Nov. 26, 1957 E. G. GRINYER ET AL 2,814,191

WASHING MACHINES

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FIG. 1.

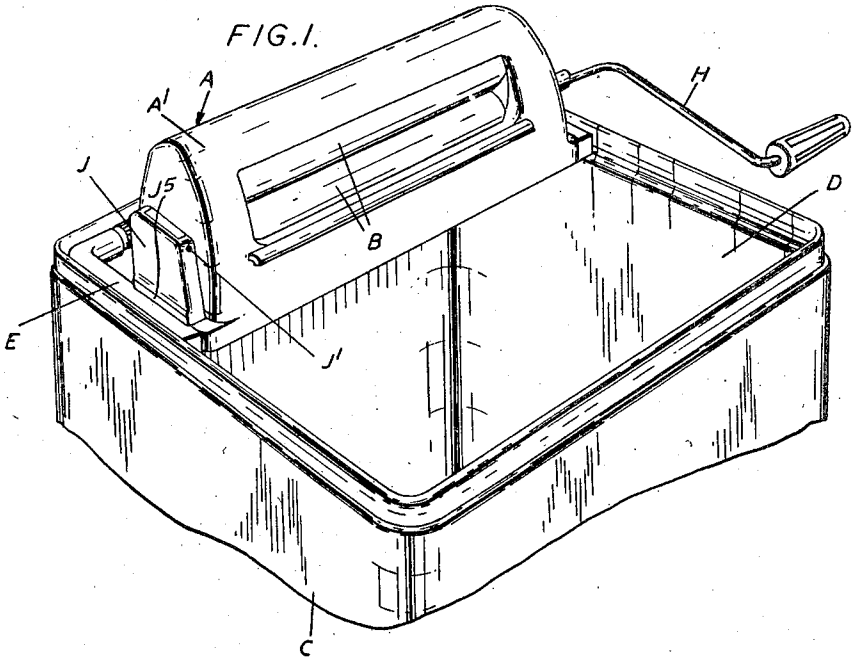
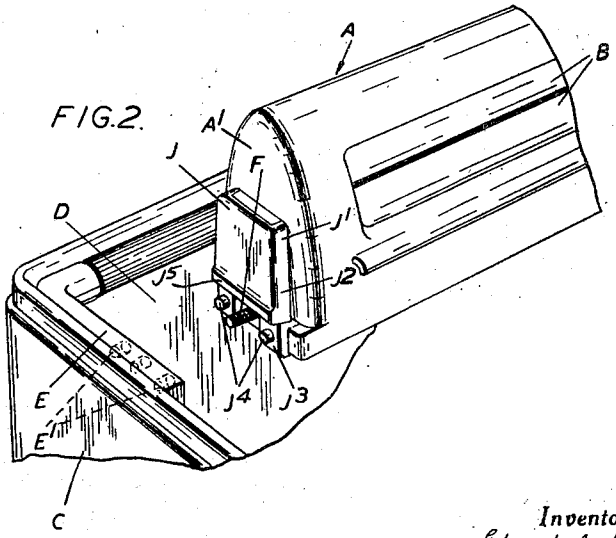


FIG. 2.



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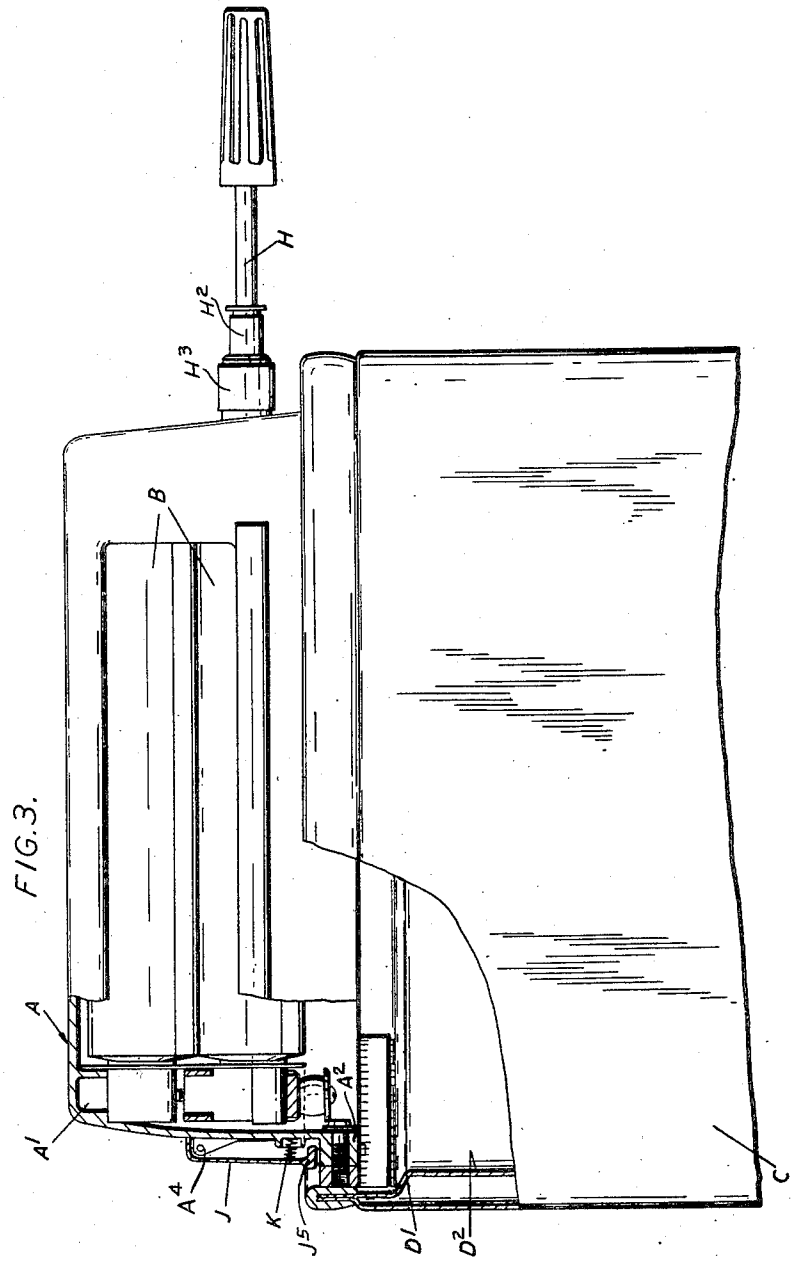


FIG. 3.

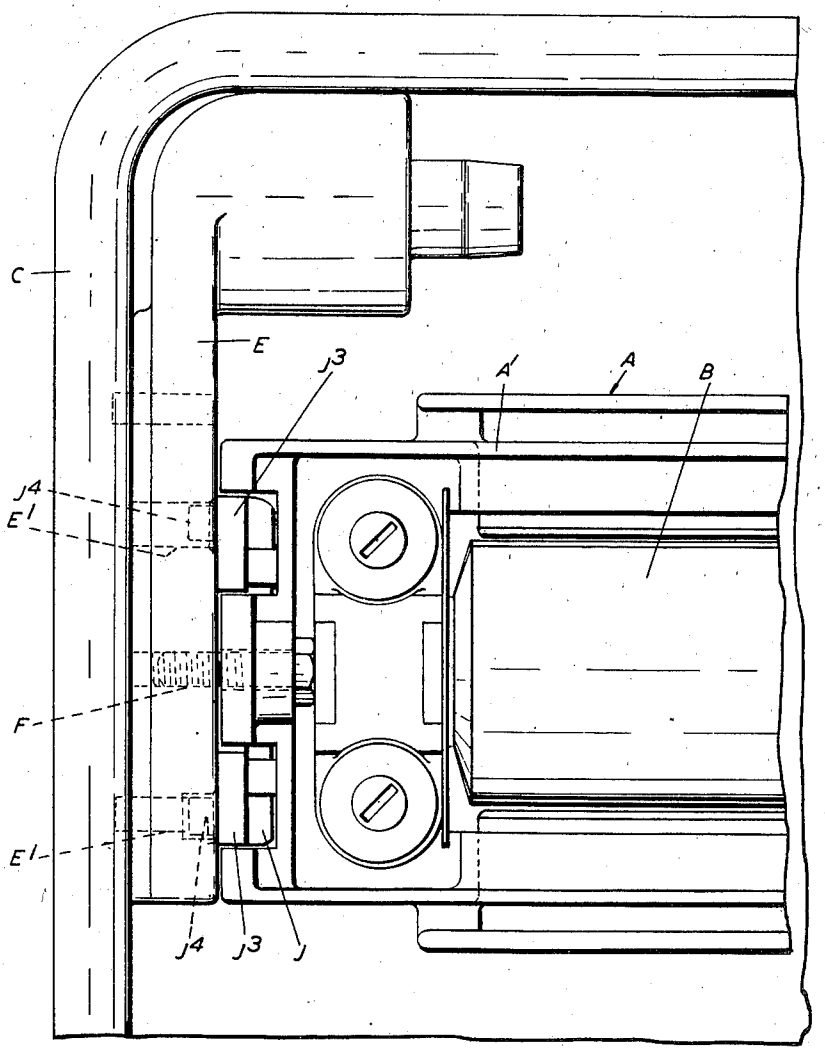
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WASHING MACHINES

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FIG. 4.



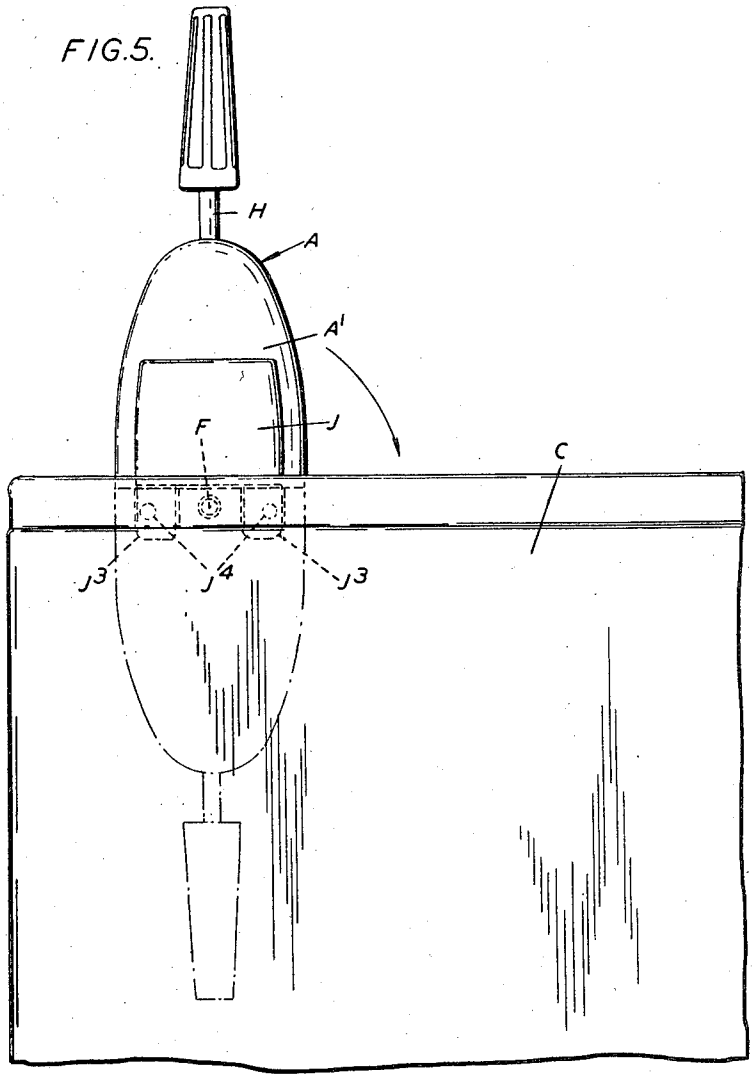
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WASHING MACHINES

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FIG.5.



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WASHING MACHINES

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7 Claims. (Cl. 68—22)

This invention relates to washing machines of the type including a container for washing liquid, and a wringer arranged to fold down to an inoperative position within the container when not in use.

According to the present invention the wringer is provided with a latch for holding it in its operative position comprising a latch member pivoted along its upper edge about a horizontal axis transverse to that about which the wringer folds, and having a surface arranged to engage an abutment fixed to the container to lock the wringer, or to be manually retracted to release it. The latch member may be arranged to lock the wringer in its inoperative position as well as in its operative position. In this case conveniently the latch member has one or more lugs extending down beyond and to one side of the wringer pivot and accessible to release the latch when the wringer is in its inoperative position.

One difficulty that is liable to be experienced with a latch for a folding wringer on a washing machine is that soap may accumulate in and around it so that anything in the form of a bolt is liable to become clogged and difficult to operate. Preferably the latch member in accordance with the present invention has a readily detachable pivot, for example the pivot may be constituted by a pair of grub screws inserted coaxially from opposite ends through lugs or flanges at the edges of the latching member and projecting into a part of the wringer body. The latch member can then be readily detached to enable any accumulated soap to be removed from behind it in a simple servicing operation.

The invention may be carried into practice in various ways but one specific embodiment will be described by way of example with reference to the accompanying drawings, in which:

Figure 1 is a perspective view of the upper part of a washing machine provided with a folding wringer having a latch in accordance with the invention,

Figure 2 is a similar fragmentary view showing the wringer separated from the washing machine so as to reveal the operative part of the latch,

Figure 3 is a front elevation showing the latch and neighbouring parts in section,

Figure 4 is a plan view of the latch and associated parts showing the wringer in its folded position, and

Figure 5 is a side elevation showing the wringer in its operative position in full lines and in its folded position in chain lines.

The wringer A comprises a body A^1 formed in a single casting to accommodate a pair of parallel wringing rollers B, and is mounted in the rear part of the open top of a generally rectangular washing machine comprising an outer casing C and a tub or container D for washing liquid. The tub has a sloping shoulder D^1 and within its upper edge are secured a pair of mounting blocks E of such thickness as slightly to overhang the lower part D^2 of the inner surface of the tub. The wringer casting is provided with downwardly projecting lugs A^2 through which pivot bolts F extend into the mounting blocks so that the

wringer can pivot about a horizontal transverse axis to fold forwardly and downwardly into the container. The latter can then be covered by a substantially flat flanged lid.

One end of the shaft of the lower roller is extended through the body of the wringer and a cranked handle H is secured to it by means of a transverse hinge. A sliding sleeve H^2 provided with a rubber hand grip and bumper sleeve H^3 encircles the handle shaft and is slid longitudinally to the left in Figure 3 to cover the hinge and prevent folding of the handle when it is in its operative position, or can be slid to the right so as to leave the handle free to pivot.

The left hand end of the wringer, as viewed in Figures 1 to 3, is provided with a latch to lock the wringer in its operative position and in its folded position. The latch comprises a latch member J of generally rectangular form lying partially in a correspondingly shaped recess in the end of the wringer body. The latch member is pivoted about its upper edge by means of a pair of screws J^1 each of which passes through a flange J^2 extending down the vertical edge of the latch member, into a rib A^4 projecting from the end of the wringer body. A compression spring K is interposed between the opposed walls of the latch member and the wringer body so as to tend to rock the latch member away from the wringer.

The latch member is formed, near opposite ends of its lower edge, with a pair of downwardly projecting lugs J^3 each having a projecting boss J^4 to enter a mating hole E^1 in the adjacent mounting block E which is rigidly secured to the container. The bosses are of slightly tapered form so as to take up any play. The line joining the centres of the bosses J^4 passes through the centre of the pivot bolt F so that the arrangement enables the wringer to be latched in its folded position, for example to hold it firm in transport, as well as in its operative position.

To release the latch from its operative position shown in Figure 1 it is only necessary to press in the latching member and swing the wringer down into the container. To release the latch from the folded position access can be had to the ends of the lugs J^3 which project slightly above of the bottom of the wringer and are therefore accessible as indicated in Figure 4.

The latch member J also has along its lower edge a rib J^5 affording a shoulder which in the operative position of Figure 1 overlies the upper surface of the mounting block. The vertical face of the rib is in the same plane as the ends of the bosses J^4 and as the wringer is being folded it bears against the vertical face of the mounting block to hold the latch member back against the action of the spring K. Thus the latch need not be held back manually as the wringer is being swung up or down but will snap into engagement as the wringer reaches its operative or inoperative position.

The latch member is finished in the same style as the remainder of the wringer and washing machine, giving a smooth and attractive appearance.

What we claim as our invention and desire to secure by Letters Patent is:

1. In a washing machine having a container for washing liquid, a wringer, and means pivotally mounting the opposite ends of the wringer on the container for swinging movement between a storage position within the container and an operating position above the container, the combination of a latching mechanism for releasably securing the wringer in operating position comprising a stop fixed to the container provided with a bore facing inwardly of the container adjacent one end of the wringer and offset from and extending parallel to the pivotal axis thereof, a latch member mounted on said one end of the wringer for movement toward and away from said stop,

means biasing the latch member toward the stop, and a projection on the latch member engageable within the bore when the wringer is in the operative position to maintain said wringer in operative position against the forces tending to rotate said wringer about its pivotal axis upon passing clothes through the wringer.

2. In a washing machine having a container for washing liquid, a wringer, and means pivotally mounting the opposite ends of the wringer on the container for swinging movement between a storage position within the container and an operating position above the container, the combination of a latching mechanism for releasably securing the wringer in operating position comprising a stop fixed to the container and provided with bores facing inwardly of the container adjacent one end of the wringer and offset equal distances on opposite sides of the pivotal axis of the wringer, a latch member movably mounted on said one end of the wringer for movement toward and away from the stop, means biasing said latch member toward the stop, a projection on the latch engageable in one of said bores in the operative position of the wringer and in the other of said bores in the storage position thereof.

3. In a washing machine having a container for washing liquid, a wringer having a pair of parallel wringer rolls, and means mounting the wringer on the container for pivotal movement on an axis parallel to the axis of the wringer rolls between a storage position in which the wringer lies within the container and an operating position in which the wringer projects above the container, the combination of a latching mechanism comprising a latching abutment on the container adjacent one end of the wringer, and having a bore therein facing inwardly of the container adjacent one end of the wringer and offset from and extending parallel to the pivotal axis of the wringer, a latch member mounted on said one end of the wringer having a projecting member adapted to engage in said bore to latch the wringer in the operating position thereof, means mounting said latch member on said one end of the wringer for pivotal movement about an axis transverse to the axes of the wringer rolls, means biasing said latch member toward said abutment to automatically engage said projection in said bore when said wringer is moved to its operating position, said latch member having an actuating portion for moving the same against said biasing means, said actuating portion extending above the container at said one end of the wringer when the wringer is latched in operating position and forming a cover for concealing the mounting means and the biasing means.

4. In a washing machine having a container for washing liquid, a wringer having a pair of parallel wringer rolls, a pair of mounting plates on the container positioned in facing relation to each other on opposite walls of the container adjacent the top thereof and pivoting means mounting the wringer on the mounting plates for swinging movement between an upright operating position above the container and a storage position within the container, the combination of a latching mechanism comprising a pair of bores in one of said mounting plates facing inwardly of the container equidistantly disposed one on either side of said pivoting means, a latch member pivotally mounted on one end of the wringer for movement about an axis transverse to the swinging axis of the wringer

having a plate-like actuating portion lying along an end wall of the wringer in the operative position of the wringer and projecting portions adapted to engage in the bores to latch the wringer in upright position and in storage position, and means biasing said latch member to latching position.

5. Apparatus according to claim 4 in which said plate portion has a projecting shoulder overlying said one mounting plate to protect the latching bore and projecting portion when the wringer is latched in operative position and cooperating with said one mounting plate to maintain the projecting portion separated from the bore when the wringer is in an intermediate position between its upright and storage positions.

6. In a washing machine having a container for washing liquid, a wringer having a pair of parallel wringer rolls, a pair of mounting plates on the container positioned in facing relation to each other on opposite walls of the container adjacent the top thereof and pivoting means mounting the wringer on the mounting plates for swinging movement between an upright operating position above the container and a storage position within the container, the combination of a latching mechanism comprising two bores in one of said mounting plates facing inwardly of the container and spaced equidistantly on opposite sides of the axis about which the wringer pivots to and from operating position, a latch member pivotally mounted on one end of the wringer for movement about an axis transverse to the swinging axis of the wringer having a plate-like actuating portion lying along an end wall of the wringer in the operative position of the wringer and a projecting portion positioned to engage in one of the bores in the operating position of the wringer and the other bore in the storage position of the wringer, means biasing said latch member to latching position, and said latch member having an actuating portion projecting from the plate-like portion thereof below the wringer for operating the latch member to release the wringer from the storage position thereof.

7. In a washing machine having a container for washing liquid, a wringer, and means pivotally mounting the opposite ends of the wringer on the container for movement between a storage position within the container and an operating position above the container, the combination of a latching mechanism for releasably securing the wringer in either of its positions and comprising a pair of bores in said container equidistantly disposed one on either side of said pivoting means, a latch member pivotally mounted on said wringer for movement about an axis transverse to the pivotal axis of said wringer and having a pair of projections adapted to engage said bores to latch said wringer when moved to either its said storage or operating positions.

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