Aug. 3, 1954 S. LANDON 2,685,188

ROTARY WASHING AND DRY CLEANING MACHINE

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Fig. 2.

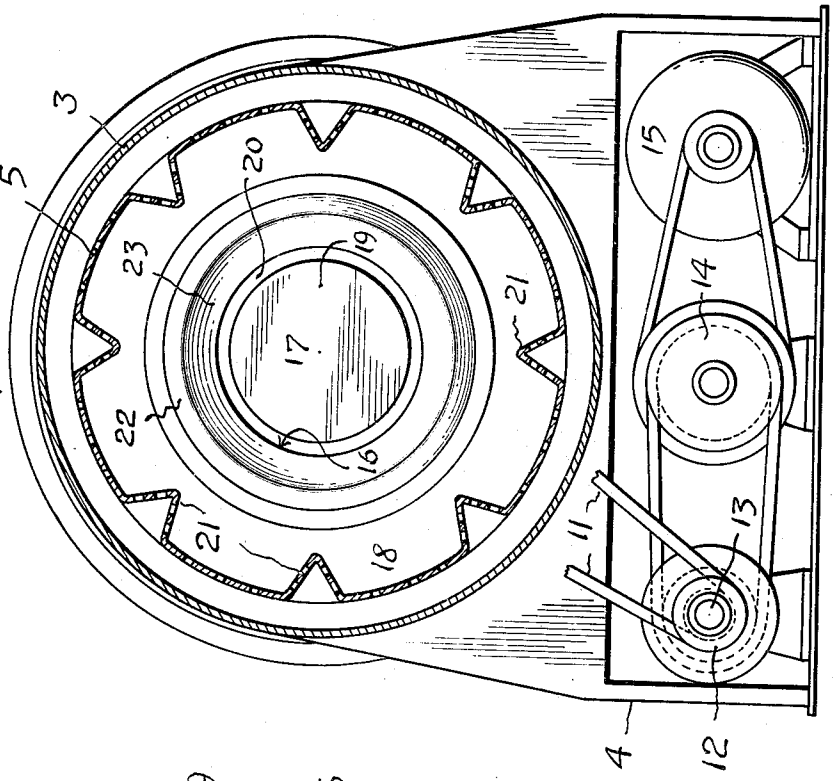
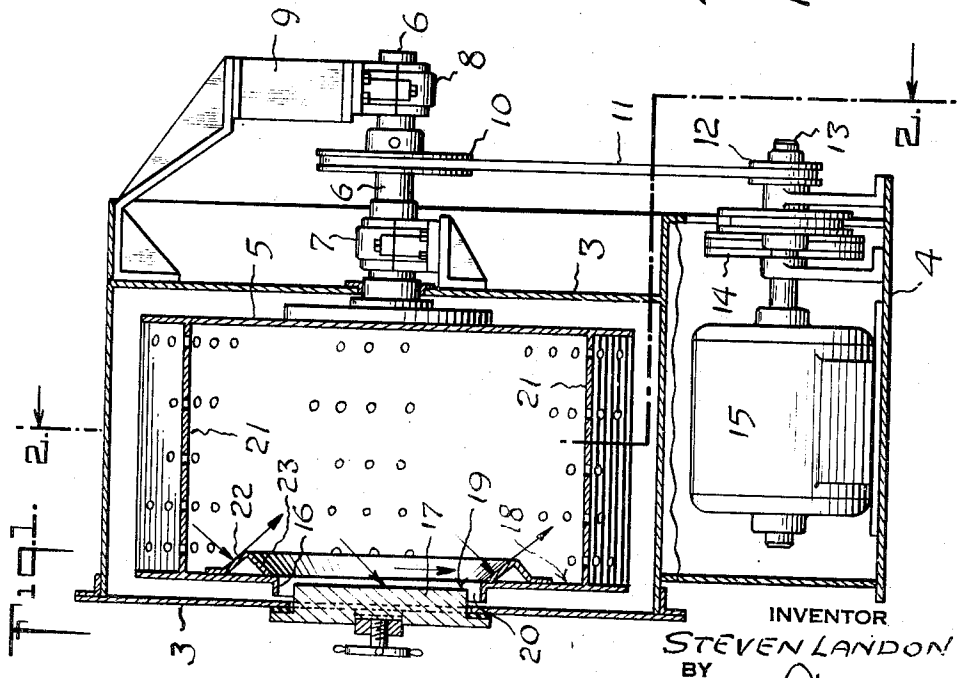


Fig. 1.



INVENTOR
STEVEN LANDON
BY
ATTORNEY

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ROTARY WASHING AND DRY CLEANING MACHINE

Steven Landon, Forest Hills, N. Y., assignor to Washex Machinery Corporation, a corporation of New York

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3 Claims. (Cl. 68—24)

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This invention relates to improvements in rotary washing and dry cleaning machines of the type in which a perforated open and drum or cylinder is supported from one end and rotates about a substantially horizontal axis, and in which an outer casing encloses the drum and is provided with a door located in alignment with the open end of the drum, so that the garments or other articles to be washed or dry cleaned may be introduced into and removed from the interior of the drum, and the invention relates more particularly to a machine of this type, having means for rotating the drum at low speed to impart a tumbling motion to the articles within the drum during the washing or dry-cleaning operation and during the drying operation, and for rotating the drum at high speed to act as an extractor to remove water or cleaning solvent from the articles after the washing or dry cleaning operation.

One object of the present invention is to provide a machine of this type with a door that projects through the front of the casing into the opening in the drum and has ample annular clearance between the edge of said opening and the adjacent portion of the door, and to provide deflecting means for preventing the articles within the drum from protruding into or through the annular space between the door and the opening, so that the said annular clearance allows for eccentric motion of the open end of the drum due to any lack of balance in the load during the extracting operation, and the deflecting means ensures against damage to the articles by engagement between the adjacent relatively moving parts of the drum and the door. Another object is to provide the deflecting means with outer and inner concentric annular surfaces for deflecting the articles in the drum away from the open end, during the tumbling operation.

With these and other objects in view, the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions and minor details may be made without departing from the spirit of the invention or sacrificing any of the advantages thereof.

In the drawings, Fig. 1 is a vertical cross section of the machine, and Fig. 2 is a sectional view taken on the line 2—2, Fig. 1.

The machine shown in the drawings is formed with a stationary casing 3 having a supporting

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base 4 and enclosing a rotary perforated drum 5 which is formed on its rear end wall with an elongated trunnion 6 supported by a bearing 7 carried on the rear end wall of the casing 3 and by a second bearing 8 carried by a bracket 9 depending from the rear part of the casing. The drum 5 is driven through the medium of the trunnion 6 by means of a pulley 10 secured on the trunnion between the bearings 7, 8 and driven by a belt 11 from a pulley 12 mounted on and driven by a shaft 13 driven from a suitable change-speed gear 14 actuated by an electric motor 15 in any suitable or well-known manner, so that the drum 5 may be rotated at relatively slow speed and may be reversed in the well-known manner to give the tumbling action necessary for the washing or dry cleaning of the articles contained within the drum, and the drum may be rotated at high speed to act as an extractor.

The front end wall of the drum 5 is provided with a central opening 16 and a hinged door 17 mounted on the front wall of the casing projects into this opening 16 so that the inner face 19 of the door 17 is in approximate alignment with the inner surface 18 of the front wall of the drum, and the annular space 20 between the outer circular surface of the inwardly projecting portion of the door 17 and the mouth of the said opening 16 is ample to permit variation of the drum from its concentric position due to lack of balance of the articles within the drum while the latter is rotated at a speed sufficient to act as an extractor for the removal of washing liquid or cleaning solvent from the articles therein.

The drum is formed with a series of eight or other suitable number of parallel internal ribs 21 for tumbling the articles within the drum as the latter is rotated at low speed during the washing or dry cleaning operation, and in order to prevent the articles from protruding into the annular space 20 between the opening 16 and the door 17, during the tumbling operation, the inner surface 18 of the front wall of the drum is formed with, or has secured thereto, a deflecting ring surrounding the opening and having an outer annular surface 22 disposed at about 45 degrees to the axis of the drum and an inner annular surface 23 disposed at an angle of about 90 degrees to the outer surface 22 so that during the tumbling operation any articles raised by the drum and caused to fall onto the upper part of the outer surface 22 or the lower part of the inner surface 23 are deflected—as indicated by the arrows in Fig. 1—away from the annular

opening **20** and towards the back of the drum, so that engagement of any parts of the articles between the adjacent parts of the stationary door and of the rotating drum is entirely prevented.

In the arrangement shown, the deflecting ring is formed with frusto-conical surfaces **22**, **23**, and is attached to the inner surface **18** of the front wall of the drum, but the said front wall may, of course, be shaped to form integral deflecting surfaces and such surfaces may, in cross-sectional form, be flat faced or convex, or may be otherwise shaped with flat or curved faces or with a suitable combination of such faces.

Although the drawings and the above specification disclose the best mode in which I have contemplated embodying my invention, I desire to be in no way limited to the details of such disclosure, for, in the further practical application of my invention, many changes in form and construction may be made as circumstances require or experience suggests without departing from the spirit of the invention within the scope of the appended claims.

What I claim is:

1. A rotary washing or dry cleaning machine comprising a casing, a perforated drum mounted for rotation about a substantially horizontal axis within the casing and having front and rear walls connected by a cylindrical side wall, means for supporting the said drum solely from its rear end, a central loading and unloading opening in the front of the casing, a corresponding opening in the front wall of the drum in alignment with the said opening in the casing, a door closing the opening in the casing and having its rear part extending into the said drum opening, an annular space being provided between the rear part of said door and the drum opening to permit eccentric motion of the front end of the drum under high speed rotation, an inner annular beveled member forming an extension of said drum opening and inclined rearwardly and outwardly therefrom for deflecting from said annular space articles contained in the lower part of the drum, and an outer annular beveled member forming an extension of said inner annular member and extending outwardly and forwardly therefrom to deflect from said space articles contained in the upper part of the said drum.

2. A rotary washing or dry cleaning machine

comprising a substantially cylindrical casing, a substantially cylindrical drum mounted within the casing for rotation about a substantially horizontal axis and having a front wall with a central loading and unloading opening therein, an opening in the front of the casing in alignment with said drum opening, a door closing the opening in the casing and extending into the opening in the drum, an annular space being provided between said door and the internal periphery of the opening in the drum to permit eccentric movement of the drum under high speed rotation, and means whereby articles contained in the drum are deflected from said annular space, such means consisting of two annular deflecting surfaces so disposed that in cross-section they form with the front wall of the drum a triangular figure with said deflecting surfaces disposed at an angle of substantially 90 degrees to each other.

3. A rotary washing or dry cleaning machine comprising a casing of substantially cylindrical form, a rotary drum mounted within said casing and having front and rear end walls connected by a cylindrical side wall, means for supporting the drum solely from its rear end wall, a door in the front of the casing, an opening in the front wall of the drum in alignment with said opening in the casing, an annular gap between said door and said drum opening, and means for deflecting from said annular gap the articles contained in the drum, such deflecting means comprising an inner beveled surface with its inner periphery coinciding with the drum opening and an outer annular deflecting surface with its inner periphery coinciding with the outer periphery of the said inner surface and with its outer periphery spaced from the inner periphery of the cylindrical side wall of the drum.

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