 8 are the turns 9 of pipe, said turns having the inlet 10 and outlet 11. Hot steam or other hot fluid may be circulated through the turns 9 in any approved manner. The casing 1 has an air inlet opening 12, into the chamber 8, which extends from end to end of the casing, and at the top has an air inlet opening 13 which also extends from end to end of the casing. The upper edge of the partition 6 terminates beneath the opening 13 and is spaced from the top of the casing to provide an air passageway 14 around said upper edge of said partition 6. There is an oblong shutter 15 which is fixed to the rod 16 and this rod works in end bearings in the casing adjacent the rear edge of the opening 13. One end of the rod 16 extends beyond the casing and has the arm 17 fixed thereto. A manipulating bar 18 has one end pivoted to the free end of the arm 17 and its other end is formed into a hand grip 19. The under edge of the bar has the spaced notches 20 and fixed to the adjacent end of the casing there is a dog 21 engageable in either of said notches. Through the bar 18 the shutter 15 may be moved into position to close the passageway 14, and exclude the hot air from the tumbler drum and to admit cold air to said drum, through the opening 13; or said shutter may be adjusted into position to close the opening 13 and to open the passageway 14 to exclude cold air from and admit hot air to, said drum; or said shutter

15 may be adjusted to an intermediate position to admit both cold and hot air to the drum and to regulate the proportions thereof, and said shutter may be secured in a selected position by engaging the dog 21 in the corresponding notch 20 of the bar 18. The chamber 8 also has the end air inlet openings 22, 22 which may be opened or closed by the hand operatable valves 23, 23.

The air is discharged through the flue 7 whose upper wall has an oblong opening 24, extending from end to end thereof.

There is a slidable shutter 25 on the top wall of the flue 7. Rotatably mounted in suitable bearings 26 carried by the inside of the front wall of the casing, there is a rod 27 one end of which is extended beyond the casing, and has a hand lever 28 fixed thereto. Depending from the rod 27, and fixed thereto, are the arms 29 and links 30 which connect the free ends of said arms to the shutter 25. Through the lever 28 the shutter 25 may be adjusted to fully or partly open the opening 24 or to entirely close the same.

The trunnions 4, 4 are attached to the imperforate ends 3', 3' of the tumbler drum 3 and spaced inwardly from said ends 3' are the perforated partitions 31, 31. The central portion of each partition 31 is preferably conical with its apex directed toward the corresponding trunnion. The drum between said partitions, is also perforated throughout to provide for the free circulation of air therethrough.

One of the trunnions 4 has a gear wheel 32, fixed thereon, through which power may be applied, to rotate the tumbler drum.

The outer ends of the trunnions 4 are connected into the air pipes 33, 33 which in turn are connected into the corresponding ends of the flue 7. The pipes 33 are equipped with the hand operatable gate valves 34, 34 through which said pipes may be controlled and the outlet end of the flue 7 is controlled by a similar hand operatable gate valve 35.

The drum 3 has the lengthwise inside bars 36, formed of perforated sheet metal, extending between the end partitions 31, and spaced apart around said drum.

A section 37, of the drum 3, is hinged to the drum forming a shutter through which the clothes may be placed into or removed from said drum.

In operation the articles to be dried are placed in the tumbler drum through the doors 2 and 37 and the drum is then rotated and the bars 36 will alternately lift and drop the clothing. The outlet end of the flue 7 is equipped with a conventional suction fan 38 for creating the draft.

Cold air will be drawn in through the opening 12, as well as through the openings 22, 22, if open. This cold air will be heated by the turns of pipe 9. If desired the

opening 13 may be closed so that only hot air will be circulated about the clothing while being lifted and dropped by the drum. This will usually be necessary only when the clothing is wet. After the clothing has become dry, or when dry cleaned clothing is in the drum, the shutter 15 may be operated to open the opening 13 and close the passageway 14 and a blast of cold air will then be circulated about the clothing in the drum. This cold air blast will be brought into intimate contact with the clothing, will fluff the material of the articles, bring out the nap thereof and remove the odors imparted thereto by the heating process, or by the cleansing agents used.

The shutter 15 may be adjusted to any selected position to regulate the amount of cold air admitted through the opening 13 and the temperature of the air entering the drum thus regulated.

With the opening 24 open a portion of the air will be drawn out through the bottom of the drum, carrying the lint with it, and this air will be exhausted through the flue 7. The remainder of the air passes out through the perforated partitions 31 and thence through the pipes 33 into the flue 7. The suction may be regulated, as desired, by the gate valves 34, and 35.

While I have shown what I now consider the preferred form of the invention it is obvious that mechanical changes may be made therein and equivalents substituted for the parts shown and I reserve the right to make such changes and substitutions as may be found desirable within the scope of the appended claims.

What I claim is:—

1. A drying tumbler including a casing having a cold air inlet opening, hollow trunnions rotatable in bearings in the casing, a foraminated drum whose ends are attached to said trunnions, a flue extending through the casing beneath the drum, said flue having an inlet opening within the casing, means for opening and closing the flue opening, a partition in the casing forming a heating chamber behind the drum having a cold air inlet, there being a passageway for air from said heating chamber to the drum, means for controlling said air inlet opening and said passageway to admit hot and cold air alternately or simultaneously to said drum, and an outlet pipe leading from each trunnion to the corresponding end of said flue.

2. A drying tumbler including a casing having a cold air inlet opening, hollow trunnions rotatable in bearings in the casing, a foraminated drum whose ends are attached to said trunnions, a flue extending through the casing beneath the drum, said flue having an inlet opening within the cas-

ing, means for opening and closing the flue
opening, a partition in the casing forming
a heating chamber behind the drum having
a cold air inlet, there being a passageway
5 for air from said heating chamber to the
drum, means for controlling said air inlet
opening and said passageway to admit hot
and cold air alternately or simultaneously
to said drum, an outlet pipe leading from
10 each trunnion to said flue, and gate valves
controlling said outlet pipes and said flue.

In testimony whereof I have signed my
name to this specification.

JOHN W. SEIFERT.

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