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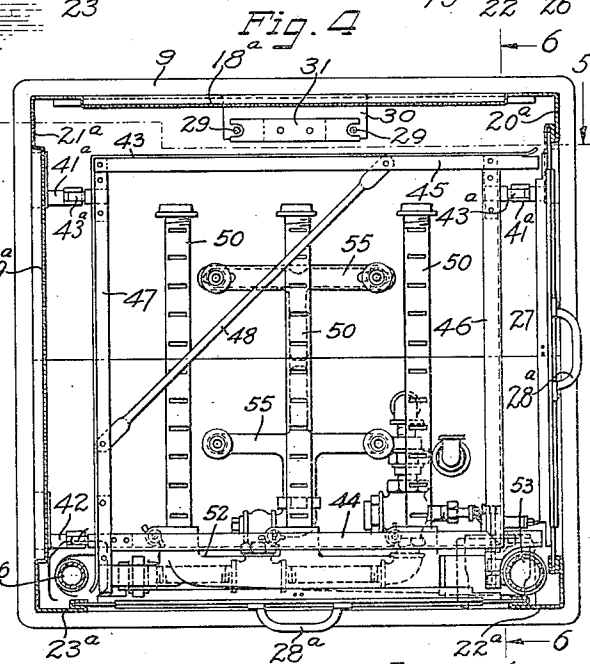
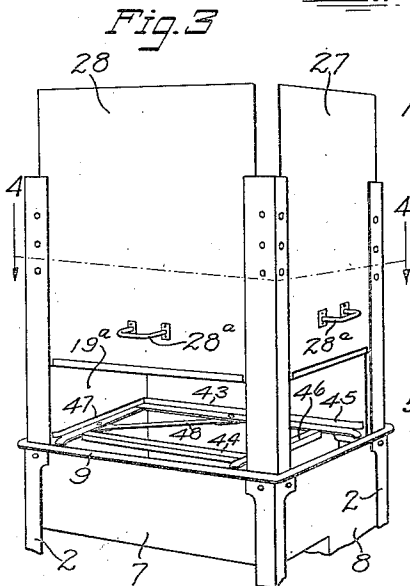
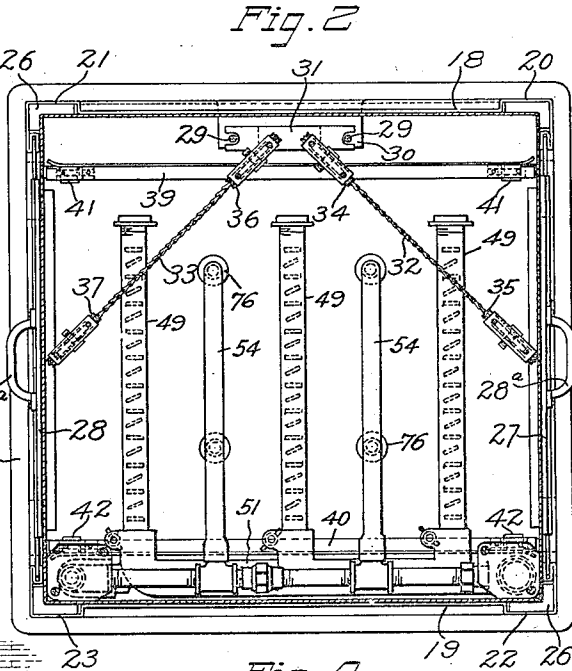
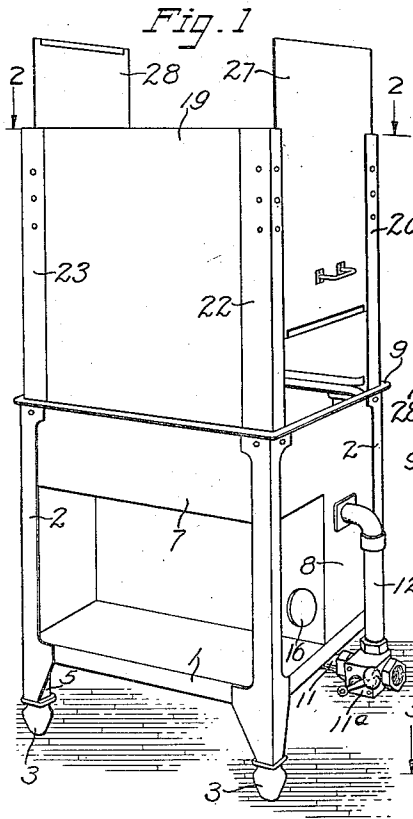
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2,104,938

FRAMEWORK AND CASING FOR DISHWASHING MACHINES

Original Filed March 18, 1932

3 Sheets-Sheet 1



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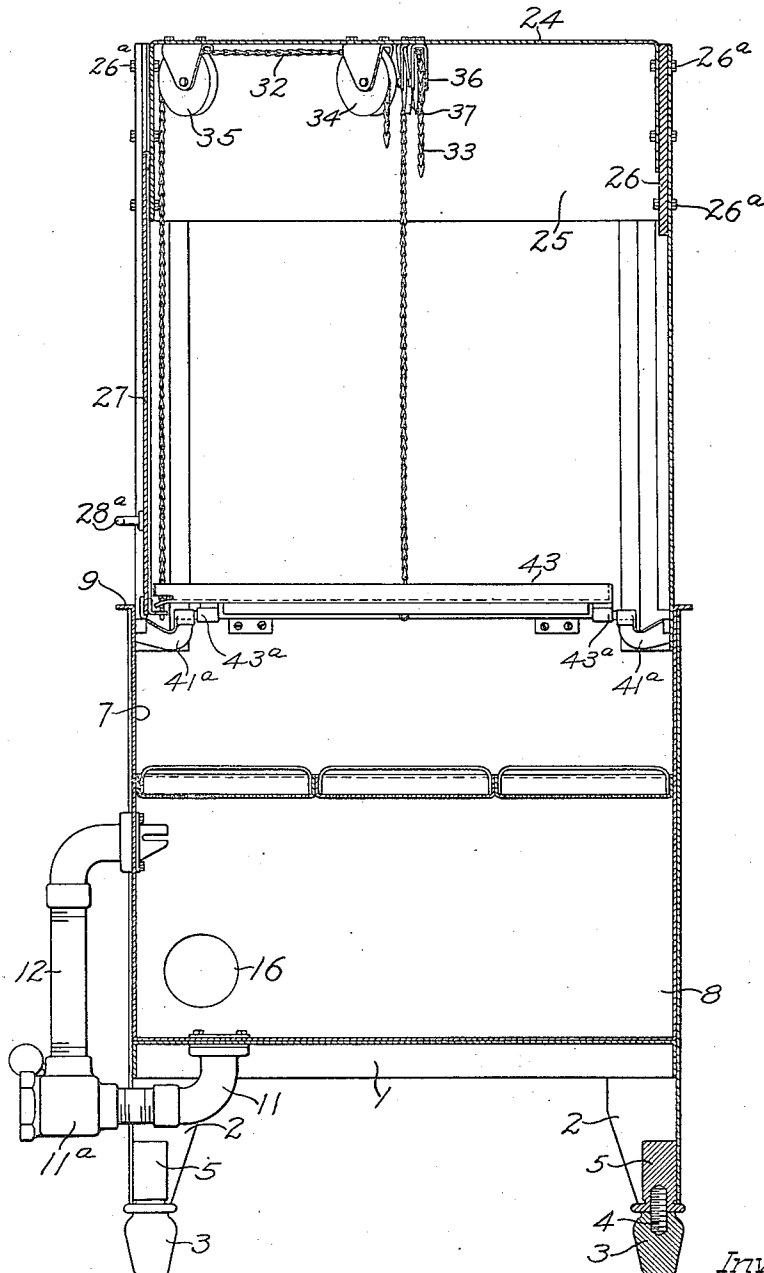
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Fig. 5



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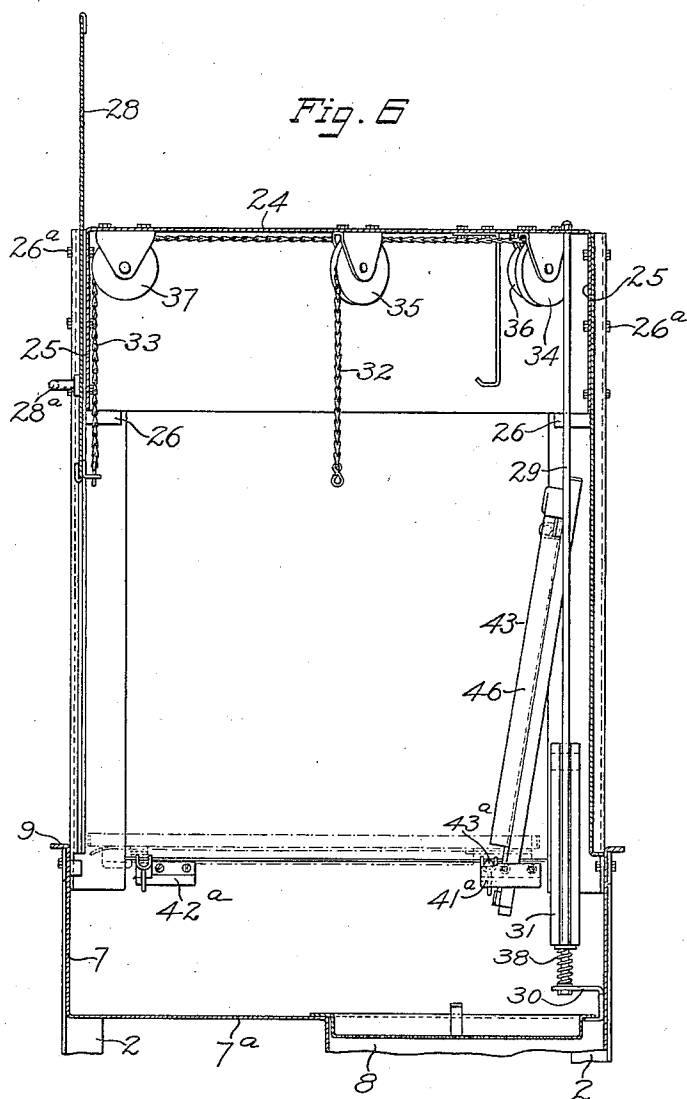
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FRAMEWORK AND CASING FOR DISHWASHING MACHINES

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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

2,104,938

FRAMEWORK AND CASING FOR DISHWASHING MACHINES

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Division of application Serial No. 599,747, March 18, 1932, now Patent No. 2,051,233, dated August 18, 1936. Continuation of application Serial No. 660,781, March 15, 1933. This application April 19, 1935, Serial No. 17,306

7 Claims. (Cl. 220—83)

The invention relates particularly to framework and casing for a dishwashing machine of the type wherein the dishes to be washed are first placed in a movable rack, which rack is then held in a stationary position in the casing while the dishes are being treated or acted upon by the washing liquids.

One object of the invention is to provide a simple and easily manufactured framework and casing structure with doors therefor, the said structure being especially well adapted for manufacture in either of two ways with the two doors opposite each other, or with the two doors at adjacent sides of the machine. In accordance with the invention the machine can, with a minimum of expense, be made with the doors opposite so that the dish racks can be introduced at one side and removed at the opposite side, it thus being possible for each successively introduced rack to push out the preceding rack; or the machines can be manufactured with the two doors at adjacent sides of the casing, the machine thus being adapted for use in a corner, the racks being introduced through one door and then removed through the other door which is at an adjacent side.

The present application constitutes a division of my copending application for Dishwashing machine, Serial No. 599,747 filed March 18, 1932, which has matured into Patent No. 2,051,233, dated August 18, 1936, and a continuation of my copending but now abandoned application for Framework and casing for dishwashing machine, Serial No. 660,781 filed March 15, 1933.

In the accompanying drawings I have shown the embodiment of the invention which I now deem preferable, but it will be understood that the drawings are intended for illustrative purposes only and are not to be construed as limiting or defining the scope of the invention, the claims forming a part of this specification being relied upon for that purpose.

Of the drawings:

Fig. 1 is a perspective view of a washing machine framework and casing embodying the invention and so constructed that the doors are at opposite sides.

Fig. 2 is an enlarged horizontal sectional view taken along the line 2—2 of Fig. 1, this view showing the upper spray devices of the washing machine.

Fig. 3 is a fragmentary perspective view similar to Fig. 1, but showing the casing so constructed that the doors are at adjacent sides.

Fig. 4 is an enlarged horizontal sectional view

taken along the line 4—4 of Fig. 3, this view showing the lower spray devices of the washing machine.

Fig. 5 is a vertical sectional view taken along the line 5—5 of Fig. 4, the doors being closed.

Fig. 6 is a vertical sectional view taken along the line 6—6 of Fig. 4, the doors being open.

As shown in the drawings, particularly Fig. 1, the casing is rectangular, being approximately square. The main framework of the machine comprises a base plate 1 and four uprights 2, 2 which are located at the corners of the base plate 1. The base plate and the uprights are preferably formed of sheet metal. Feet 3, 3 are provided at the lower ends of the uprights, and preferably, as shown in detail in Fig. 5, each of them is adjustable, being connected with the corresponding upright 2 by means of a threaded stud 4 which extends into a block 5 secured to the said upright. It will be understood that by adjusting one or more of the feet 3 on the corresponding stud 4 adjustment may be made for irregularities in the floor.

The lower casing of the machine is represented at 7, being constructed of sheet metal. The lower portion of the said casing 7 is relatively narrow, as indicated at 8, this narrower portion constituting a reservoir for the cleaning liquid which is to be used. The upper portion of the casing 7 extends the entire width of the machine and fits between the four uprights 2, 2. This upper portion has a bottom wall 7^a. The upper edge portions of the walls of the lower casing are bent outward to form a narrow flange or ledge 9 positioned above the tops of the uprights 2, 2 and extending entirely around the machine. Connected with the reservoir 8 at the bottom thereof is a drain pipe 11 controlled by a valve 11^a and there is also an overflow pipe 12 connected with the reservoir 8 at a higher elevation.

The base plate 1 at one side of the reservoir 8 is adapted for the mounting thereon of a centrifugal pump and an electric driving motor therefor. The intake of the pump is connected with the reservoir 8 at the opening 16 and the outlet pipe of the pump extends upward to an opening 17 in the wall 7^a.

The lower portion of the upper casing of the machine fits within the upper portion of the lower casing 7, as clearly shown in Figs. 5 and 6. The said upper casing comprises two vertical metallic sheets which constitute two side walls and which are bent to form four corner structures, and it also comprises a suitable sheet metal top member or plate.

In the construction shown in Figs. 1 and 2 the two vertical metallic sheets are similar to each other, the said sheets respectively forming side walls 18 and 19 and the said sheets being bent to form two outward offset corner structures, these being respectively marked 20, 21 and 22, 23. The metal constituting these corner structures is additionally bent to form vertical door receiving grooves, the said corner structures 20 and 22 providing one pair of oppositely disposed grooves, and the corner structures 21 and 23 providing another pair of oppositely disposed grooves. It will be observed that the two grooves of each pair are open toward each other. The upper casing also comprises a sheet metal top member 24 which is formed with four depending side flanges 25, 25, two of which engage the inner surfaces of the corresponding side walls 18 and 19, and the other two of which form the side walls of the casing above the door openings, as shown for instance at the left side of Fig. 5. Preferably filler pieces 26, 26 are provided in the upper portions of the several corner structures, and bolts 26^a, 26^a hold the several parts together as shown in detail in the upper right hand portion of Fig. 5. These bolts extend through each flange 25, through the corresponding filler piece 26 and through the corresponding corner structure.

The casing structure which has been described makes it possible to provide two doors at opposite sides of the machine so that the dish racks can be pushed straight through. It is sometimes desirable, however, to provide a machine which can be placed in the corner of a room, the dish racks being inserted through an opening in one wall and then removed through an opening in an immediately adjacent wall. A machine constructed in accordance with the principles which have been described can easily be assembled either for straightaway use or for corner use as may be desired. When a machine for corner use is to be constructed, as shown in Figs. 3 and 4, the upper casing construction is substantially the same as that already described, with the single exception that the two vertical metallic sheets constituting the walls of the casing are so constructed that one of the sheets forms two immediately adjacent side walls 18^a and 19^a and three corner structures 20^a, 21^a and 23^a, and the second vertical metallic sheet forms only the fourth corner structure 22^a. The top member 24 is constructed and connected exactly as already described. It will be observed that the corner structures 20^a and 22^a provide one pair of door receiving grooves, and that the corner structures 22^a and 23^a provide the other pair of door receiving grooves.

Two similar doors 27 and 28 are provided. With the straightaway construction as shown in Figs. 1 and 2, the door 27 is vertically movable in the grooves in the corner structures 20 and 22, and the door 28 is vertically movable in the grooves in the corner structures 21 and 23. Each door is provided with a handle 28^a by means of which it can be conveniently moved. Adjacent the rear wall 18 of the casing there are mounted two vertical guide rods 29, 29, these being supported at the bottom by means of a bracket 30 and being supported at the top in the top member 24. A counter-weight 31 is vertically movable along the guide rods 29, 29 and this counter-weight is connected with horizontal flanges near the bottom of the two doors 27 and 28 by means of chains 32, 33 which extend

respectively over pulleys 34, 35 and 36, 37. With this counter-weight construction both doors can be moved simultaneously by means of the handle on either one of them. When upward pressure is applied to either door the counter-weight will move downward and cause both doors to move upward at the same speed. Similarly, when downward pressure is applied to either door, the counter-weight is raised and both doors move downward at the same speed. Preferably a spring 38 is provided which constitutes a resilient stop to limit the downward movement of the counter-weight.

When the doors are arranged as shown in Figs. 3 and 4 the counter-weight construction is exactly the same except that the pulleys 36 and 37 are differently located, as shown in Figs. 5 and 6, to correspond to the different position of the door 28.

When the machine is constructed as shown in Figs. 1 and 2 there are provided two parallel rails 39 and 40 which serve as a dish support, these rails being spaced to receive and guide a suitable rectangular dish rack which may be of any usual or preferred construction. These rails are removably supported on brackets 41, 41 and 42, 42 projecting inward from the walls of the lower casing 7.

When the machine is constructed as shown in Figs. 3 and 4, brackets 41^a, 41^a are provided in lieu of the brackets 41, 41, and the right hand bracket 42 is omitted. A dish support 43 is provided which is adapted to be held in part by the said brackets 41^a, 41^a and 42 and in part by a valve bracket (not shown). This dish support comprises parallel rails 44 and 45, the rail 45 being flanged, and it further comprises parallel rails 46 and 47, the rail 47 being flanged. A diagonal brace 48 may also be provided. It will be apparent that a rectangular dish rack can be inserted through the door opening at the right and removed through the door opening at the front, or can be inserted through the door opening at the front, and removed through that at the right. The engagement of the dish support 43 with the brackets 41^a, 41^a is by means of trunnions 43^a, 43^a and if desired the entire dish support 43 may be swung upward about these trunnions to the position shown by full lines in Fig. 6.

When the casing is used as a part of a dish washing machine suitable spray or jet devices are mounted therein, liquid from the reservoir 8 being supplied to these jet devices by means of a suitable pump. Reference may be had to the aforesaid copending application for a complete disclosure of suitable spray devices, but in Fig. 2 I have shown upper spray devices, and in Fig. 4 I have shown lower spray devices.

The main upper and lower spray devices for the washing liquid are respectively shown at 49, 49 and 50. The spray devices 49, 49 are connected with a manifold 51 and the spray devices 50, 50 are connected with a manifold 52. The two manifolds are connected with a vertical liquid supply pipe 53 which, in turn, is connected with a suitable pump (not shown) by means of which liquid may be withdrawn from the reservoir or tank 8. The main spray devices 49, 49 and 50, 50 respectively serve to forcibly direct the washing liquid downward and upward against the dishes to effect washing.

The rinse spray devices are shown respectively at 54, 54 and 55, 55, these being suitably connected by means of a vertical pipe 56 and

otherwise with a suitable source of hot rinsing water. After the conclusion of the washing operation the spray devices 54, 54 and 55, 55 respectively serve to forcibly direct hot rinsing water downward and upward against the dishes to rinse and sterilize them.

What I claim is:

1. For a dishwashing machine of the type having a tank at the bottom and a dish support and spray devices above the tank, a main enclosing casing for the dish support and the spray devices comprising two vertical metallic sheets bent to form four vertical corner structures and arranged with the main walls at two sides of the casing formed integrally with the corner structures to which they are respectively adjacent, the corner structures adjacent the remaining two sides of the casing being additionally bent to provide two pairs of opposite vertical door receiving grooves with the grooves of each pair open toward each other.

2. In a dishwashing machine of the type having a tank at the bottom and a dish support and spray devices above the tank, the combination of a main casing adapted for enclosing the dish support and the spray devices and comprising two vertical metallic sheets bent to form four vertical corner structures and arranged with the main walls at two sides of the casing formed integrally with the corner structures to which they are respectively adjacent, the corner structures adjacent the remaining two sides of the casing being additionally bent to provide two pairs of opposite vertical door receiving grooves with the grooves of each pair open toward each other, two doors vertically movable in the said grooves, and a top member engaging with the said side walls.

3. In a dishwashing machine of the type having a tank at the bottom and a dish support and spray devices above the tank, the combination of a main casing adapted for enclosing the dish support and the spray devices and comprising two vertical metallic sheets bent to form four vertical outward offset corner structures and arranged with the main walls at two sides of the casing formed integrally with the corner structures to which they are respectively adjacent, the corner structures adjacent the remaining two sides of the casing being additionally bent to provide two pairs of opposite door receiving grooves with the grooves of each pair open toward each other, two doors vertically movable in the said grooves, and a sheet metal top member formed with four depending flanges adjacent the inner faces of the respective side walls and doors.

4. For a dishwashing machine of the type having a tank at the bottom and a dish support and spray devices above the tank, a main enclosing casing for the dish support and the spray devices comprising in combination two similar vertical metallic sheets respectively forming two opposite main side walls and each bent to form two vertical outward offset corner structures and each additionally bent to form a vertical door receiving groove, each two opposite grooves constituting a pair being open toward each other.

5. In a dishwashing machine of the type having a tank at the bottom and a dish support and spray devices above the tank, the combination of a main casing adapted for enclosing the dish support and the spray devices and comprising two similar vertical metallic sheets respectively forming two opposite main side walls and each bent to form two vertical outward offset corner structures and each additionally bent to form a vertical door receiving groove, each two opposite grooves constituting a pair being open toward each other, two doors vertically movable in the grooves in opposite corner structures and constituting the other two side walls of the casing, and a top member engaging with the said side walls.

6. For a dishwashing machine of the type having a tank at the bottom and a dish support and spray devices above the tank, a main enclosing casing for the dish support and the spray devices comprising in combination, two vertical metallic sheets one of which constitutes two adjacent side walls and is bent to form three vertical corner structures and the other of which is bent to form a single corner structure, the last said corner structure and the two corner structures adjacent thereto being additionally bent to provide two pairs of opposite vertical door receiving grooves.

7. In a dishwashing machine of the type having a tank at the bottom and a dish support and spray devices above the tank, the combination of a main casing adapted for enclosing the dish support and the spray devices and comprising two vertical metallic sheets one of which constitutes two adjacent side walls and is bent to form three vertical outward offset corner structures and the other of which is bent to form a single corner structure, the last said corner structure and the two corner structures adjacent thereto being additionally bent to provide two pairs of opposite vertical door receiving grooves, two doors vertically movable in the said grooves, and a top member engaging with the side walls and corner structures.

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