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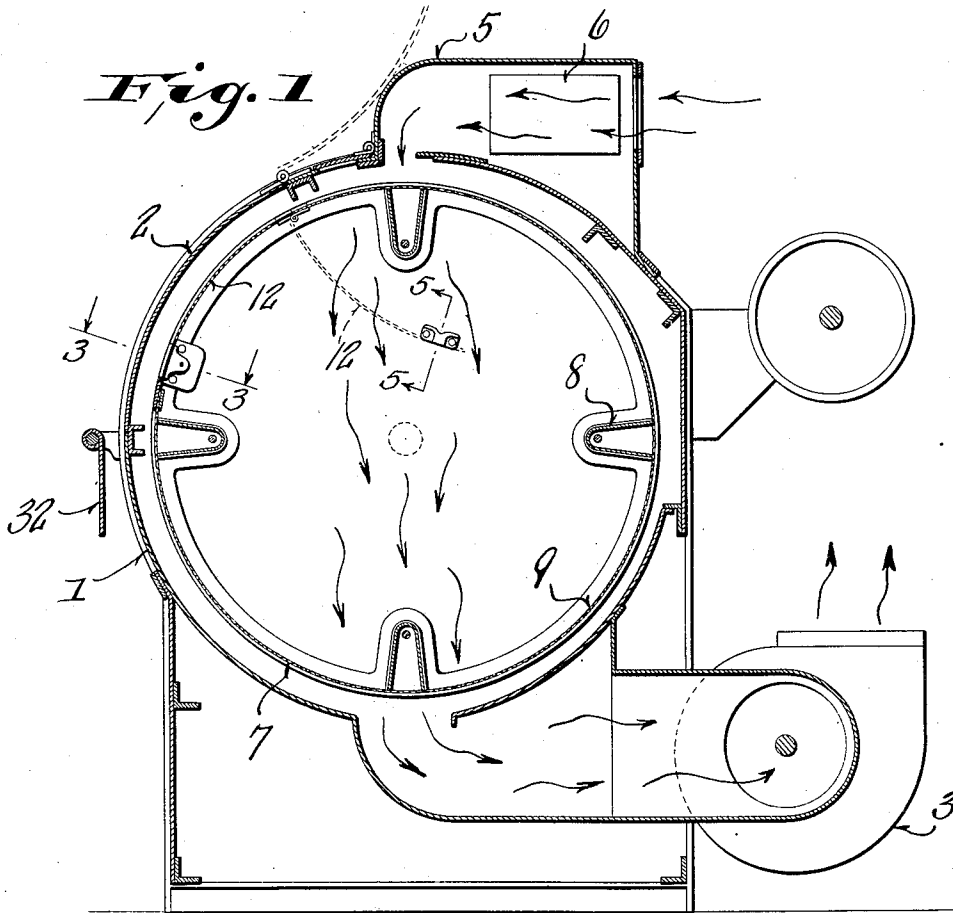
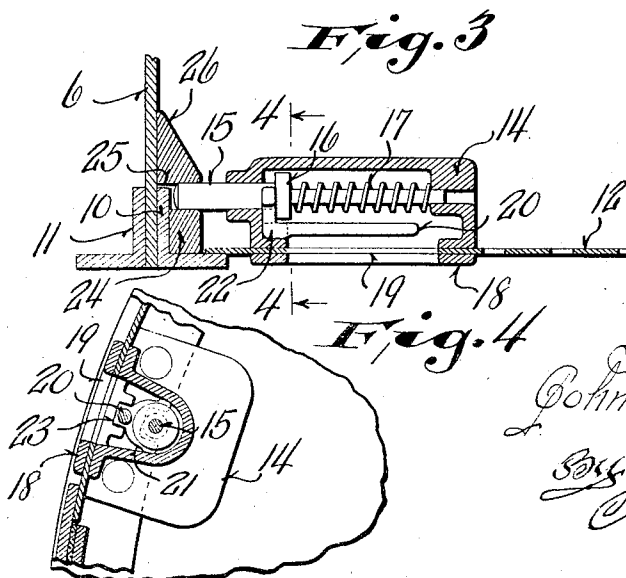
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1,792,137

LAUNDRY DRIER

Filed Dec. 10, 1928

2 Sheets-Sheet 1



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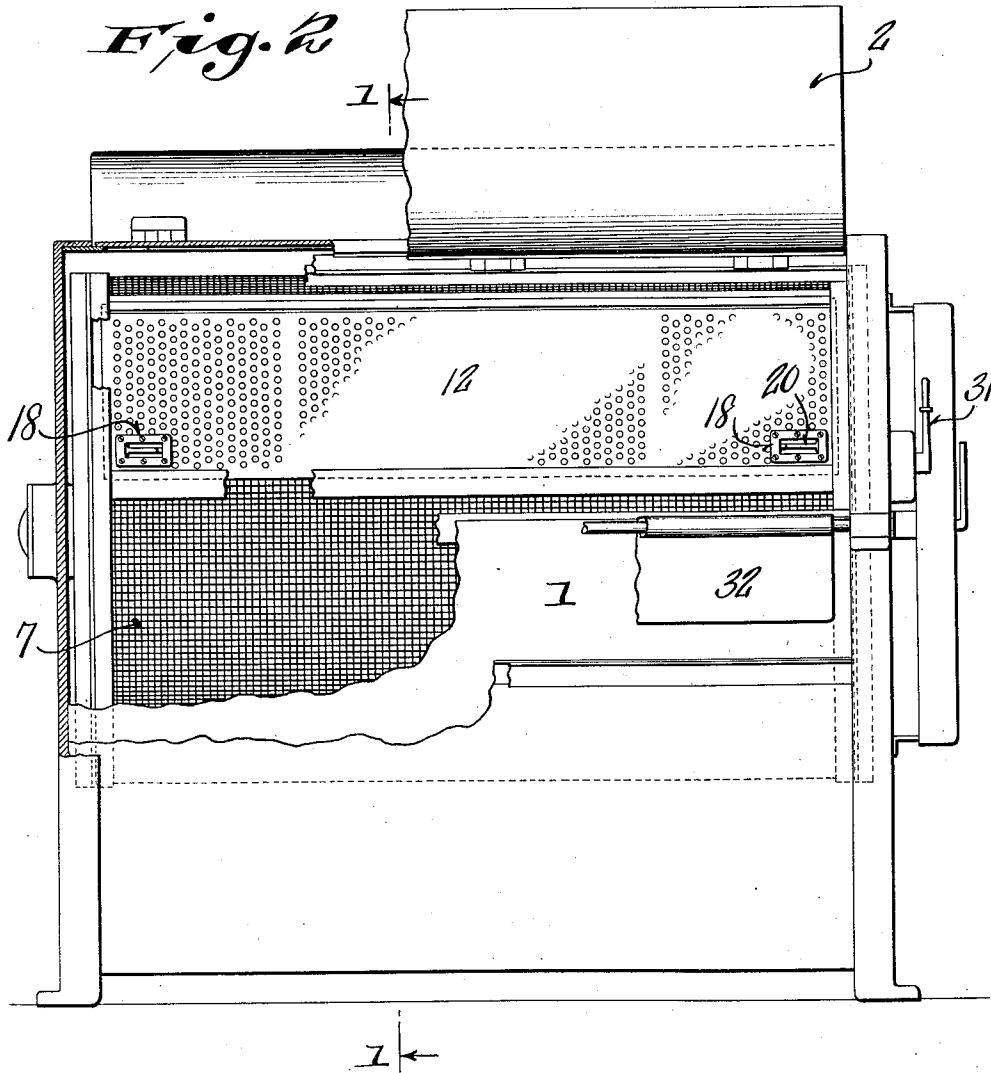
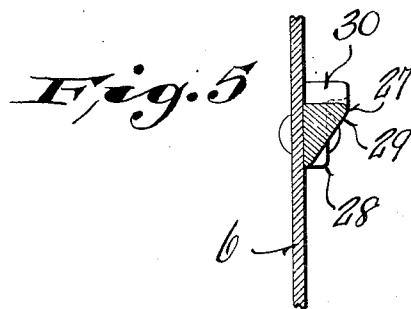
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LAUNDRY DRIER

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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LAUNDRY DRIER

Application filed December 10, 1928. Serial No. 324,864.

This invention relates to laundry driers and is particularly directed to the construction of the tumbler drum and door.

In laundry driers it is the usual practice to provide a perforated tumbler drum for the reception of the laundry or material which is initially placed in the drum in a moist or wet condition as it comes from the extractor, for instance, and to rotate the drum in alternate directions while a current of heated air is passed through the machine. All parts of the machine become heated and the operators experience considerable discomfort in opening the door of the tumbler drum, for these doors are made to slide with reference to the drum and considerable pressure must be exerted by the hands of the operator against the heated door in order to either open or close the door.

This difficulty is increased when the action of the door becomes "sticky" or, in other words, when the door slightly warps in use as actual experience has demonstrated. This warping of the door is due probably to a slight relief of internal strains in the door when the door is heated in the normal operation of the machine. Even a slight warping of the door is sufficient to cause it to bind in its guides, and the operator's hands remain in contact with the door for a material length of time while he is sliding the door into open or closed position, and the burning of his hands is augmented by the heavy pressure he is forced to exert against the door.

This invention is designed to overcome the defects noted above, and objects of this invention are to provide the tumbler drum of a laundry drier with a door which is easy to operate, either in opening or closing; which automatically temporarily locks either in open or closed position; which releases by a slight, substantially instantaneous push of the operator; and which is provided with one or more latching means which function both to release the door and open or close the door, without requiring continued or great pressure of the operator's hands.

More specifically, objects of this invention are to provide a door for a laundry drier which may slightly warp or straighten out

and which yet operates freely; which is pivotally carried by the tumbler drum and is adapted to freely swing inwardly and upwardly into the tumbler drum, and thereby swing above, and clear of the laundry carried by the drum; and which is so constructed that it has no definite inward point to which it must be swung, but in which the latching means automatically holds the door at a predetermined point although it may be swung inwardly beyond this point.

An embodiment of the invention is shown in the accompanying drawings, in which:

Figure 1 is a transverse sectional view through the laundry drier, such view corresponding to a section on the line 1—1 of Figure 2, showing the outer and inner doors closed in full lines, and in dotted lines showing the open positions of the doors.

Figure 2 is a front view of the laundry drier, with parts broken away, showing the outer door open and the inner door closed.

Figure 3 is a sectional view on the line 3—3 of Figure 1, drawn to an enlarged scale.

Figure 4 is a sectional view on the line 4—4 of Figure 3.

Figure 5 is a sectional view on the line 5—5 of Figure 1, drawn to an enlarged scale.

Referring to the drawings it will be seen that the laundry drier is provided with an outer casing 1 having a door 2 hinged thereto and adapted to be swung upwardly as shown in dotted lines in Figure 1. A fan 3 draws air through the heater chamber 5, past the heater 6, and through a perforated tumbler drum 7.

The tumbler drum is adapted to receive the laundry or material to be dried and is revolutely mounted within the outer casing and provided with a plurality of channel shaped, inwardly projecting portions 8 for elevating or dropping the laundry so that the heated air may freely pass therethrough. Preferably the peripheral portion of the drum is formed of a wire screen 9, and the ends are provided with inner and outer bracing rings 10 and 11, respectively, see Figure 3.

A door 12 is provided for the tumbler drum and is hingedly joined thereto and adapted to swing inwardly into the tumbler

drum as shown in dotted lines in Figure 1. The door is preferably formed of a curved sheet of perforated metal, although obviously it may be otherwise formed without departing from the spirit of this invention.

The door carries latch bolt casings 14 adjacent each corner at the free edge of the door, see Figures 2 and 3. The latch mechanism may take any of several forms, but as one example it is shown as provided with a plunger 15 slidably carried by the casing 14 and provided with a collar 16 against which a spring 17 bears.

Preferably the door is provided with reenforcing plates 18 which surround the openings 19. Operating means such as latch levers 20 are mounted directly inwardly of the openings 19 and are provided with a pair of spaced arms 21, see Figure 4, which fit between the ends of the respective casings 14 and the collars 16. Preferably each latch lever is provided with a heel 22 which fits within a notch 23 formed in the casing 14, as shown in Figures 3 and 4.

It is apparent that whenever the lever 20 is moved either up or down, the corresponding arm 21 bears against the collar 16 and retracts the bolt 15. In other words, when the drum is in the position shown in Figure 1, it is merely necessary to press the lever 20 either downwardly or upwardly, as the lever is double acting in the sense that it has two projecting arms 21, either of which will engage the collar 16 and press the plunger 15 inwardly. When the door is in open position, that is to say, when it is swung inwardly of the drum, as shown in dotted lines in Figure 1, it is apparent that the lever 20 may be rocked outwardly towards the operator or else may be pushed inwardly away from the operator.

Each end of the drum is provided with an outer catch 24 having an opening or notch 25 adapted to receive the bolt 15, and having a cam face 26 upon which the bolt may ride when the door is swung to closed position, as shown in Figure 3. An inner catch 27 is carried by each end of the tumbler drum and is provided with a pair of ears 28 riveted to the drum. The inner catches have cam faces 29 upon which the bolts 15 ride when the door is swung inwardly, the bolts finally catching in the notches 30, see Figure 5, and holding the door in a predetermined position within the tumbler drum.

The laundry drier may be provided with a control lever 31 and guard flaps 32, which latter may be swung into the outer casing to prevent clothes from dropping into the space between the drum and outer casing when the laundry is being placed within or removed from the tumbler drum.

It will be seen that the operator may open the door of the drum by a quick pressure of his hands against the levers 20, thus simul-

taneously releasing the latch mechanism and throwing or suddenly swinging the door inwardly. The latch mechanism automatically engages the inner catches, although the door may be suddenly swung any distance inwardly of the drum, as the bolts freely ride over the cam faces 29 of the inner catches.

The door may be readily released by a quick or substantially instantaneous pressure of the operator's hands upon the levers 20. The latch mechanism automatically locks the door when it arrives at closed position.

Thus it is apparent that the operator's hands are in contact with the heated portion of the machine for only an instant while a quick push or pull is given the door, and that his hands are instantly removed while the door swings open or closed.

The door cannot have a hard or sticky action, although it may warp somewhat in use, as it will yield slightly and easily latch itself in either open or closed position.

The construction, therefore, requires only a substantially instantaneous pressure of the operator's hands, and requires, at most, only a light pressure. There is, therefore, no chance of burning the operator's hands, and no discomfort whatsoever is occasioned.

This invention has, from actual trials, been found to fulfill a long felt want and provides an easily operable, simple and highly practical construction.

Although this invention has been described in considerable detail, it is to be understood that such description is intended as illustrative rather than limiting, as the invention may be variously embodied and is to be interpreted as claimed.

I claim:

1. A laundry drier comprising an outer casing, a revolubly mounted tumbler drum located within said casing, a door carried by said drum and adapted to swing inwardly into said drum, and means for temporarily holding said door when said door is swung inwardly.

2. A laundry drier comprising an outer casing, a tumbler drum revolubly mounted within said casing, a door hingedly carried by said tumbler drum and adapted to swing into said drum to open said drum, and quickly detachable means for temporarily latching said door in either open or closed position.

3. A tumbler drum for a laundry drier comprising an approximately cylindrical perforated body portion having an opening through its peripheral wall, a door hinged to said drum and normally closing said opening, said door being adapted for inward swinging motion to give access to the interior of said drum, an inwardly positioned catch carried by said drum, and a latch carried by said door and cooperating with said catch to temporarily hold said door in its inner position.

4. A tumbler drum for a laundry drier comprising an approximately cylindrical body portion formed of openwork material and having an opening, a door normally closing said opening, said door being hinged to said body portion adjacent said opening and adapted to swing inwardly into said tumbler drum, a spring pressed manually releasable latch carried by said door and constituting means for operating said door, and a pair of catches selectively cooperating with said door to hold said door either in its closed position or in its inwardly swung position, said catches having cam faces upon which said latch is adapted to ride.
5. A laundry drier comprising an outer casing, a tumbler drum revolubly mounted within said outer casing, said tumbler drum having an inwardly swinging door, an operating handle for said door, and latching means operated by said handle and adapted to temporarily lock said door either in its inner position or in its closed position.
6. A laundry drier comprising an outer casing, a tumbler drum revolubly mounted within said outer casing and having an opening through its peripheral wall, a door hinged to said drum adjacent an edge of said opening and adapted to swing into said drum, a latch carried by said door, and a catch mounted within said drum and cooperating with said latch to temporarily hold said door in an inner position, said latch and catch permitting said door to swing inwardly to any desired extent.
7. A laundry drier comprising an outer casing, an apertured tumbler drum revolubly mounted within said casing and having an opening through its peripheral wall, a door hinged to said drum adjacent an edge of said opening and adapted to swing inwardly, said door being formed of sheet metal and having a pair of operating members adjacent its free corners, latch mechanism controlled by said operating members, and means cooperating with said latch mechanism for temporarily holding said door either in closed position or inwardly of said drum, whereby both said door and latch mechanism may be operated by a single effort on the part of the operator.
8. A laundry drier comprising an outer casing, a tumbler drum revolubly mounted within said casing and having an opening in its peripheral wall, a door hinged to said drum adjacent an edge of said opening and adapted to swing inwardly, an operating member for operating said door, and latch mechanism releasable by said operating member for automatically locking said door either in closed position or in its inner position.
9. A laundry drier comprising an outer casing, a tumbler drum revolubly mounted within said casing, a perforated sheet metal door hingedly carried by said tumbler drum and having a free edge, said door providing access to the interior of said drum and being adapted to swing inwardly into said drum, latch mechanism mounted adjacent the free edge and adjacent opposite ends of said door for automatically and temporarily locking said door either in closed position or in its inner position, and means for simultaneously operating said door and releasing said latch mechanism.
- In testimony whereof, the signature of the inventor is affixed hereto.
- JOHN P. BETHKE.

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