Jan. 16, 1951 M. I. GOLDENBERG 2,538,095

FOLDABLE CLOTHES-WASHING MACHINE

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FIG. 1

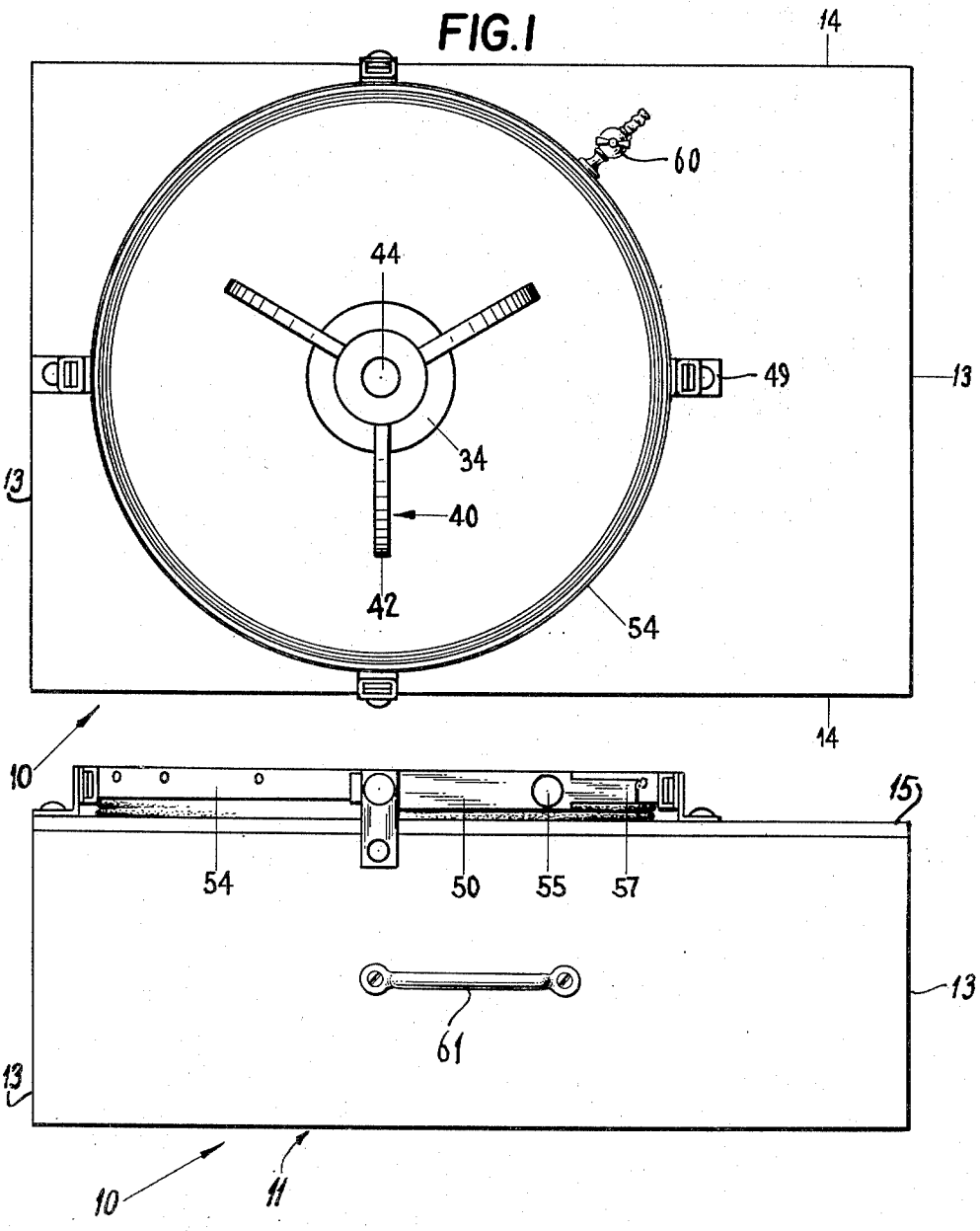


FIG. 2

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FIG.3

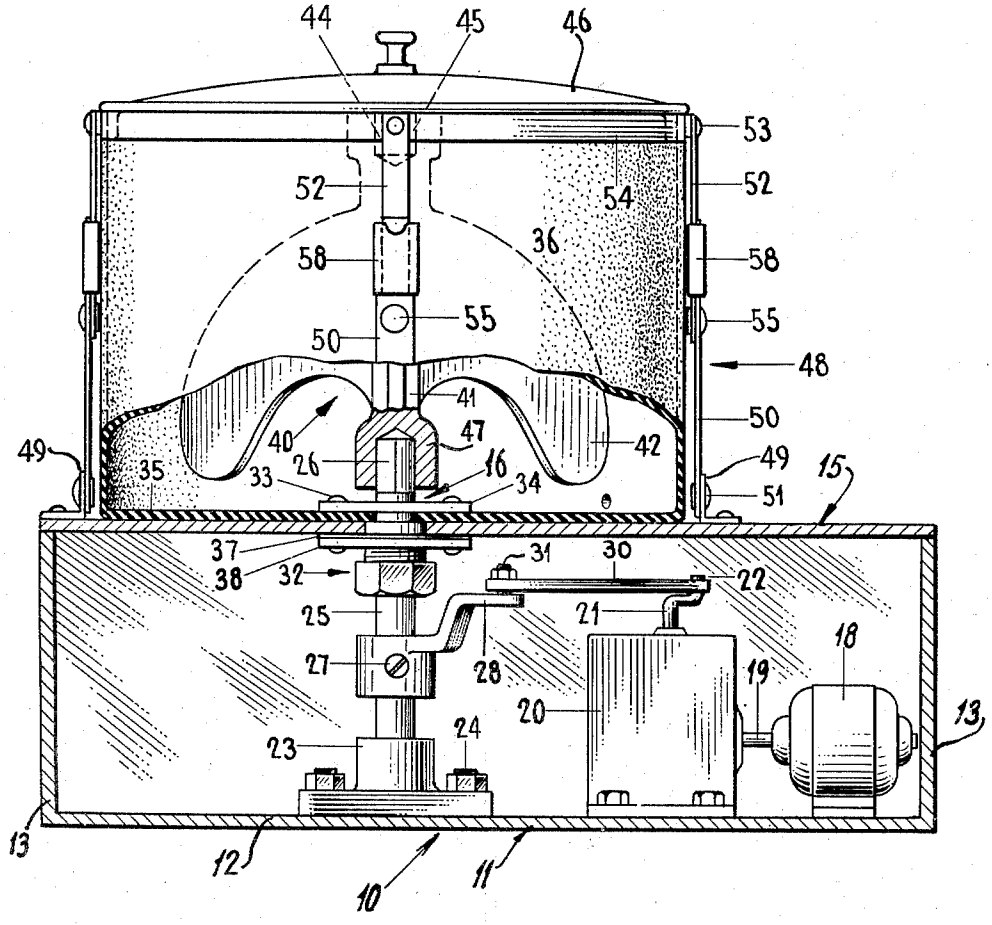
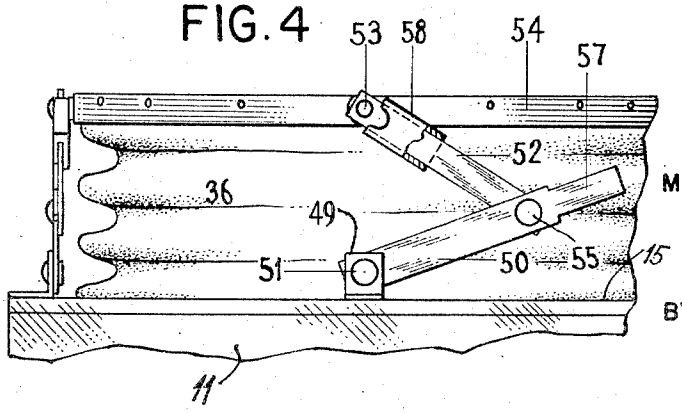


FIG.4



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FOLDABLE CLOTHES-WASHING MACHINE

Meyer I. Goldenberg, Brooklyn, N. Y.

Application November 20, 1947, Serial No. 787,132

2 Claims. (Cl. 68—133)

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This invention relates to a washing machine having a foldable clothes washing container which may be collapsed to occupy a small fraction of its height in washing position, and so that while of large washing capacity, the machine may be compactly folded into much smaller size and stored in a closet or other convenient place when not in use.

Another object of this invention is to provide a foldable frame secured to the rim of the collapsible container, the frame comprising a plurality of sets of two-member foldable bars which are pivoted together between their ends, one of the bars of each set having an extension, and to provide tubular members for releasably securing the extensions and the other bars in upright position for supporting the container in upright washing position.

With the above and other objects in view, the invention will be hereinafter more particularly described, and the combination and arrangement of parts will be shown in the acompanying drawings and pointed out in the claims which form part of this specification.

Reference will now be had to the drawings, wherein like numerals of reference designate corresponding parts throughout the several views, in which:

Figure 1 is a plan view of the washing machine, in upright washing position with the cover removed.

Figure 2 is a side elevation of the machine shown in Figure 1, with the container in folded position.

Figure 3 is a side elevation of the machine, the container being in extended or operating position, a cover being mounted on the container.

Figure 4 is a side elevation of a fragmentary portion of the housing, and showing the washing container in partially collapsed position.

In the illustrated embodiment of the invention, the numeral 10 indicates a portable washing machine, comprising a motor housing 11 of box-like form and having a base plate 12, upright sides 13, 14 and a cover plate 15 having an aperture 16.

Mounted in the housing 11 is a motor 18 having a shaft 19 connected to a speed reduction gear 20. The reduction gear 20 has a shaft 21 which terminates in an eccentric end portion 22.

A bearing 23 is secured to the base 12 by bolts 24 and supports a vertical drive shaft 25. The upper end 26 of the drive shaft 25 projects sufficiently above the cover plate 15 of the housing 11 to form a stub shaft which is of square or other non-circular cross-section.

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Secured to the drive shaft 25 by a screw 27 is a crank arm 28 which extends at a right angle to the shaft. A connecting bar or link 30 has one end in engagement with the eccentric end 22 of the motor shaft 21 and the other end in engagement with a pin 31 extending from the crank arm 28.

The drive shaft 25 passes through a packing box 32, well known in the art, and which is secured by rivets 33 passing through a disk 34, through the lower portion 35 of a flexible and collapsible container 36, through a gasket 37 and through a flange 38 which is integral with the packing box 32.

It will be seen that the lower portion 35 of the collapsible washing container 36 is compressed between the disk 34 and the flange 38 so as to seal the aperture 16 in the cover plate 15. The shaft 25 passes through the packing box 32 which prevents leakage around the lower portion of the shaft into the housing 11.

Mounted for rotation in the container 36 is an agitator 40 comprising a hub 41 and blades 42. The upper end of the hub 41 contains a cylindrical opening 44 to receive a bearing pin 45 in the central portion of a cover 46. The lower end of the hub 41 terminates in an enlarged boss 47 in which is a non-circular opening adapted to receive the non-circular bearing end 26 of the drive shaft 25.

Surrounding the collapsible container 36 is a collapsible metal frame 48 which is foldable in height and secured by brackets 49 to the cover 15. The foldable metal frame 48 comprises pairs of pivoted and foldable link members which are erectable to extend the full height of the container 36 and connected in alined unitary relation for supporting the container in upright washing position.

Each pair of foldable frame members consists of a lower link member 50 which is pivotally connected to a bracket 49 by a pivot 51, and an upper link member 52 which is pivotally connected by a pivot 53 to an annular metallic rim member 54 which maintains the rim portion of the container in open position. The links 50 and 52 are pivotally connected by a pivot 55, approximately medially of the height of the container.

In Figure 4, the container 36 is shown in partially collapsed position. In this position, it will be seen that the lower member 50 of each pair of pivotal frame members terminates in an extension 57 which is smaller in size than the body of the member. It will also be seen that there is a tubular connecting member 58 slidably mounted on the upper link member 52 and that

in upright position the tubular connecting member 58 is slid down so as to engage the extension 57, whereby the upper and the lower members are retained rigidly in upright position for supporting the flexible container in upright or washing position.

In Figure 2, the pairs of foldable members 50, 52, are shown in completely collapsed position and the flexible container 36 is reduced in size to a very small fraction of its service height.

It will thus be seen that there has been provided a portable washing machine comprising a box-like motor housing 11, and a flexible and collapsible container 36 in which the washing takes place when erected and maintained in upright position by the foldable members 50, 52. It will also be noted that the agitator 40 may be removed from the container and that when the container is in collapsed position the entire washing machine takes up the room substantially that of the housing.

The agitator may oscillate in an arc of any desired amplitude to secure an efficient washing operation.

As shown in Figure 1, an outlet valve 60 is provided in the washing container 36 to drain the waste water therefrom.

It is to be noted that in collapsed position, the agitator 40 of the cover 46, may be placed inside the housing 13. For this purpose, the housing 13 is made of a size which will permit placing these parts therein. The user may then take hold of a handle 61 on the housing 13 and carry the entire washing machine 10 from place of use to place of storage with ease.

In accordance with the patent statutes I have described and illustrated the preferred embodiment of my invention, but it will be understood that various changes and modifications can be made therein without departing from the spirit of the invention as defined by the appended claims.

I claim:

1. In a foldable washing machine comprising a housing, an agitator drive mechanism in said housing, said drive mechanism having a stub end portion of a drive shaft projecting therefrom, an agitator having a bearing hub at its upper end and a bearing hub at its lower end, said lower hub being attachable to said drive shaft end, a foldable metal frame comprising pairs of foldable members and being extensible and contractible in height, said frame comprising brackets secured to said housing, a collapsible container secured to said housing and adapted to be opened to the height of said frame when in extended position, said container having an annular metallic rim secured around the outer upper portion thereof for maintaining said upper portion open, each pair of said foldable frame members having upper members pivotally connected to said annular rim member and lower members pivotally connected to said brackets, said container having an aperture in its base for said agitator shaft, said agitator being detachable from said stub shaft at a point close to and above said base, said frame being erectable to extend the full height of said container, said frame being secured to the upper portion of said container and when extended being adapted to support said container and said agitator in upright washing position, a removable cover fitting in the upper portion of said container and having a bearing pin fitting in said upper bearing hub, and a packing box engaging said shaft for sealing the aperture in the lower surface of said container to prevent leakage around said agitator shaft while rotatable in said container.

2. In a foldable washing machine comprising a housing, an agitator drive mechanism in said housing, said drive mechanism having a stub end portion of a drive shaft projecting therefrom and a collapsible washing container having a base secured to said housing and having said stub-end portion of said drive shaft extending thereinto said container having an annular rim secured to the upper portion thereof for maintaining said upper portion open, an agitator having supporting bearings at its upper and lower ends, said lower bearing being attachable to said stub end of said drive shaft, said agitator being detachable from said stub shaft at a point close to and above said base, a foldable metal frame comprising pairs of foldable members each having a bracket secured to said housing, each pair of said foldable members having upper members pivotally connected to said annular rim and lower members pivotally connected to said brackets, said frame being erectable to extend said container to its full height, said frame being secured to the upper portion of said container and when extended being adapted to support said container in upright washing position, a cover in engagement with the upper portion of said container and having means engaging and supporting the upper end of said agitator, said container having an aperture in its base and packing means engaging said shaft for sealing said aperture to prevent leakage of washing fluid into said motor housing.

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