

(No Model.)

A. D. MILLER.  
DISH WASHING MACHINE.

No. 442,906.

Patented Dec. 16, 1890.

Fig. 5.

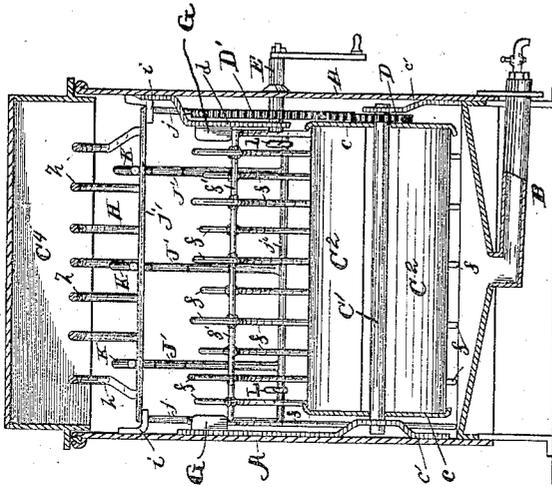


Fig. 2.

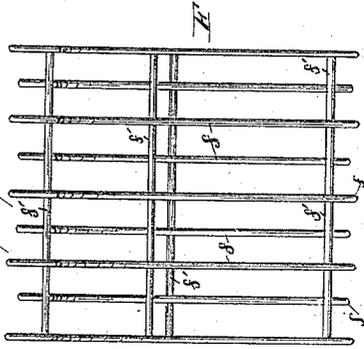


Fig. 4.

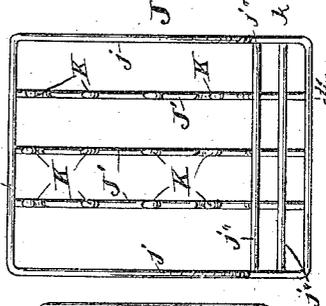


Fig. 1.

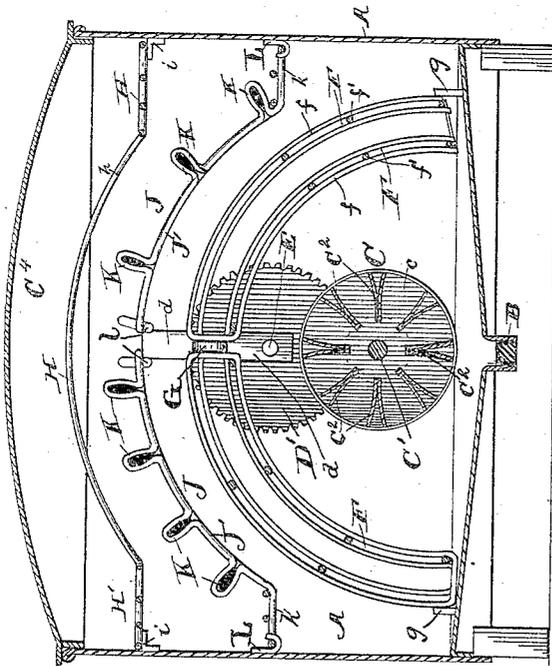
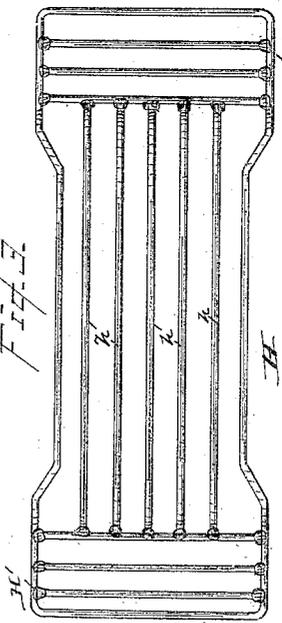


Fig. 3.



WITNESSES

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# UNITED STATES PATENT OFFICE.

ADDIE DICKMAN MILLER, OF PORTLAND, OREGON.

## DISH-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 442,906, dated December 16, 1890.

Application filed July 24, 1890. Serial No. 359,796. (No model.)

*To all whom it may concern:*

Be it known that I, ADDIE DICKMAN MILLER, of Portland, in the county of Multnomah and State of Oregon, have invented certain new and useful Improvements in Dish-Washing Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a central vertical longitudinal section through my improved dish-washing machine. Fig. 2 is a view of one of the lower plate-racks detached. Fig. 3 is a view of the upper plate-rack detached. Fig. 4 is a view of one of the cup-racks removed. Fig. 5 is a central transverse vertical sectional view of the machine.

This invention is an improvement in dish-washing machines, and its principal object is to provide a vessel in which the plates, &c., can be placed over and around a revoluble dasher-wheel of peculiar construction, and to provide a compact arrangement of racks for holding the plates, dishes, &c.; and to this end the invention consists in the novel construction of the dasher-wheel, the racks, and in the combination and arrangement of parts hereinafter more particularly specified and claimed.

Referring to the drawings by letter, A designates a vessel, preferably of tin or galvanized iron, and rectangular in cross-section or box-like in appearance. Its bottom is depressed from all sides toward its center, as indicated, so as to drain sediment and water to an outlet-opening in the center of the bottom communicating with a short drain-pipe B, that is provided with a cock or stopper to prevent escape of water when the machine is in use.

The cover  $c^4$  is hinged to the box and is arched longitudinally, being highest at center, as indicated.

C designates the dasher-wheel composed of end disks  $c c$ , mounted on a shaft  $C'$ , journaled in proper bearings in the sides of the box or in hangers  $c' c'$ , attached to the sides of the box, as shown. The dasher-blades  $C^2$  of this wheel are formed of metallic strips, which are first bent transversely into concavo-convex shape. These strips are then

bent on a central longitudinal line backward or folded with their concave faces outermost, so that each strip forms two blades which curve in opposite directions. These strips are secured to the end disks  $c c$  in any suitable manner, and when the wheel is revolved in either direction will lift and dash the water forcibly against the sides and top of the box. It is best to revolve the wheel alternately in opposite directions.

D designates a small pinion on shaft  $C'$ , meshing with a gear  $D'$ , mounted on a stub-shaft E, journaled in the side of the box and in a bracket  $d$ , attached thereto, as shown. Shaft E projects through the side of the box and has on its outer end a crank-arm handle by which it can be revolved, thereby transmitting a rapid motion to wheel C.

F F designate rack-frames, preferably formed of wire, and consisting of a series of wire loops  $f f$ , bent into arc shape of about a quarter-circle extent, the two longer sides of the loops being bent on parallel arcs of a large and small circle having a common axis. A series of such loops are arranged parallel with each other and about a half-inch or so apart, and are united by transverse tie-wires  $f' f'$ , soldered or otherwise fastened to loops at the point of intersection therewith, as indicated. Two of these frames F are used, placed on opposite sides of the wheels, and extending over the latter and retained in position by lugs  $g g$  on the bottom of the vessel, and their upper ends resting against each other or against pins G G, projecting from the sides of the vessel or hangers  $c'$  just above the wheel C, as shown.

H designates another rack-frame, which is composed of a series of parallel wires  $h h$ , each bent on the arc of a large circle and connected at their ends to one side of narrow rectangular wire loops  $H' H'$ , which rest upon lugs  $i i$ , attached to the ends of the box and support frame H above the frames F F, as shown.

J J designate the cup-racks, two being employed and mounted above frame H and at each side of the vessel and overreaching frame H, their ends meeting at center, as shown. Each frame J is formed of two side wires  $j j$ , bent on arcs of about an eighth of a circle, and united at their extremities by

transverse wires  $j' j'$  and a series of intermediate wires  $J' J'$ , which are formed at intervals with upstanding short return-bend loops  $K K$ , the wires  $J$  being arranged in parallel series and united at their ends to the transverse wires  $j'$ . At the lower side of each frame  $J$  is a horizontal narrow rectangular portion  $k$ , formed of wires arranged lengthwise and crosswise, as shown, and which rest upon studs  $L L$  on the ends of the vessel, as shown, while the upper ends of frames  $J$  rest upon studs  $l l$  on the inner sides of the vessel, as shown. The cover closes neatly over frames  $J$ . Frames  $F F$  are adapted to hold saucers, plates, and other flat pieces of table service set edgewise between the wires thereof, as indicated, and frames  $H$  sustain the larger pieces of service, such as meat-dishes, &c., also set edgewise to the wheel, while cups, glasses, &c., can be hung on the loops of frames  $J J$  and larger vegetable dishes and miscellaneous articles placed on the same. By this arrangement of racks all the dishes, &c., are arranged in such manner that they present an edge to the wheel and will not interfere with the dashing of water by the wheel through the interior of the vessel onto all the plates and dishes therein. The shape of the wheel-blades or buckets forcibly dashes the water against the plates in a continuous shower and through the entire interior of the vessel. The water should about half cover the wheel, and as the vessel is of metal it can be placed on a stove and kept heated.

Fresh water can be added through the top, as desired, and the foul water drawn off through the spout at bottom without removing the plates or dishes until all the latter are properly cleansed. The water on the plates instantly drains therefrom back onto the bottom of the vessel, where it is drawn off, so that

by a few revolutions of the dry-wheel as a fan and by letting the articles remain a few minutes after the revolution of the wheel is stopped, no wiping of the dishes will be necessary, as they can be removed clean and dry.

The racks it will be observed are all removable, so that either one or more or all the different racks can be used, as desired. The racks being of open wire-work, as shown and described, hardly interfere with the dashing of water at all, and there is but slight contact between the racks and plates, &c., supported thereby.

Having described my invention, what I claim as new, and desire to secure by Letters Patent thereon, is—

1. The combination, with the vessel and dasher-wheel, substantially as described, of the pair of semicircular racks  $F F$ , formed of arc-shaped wire loops  $f f$ , united by transverse wires, substantially as specified.

2. The combination of the vessel and the dasher-wheel therein, having curved blades, with the wire plate-racks and wire cup-holding racks  $J J$ , formed at intervals with upstanding loops or pieces  $K K$ , substantially as described.

3. The combination of the vessel and the dasher-wheel mounted therein, having oppositely-curved blades  $C^2$ , substantially as described, with the supporting-racks in said vessel above and partly surrounding said wheel, substantially as specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ADDIE DICKMAN MILLER.

Witnesses:

E. M. MILLER,  
F. R. OSBORN.