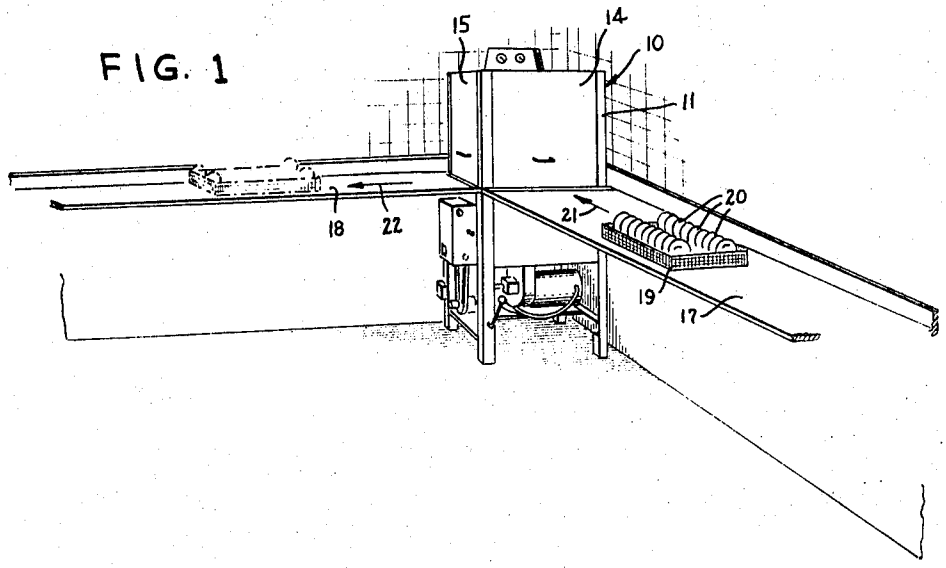
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DISHRACK TRACK ASSEMBLY FOR A DISHWASHING MACHINE

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FIG. 1



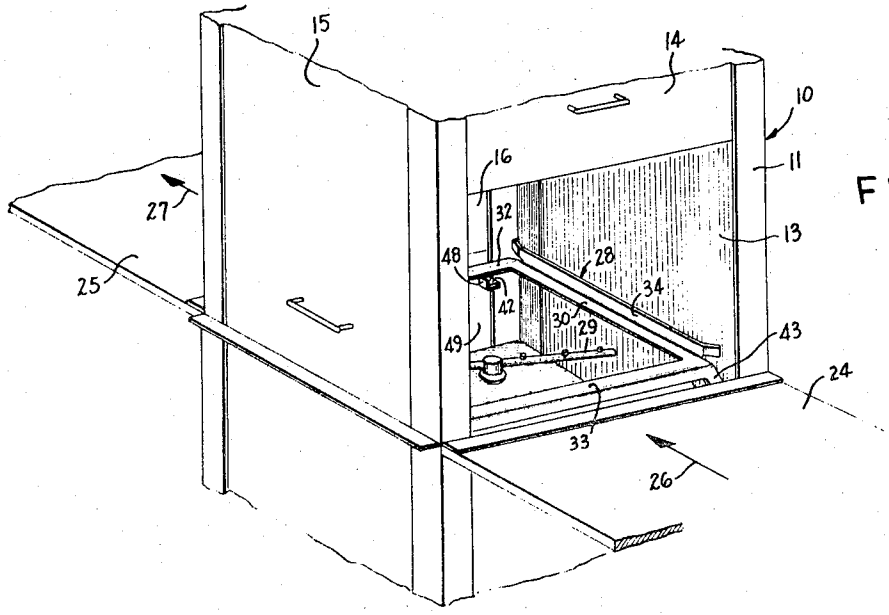


FIG. 2

INVENTOR
ROGER L. HOFFMAN
BY David M. Schiller
ATTORNEY

Sept. 9, 1969 R. L. HOFFMAN 3,465,763

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FIG. 3

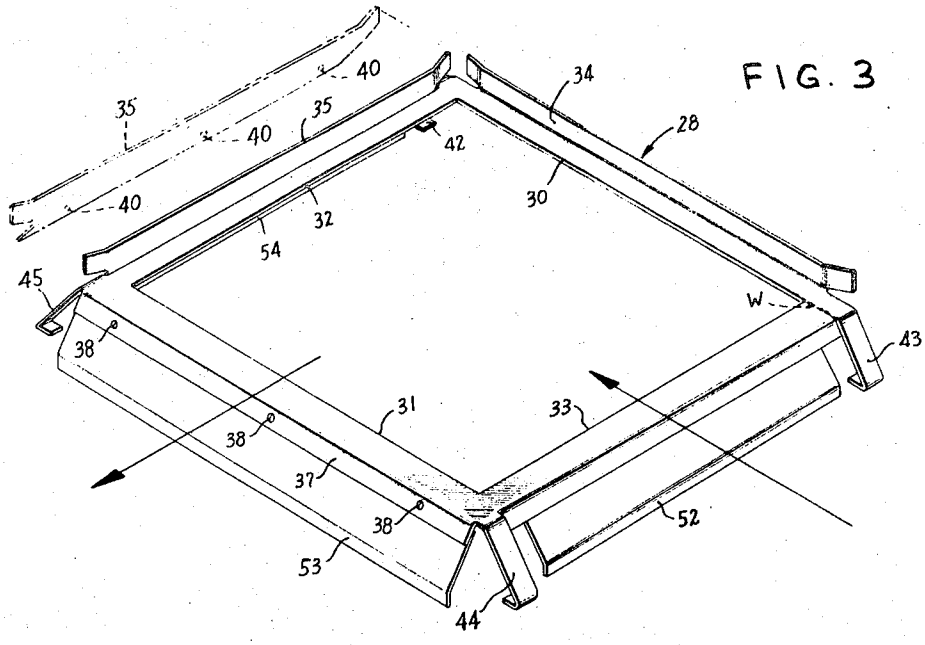


FIG. 4

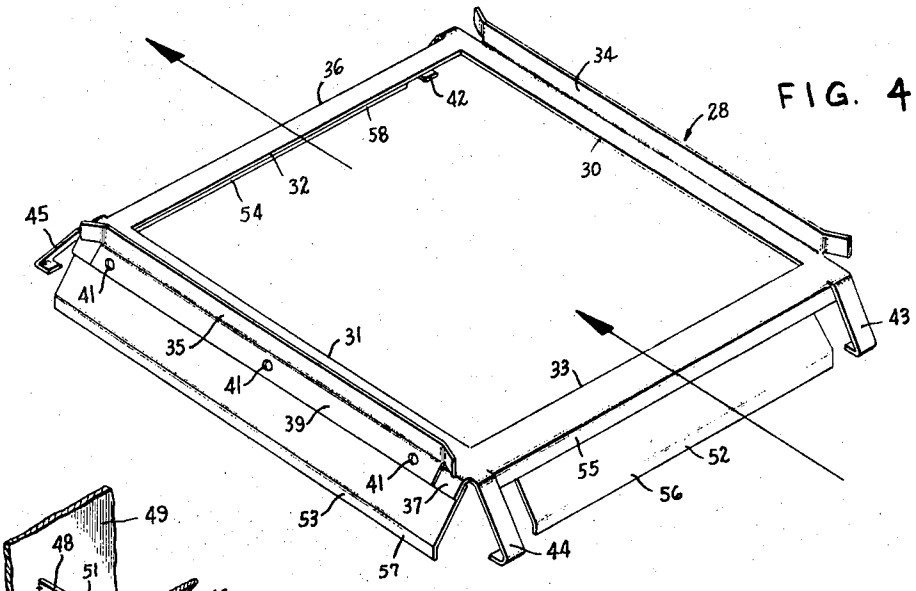
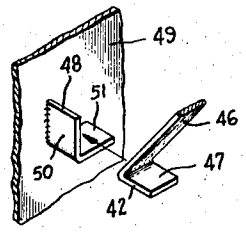


FIG. 5



INVENTOR
ROGER L. HOFFMAN
BY David M. Schiller
ATTORNEY

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3,465,763

DISHRACK TRACK ASSEMBLY FOR A DISHWASHING MACHINE

Roger L. Hoffman, Pequannock, N.J., assignor to General Electric Company, a corporation of New York

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Int. Cl. B08b 3/00
U.S. Cl. 134—154 10 Claims

ABSTRACT OF THE DISCLOSURE

A track assembly for supporting dishracks in a dishwasher is convertible for use in either an "in-line" or a "corner" type dishwasher installation. The track assembly is a unitary structure including four tracks disposed in a rectangle and two guide rails one of which is fixed on one of the tracks. The track assembly includes means for detachably mounting the other guide rail on either of two different tracks so that the two guide rails can be associated with either two parallel tracks or two perpendicular adjacent tracks. The track assembly includes mounting feet depending from its corners permitting releasable mounting of the assembly, and carries a plurality of splash baffles for shielding the dishwasher doors from water spray during the washing operation.

BACKGROUND OF THE INVENTION

Dishwashing machines ordinarily include track assemblies for supporting dishracks within the dishwasher housing. The track assemblies have tracks with track surfaces which support the dishrack and which also permit sliding movement of the dishrack into and out of the housing. The commercial type dishwashers ordinarily include a housing with two open sides and associated doors serving respectively as entrance and exit passages through which the dishrack is inserted and withdrawn into and out of the housing. In certain installations a so-called "in-line" machine is employed wherein the entrance and exit passages are oppositely disposed requiring straight line movement of the dishrack relative to the housing. In these installations the track assembly includes two spaced parallel tracks with fixed guide rails to permit straight line movement of the dishrack. Certain other installations require a so-called "corner" machine wherein the entrance and exit passages are located at right angles. In this type installation a different track assembly is employed which has four tracks with two guide rails fixed at right angles to permit the necessary right angle movement of the dishrack. Examples of these different type dishwashers and their different associated track assemblies are disclosed in U.S. Patent 2,051,233.

Heretofore, there has not been available a single basic track assembly design which is readily convertible for use with either an "in-line" or a "corner" type dishwasher installation. Provision of such a basic design is desirable in that it permits reduction in the inventory of track assemblies which must be stocked. Further, such a basic track assembly facilitates the design of a universal dishwasher which has three entrance and exit passages and which is usable selectively either in an "in-line" or a "corner" installation. Thus, such a universal dishwasher and basic track assembly permits a customer to readily change his installation from "in-line" to "corner" or vice-versa using the same machine and the same track assembly with a simple converting operation of the track assembly.

It is necessary that commercial dishwashers be maintained in a sanitary condition which requires periodic cleaning of the interior thereof and the interior parts such as the track assembly and splash baffles usually employed

to shield the doors from water spray during the washing operation. Heretofore, the cleaning of the machine and its internal parts have been difficult and time consuming inasmuch as many of the internal parts have not been readily removable. It is thus seen to be desirable that provision be made for mounting the track assembly and the splash baffles so that they can be readily removed from the machine to permit cleaning of such parts as well as to facilitate cleaning of the dishwasher interior.

OBJECTS OF THE INVENTION

It is therefore a primary object of the invention to provide a novel and improved basic unitary track assembly which is readily convertible for use in either an in-line or a corner type dishwasher installation.

It is another object of the invention to provide a unitary track assembly as defined in the proceding object which carries a plurality of splash baffles and which is mounted within a dishwasher in a manner permitting its easy removal therefrom for cleaning or other purposes.

SUMMARY OF THE INVENTION

In carrying out the invention in one preferred form, a unitary track assembly for supporting dishracks is provided including a pair of spaced parallel first tracks and a pair of spaced parallel second tracks perpendicular to and connecting the first tracks. The tracks include track surfaces which are generally coplanar for supporting a suitable dishrack containing dishes or other articles to be washed. The assembly includes two guide rails one of which is fixed on one track of the first pair of tracks adjacent the outer edge of the associated track surface. Means are provided on the assembly for detachably mounting the second guide rail in association with either the other track of the first pair or one track of the other pair to permit ready convertibility of the assembly for use either in an in-line or a corner installation.

The assembly is releasably mounted in a dishwasher by means of a plurality of depending feet which freely rest upon a corresponding number of supporting brackets in a dishwasher. Also carried by the track assembly are three splash baffles which depend angularly away from the assembly for extension toward the bottom portions of the dishwasher doors to shield the doors from spray emanating from a water spray pipe in the machine.

Other objects and advantages of the invention will become apparent from the following description taken in conjunction with the accompanying drawings in which:

BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 is a perspective view of a dishwashing machine in a corner installation;

FIGURE 2 is a view in perspective with parts broken away of the machine of FIGURE 1 in an in-line installation with one of its doors open to expose the interior in which the improved track assembly is positioned;

FIGURE 3 is a view in perspective of the track assembly showing the detachable guide rail mounted in association with one of the tracks to provide an assembly for utilization in a corner installation;

FIGURE 4 is a view in perspective of the track assembly of FIGURE 3 showing the detachable guide rail remounted in association with another track to convert the assembly for utilization in an in-line installation;

FIGURE 5 is an enlarged perspective view with parts broken away showing one of the support brackets in the machine and one of the mounting feet on the track assembly adapted to be supported by the support bracket.

DESCRIPTION OF A PREFERRED EMBODIMENT

Referring now to the drawings, there is illustrated in FIGURE 1 a dishwashing machine represented generally

by the numeral **10** including a housing **11** having a plurality of open sides serving as entrance and exit passages for permitting movement of a dishrack into and out of the housing. While the housing **11** may have two open sides, it preferably has three open sides permitting selective installation of the machine for either in-line or corner operation. In FIGURE 1 the machine **10** is shown installed in the corner of a room.

Referring to FIGURE 2, the machine **10** includes an open side **13** having a vertically movable door **14** associated therewith, the remaining two open sides being respectively adjacent the open side **13** to the left thereof, and opposite the open side **13** and having doors **15** and **16** associated therewith. The corner installation of FIGURE 1 includes a pair of right angle tables **17** and **18** associated respectively with two adjacent open sides of the machine such that a suitable dishrack **19** containing dishes **20** and supported on the table **17** is movable into the machine in the direction of the arrow **21** through the open side **13** when the door **14** is elevated, and is movable out of the machine in the direction of the arrow **22** through the adjacent open side when the door **15** is elevated. It is understood that the directions of movement of the dishrack **19** can be reversed from those indicated by the arrows **21** and **22**. As shown in FIGURE 2, the machine **10** is disposed for in-line operation and to this end is associated with two longitudinally spaced tables **24** and **25**. The table **24** supports a suitable dishrack (not shown) which is movable in the direction of the arrow **26** into the machine through the open side **13** and which is removed from the machine after the cleaning operation through the opposite open side along the table **25** in the direction of the arrow **27**. Here again the direction of movement of the dishrack can be reversed from the direction indicated by the arrows **26** and **27**.

In accord with the present invention an improved unitary track assembly is provided which is readily convertible for use in either an in-line or a corner type dishwasher installation. To this end, the track assembly includes a guide rail which can be detachably mounted selectively in association with either of two adjacent tracks such that an associated dishrack can be moved relative to the housing in either a straight line path or a right angle path. The improved track assembly is shown in FIGURES 2, 3 and 4 represented generally by the numeral **28** and is in the form of a unitary frame of generally hollow rectangular configuration.

As shown in FIGURE 2, the assembly **28** is mounted within the machine housing above a water spray pipe **29** for removably supporting a dishrack in position to receive spray from the spray pipe **29**. An additional spray pipe (not shown) may be located within the housing above the assembly **28** to provide upper and lower wash and rinse spray pipes as desired. The spray pipes are preferably mounted for rotation about vertical axes so as to completely envelop the dishrack and its contents with wash and rinse fluid.

In order to support the dishrack and to permit its movement relative to the machine housing, the assembly **28** includes four tracks arranged in a rectangular array and comprised of a pair of first spaced parallel tracks **30** and **31** and a pair of second spaced parallel tracks **32** and **33** extending generally perpendicular to and connecting the first tracks **30** and **31**. The tracks **32** and **33** are in the form of separate supports which are connected to the tracks **30** and **31** in any suitable manner such as by welding along meeting edges of the tracks and supports as indicated by the letter W in FIGURE 3. The welds are ground smooth so that the tracks **30, 31, 32** and **33** have upper track surfaces which are substantially coplanar.

In order to guide the dishrack for sliding movement relative to the track assembly, the assembly includes a pair of guide rails **34** and **35** associated with selected ones of the tracks **30, 31, 32** and **33**. As best shown in FIGURES 3 and 4, the guide rail **34** is associated with the track **30** and is preferably an integral part thereof extending upwardly from the outer edge of the associated track surface generally perpendicular thereto. In accord with the invention the second guide rail **35** is adapted for selective detachable mounting in association with either the track **31** or the track **32**. To this end, first means are provided for detachably mounting the rail **35** adjacent the outer edge of the track surface of the track **31**, and second means are provided for detachably mounting the guide rail **35** adjacent the outer edge of the track surface of the track **32**. The first mounting means preferably comprises a depending lateral flange **37** integral with the track **31** and the second mounting means similarly comprises a depending lateral flange **36** integral with the track **32**. The flange **37** extends downwardly and away from the track **31** and includes a plurality of spaced openings **38**. The flange **36** similarly extends downwardly and away from the track **32** and includes a plurality of openings (not shown).

As best shown in FIGURE 4, the detachable guide rail **35** includes a flange **39** integral with and depending from the main section of the guide rail. The flange **39** includes a plurality of openings **40** as shown in FIGURE 3 which are aligned with the openings **38** in the flange **37** of the track **31** when the guide rail **35** is operatively positioned in association with the track **31** with its flange **39** bearing against the upper surface of the flange **37** as best shown in FIGURE 4. The rail **35** is secured to the track **31** by releasable fasteners such as screws **41** which extend through the aligned openings **38** and **40**. When the guide rail **35** is mounted in association with the track **31** as shown in FIGURE 4, it is in spaced parallel relation with the guide rail **34** to guide the dishrack for straight line movement along the tracks **30** and **31** in the direction of the arrows. This arrangement is employed in an in-line installation as shown in FIGURE 2.

In order to convert the track assembly for use in a corner installation as shown in FIGURE 1, it is only necessary to detach the guide rail **35** from the track **31** and remount it in association with the track **32**. This is quickly accomplished by removing the screws **41** and placing the rail **35** in association with the track **32** in the same manner in which it was associated with the track **31**. The screws **41** are then inserted through the aligned openings of the rail **35** and the flange **36** on the track **32**. Such arrangement is illustrated in FIGURE 3 and is effective to guide the dishrack for movement along a right angle path. The dish rack is slid onto the tracks **30** and **31** by movement thereof in the direction of the right-hand arrow in FIGURE 3 and is guided into position by the rail **34** until it abuts against the rail **35**. When it is desired to remove the dishrack from the machine, it is moved in the direction of the left-hand arrow in FIGURE 3 along the tracks **32** and **33**, the dishrack being guided for such movement by the rail **35**.

In accord with the invention the assembly **28** is releasably mounted within the machine housing so as to permit its ready removal from the housing for cleaning or other purposes. To this end, the assembly **28** is provided with a plurality of support feet shown in FIGURES 3 and 4 as comprising four support feet **42, 43, 44** and **45** disposed at the corners of the assembly. The support feet preferably comprise integral extensions of the tracks **30** and **31**. Thus, the feet **42** and **43** are in the form of longitudinal extensions of the track **30** formed to depend angularly from the ends of the track **30**. Similarly, the feet **44** and **45** are integral longitudinal extensions of the track **31** formed to depend angularly from the ends of such track. Each of the feet includes a long depending section **46** and a short inturned section **47** as shown in FIGURE 5 with reference to the foot **42**.

In order to releasably mount the assembly **28** within the machine housing, four generally L-shaped brackets **48** are mounted by opposed inside walls of the housing

just below the opposed open sides **13** and **16**. Each of the brackets **48** includes vertically and horizontally extending parts **50** and **51** (FIGURE 5) with the horizontal part **51** serving as a shelf to receive the section **47** of the associated support foot whereby the brackets **48** freely and releasably support the assembly **28** for removal from the housing. FIGURE 2 illustrates the support foot **42** in operative engagement with the associated bracket **48**. The assembly **28** is readily removed from the housing simply by lifting the assembly to elevate the support feet clear of the brackets **48** and withdrawing the assembly **28** through one of the open sides **13** and **16**.

In accord with a further aspect of the invention, the assembly **28** carries a plurality of splash baffles for shielding the lower portions of the doors from spray from the spray pipes during operation of the machine so as to prevent leakage of water outside the machine. As shown in FIGURES 3 and 4, the baffles preferably comprise three baffle plates **52**, **53** and **54** associated respectively with the tracks **33**, **31** and **32**. The baffle plate **52** is preferably welded to the underside of a depending flange **55** integral with the track **33**, and the baffle plates **53** and **54** are similarly welded to the undersides of flanges **37** and **36** respectively on the tracks **31** and **32**. The baffles include respectively short vertical terminal sections **56**, **57** and **58** which lie adjacent the lower portions of the doors **14**, **15** and **16** when such are closed so as to shield these door portions from water spray during operation of the machine.

Although the invention has been described with reference to certain specific embodiments thereof, numerous modifications are possible and it is desired to cover all modifications falling within the spirit and scope of the invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A unitary track assembly for supporting a dishrack in a dishwashing machine comprising a generally rectangular hollow frame including:

a pair of spaced parallel first tracks having track surfaces,

a pair of spaced parallel second tracks extending generally perpendicular to and connecting said first tracks and having track surfaces substantially coplanar with the track surfaces of said first tracks,

first and second guide rails, said first guide rail being fixed to said frame to extend generally perpendicular to the track surface of one of said first tracks adjacent its outer edge,

first means on said frame for detachably mounting said second guide rail adjacent the outer edge of the track surface of the other of said first tracks to extend generally perpendicular to the associated track surface,

second means on said frame for detachably mounting said second guide rail adjacent the outer edge of the track surface of one of said second tracks to extend generally perpendicular to the associated track surface, whereby said second guide rail can be selectively mounted by said first and second means for association with either said other of said first tracks or said one of said second tracks,

three splash baffles carried by said frame and depending angularly away from said second tracks and said other of said first tracks, and

depending support feet on said frame to permit releasable mounting of said assembly in a dishwashing machine.

2. An assembly as defined in claim **1** wherein said support feet comprise four integral longitudinal extensions of said first tracks depending angularly therefrom.

3. An assembly as defined in claim **1** wherein said first and second means comprise respectively first and second depending lateral flanges integral with said other of said first tracks and with said one of said second tracks, said flanges having openings therein,

a third depending lateral flange integral with said second guide rail and having openings therein, said second guide rail being positioned with its third flange overlying the selected one of said first and second flanges with said openings aligned, and

releasable fasteners extending through said aligned openings.

4. An assembly as defined in claim **3** wherein said other of said second tracks includes an integral depending lateral flange, said support feet comprising four integral longitudinal extensions of said first tracks depending angularly therefrom, said splash baffles having sections underlying and secured to the flanges of said tracks.

5. In a dishwashing machine,

a housing for receiving a dishrack, said housing having a plurality of open sides through which the dishrack can be inserted and withdrawn into and out of the housing.

door means on said housing movable between open and closed positions for exposing and closing said open sides,

a water spray pipe in said housing,

a unitary track assembly releasably mounted in said housing for removably supporting the dishrack in a position to receive spray from said spray pipe, said track assembly comprising a generally rectangular hollow frame including;

a pair of spaced parallel first tracks having track surfaces,

a pair of spaced parallel second tracks extending generally perpendicular to and connecting said first tracks and having track surfaces substantially coplanar with the track surfaces of said first tracks,

first and second guide rails, said first guide rail being fixed to said frame to extend generally perpendicular to the track surface of one of said first tracks adjacent its outer edge,

first means on said frame for detachably mounting said second guide rail adjacent the outer edge of the track surface of the other of said first tracks to extend generally perpendicular to the associated track surface,

second means on said frame for detachably mounting said second guide rail adjacent the outer edge of the track surface of one of said second tracks to extend generally perpendicular to the associated track surface, whereby said second guide rail can be selectively mounted by said first and second means for association with either said other of said first tracks or said one of said second tracks, said second guide rail when mounted in association with said other of said first tracks cooperating with said first guide rail to guide the dishrack for movement along said first tracks in a straight line path, said second guide rail when mounted in association with said one of said second tracks extending generally perpendicular to said first guide rail such that the dishrack is guided for movement along said first and second tracks in a right angle path,

depending support feet on said frame,

a plurality of support brackets mounted in said housing each for freely supporting a separate one of said support feet to releasably mount said track assembly, and

a plurality of splash baffles on said frame extending toward said open sides to shield the lower portions of said door means when closed from spray from said spray pipe.

6. A machine as defined in claim **5** wherein said plurality of open sides comprises three open sides permitting selective installation of the machine for either in-line or corner operation, two opposed ones of said open sides being employed respectively as entrance and exit passages

for straight line movement of the dishrack in an in-line installation wherein said second guide rail is mounted by said first means, two adjacent ones of said open sides being employed respectively as entrance and exit passages for right angle movement of the dishrack in a corner installation wherein said second guide rail is mounted by said second means.

7. A machine as defined in claim **6** wherein said first and second means comprise respectively first and second depending lateral flanges integral with said other of said first tracks and with said one of said second tracks, said flanges having openings therein,

a third depending lateral flange integral with said second guide rail and having openings therein, said second guide rail being positioned with its third flange overlying the selected one of said first and second flanges with said openings aligned, and

releasable fasteners extending through said aligned openings.

8. A machine as defined in claim **5** wherein said first and second means comprise respectively first and second depending lateral flanges integral with said other of said first tracks and with said one of said second tracks, said flanges having openings therein,

a third depending lateral flange integral with said second guide rail and having openings therein, said second guide rail being positioned with its third flange overlying the selected one of said first and second flanges with said openings aligned, and

releasable fasteners extending through said aligned openings.

9. A machine as defined in claim **7** wherein said other of said second tracks includes an integral depending lateral flange, said support feet comprising four integral longitudinal extensions of said first tracks depending angularly therefrom, said splash baffles comprising three baffle plates having sections underlying and secured to the flanges of said second tracks and the flange of said other second tracks.

10. A machine as defined in claim **8** wherein said other of said second tracks includes an integral depending lateral flange, said support feet comprising four integral longitudinal extensions of said first tracks depending angularly therefrom, said splash baffles comprising three baffle plates having sections underlying and secured to the flanges of said second tracks and the flange of said other second tracks.

References Cited

UNITED STATES PATENTS

2,051,233	8/1936	Webb.	
3,139,095	6/1964	Haas	134—165 XR

ROBERT L. BLEUTGE, Primary Examiner

U.S. Cl. X.R.

134—165; 211—162; 312—289, 350