

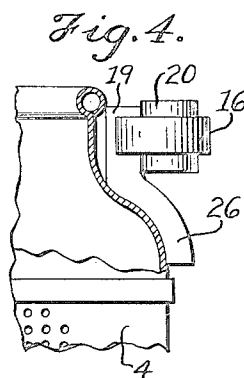
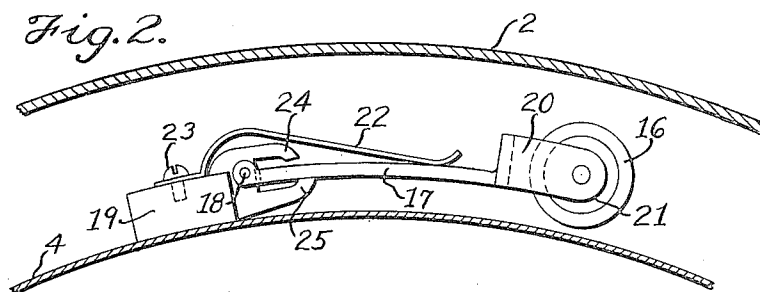
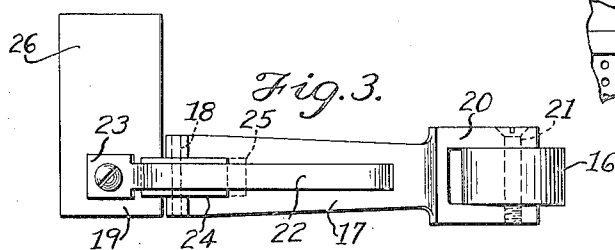
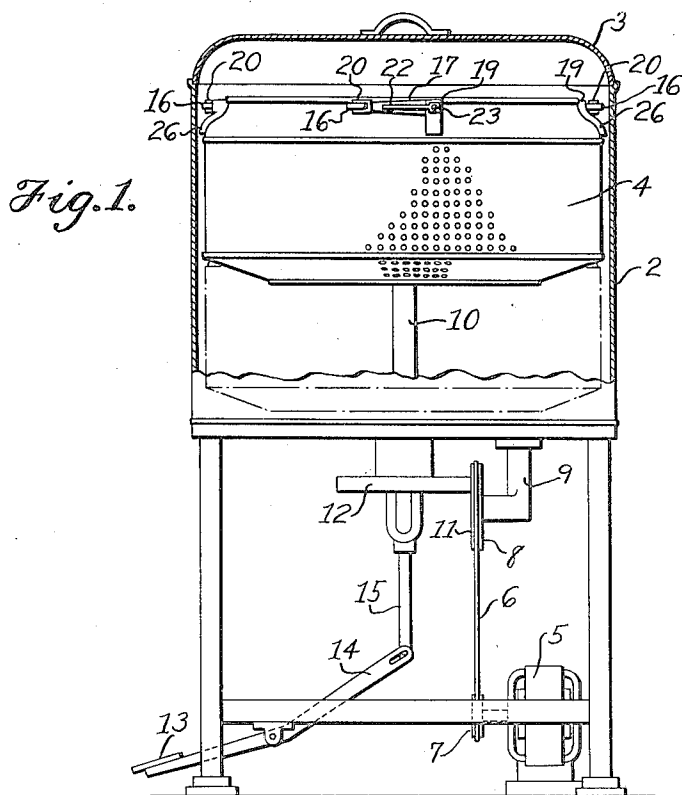
Nov. 20, 1923.

1,474,845

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CENTRIFUGAL

Filed June 9, 1921



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CENTRIFUGAL.

Application filed June 9, 1921. Serial No. 476,343.

To all whom it may concern:

Be it known that I, GEORGE R. PARR, a citizen of the United States, residing at 3 Ridgefield Avenue, West Orange, New Jersey, have invented new and useful Improvements in Centrifugals, of which the following is a specification.

My invention relates to means for reducing the vibration of centrifugals and particularly to means for reducing vibration of a centrifugal drying drum in a clothes washing machine. One of the objects of my invention is to utilize the reaction developed by centrifugal force in the rotation of such a drum to center the drum and diminish its vibrations or oscillations, when loaded unevenly with clothes to be dried.

Another object of my invention is to provide a simple and inexpensive form of mechanism which is or may be mounted upon the drum and which is adapted under the action of centrifugal force to contact with a track thereby creating a reaction tending to centralize the drum and diminish its vibration.

Another object of my invention is to provide one or more members such as rollers, carried by the drum and yieldingly mounted thereon, the said rollers being adapted to move outwardly against the track when the drum is whirled and thru their connections with the drum to transmit the reaction of the rollers against the track, to the drum, so as to centralize it and diminish the vibration.

With the above and other objects in view, my invention consists in the parts, improvements and combinations more fully pointed out hereinafter.

Turning now to the drawings which illustrate one embodiment of the invention:

Fig. 1 illustrates a vertical elevation of a washing machine provided with a drum and the centrifugal attachment connected therewith, part of the view being in section.

Fig. 2 illustrates a transverse section of part of the drum and track, showing the centrifugal attachment.

Fig. 3 is a plan view of the centrifugal device.

Fig. 4 is a section detail of the same.

In Fig. 1 the machine is shown mounted upon base 1 and carries a casing 2 which may be closed by a cover 3 as usual. The machine is also provided with the usual form of centrifugal as for example a perforated

centrifugal drying drum 4. Means are provided as customary, for rotating the drying drum and may consist of an electric motor 5, belt 6 and pulleys 7 and 8, the latter mounted in a bracket 9 and driving the axis or shaft 10 of the centrifugal thru friction face disks 11 and 12. These disks drive the drum at a speed depending upon the position of the disks with relation to each other. In the machine illustrated, a treadle 13 and lever 14 are connected to the shaft 10 by means of a connection 15 which permits the shaft to rotate. By pressing upon the pedal, the drum may be raised from the wash water, thus raising the clothes within the drum into a position so that when the drum is whirled, the water escapes thru the perforations in the drum and the clothes are dried. The above machine is one of a number of well known forms in common use. When such a drum is loaded with clothes to be dried or other material it frequently happens that the loading is not uniform. A greater weight of contents at one place in the drum, acts to weigh down this portion of the floor of the drum and to slightly bend the shaft toward the weighted side. In whirling this has a tendency to set up an oscillation of the drum.

In accordance with my invention, I provide means for reducing the vibrations or oscillations of the drum when it is unevenly loaded and is being rotated at drying speed, usually hundreds of turns a minute, the means utilizing the reaction developed by centrifugal force in the rotation of the drum, thereby centering the drum and diminishing its vibrations or oscillations.

In the particular embodiment of the invention illustrated, I make use of a plurality of members mounted upon the drum. These members in the form illustrated comprise a plurality of rollers 16 carried by the drum. Means are provided for connecting the rollers to the drum. In the form of the invention illustrated, I make use of arms 17 carrying the rollers at their ends, the said arms being in turn movably mounted with relation to the drum as by means of the pivots 18. Blocks 19 may be secured to the drum in any desired manner, the connecting arms 17 being pivoted to the blocks thru their pivots 18. The outer ends of the arms 17 may be forked as at 20, provided with journal pins or bearings 21 as illustrated.

Means are provided, which may be varied, for regulating the pressure between the rollers and the track portion of the outer casing on which the rollers bear under the reaction of the centrifugal force. In the embodiment of the invention illustrated I make use of one or more springs such as the leaf spring 22 which may be secured at its base to the block 19 by means of the screw 23.

10 The free or outer portion of the spring exerts a pressure against the arm 17 thus urging the roller toward the inner drum against the action of centrifugal force which tends to throw the roller outwardly.

15 Means may also be provided for checking the outward movement of the arm 17. I have accordingly arranged a stop 24 which is connected to the block 19. This stop will prevent further outward movement of the arm 17 after the roller 16 has come in contact with the track portion of the outer casing, thus preventing undue pressure of the roller against the track which would tend to retard the drum.

25 In order to prevent the roller 16 from vibrating or hammering against the inner drum, thus producing unnecessary noise and vibration of the roller, I provide an inner stop 25 which may be secured to the block 19. This inner stop limits the inward motion of the roller with relation to the movable drum, always keeping the roller out of contact with the drum.

35 In the preferred embodiment of the invention I mount the rollers on a particular part of the drum, to wit the top, where they act to readily check the vibration. Moreover, the top is of somewhat smaller diameter than the rest of the drum, thus permitting the rollers to be easily mounted so as to be free to act. I may provide a special form of top which gives the necessary space in which to mount the rollers and permit their free action. As illustrated, I make the block 19 curved as shown at 26 in Fig. 4, and have it fit the curved neck or upper portion of the drum near the top.

45 The rollers are preferably uniformly spaced about the drum, three or four rollers being ordinarily used.

From the above description of the invention its operation will be clear. When the drum is rotated the rollers fly outwardly, the springs being compressed, and come in contact with the track portion of the casing. A reaction thus developed, operating thru the connections between the rollers and the drum, serve to center the drum and diminish its oscillations. I have found in practice that a centrifugal drying drum forming part of a laundry machine which would otherwise vigorously shake and oscillate the entire machine, when the drum is loaded with laundry and rotated at speed, will run quietly

55 when provided with my centrifugal roller

device, without objectionable vibration or oscillation.

Having thus described one form of my invention, it will be understood that it is not limited to any particular theory of operation and that many changes may be made in the parts which carry the invention into effect without departing from the principle thereof.

What I claim and desire to secure by Letters Patent is:

1. The combination with a rotating centrifugal drying drum, of means for reducing the vibration thereof, comprising a plurality of rollers carried by said drum and mounted at intervals along its circumference and means for permitting an outward movement of the said rollers with relation to said drum when the drum is whirled, a casing within which the said drum is disposed, said rollers being adapted to contact with said casing when the drum is whirled.

2. The combination with a rotating centrifugal drying drum, of means for reducing the vibration thereof, comprising a plurality of rollers uniformly spaced about the said drum and carried thereby, of yielding means for the said rollers, said rollers moving outwardly under the action of centrifugal force and a track against which the rollers bear when the drum is whirled.

3. The combination with a drum, of means for rotating said drum, of means for reducing the vibration thereof, comprising a plurality of rollers spaced about the said drum and carried thereby, a spring for each of said rollers and a track against which the rollers bear when the drum is whirled.

4. The combination with a rotating centrifugal drum of means for reducing the vibration thereof, comprising a plurality of outwardly movable rollers carried by the drum, an arm carrying each of said rollers, a spring for each of said rollers contacting with said arm and urging the said arm toward the said drum and a track against which the said rollers are brought to bear, when the drum is whirled.

5. The combination with a rotating centrifugal drying drum, of means for reducing the vibration thereof, comprising a plurality of blocks secured to said drum, an arm pivoted to each of said blocks, a roller carried by the outer end of each of said arms, a spring for each of said arms, adapted to urge the said arm toward the said drum and a track against which the said rollers are brought to bear, when the drum is whirled.

6. The combination with a rotating centrifugal drying drum, of means for reducing the vibration thereof, comprising a plurality of blocks secured to said drum, an arm pivoted to each of said blocks, a roller carried by the outer end of each of said

arms, a spring for each of said arms, adapted to urge the said arm toward the said drum, a stop for each of said arms, limiting the inward movement thereof so as to normally keep said roller out of contact with said drum and a track against which the said rollers are brought to bear when the drum is whirled.

7. The combination with a rotating centrifugal drying drum, of means for reducing the vibrations thereof, comprising a plurality of blocks secured to said drum, an arm pivoted to each of said blocks, a roller carried by the outer end of each of said arms, a spring for each of said arms, adapted to urge the said arm toward the said drum, and a casing against which the said rollers are brought to bear when the drum is whirled.

8. The combination with a rotatable centrifugal drum of means for rotating said drum, means for reducing the vibration thereof comprising a plurality of members carried by the said drum, and adapted to move away from said drum when the drum is rotated, connections between said members and said drum, a track against which said members bear when the drum is whirled, said members being adapted thru their reaction against said track to urge the axis of said drum toward the center of rotation.

9. The combination of a drum, of means for rotating said drum, of a member carried by the said drum and connected thereto, said member being moved with relation to said drum, by the centrifugal force developed by the rotation of the drum and a

track against which said member bears when the drum is rotated.

10. The combination of a drum, of means for rotating said drum, of a member carried by the said drum and connected thereto, said member being moved with relation to said drum, by the centrifugal force developed by the rotating of the drum, a stop for limiting the inward motion of said member so as to keep it out of contact with said drum, and a track against which said member bears when the drum is rotated.

11. The combination of a drum, of means for rotating said drum, of a member carried by the said drum and connected thereto, said member being moved with relation to said drum, by the centrifugal force developed by the rotation of the drum and a track against which said member bears when the drum is rotated, a stop for limiting the outward movement of said member after the member has contacted with said track.

12. The combination of a drum, of means for rotating said drum, of a member carried by the said drum and connected thereto, said member being moved with relation to said drum, by the centrifugal force developed by the rotation of the drum, a stop for limiting the inward motion of said member so as to keep it out of contact with said drum, a track against which said member bears when the drum is rotated and a stop for limiting the outward movement of said member after the member has contacted with said track.

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

GEORGE R. PARR.