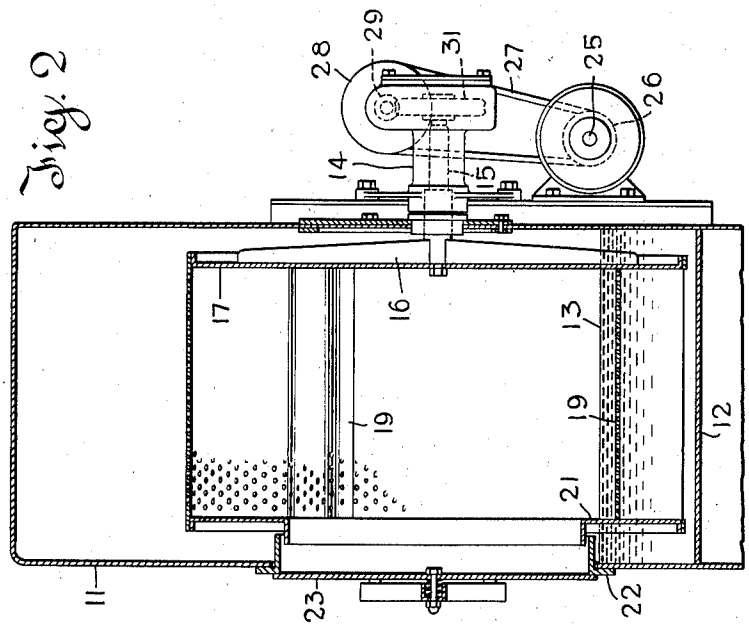
April 28, 1942. W. J. FRANCEY 2,281,031

DRAIN PLATFORM FOR WASHING MACHINES

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Fig. 2



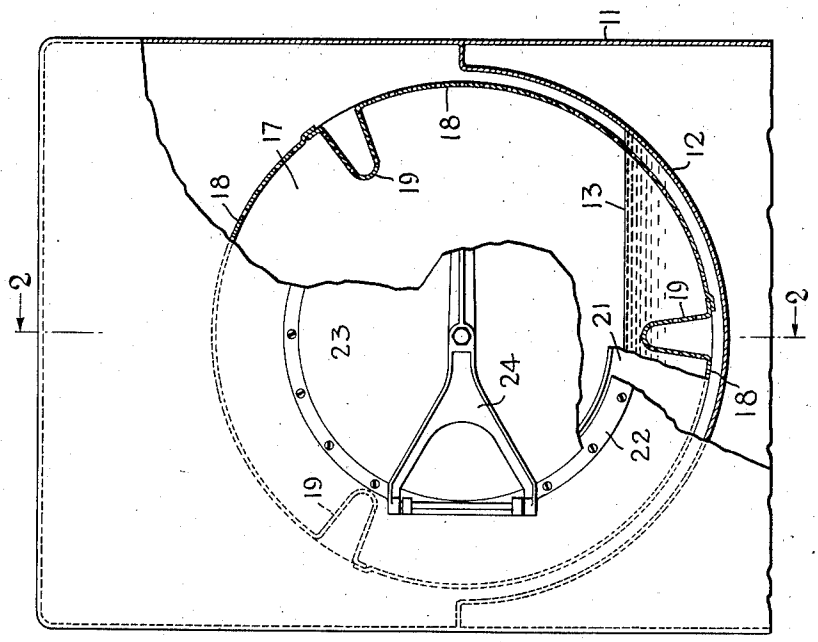


Fig. 1

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Fig. 3

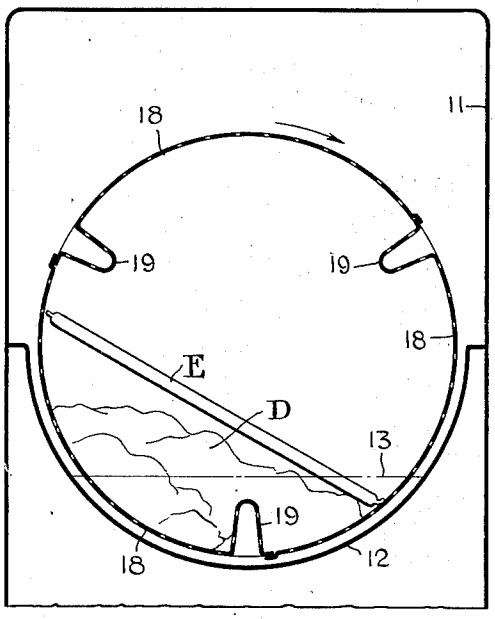


Fig. 4

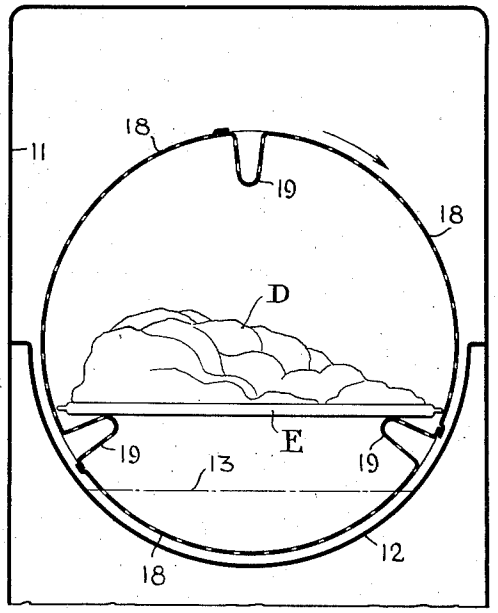
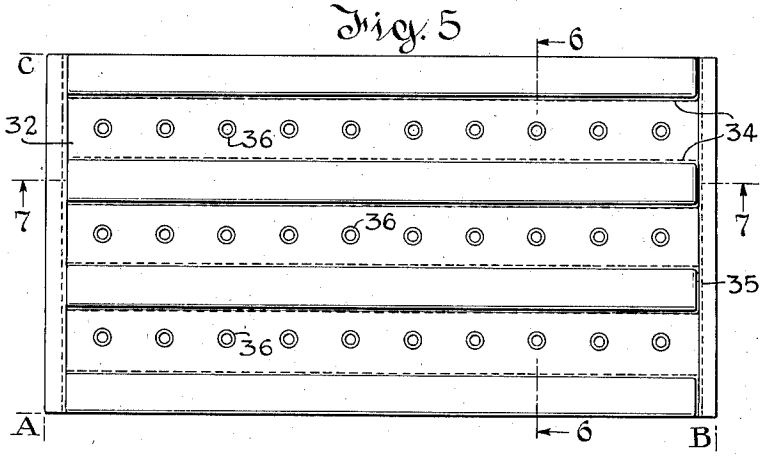


Fig. 5



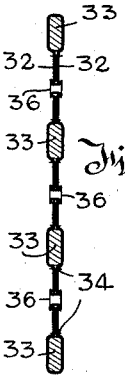


Fig. 6

Fig. 7

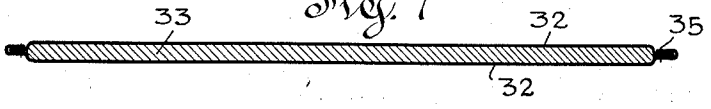
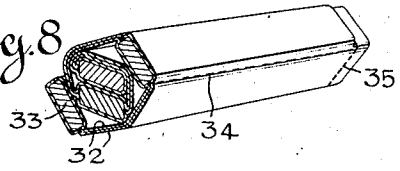


Fig. 8



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Patented Apr. 28, 1942

2,281,031

UNITED STATES PATENT OFFICE

2,281,031

DRAIN PLATFORM FOR WASHING MACHINES

William John Francey, Syracuse, N. Y., assignor to United States Hoffman Machinery Corporation, New York, N. Y., a corporation of Delaware

Application March 15, 1940, Serial No. 324,170

6 Claims. (Cl. 68—210)

This invention relates to washing machines, and particularly to washing machines of the cylinder type used in the dry cleaning industry to treat fabrics with a volatile solvent.

The purpose of the invention is to provide a draining shelf which may be temporarily inserted in the washer drum over the fabrics, after which the drum is rotated approximately 180° so that the drain board underlies the fabrics and sustains them at a level above the surface of the volatile solvent in the washing machine. This permits the solvent to drain away and relieves the operator of the necessity, heretofore encountered, of either completely draining the solvent from the washing machine, or else periodically immersing his hands in the solvent.

The invention contemplates a collapsible platform so arranged that it may be sustained by the cylinder walls or by certain ribs or tumbler bars forming part of the washing cylinder. Particular details of the washing machine are not necessarily controlling, and the invention will be described as used with a washing machine of the open ended cylinder type, which in its broader aspect is the invention of another and is not herein claimed for that reason.

The preferred embodiment of the invention as so used will now be described in connection with the accompanying drawings, in which:

Figure 1 is a front elevation of a washing machine, with the casing partly broken away to show the cylinder, said cylinder being shown partially in section.

Fig. 2 is a view, chiefly in section, on the line 2—2 of Fig. 1.

Fig. 3 is a diagrammatic section showing the position assumed by the drain platform when initially inserted.

Fig. 4 is a similar view, showing the position assumed during the draining operation after the cylinder has been rotated approximately 180°.

Fig. 5 is a face view of the platform.

Fig. 6 is a section on the line 6—6 of Fig. 5.

Fig. 7 is a section on the line 7—7 of Fig. 5; and

Fig. 8 is a perspective view of the platform rolled for insertion or removal. In this view, the platform is shown sectioned on a plane intermediate its ends, for the purpose of illustrating the construction.

Referring first to Figs. 1 and 2, the general construction of a washing machine with which the invention may be used, will first be described.

11 represents the main casing or housing of the washing machine. 12 represents a semi-cylindrical partition extending across the casing and used to confine a body of cleaning fluid (volatile solvent) whose upper level is indicated at 13. On the back of the housing 11 is mounted a bearing sleeve 14 in which is journaled a shaft 15, which overhangs the bearing within the housing 11 and is there provided with a spider comprising radial arms 16, to which is attached a flanged disc 17 forming the rear circular face of the washing cylinder.

The peripheral surface of the washing cylinder is made up of three perforated cylindrical sheets 18, each of which adjacent one end is bent to form a reentrant angle affording a rib or flight 19 within the cylinder. This flight 19 is perforated as is the periphery of the cylinder. The front side of the cylinder is closed by an annular flanged plate 21, which is concentric with an access opening in the front of the casing 11. This access opening is surrounded and defined by a flanged ring 22 which is wholly above the level 13 of the liquid and which overlaps the flange on the ring 22 but is not in contact with the same. In this way, a guard is provided so that fabrics may be inserted into the cylinder without danger of their escaping from the cylinder.

The access opening is closed by a door 23 which is mounted on a hinged yoke 24, the yoke being held in door-closing position by any suitable means (not here shown in detail). The cylinder is rotated from a drive shaft 25 through a pulley 26, belt 27, pulley 28, worm 29, and worm wheel 31, the worm wheel being fixed on the outer end of the shaft 15. The housing 14, above described, encloses the worm and may retain a lubricant bath for the worm and wheel. Thus, the washing machine comprises a drum which may be rotated at moderate speed. The drum dips into the bath of solvent, and the flights 19 operate to lift and drop the fabrics which are inserted in the drum for treatment.

Referring to Figs. 5 to 8, the collapsible platform, which is not inserted in the drum until the cleaning operation is complete, comprises two plies 32 of fabric, such as heavy canvas, which are stitched to form pockets for longitudinal slats 33, the lines of stitches being indicated at 34, and also stitched across the ends as indicated at 35 to retain the slats in the pockets. In order to permit drainage, rows of tubular rivets 36 are inserted through the two plies of fabric between pairs of slats. This produces a device which is rigid against flexure on lines

transverse to its length, and which may yet be rolled in a direction transverse to its length.

The over-all length, i. e., the dimension A—B is somewhat less than the internal diameter of the washing machine drum, and the over-all width, i. e., the dimension A—C is approximately equal to and preferably not greater than the axial dimension of the drum.

After the washing operation is complete, the rotation of the drum is stopped and the door **23** is opened. The collapsible platform is rolled up, as indicated in Fig. 8, and inserted through the door. At this time, the fabrics in the washing machine drum occupy the position indicated at D in Fig. 3. After insertion through the door into the drum, the platform is unrolled and laid over the fabrics.

The general position of the platform is shown in Fig. 3, in which the edge view of the platform as a whole is indicated by the reference letter E. The shaft **25** is then driven until the drum has been rotated approximately 180°, the precise angle through which the drum is turned being dependent upon the position in which the drum stopped prior to the insertion of the platform. The effort is, however, to cause the drum to assume the position shown in Fig. 4, in which the fabrics rest on the platform E and the platform E is approximately horizontal and rests at its ends on two of the flights **19**. The effect is to permit the volatile solvent to drain away. In some cases, it may be desirable to close the door **23** and allow time for drainage to occur, but this is a matter of manipulation to be determined according to the particular fabrics being treated and the particular solvent being used.

After the fabrics have drained comparatively free of solvent, they may be removed through the doorway, whereupon the platform is rolled up and also removed. This conditions the machine for the next washing operation. The insertable platform is not expensive to construct, is durable, and may readily be inserted and removed. It may be constructed of materials which are harmless to the fabrics being treated. It relieves the operator of the necessity of plunging his hands into the solvent, or, in the alternative, of draining the solvent out of the machine completely in order to permit the solvent to drain from the fabrics in the drum. The latter operation slows up procedure very seriously, while frequent plunging of the hands into the solvent is considered to be injurious to the operator.

While one type of washing machine has been described in some detail, this is intended merely for purposes of illustration and it should be understood that the collapsible platform may be used with various types of cylinder. It is particularly desirable where the loading opening, wherever located, is too small to receive a rigid one-piece platform. The platform is necessarily dimensioned with regard to the form and dimensions of the washing cylinder.

While the preferred embodiment has been described in considerable detail, this should be interpreted as illustrative and not limiting, the scope of the invention being defined in the claims.

What is claimed is:

1. The combination of a washing machine, comprising a cylinder mounted to rotate on a substantially horizontal axis and to dip into a bath of cleaning fluid, said cylinder having an axial port of less diameter than the cylinder through which fabrics to be treated are inserted and removed; and a drain platform of approximately rectangular form, said platform including means for collapsing the same in one transverse direction to permit its insertion through said port, and in the other transverse direction being rigid and so dimensioned as to be sustained at its ends by portions of said drum in chordal relation to the drum, whereby the platform may be inserted above the fabrics and then be transposed to a sustaining position beneath the fabrics and above the bottom of the drum as an incident to the partial rotation of the drum.

2. The combination defined in claim 1, in which said draining platform comprises a member substantially rigid in one transverse direction and flexible in a direction 90° thereto, whereby the platform may be bent or curled upon itself to permit insertion through said port.

3. The combination defined in claim 1, in which said draining platform is constructed of a woven fabric with spaced stiffeners extending in one direction, whereby the platform may be rolled to permit insertion through said port and the positioning of the stiffeners in a direction chordal to the cylinder.

4. The combination with a washing machine of the cylinder type in which the lower portion of the cylinder dips into a bath of cleaning fluid, of a removable unitary partition rigid in one direction and flexible in a direction transverse thereto, said partition being insertable in a rolled or flexed condition into said cylinder above the fabrics being treated therein when the cylinder is at rest, said partition being perforate and being so sustained by engagement with the cylinder as to support said fabrics above the level of liquid in the machine when the cylinder is rotated and stopped approximately 180° from the position of insertion.

5. The combination of a washing machine, comprising a cylinder mounted to rotate on a substantially horizontal axis and to dip into a bath of cleaning fluid, said cylinder having a port through which fabrics to be treated are inserted and removed, and said cylinder further being provided with a series of internal flights around its periphery and approximately parallel with its axis; and a draining platform flexible in one direction and rigid in a direction at right angles thereto, said platform being insertable through said port when the platform is flexed, the platform being dimensioned to be sustained at its ends by certain of said flights in chordal relation to the drum, whereby the platform may be inserted above the fabrics and then be transposed to a sustaining position beneath the fabrics as an incident to the partial rotation of the drum.

6. A draining partition for use in and removable bodily from the cylinder of a horizontal cylinder washing machine of the type in which the cylinder dips into a bath of washing fluid, said partition comprising a plurality of parallel slats whose length is slightly less than the internal diameter of the cylinder and a connecting web of reticulated fabric connected with said slats, the dimension of said web in a direction transverse to said slats approximating the internal axial dimension of the cylinder, the material of the web being such and the parts being so arranged that the platform may be rolled for insertion into the cylinder and when inserted may be unrolled with its slats in a chordal relation to the cylinder above the fabrics treated therein.

WILLIAM JOHN FRANCEY.