

Oct. 27, 1959

M. J. ANDREW

2,910,207

DISH RACK FOR DOMESTIC APPLIANCE

Filed Sept. 26, 1957

4 Sheets-Sheet 1

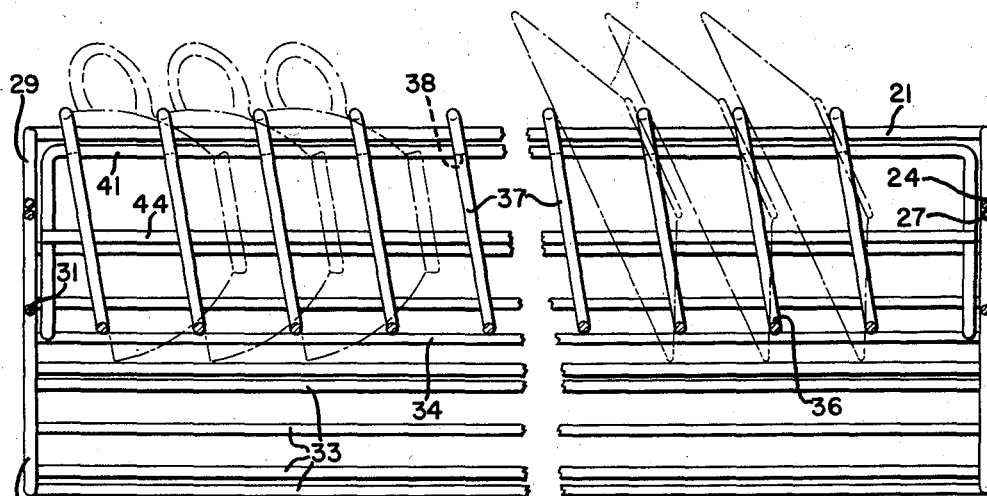


Fig. 6

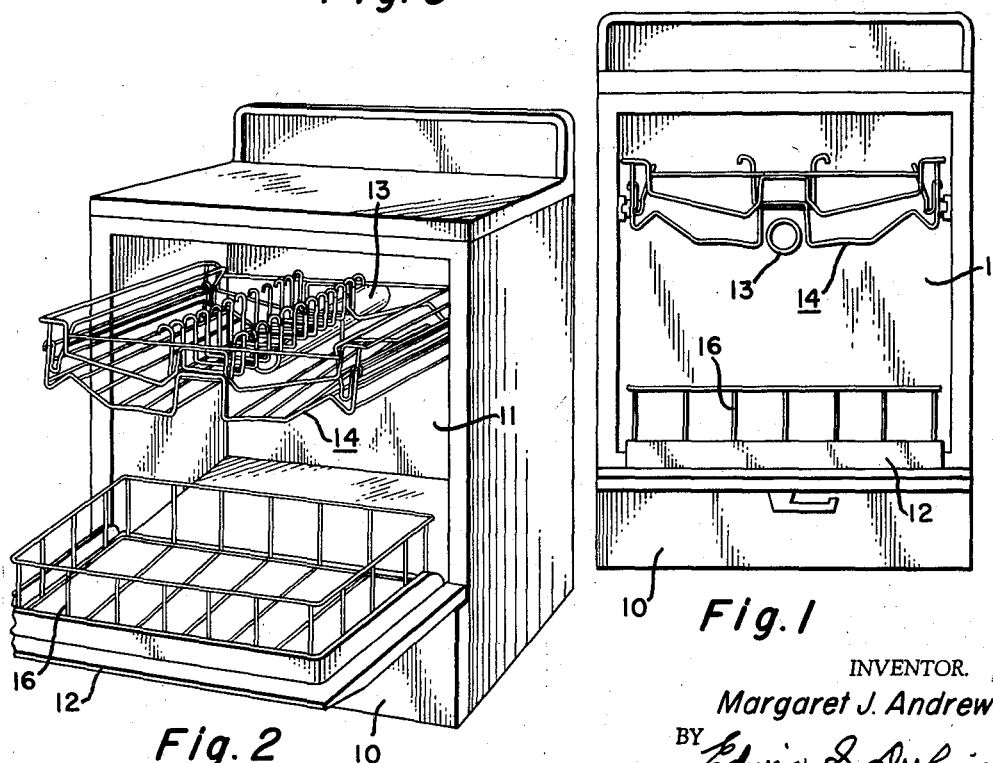


Fig. 1

Fig. 2

INVENTOR.

Margaret J. Andrew

BY

Edwin S. Rybicki  
Her Attorney

Oct. 27, 1959

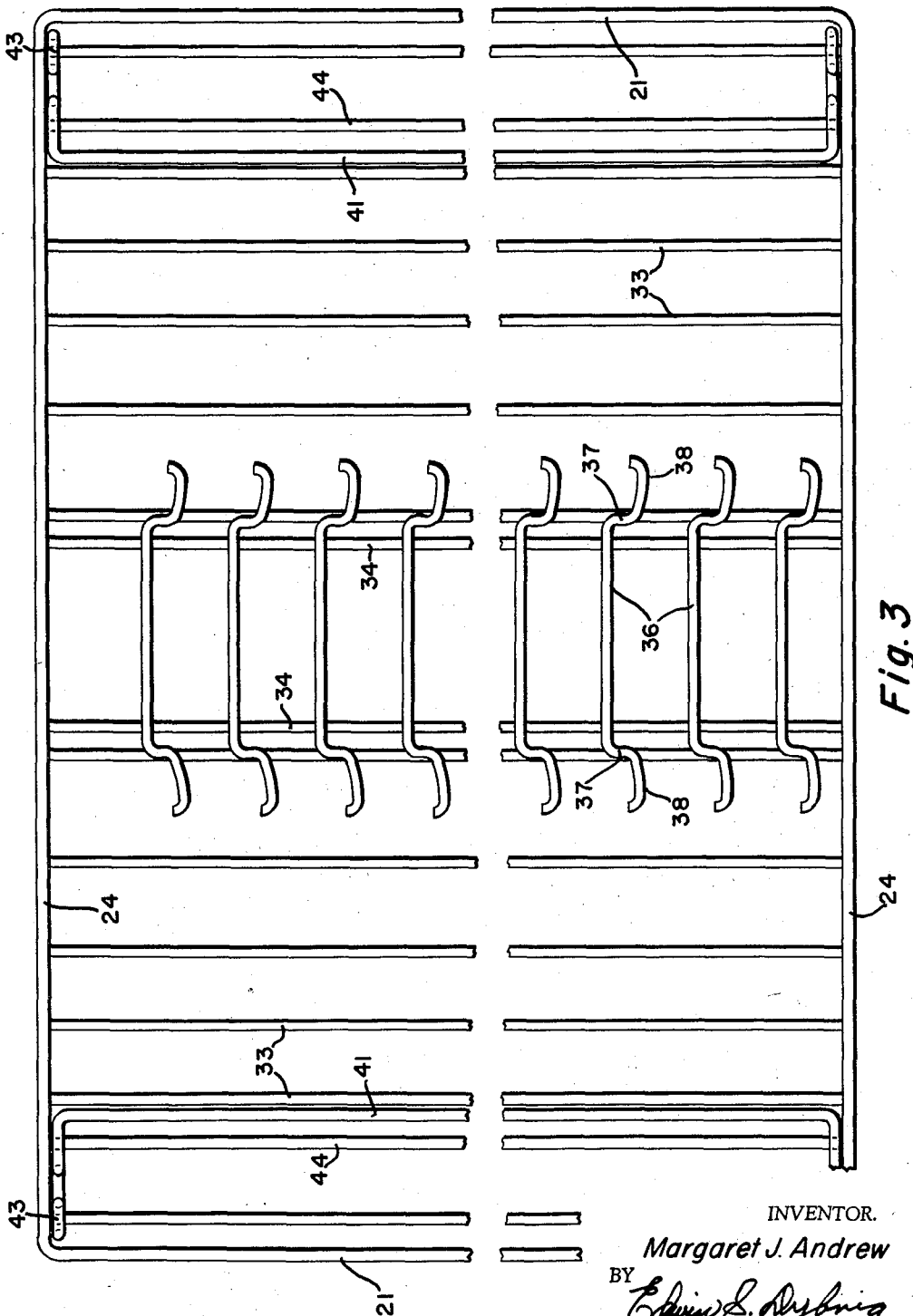
M. J. ANDREW

2,910,207

DISH RACK FOR DOMESTIC APPLIANCE

Filed Sept. 26, 1957

4 Sheets-Sheet 2



INVENTOR.

Margaret J. Andrew

BY

Edwin L. Rydberg  
Her Attorney

Oct. 27, 1959

M. J. ANDREW

2,910,207

DISH RACK FOR DOMESTIC APPLIANCE

Filed Sept. 26, 1957

4 Sheets-Sheet 3

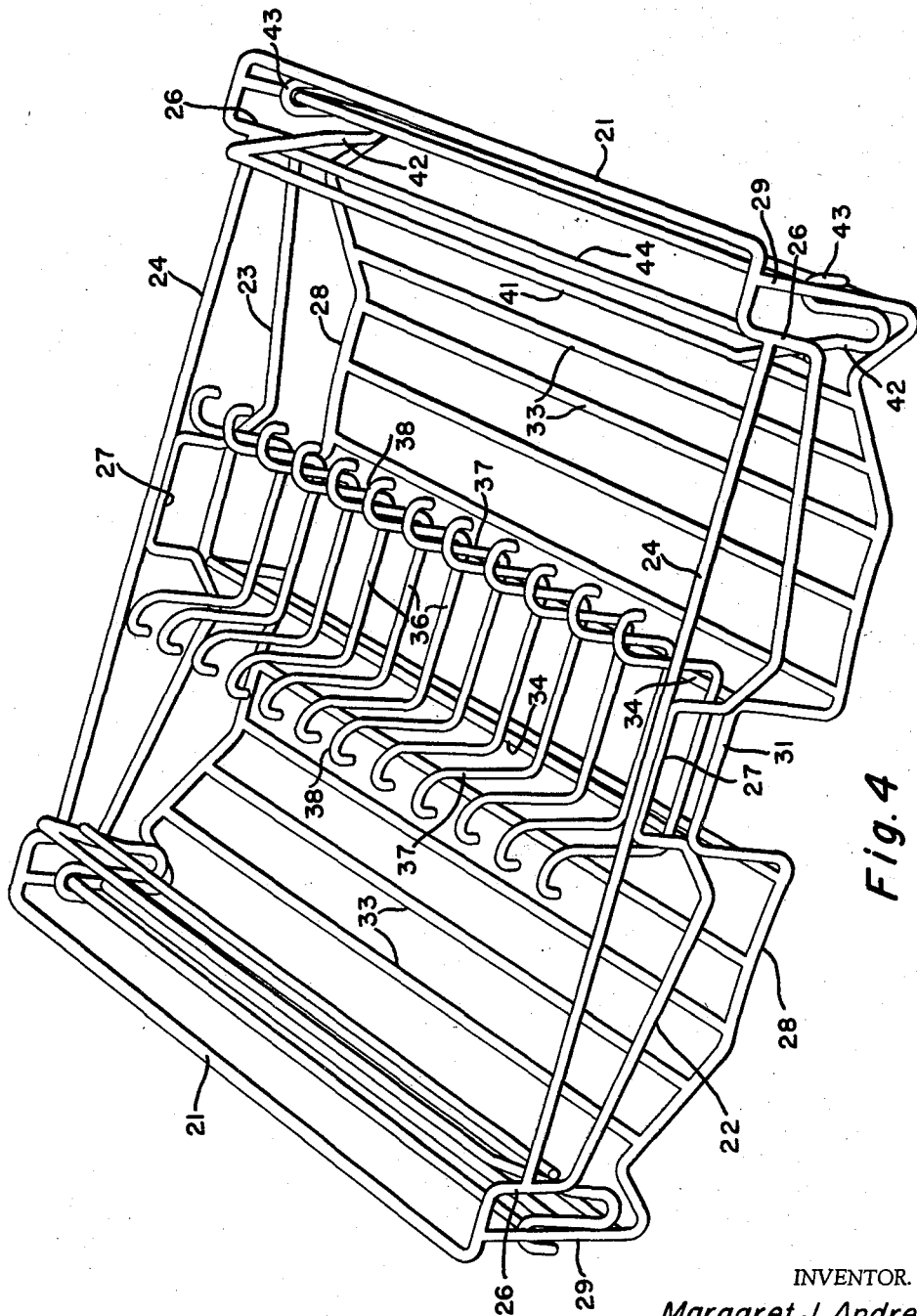


Fig. 4

INVENTOR.

Margaret J. Andrew

BY

Edwin S. Dybing  
Her Attorney

Oct. 27, 1959

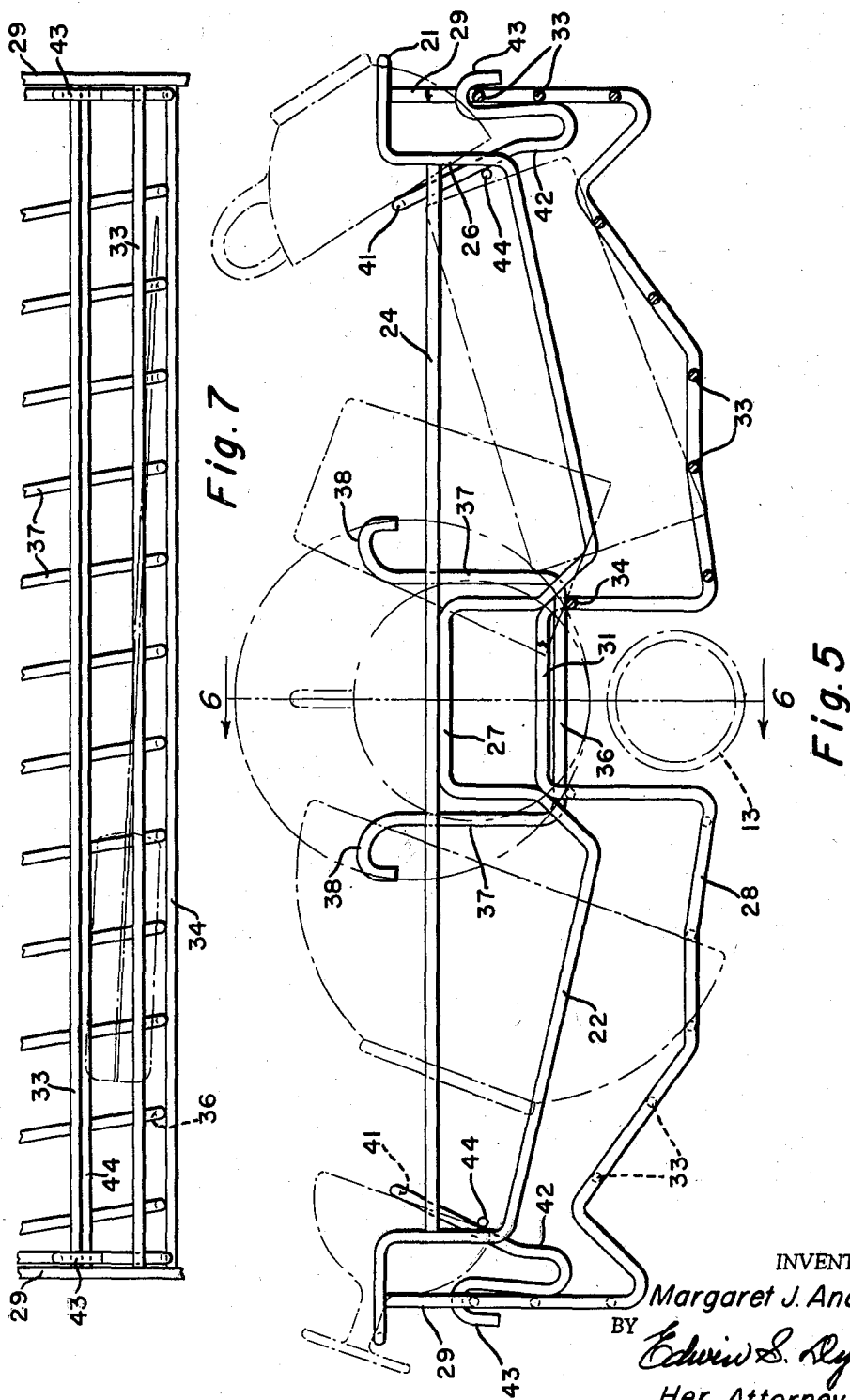
M. J. ANDREW

2,910,207

DISH RACK FOR DOMESTIC APPLIANCE

Filed Sept. 26, 1957

4 Sheets-Sheet 4



INVENTOR.

Margaret J. Andrew

BY

Edwin S. Rybnig  
Her Attorney

1

2,910,207

## DISH RACK FOR DOMESTIC APPLIANCE

Margaret J. Andrew, Oakwood, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Application September 26, 1957, Serial No. 686,475

2 Claims. (Cl. 220—19)

This invention relates to a domestic appliance and particularly to a rack for a dishwasher.

It is generally and well recognized that placement of utensils such as tableware and kitchenware within a dishwasher is important in obtaining efficient and thorough cleansing and rinsing thereof. In some home dishwashers the utensil supporting racks are not constructed or arranged to permit substantial filling of the washing compartment thereof with utensils and therefore much valuable washing space therein is not usable and a housewife is required to duplicate a washing cycle of a washing machine in order to cleanse all the tableware and kitchenware after a meal or a party. For home dishwashers, to make it possible to wash all the varieties or various kinds of dishes and kitchenware in maximum quantities in the dishwasher, it is necessary to provide a flexible or versatile and yet compact, efficient and accurate supporting or holding arrangement for accommodating all the varieties of utensils to be washed. It is also desirable to hold the maximum quantity of any of a plurality of like dishes or of all different sorts or combinations and varieties of utensils in such a compact way that none will block the liquid cleansing stream from another and all are held to drain adequately after being washed without trapping liquid therein. These problems are particularly peculiar and troublesome in a dishwashing machine of the front opening type having a horizontal liquid spray tube in the center of the washing compartment thereof.

An object of my invention is to provide a dish rack with an improved and versatile supporting means for holding utensils in a compact manner and arranging the utensils held thereby in positions relative to a liquid spray tube of a dishwashing machine so that washing and rinsing of all sorts and varieties of tableware and kitchenware in maximum quantities may be efficiently carried out.

Another object of my invention is to provide a utensil rack for a dishwashing machine in the form of an open basket-like receptacle provided with ingeniously located sub-receptacles or supports for receiving and selectively supporting various types of utensils at different times depending upon the quantity of soiled tableware or kitchenware to be washed.

A further object of my invention is to provide a dish rack with drinking glass supporting posts or upright spines adjacent a portion of the rack which straddles a centrally located liquid spray tube in a dishwasher so that the glasses are invertedly supported in close proximity to liquid streams and have their interior exposed thereto.

In carrying out the foregoing objects it is a still further and more specific object of my invention to provide a utensil rack with a plurality of substantially U-shaped wirelike members secured to a predetermined portion of the rack to form, in addition to drinking glass or the like supporting posts, a support of a character to selectively receive and support long carving knives or spatulas in a horizontal position and/or coffee cups and saucers

2

and wherein the spacing between the U-shaped members serve to support the cups in spaced apart telescoping relationship whereby a greater number cups can be simultaneously washed in a limited area in a rack of a washing machine.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings, wherein a preferred form of the present invention is clearly shown.

In the drawings:

Figure 1 is a front view of a dishwashing machine with the forward door thereof open showing my improved utensil rack in the washing compartment thereof;

Figure 2 is a perspective view of the machine disclosed in Figure 1 showing my improved utensil rack slid part way out of the washing machine;

Figure 3 is a top view of my utensil rack removed from the washing machine;

Figure 4 is a perspective view thereof;

Figure 5 is a front view of my improved rack showing various utensils supported at different locations thereon;

Figure 6 is a vertical sectional view taken on the line 6—6 of Figure 5 showing in phantom cups and saucers on a support of the rack with U-shaped members thereof spacing telescoped cups apart; and

Figure 7 is a view similar to Figure 6 and shows in phantom long knives or the like supported in a horizontal position on a support of the rack.

Before proceeding to describe the improved rack disclosed herewith, it is to be understood that by the employment herein of the term utensils I mean this word in its broad sense to include kitchenware and tableware of various types such, for example, as metal knives, forks, spoons, pans or bowls and ceramic dishes or glassware such as coffee or tea cups, saucers, plates, tumblers and drinking glasses or culinary items of different kinds.

Referring to the drawings wherein the present invention is illustrated, the dishwasher or dishwashing machine includes a cabinet 10 having a washing compartment 11 therein for receiving utensils to be washed. Cabinet 10 is provided with a front access opening leading to compartment 11 and closed by a door 12 hinged on a horizontal axis. A liquid spray tube 13 is located centrally within compartment 11 and extends forwardly of the rear wall thereof for spraying a plurality of streams of water in various directions therefrom into compartment 11 and onto utensils therein. Upper and lower separate and independent racks, generally represented at 14 and 16, respectively, are slidably mounted in any suitable or conventional manner within compartment 11 upon upright side walls thereof for movement relative to one another and to spray tube 13 part way out of the compartment (see Figure 2). These racks 14 and 16 provide a utensil supporting arrangement in compartment 11 for utensils to be washed and rinsed therein. Suitable drain means may be provided at the bottom of compartment 11 to carry away water sprayed into the washing compartment. Insofar as the present invention is concerned, it is particularly applicable to washing machines of the type shown in the Abresch et al. Patent 2,734,520 dated February 14, 1956, and this patent is referred to for a full and comprehensive description of details of such a dishwasher. My invention is directed to a rack and specifically to an improved upper utensil supporting rack in a dishwashing machine, to the versatile use thereof and to the association or location of parts thereof with respect to a liquid spray tube in the center of the washing compartment of the machine.

Referring now to Figures 3, 4 and 5, the improved upper rack 14 comprises a perimeter metal wire having straight portions providing opposed horizontal side rails

21 and zig-zagged shaped similar front and rear bars 22 and 23, respectively (see Figure 4). A straight wire or bar 24 at both the front and rear of rack 14 has its ends secured, as by welding, to downwardly bent portions 26 of the perimeter wire and also has its central portion welded to a raised central part 27 of this wire (see Figure 5). Another zig-zagged shaped wire or bar 28, at both the front and rear of rack 14, has its ends 29 welded to the perimeter wire at a point spaced slightly inward of the rails 21 thereof and has its raised center portion 31 welded to legs of the raised part 27 of the front and rear bars 22 and 23. The rack 14 also comprises a plurality of spaced apart horizontal wire rails 33 extending between and having their ends welded to front and rear portions of the rack. Three of the wire rails 33 next adjacent ends 29 of bar 28 are disposed one above another in vertical alignment and provide upstanding bordering portions of a basket-like receptacle formed by the various wire rails and bars. Two of the wire rails centrally of rack 14, indicated at 34, are welded to bar 28 adjacent the top of its raised portion 31 and provide a part of an elevated support to be hereinafter more explicitly described. Wire rails 33 intermediate the center rails 34 and those disposed one above another, providing the bordering portions of the basket-like receptacle, are progressively elevated with respect to one another toward side bordering portions of the receptacle to provide inclined bottom portions thereof. The bars 22, 23 and 24 form guards at the front and back of rack 14 to prevent round utensils such as glasses or bowls placed on the inclined bottom portions of the basket-like receptacle from sliding off the wire supports 33 when the rack is slid into or part way out of washing compartment 11 of the dishwasher. Rack 14 also comprises a plurality of substantially U-shaped wire members spaced apart along the two elevated central rails 34 with the base 36 of these members spanning and being welded thereto and having their legs extending upwardly therefrom to provide rows of posts or spines 37, disposed at an acute angle with respect to the vertical, terminating in hook-like ends 38. The posts 37 are adapted to invertedly receive and support drinking glasses, tumblers, cups or the like in an inclined position above other utensils placed on the rails 33 of the bottom portions of the rack. Base portion 36 of the U-shaped wire members extends transversely across the two central rails 34 and this portion of the plurality of members provides a flat support on rack 14 intermediate posts 37 which extends from the front to the rear thereof. This flat support and the supports or posts 37 cooperate with one another to selectively receive and support long knives or the like in a horizontal position and/or a plurality of cups and saucers in an edgewise liquid spill-out position thereon. Glasses or tumblers placed over posts 37 have their edge at the open end thereof resting on a rail 34 and this supports the glasses or tumblers in an inclined position on rack 14. It is to be noted (see Figs. 1 and 5), that raised portions 31 of bars 28 together with the base portion 36 of the U-shaped members and rails 34 of rack 14 straddle liquid spray tube 13 so as to locate its central portion in close proximity therewith and surrounding a substantial part thereof. Rack 14 further comprises removable and pivotally mounted side sub-receptacle forming means each of which includes a wire member having a horizontal straight portion 41 with its end portions 42 bent and provided with a hook 43 removably looped over the uppermost rail 33 of the rails that are disposed one above another at sides of the rack. A straight wire rail 44 extends between end portions 42 of wire member 41 in spaced relation thereto and has its ends welded to portions 42 thereof. Wire member 41 and rail 44 secured thereto provide a sub-receptacle within and at each side of the main basket-like receptacle of rack 14, which sub-receptacles are tiltable relative to the rack or removable therefrom to provide for greater storage space therein

when large pans, bowls or the like are to be supported on the inclined bottom rack portions or rails 33. In their normal position as shown the sub-receptacles may support cups or cocktail glasses above smaller utensils placed on the inclined bottom portions, rails 33, of the rack. When the sub-receptacles are tilted about their pivotal mounting the end portions 42 of wire member 41 rest against the upper rail 21 of the perimeter wire or bar 22 to position the straight portion thereof and rail 44 upwardly of and away from the main basket-like receptacle or rack 14. This position of the sub-receptacles is not shown but should be readily understood by the construction thereof. All of the wire elements, bars 22, 24, 28, rails 33, 34, 41 and 44 and other wire members of rack 14 may be coated with some suitable resilient substance such as natural or synthetic rubber or vinyl material. One such suitable material is vinyl plastisol.

My improved rack construction for the interior of a washing compartment of a utensil washing machine provides ample and proper support for washing, rinsing and draining of tumblers, cups, saucers, pans, bowls, long knives or cake spatulas and drinking glasses used in the serving of ordinary meals. The rack also has ample space to accommodate an unusual number of similar utensils or a single kind thereof such as tea or coffee cups, saucers or glasses along with other articles used or soiled during a snack or cocktail party. For example, and by reference to Figure 6 of the drawings wherein I show a plurality of cups and saucers, in dot-dash lines, supported on the two center rails 34, it is to be noted that the distance between the plurality of upright U-shaped members is utilized to space cups apart in telescoped relationship and to support saucers in edgewise spaced apart relation in close proximity to the origin of spray streams of water from spray tube 13. This is a unique way to support cups so that they will be exposed to the water sprays or streams and be effectively cleansed and drained as compared to supporting cups in inverted side-by-side full-cup spaced-apart fashion. The spacing and telescopic support of the cups more than doubles the capacity of a row of cups on the rack and permits an unusual number of cups to be arranged along a dish rack to thereby simultaneously cleanse and drain a greater number of cups and saucers at one time after a party so as to eliminate the necessity of carrying out two or more washing operations. This spacing and telescopic support of the cups affords entrance of ample water from the sprayed streams thereof from tube 13 into each cup and adjacent exterior cup surfaces form splash baffles for directing water striking one cup into another adjacent cup and such is quite different from the usual or conventional manner of supporting cups to be washed, rinsed and drained. In Figure 7 of the drawings I illustrate a long knife, by dot-dash lines, supported in a horizontal position on the base portion 36 of the U-shaped wire members and it is to be understood that several such knives may be supported thereon at the same time if desired. Thus this support on the rack may selectively receive cups and saucers and/or long knives or spatulas to be washed, rinsed and drained. No attempt is herein made to show or illustrate all the various other arrangements of utensil support which may be had with the use of my improved rack because it is believed that one familiar with loading a dish rack with utensils will recognize, from the present disclosure, that many widely diversified arrangements or combinations of utensil support can be had and that my rack is flexible and versatile to thereby increase its utility. The construction of the rack and provision of posts or the like utensil supports thereon in close proximity to streams of water increases its holding capacity without any one article blocking the spray upon another. A plurality of different articles or utensils can be accommodated on the rack and held in proper position for satisfactory washing, rinsing and draining. The rack 14 may hold a plu-

ality or an unusual number of soiled cups, saucers and glasses after serving guests at a party while other larger items or utensils may be held in the lower rack 16 of the two slidable racks. The improved rack 14 is of such construction that its utensil supporting portions increase its capacity to thereby permit the compartment 11 of the washing machine 10 to be substantially filled with utensils when a washing operation is to be carried out.

While the form of embodiment of the invention as herein disclosed constitutes a preferred form, it is to be understood that other forms might be adopted as may come within the scope of the claims which follow.

What is claimed is as follows:

1. A dish rack for use in a compartment of a dish washing machine above a liquid spray tube projecting forwardly from and disposed substantially perpendicular to the compartment back wall, said rack comprising spaced apart bottom rails extending horizontally between and connected at their ends to front and rear bars, other rails at sides of said rack and other bars at the front and rear thereof being disposed over one another to provide upstanding bordering portions of a main receptacle above the rails forming its bottom, a center part of the lower front and rear bars being bent upwardly and two of the horizontal rails centrally of said upstanding side portions of the receptacle being elevated above adjacent rails at the bottom thereof, the ends of said two rails being secured to the upwardly bent part of said lower front and rear bars near the top thereof and providing the underside of said rack with an unobstructed straddling portion, said bottom rails outwardly of said two central elevated rails providing said receptacle with utensil supporting portions at the sides of its straddling portion, said rack also comprising means forming a supporting structure along and above said straddling portion thereof, said supporting structure means including a plurality of spaced apart substantially U-shaped members having the base of the U thereof secured to and extending transversely across said elevated central rails providing a flat support therealong with the legs of said U-shaped members projecting

upwardly and providing rows of posts for the structure, said supporting structure of the rack being at one time adapted to receive drinking glasses invertedly over said posts and supported thereon in a tilted position by said central rails, said U-shaped members being inclined with respect to the vertical and the spacing thereof being such as to render said supporting structure of said rack adapted at another time to receive and support a row of cups in liquid spill-out position above said straddling portion thereof with a cup between adjacent U-shaped members spaced from and telescoped into a cup between other of said members at either side of said adjacent members, and said flat support of said supporting structure of the rack being adapted at still another time to receive in a horizontal position knives and forks or the like with said posts providing guards along the flat support for preventing the knives, forks or the like from sliding off the support into said utensil supporting portion of the receptacle.

2. A dish rack as defined by claim 1 having a wire member pivotally mounted upon an upper side rail of the rack and provided with an angular part held by a side rail under said upper side rail in a position forming a sub-receptacle within the bordering portions of the main receptacle above the bottom thereof.

#### References Cited in the file of this patent

##### UNITED STATES PATENTS

|            |                |               |
|------------|----------------|---------------|
| D. 164,197 | Planeta        | Aug. 7, 1951  |
| D. 167,483 | Russo          | Aug. 12, 1952 |
| 2,163,865  | Bitney         | June 27, 1939 |
| 2,622,757  | Von Bromssen   | Dec. 23, 1952 |
| 2,629,498  | Marasignan     | Feb. 24, 1953 |
| 2,648,588  | Ruspino        | Aug. 11, 1953 |
| 2,686,598  | Brecht         | Aug. 17, 1954 |
| 2,697,525  | Breneman       | Dec. 21, 1954 |
| 2,734,520  | Abresch et al. | Feb. 14, 1956 |
| 2,864,509  | Watral         | Dec. 16, 1958 |