J. H. McCAIN.

DISH WASHING MACHINE.

APPLICATION FILED FEB. 17, 1917.

1,292,497.

Patented Jan. 28, 1919.

2 SHEETS—SHEET 1.

Fig. 1.

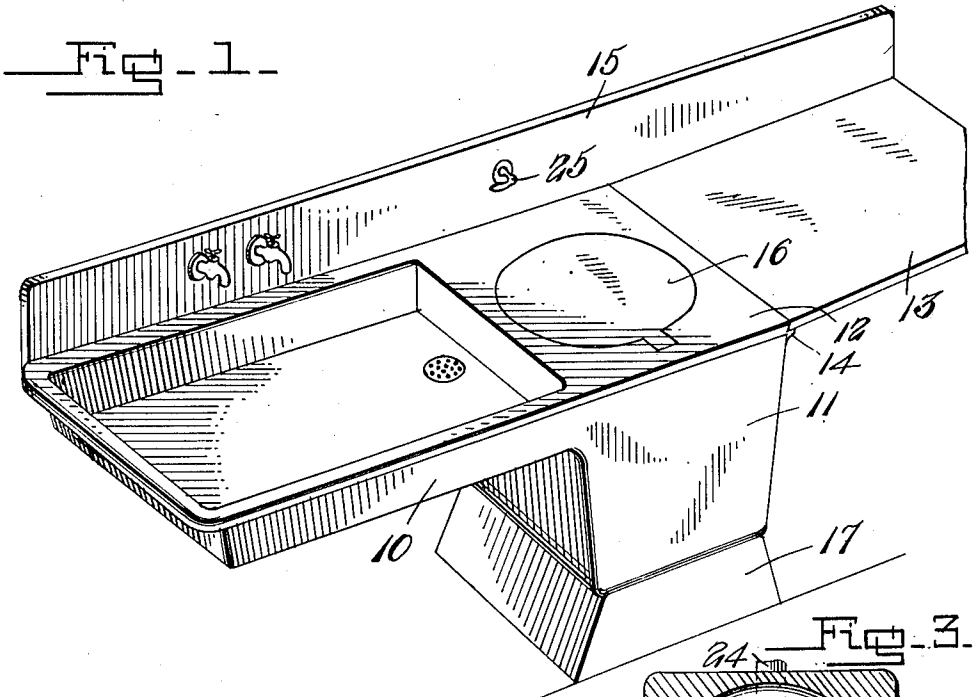


Fig. 2.

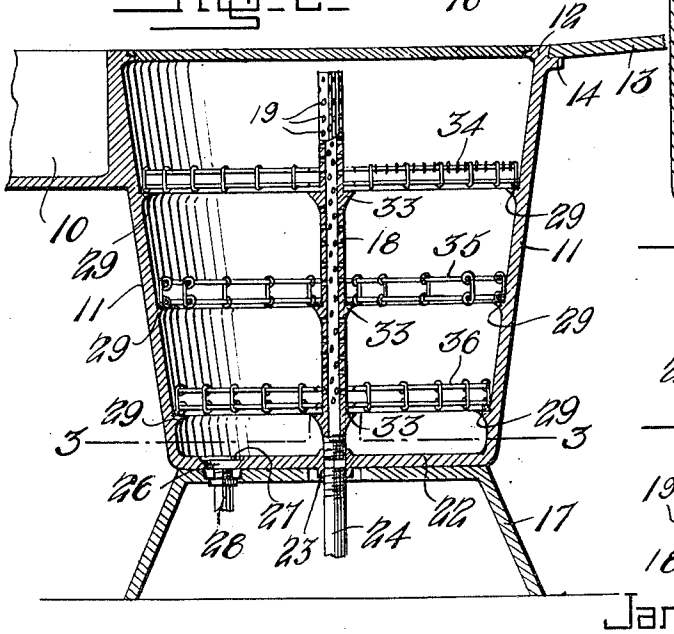


Fig. 3.

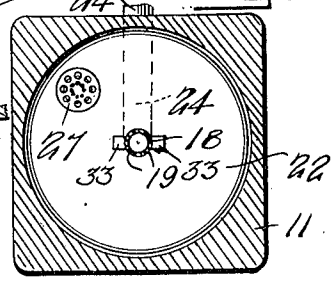


Fig. 10.

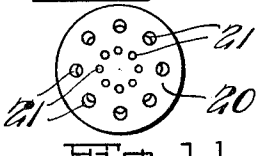
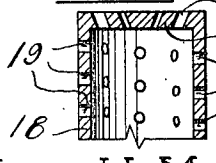


Fig. 11.



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2 SHEETS—SHEET 2.

Fig. 4.

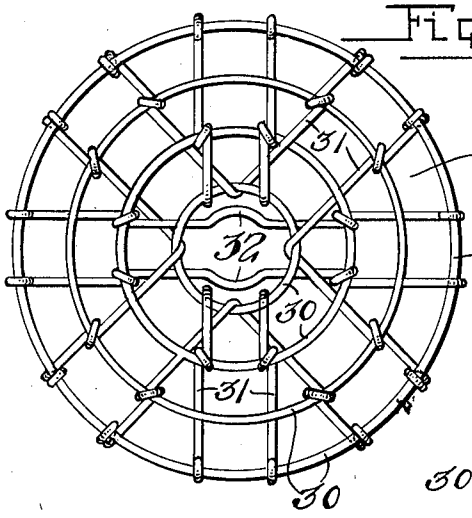


Fig. 5.

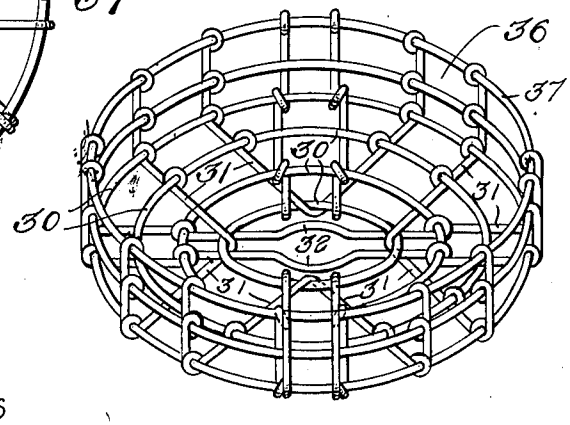
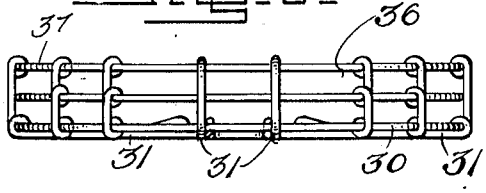


Fig. 6.



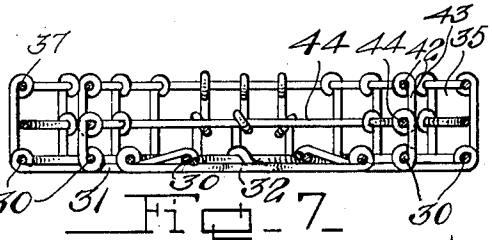


Fig. 7.

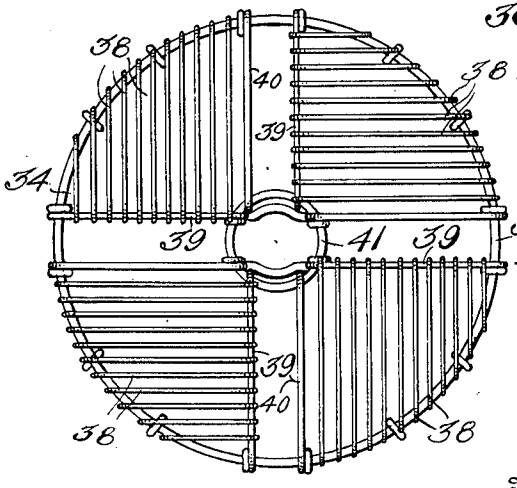


Fig. 8.

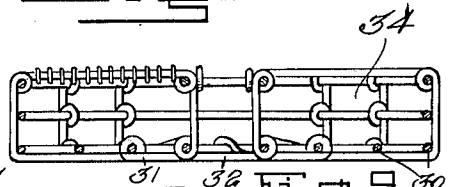


Fig. 9.

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UNITED STATES PATENT OFFICE.

JANE H. McCAIN, OF ROY, MONTANA.

DISH-WASHING MACHINE.

1,292,497. Specification of Letters Patent. Patented Jan. 28, 1919.

Application filed February 17, 1917. Serial No. 149,312.

To all whom it may concern:

Be it known that I, JANE H. McCAIN, a citizen of the United States, and a resident of Roy, in the county of Fergus and State of Montana, have invented a certain new and useful Improvement in Dish-Washing Machines, of which the following is a specification.

The present invention relates to dish-washing machines.

An object of the present invention is to provide a machine or device of this character wherein the washing is effected by water which is introduced into the body of the machine under pressure, the machine being provided with a suitable drain for carrying off the water after use.

Another object of the present invention is to provide a machine of this character which will accommodate a relatively large number of dishes and the like to be cleaned, and which is provided with novel means for supporting the dishes in such position that all of the dishes will receive the sprayed water thereagainst and be thoroughly cleansed on both sides.

The invention further aims at the provision of improved means for distributing or spraying the water upon the dishes, and for supporting the dishes and their racks in an improved manner about the spraying device.

The above, and other objects and advantages of this invention will be brought more clearly in the following detailed description of the present preferred embodiment, the same being illustrated in the accompanying drawings wherein:

Figure 1 is a perspective view of a washing machine constructed according to the present invention, the same being shown as arranged in proximity to a sink and a drain board.

Fig. 2 is a vertical central section taken through the washing machine, parts of the sink and the drain board being shown in section.

Fig. 3 is a transverse section taken on the line 3—3 of Fig. 2, showing the bottom of the washing machine.

Fig. 4 is a top plan view, enlarged, of one of the open racks detachably mounted in the bottom of the washing machine and adapted to support silverware, irregular dishes and the like.

Fig. 5 is a detail perspective view of the same.

Fig. 6 is a side elevation of the same.

Fig. 7 is a transverse section taken centrally through the rack, showing a slightly modified form of the same for supporting vegetable and other relatively large dishes in proper position in the body.

Fig. 8 is a top plan view of another form of the rack, showing the means for supporting plates and saucers on edge and in a predetermined position in the body.

Fig. 9 is a transverse section taken vertically through the form shown in Fig. 8.

Fig. 10 is a top plan view of the spray tube.

Fig. 11 is a fragmentary section of the upper end of the same.

Referring to these drawings, wherein like parts are designated by similar characters of reference throughout the several views, 10 designates a sink of usual construction, and which in the present instance is disclosed as being formed of an integral casting. At one end of the sink 10, and formed integrally therewith is a vertically disposed hollow body or casing 11 which comprises the body of the washing machine of this invention. This casing 11 tapers downwardly, and has its upper end flush with the upper edge of the sink 10 and provided with a top 12 which is substantially flush with a drain board 13 arranged at one side of the body 11 remote from the sink 10. A supporting rib or flange 14 is formed across said remote side of the casing 11 in position to hold the drain board 13 flush with the top 12. A wall board 15, or flange, rises from the casing and extends entirely along the rear edges of the sink 10, the casing or body 11, and the drain board 13. The body 11 is open at its upper end, and provided with a marginal ledge or shoulder at the opening upon which is seated a cover or closure cap 16, the latter lying flush with the upper face of the top 12. Preferably, the body 11 is supported upon a stand or pedestal 17 which may be in the form of an integral casting adapted to rest upon the floor, and being of sufficient height to engage against the lower end of the casing or body 11 to support it.

The body 11 is provided centrally, with a vertically extending spray tube and supporting post 18. As shown in Figs. 9 and 10, the post 18 is provided with a plurality of relatively small openings or perforations through its lateral wall, as indicated at 19, and is provided with a closed upper end or

top 20 through which extend openings or perforations 21, the latter being inclined outwardly, or flaring upwardly to provide a spreading stream or spray of water when the latter is admitted under pressure into the spray tube 18.

The bottom 22 of the body 11 is provided with a threaded opening extending therethrough and having bosses about the opposite ends of the opening, as indicated at 23, and the lower open end of the post or spray tube 18 is externally threaded and adapted to be detachably secured into said opening. A supply pipe 24 is threaded into the lower end of the opening 23 and is adapted to deliver hot water under pressure to the post or tube 18. This supply pipe 24 leads from any suitable source of hot-water supply under pressure, and the water is adapted to be controlled in any usual manner, such as by means of a valve 25 located preferably upon the wall flange or board 15, immediately over the body 11. The bottom 22 of the body 11 is also provided with a drain opening 26 covered by a strainer or screen disk 27, and to which is connected a drain pipe 28.

The body 11 is provided, on its inner wall, with annular ledges or shoulders 29 arranged in vertically-spaced apart relation, and adapted to support a plurality of racks or open baskets within which are placed the dishes, and other articles adapted to be cleansed.

As shown in Figs. 4 to 9 inclusive, each of the dish racks is provided with a bottom formed of a plurality of concentrically arranged rings 30 which are interbraced and held together in a common plane by means of a plurality of wire strands 31 which extend substantially radially, and are threaded over and under the concentrically arranged rings 30, and which are rolled over or looped about certain of the rings as shown for interlocking the structure and making the same rigid.

The central portion of each dish receptacle is provided with a socket in the form of a pair of oppositely bowed or arched supporting members 32 formed preferably by a pair of substantially parallel strands of wire which extend diametrically across the bottom. The outwardly bowed supporting elements 32 provide at their opposite ends recesses or notches which form, together with the intermediate socket portion, an elongated opening extending substantially diametrically across the intermediate portion of the bottom of the receptacle. This socket, which may be designated as 32, is of a size adapted to freely receive the post 18 upwardly therethrough. The post 18 is provided at its opposite sides, with pairs of outwardly extending lugs or shoulders 33 which register with the annular shoulders 29, and lie substantially in the same horizontal plane therewith. These lugs 33 are adapted to extend through the recesses or elongations of the socket 32 to permit the passage of the lower receptacles or racks downwardly into the bottom of the body 11. As the body 11 flares upwardly, the receptacles, designated as 34, 35 and 36, correspond in diameter to the different positions which they assume in the body. The lowermost receptacle 36 is adapted to pass the upper pairs of lugs 33 and to be seated upon the lower annular shoulder 29 and the lowest pair of lugs 33. The lugs 33 extend from the diametrically opposite sides of the post 18, and as soon as the receptacle has been placed upon its shoulder 29, the receptacle is given substantially a quarter turn to bring the recesses out of registry with the lugs 33. The lugs 33 therefore rest upon the outwardly bowed portions 32 of the socket. By means of this construction the racks or receptacles are capable of supporting considerable weight, and do not sag at their intermediate portions.

Each of the receptacles 34, 35 and 36 is provided with a marginal up-standing flange formed by extending the outer extremities of the radially extending strands 31, upwardly, and securing their upper ends to an upper ring 37.

The upper receptacle 34 is divided into four parts, each part being provided with a plurality of closely-spaced-apart bars 38 which are secured at one end to the top ring 37, and which extend inwardly and have their opposite ends secured to strands 39. The end bars 40 of each group, are spaced apart from and lie substantially in parallelism to the adjacent strands 39. The alternate bars 40 and strands 39 are rolled over about a top ring 41 which connects the groups of bars 38 and support the same. The opposite alternate strands 39 and bars 40 are rolled over the top ring 41, and are extended downwardly and have engagement with the inner rings 30 of the bottom structure. This construction permits the free passage of the receptacle downwardly over the post 18, and permits the turning of the receptacle on the post to dispose the socket members 32 on the lugs or shoulders 33. Preferably, this receptacle 34 is placed at the upper enlarged end of the receptacle, and the receptacle is spaced downwardly from the top of the body 11 a sufficient distance to permit the positioning of relatively large plates edgewise between the bars 38.

The intermediate receptacle or rack 35 is shown in Fig. 7, and wherein the same is provided with an inner wall arranged concentric to the outer rim, and comprising an inner ring 42 which is supported upon upwardly extending links 43 which are secured

at their lower ends to one of the intermediate rings 30 at the bottom. The links 43, and the inner rings 42 are supported in raised position, and interbraced, by means of a second inner ring 44 about which is looped the intermediate portion of each link 43. The outer rim or wall of each receptacle, and the inner wall of the receptacle 35 may be provided with any number of rings for reinforcing and bracing the same, and for providing openings of the desired size through the receptacle.

The lowest receptacle 36 is in the form of a basket having the bottom structure above described, and provided with the marginal rim or wall adapted to confine irregularly shaped articles therein, and which cannot be accommodated in the upper receptacles 34 and 35.

In use, the cover 16 is removed from the receptacle 11, and the racks are raised one at a time through the open top of the receptacle or body. To remove the racks, it is only necessary to lift the top rack upwardly from the post 18. The lower racks, however, must be turned through substantionally a quarter of a turn to register the elongated sockets with the laterally extending lugs 33 on the post. When adjusted into this position, the lower racks may readily be raised. The racks may be spread out upon the drain board 13, and the dishes or the like placed therein. The racks are now fitted into the body 11 about the post 18, and the cover 16 is replaced to seal the top of the receptacle. The valve 25 is now manipulated to turn on hot water under pressure into the bottom of the spray tube 18. The water passing into the tube 18 is projected into relatively fine streams through the lateral openings 19, and is delivered upwardly into a diverging or spreading stream of water from the top of the spray tube against the cover 16, the water being deflected thereby downwardly into the body 11 and between the dishes which are placed, particularly on the upper rack 34.

The water dripping from the dishes on the racks, and from the sides of the body 11, is collected on the bottom 22 and passes outwardly through the drain opening 26 and drain pipe 28. The cover 16 is now removed, and the steam is permitted to escape. Dishes are left in this position for several minutes, and the heat absorbed thereby is sufficient to dry the same in a relatively short time. The racks or receptacles may now be removed from the body 11, and the dishes may be stored in any desired manner for future use.

It will be particularly noted, from the position shown in Fig. 1 of the accompanying drawings, that the novel formation of the receptacle or body 11 at one side of the sink 10, and interposed between the sink and the drain board 11 provides not only a neat and attractive structure, but one which is compact and readily accessible, and wherein the dish receptacle 11 is so positioned that the dishes may be quickly removed or positioned with respect to the washing machine, and any dripping from the dishes, silverware or the like in either positioning or removing the same from the washing machine, may be caught on the drain board 13 and in the sink 10. The arrangement is also believed to be sanitary, as the drain board and the top of the receptacle may be kept clean by merely wiping the same and permitting the water to drain down into the sink 10.

The receptacle 11 may be cast integrally with the sink 10, or be made as a part thereof of sheet metal, porcelain or the like such as is found convenient in manufacture, and which may be readily handled and installed.

It is of course understood that various changes and modifications may be made in the above-specifically described construction of washing machines and parts adjacent thereto, without departing from the spirit of this invention, and being restricted only by the scope of the following claims.

I claim:

1. In a washing machine, a vertical hollow body, a hollow centrally disposed post projecting upwardly in the body and provided with perforations to permit egress of water from the post, diametrically opposed lugs formed upon said post in vertical spaced pairs, a receptacle adapted to be fitted downwardly in the body and provided with an elongated socket adapted to pass over said post and lugs, said receptacle adapted to be turned on the post to engage its bottom against the pair of said lugs, and an annular ledge formed about the inner surface of the body to engage the bottom of the receptacle at its periphery.

2. In a washing machine, the combination of a hollow body, a vertically extending post arranged in the body and provided with laterally extending lugs, and a plurality of receptacles adapted to be fitted downwardly into the body and provided with elongated sockets at their intermediate portions adapted to pass over said post and said lugs, said receptacles being adapted to be turned to engage the lugs on the post against the bottoms of the receptacles.

3. In a washing machine, the combination of a hollow body provided with an open top, a centrally extending post arranged vertically in the body, projections carried by the walls of the body, diametrically extending lugs formed on the opposite sides of the post and adapted to register horizontally with said projections, and a plurality of receptacles adapted to be fitted downwardly into the body upon said projections and provided with central openings adapted to re-

ceive the post therethrough and having recesses at the opposite sides of the openings adapted to receive said lugs therethrough, said receptacles being adapted to be turned to move the recesses out of register with the lugs and engage the latter against the lower sides of the receptacles for supporting the same.

4. In a washing machine, a vertical hollow body, a centrally disposed post projecting upwardly through the body, said post being hollow and provided in its walls with perforations and having outwardly extending lugs arranged in pairs in vertically spaced-apart relation on the post, and a plurality of dish-supporting racks adapted to be fitted into the body about said post and having central openings to receive the post, said openings being elongated in one direction adapted to receive the lugs therethrough, said receptacles being adapted to be turned to dispose the openings out of register with the lugs whereby the lugs are adapted to engage the lower sides of the receptacles to support the same.

5. In a washing machine, a vertical hollow body having its walls converging as they extend downwardly to the bottom thereof, a hollow centrally disposed post projecting upwardly in the body and provided with perforations to permit the egress of water from the post, diametrically opposed lugs formed upon said body in vertically spaced pairs, a plurality of receptacles of different diameters adapted to be fitted downwardly in the body and provided with elongated sockets adapted to pass over said post and said lugs, said receptacles adapted to be turned on the post to engage their bottoms against said lugs.

6. In a washing machine, a vertical hollow body having its walls converging as they extend downwardly to the bottom thereof, a hollow centrally disposed post projecting upwardly in the body and provided with perforations to permit the egress of water from the pipe, diametrically opposed lugs formed upon said body in vertically spaced pairs, a plurality of receptacles of different diameters adapted to be fitted downwardly in the body and provided with elongated sockets adapted to pass over said post and said lugs, said receptacles adapted to be turned on the post to engage their bottoms against said lugs, and annular ledges formed about the inner surface of the walls of said receptacle and having their upper surfaces flush with the upper surfaces of said lugs whereby when said receptacles are turned to be engaged by said lugs their outer edges will be engaged by the corresponding annular ledge.

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