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PROTECTIVE SPRAY SHIELD APPARATUS

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2 Sheets-Sheet 1

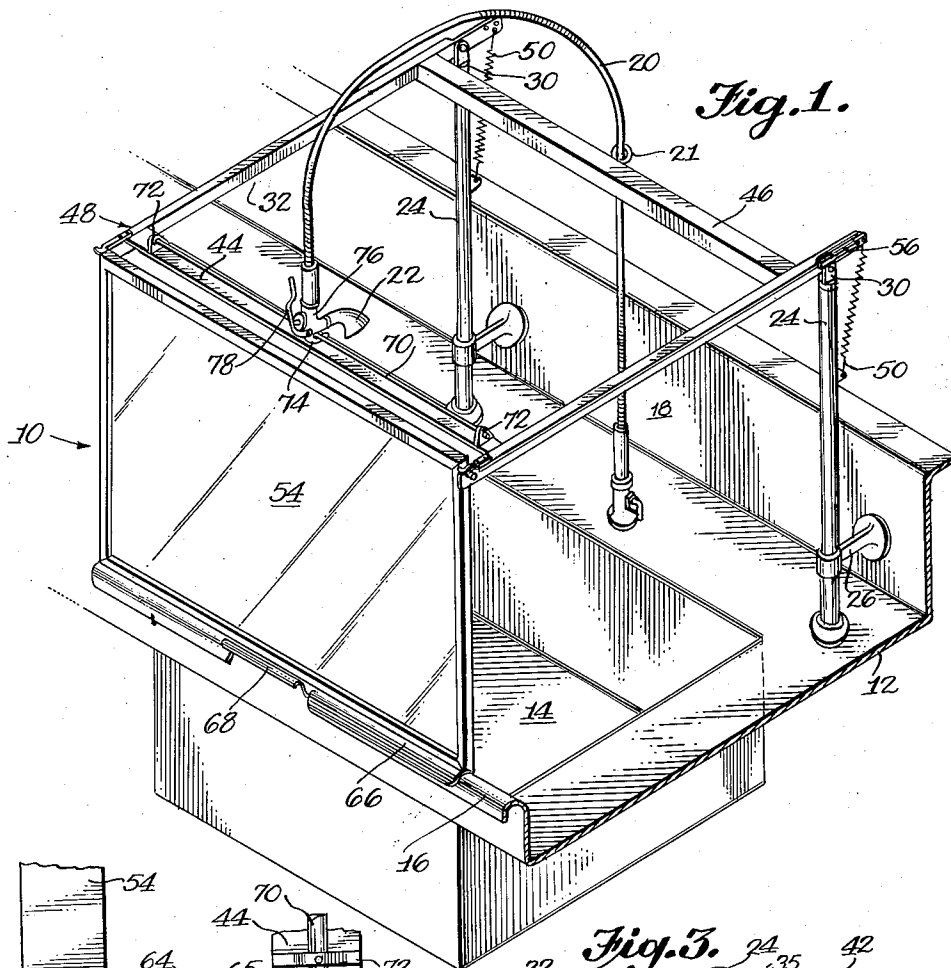


Fig. 1.

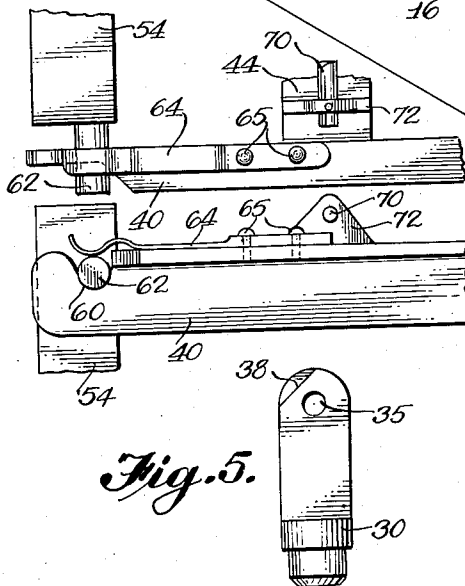


Fig. 5.

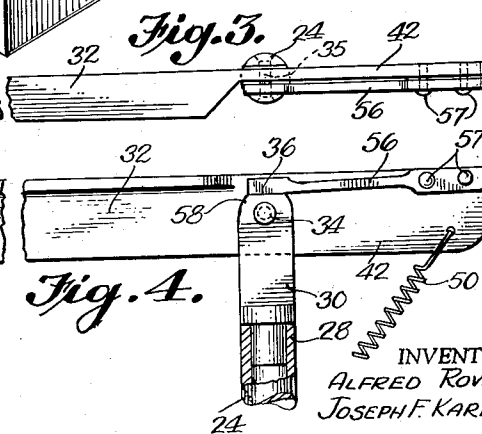


Fig. 4.

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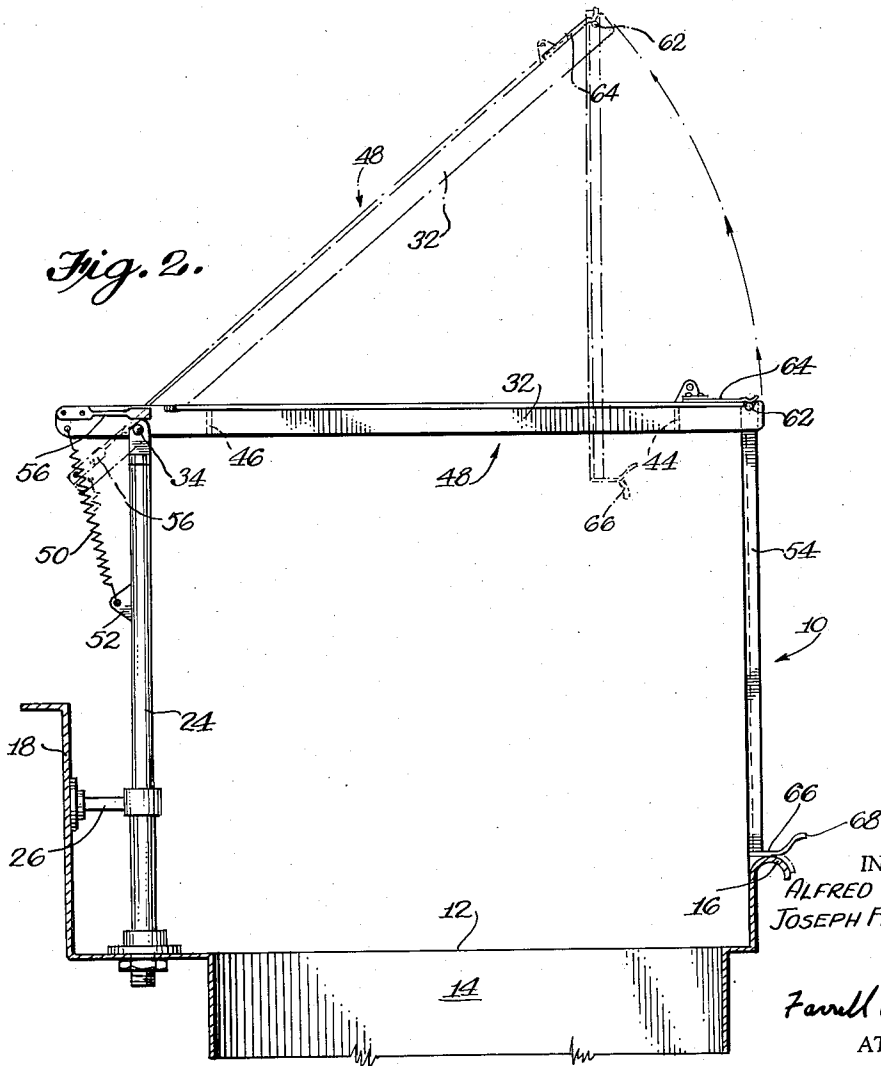
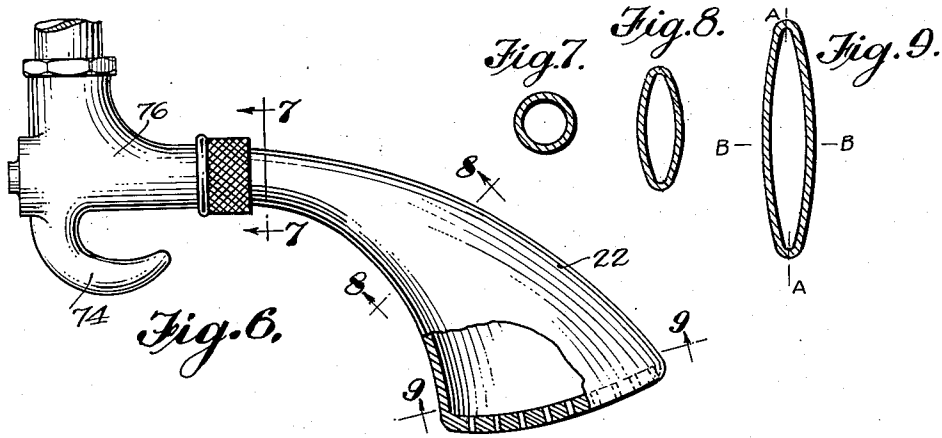
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PROTECTIVE SPRAY SHIELD APPARATUS

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2 Sheets-Sheet 2



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## PROTECTIVE SPRAY SHIELD APPARATUS

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8 Claims. (Cl. 4—187)

This invention relates to spray shield apparatus and more particularly to an improved spray shield apparatus for use in a pre-rinsing operation for articles such as dishes, trays, tableware, etc., to protect the operator from the spray created while pre-rinsing such articles.

It is the principal object of this invention to provide an improved spray shield apparatus which will movably support and position a protective shield intermediate an operator or user and a rinsing spray of liquid, so that the protective shield may be easily removed from the interposed operative position to an inoperative position, and enable the operator to remove the articles which have been rinsed from the rinsing station and to place other articles to be rinsed in the rinsing station.

An important object of this invention is to provide an improved spray shield apparatus having a cantilever frame structure which is pivotally mounted to an upstanding support standard for movement between an operative position, wherein the frame structure is disposed generally horizontally, and an inoperative position wherein the frame structure is disposed on an incline to the horizontal, with a protective shield that is removably and pivotally mounted to the frame structure with the protective shield depending generally vertically therefrom, and means for counter balancing the frame structure.

Another object of this invention is to provide an improved spray shield apparatus, which includes a protective shield that is movable between operative and inoperative positions to protect the user from a liquid rinsing spray, with resilient means for positioning and retaining the protective shield in such positions.

An additional object of this invention is to provide an improved spray shield apparatus having a pivotally mounted protective shield for protecting a user from a liquid rinsing spray with means, including resilient clip means, for removably attaching the protective shield to the apparatus so that the protective shield may be easily removed from the apparatus for repair, cleaning and/or replacement.

A further object of this invention is to provide an improved spray shield apparatus with a spray nozzle that is pivotally, slidably and removably attached to the apparatus, with the spray nozzle creating a knife-like spray which, in view of the universal movability of the nozzle head, will effect a more efficient cleaning of dishes and the like which are conventionally stacked on edge in a generally inclined position within the well of a rinse sink.

A still further object of this invention is to provide an improved spray nozzle that creates a spray that is substantially elliptical or knife-like in configuration over a uniform area in which the major axis of the ellipse is substantially longer than the minor axis thereof.

In order to acquire the desired objects, as stated above, the improved spray shield apparatus of the invention includes a pair of spaced generally vertically disposed upstanding support means which are adapted to be rigidly secured to a rinse sink, or the like. The rinse sink is provided with a flexible hose line that has a spray nozzle

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connected thereto for spraying water or the like onto articles which are to be pre-rinsed. The upstanding support means is positioned adjacent the inner edge portion of the rinse sink, and each of the support means is pivotally connected to an intermediate portion of an elongated relatively rigid cantilever bar member. The elongated relatively rigid bar members extend generally parallel to each other from the respective pivotal connections to the upstanding support means, and a plurality of relatively rigid brace means extend therebetween to define therewith a substantially rectangular relatively rigid cantilever frame structure which is pivotally movable between a generally horizontal operative position and a generally inclined inoperative position. Spring biased resilient locking or positioning means is provided for each of the bar members for retaining the frame structure in the operative and inoperative positions. A resilient means is provided to bias each of the elongated bar members from the normal operative position to the inoperative position, and this resilient means is in the form of a coil spring that is attached adjacent one end portion of each bar member and an intermediate portion of the respective upstanding support means. Adjacent the other end portions of the bar members there is removably, pivotally attached a generally rectangular impervious protective shield that depends generally vertically therefrom, and which is pivotally mounted thereto so that the protective shield will be mounted in such generally vertical position during the movement of the cantilever frame structure between the operative and inoperative positions. The lower edge portion of the protective shield is adapted to engage the outer edge portion of the rinse sink when the frame structure is in the operative position to give more stable support to the spray shield apparatus. Handle means is provided adjacent the lower edge portion of the protective shield for urging the frame structure between the operative and inoperative positions. Resilient means in the form of spring clips retain the protective shield pivotally connected to the bar members so that the protective shield will not be accidentally removed from the bar members and also to enable the protective shield to be easily removed therefrom to permit cleaning, repairing and replacing of the protective shield, when necessary. The spray nozzle is pivotally, slidably and removably connected to the cantilever frame structure to facilitate the spraying of any article that may be placed in the rinse sink.

Other objects, advantages and important features of the invention will be apparent from a study of the specification following taken with the drawing which together described, disclose and illustrate a preferred embodiment of the invention and what is now considered and believed to be the best mode of practicing the principles thereof. Other embodiments may be suggested to those having the benefit of the teachings herein, and such other embodiments are intended to be reserved especially as they fall within the scope and breadth of the subjoined claims.

In the drawing:

Figure 1 is an isometric view of the improved spray shield apparatus shown in the operative position in combination with a rinse sink;

Figure 2 is a partial side elevational view of Fig. 1 looking from left to right illustrating the spray shield apparatus in the operative position by solid lines and in the inoperative position by dotted lines with the spray nozzle and hose line eliminated for the purpose of clarification;

Figure 3 is an enlarged partial plan view taken along the near side of Fig. 1 illustrating, in detail, one of the elongated cantilever bar members;

Figure 4 is a side elevational view of Fig. 3;

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Figure 5 is an enlarged side elevational view illustrating the details of a bifurcated clevis member that is located on the far side of Fig. 1;

Figure 6 is an enlarged side elevational view, with a portion broken away, illustrating the details of the improved spray nozzle;

Figure 7 is a cross-sectional view taken along the line 7—7 of Fig. 6 looking in the direction of the arrows;

Figure 8 is a cross-sectional view taken along the line 8—8 of Fig. 6 looking in the direction of the arrows, and

Figure 9 is a cross-sectional view taken along the line 9—9 of Fig. 6 looking in the direction of the arrows.

Attention is now directed to Figs. 1 and 2 of the drawing wherein there is illustrated an improved spray shield apparatus 10 that is adapted to be used in combination with a rinse sink 12 having a well 14 into which may be placed articles to be rinsed such as dishes, trays, flatware etc., or the like, not illustrated. The rinse sink 12 is provided with a generally upwardly projecting outwardly rounded drip flange or roll 16 adjacent the outer edge portion and an upwardly projecting back flange 18 adjacent the inner edge portion thereof.

A flexible hose line 20, note Fig. 1, extends from adjacent the inner edge portion of the rinse sink 12 generally upwardly through a retaining ring member 21 and then outwardly, and terminates in an improved spray nozzle 22, note Figs. 6—9 to be described in more detail hereinafter.

A pair of elongated, spaced, relatively rigid, generally vertically disposed upstanding tubular support standards 24—24 are secured to the rinse sink 12 adjacent the inner edge portion thereof with the support standards 24 being spaced in opposite directions generally longitudinally of the rinse sink 12 from the hose line 20. The support standards 24—24 extend generally upwardly from the rinse sink 12 with the longitudinal axes thereof being substantially parallel. If desired, each of the support standards 24 may be further supported by rigid members 26 which are each connected to the back flange 18, and extend generally outwardly therefrom to the respective support standard 24 with the rigid members 26—26 being generally horizontally disposed in substantially parallel relationship to each other.

The open upper end portions 28, note Fig. 4, of each tubular support standard 24 have a bifurcated clevis member 30 telescopically positioned and retained therein by press fitting.

An elongated relatively rigid cantilever bar member 32, substantially angular in cross-sectional configuration, is pivotally mounted to each of the bifurcated clevis members 30 by a pivot pin 34 which passes through aligned openings 35 in the bifurcated clevis members 30 and the respective bar member 32.

One of the bifurcated members 30 has a generally horizontally disposed substantially flat portion 36, note Fig. 4, while the other bifurcated clevis member 30 is provided with a substantially flat portion 38 that is inclined to the horizontal, note Fig. 5. In each instance, the flat portions 36 and 38 are provided on the outer bifurcation of each of the clevis members 30.

It is to be noted that each of the elongated cantilever bar members 32 is pivotally mounted to the respective support standard 24 intermediate the outer 40 and inner 42 end portions for pivotal movement about a common generally horizontally disposed axis that passes through the pivot pins 34. The bar members 32 are disposed in substantially parallel relationship to each other, and extending between and connected to the spaced bar members 32 are a pair of spaced relatively rigid outer 44 and inner 46 brace members, angular in cross-section, which are disposed in a plane substantially common to the bar members 32 to define a generally rectangular cantilever frame structure 48. The frame structure 48 is pivotally movable between a generally horizontally disposed operative position to an inoperative position with the bar

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members 32 being inclined to the horizontal, and the outer end portions 40 moving through an arcuate path show by the arrows in Fig. 2 wherein the operative position is illustrated in solid lines and the inoperative position is shown in dotted lines. It is also to be noted that in the operative position, the frame structure 48 including the elongated bar members 32 is positioned in a plane that is substantially common to the generally horizontally disposed flat portion 36, and in the inoperative position in a plane that is substantially common to the inclined flat portion 38.

A resilient biasing means 50 in the form of a coil spring is attached between the inner end portion 42 of each bar member 32 and a flange 52 on an intermediate portion of the respective support standard 24, note Fig. 2, for normally biasing the respective bar member 32 to the inoperative position and enable the frame structure 48 to be counter-balanced and counteract the weight of a protective shield 54 which is carried by the outer end portions 40 of the cantilever bar members 32.

An elongated resilient biasing means 56 in the form of a flat leaf-type spring is attached to the outer side of the inner end portion 42 of each of the bar members 32 by suitable means such as rivets 57, with each of the resilient means 56 extending generally longitudinally outwardly toward the outer end portion 40 of the respective bar member 32. Each of the biasing means 56 engage and slide over the generally arcuate surface 58 of the respective outer bifurcation of the respective clevis member 30, and in the instance, as illustrated in Fig. 4, when the biasing means 56 engages the generally horizontally disposed flat portion 36 such engagement will facilitate the positioning and retaining of the frame structure 48 in the operative position, and when the other biasing means 56 engages the inclined flat portion 38 on the other clevis member 30 the frame structure 48 will be positioned and retained in the inoperative position.

Each of the outer end portions 40 of the bar members 32 is provided with a generally upwardly opening notch or recess 60, note Fig. 4, into each of which there is removably and pivotally mounted the impervious, transparent, generally rectangular, relatively rigid, protective shield 54 by means of pivot pins 62 which are retained in the respective recesses 60 by resilient means 64 in the form of a flat spring clip attached to the outer end portion 40 of each bar member 32 by suitable means such as rivets 65. The resilient means 64 provides that the pins 62 on the protective shield 54 may be easily removed from the respective recess 60 to enable the shield 54 to be repaired, cleaned and/or replaced, etc., as desired.

It is to be noted that during movement of the frame structure 48 into and out of the operative and inoperative positions, the protective shield 54 depends from the outer end portions 40 of the bar members 32, and is disposed in a generally vertical position at all times. The protective shield 54 terminates in a lower, generally horizontally disposed edge portion 66 which is adapted to engage the generally upwardly extending drip flange or roll 16 of the rinse sink 12 when the frame structure 48 of the spray shield apparatus 10 is in the operative position, note Figs. 1 and 2, with the protective shield 54 being disposed substantially normal to the bar members 32 to provide stability and support for the spray shield apparatus 10 during use of the apparatus in a pre-rinsing operation.

The lower edge portion 66 of the protective shield 54 is also provided with handle means 68 in the form of a generally upwardly extending and outwardly projecting flange, note Figs. 1 and 2, which is useful in urging the frame structure 48 of the spray shield apparatus 10 to move between the operative and inoperative positions.

An elongated relatively rigid traverse rod 70 is secured to the outer brace member 44 by spaced bracket means 72, and the spray nozzle 22 is pivotally, slidably movable and removably mounted to the traverse rod

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70 by hook means 74, note Figs. 1 and 6, to facilitate the spraying of any article which may be placed in the well 14 of the rinse sink 12.

The novel spray nozzle 22 produces a knife-like spray which is more effective in pre-rinsing and spraying away food and greases from the articles being rinsed since the spray so produced will simultaneously rinse the top, side and bottom surfaces of the articles in the well 14. The knife-like spray is produced by having the spray nozzle 22 smoothly and continuously tapering from a substantially oval configuration, note Fig. 7, immediately adjacent the attachment 76 to the hose line 20 to an elliptical configuration, note Fig. 9, wherein the major axis A—A is of a substantially greater length, preferably more than four times greater, than the length of the minor axis B—B. The knife-like spray is controlled by a conventional type of manually operated valve having a handle 78, note Fig. 1. In actual operation it has been found that a knife-like spray which is apparently four (4) inches wide by twenty (20) inches long will give the most efficient and sanitary results.

While the invention has been described in terms of an embodiment which it has assumed in practice, the scope of the invention should not be deemed to be limited by the precise embodiment herein shown, such other embodiments being intended to be reserved especially as they fall within the scope of the claims here appended.

We claim as our invention:

1. A spray shield apparatus for preventing liquid being directed into a sink from splashing over an edge of said sink comprising a shield, a frame, said shield depending from one end of said frame, means to move said frame and the shield depending therefrom between a shielding position and another position affording manual access to said sink, means normally biasing said frame to said other position, and quick releasable means for holding said frame in said shielding position against said bias.

2. The apparatus of claim 1 including a spray nozzle and means for sliding said nozzle in a predetermined path parallel to and rearward of said shield.

3. A spray shield apparatus for preventing liquid being directed into a sink from splashing over an edge of said sink comprising a shield, a frame, said shield depending

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from one end of said frame, means to move said frame and the shield depending therefrom between a shielding position and another position affording manual access to said sink, a spray nozzle, and mounting means for sliding said nozzle in a predetermined path parallel to and rearward of said shield.

4. The apparatus of claim 3 wherein said frame lies in a generally horizontal plane during said shielding position and in an inclined plane during said other position.

5. The apparatus of claim 3 including positioning means for selectively retaining the frame in said shielding position and said other position.

6. The apparatus of claim 3 wherein the lower edge of said depending shield engages the edge of said sink when in shielding position.

7. The apparatus of claim 6 including two upwardly projecting support standards positioned adjacent a sink edge opposite the edge engageable by said shield, said frame being pivotally mounted on said standards.

8. A spray shield apparatus for preventing liquid being directed into a sink from splashing over an edge of said sink comprising a shield, a frame, said shield depending from one end of said frame, means to move said frame and the shield depending therefrom between a shielding position and another position affording manual access to said sink, and mounting means carried by said frame adapted to engage a spray nozzle for sliding said nozzle in a predetermined path rearward of said shield.

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