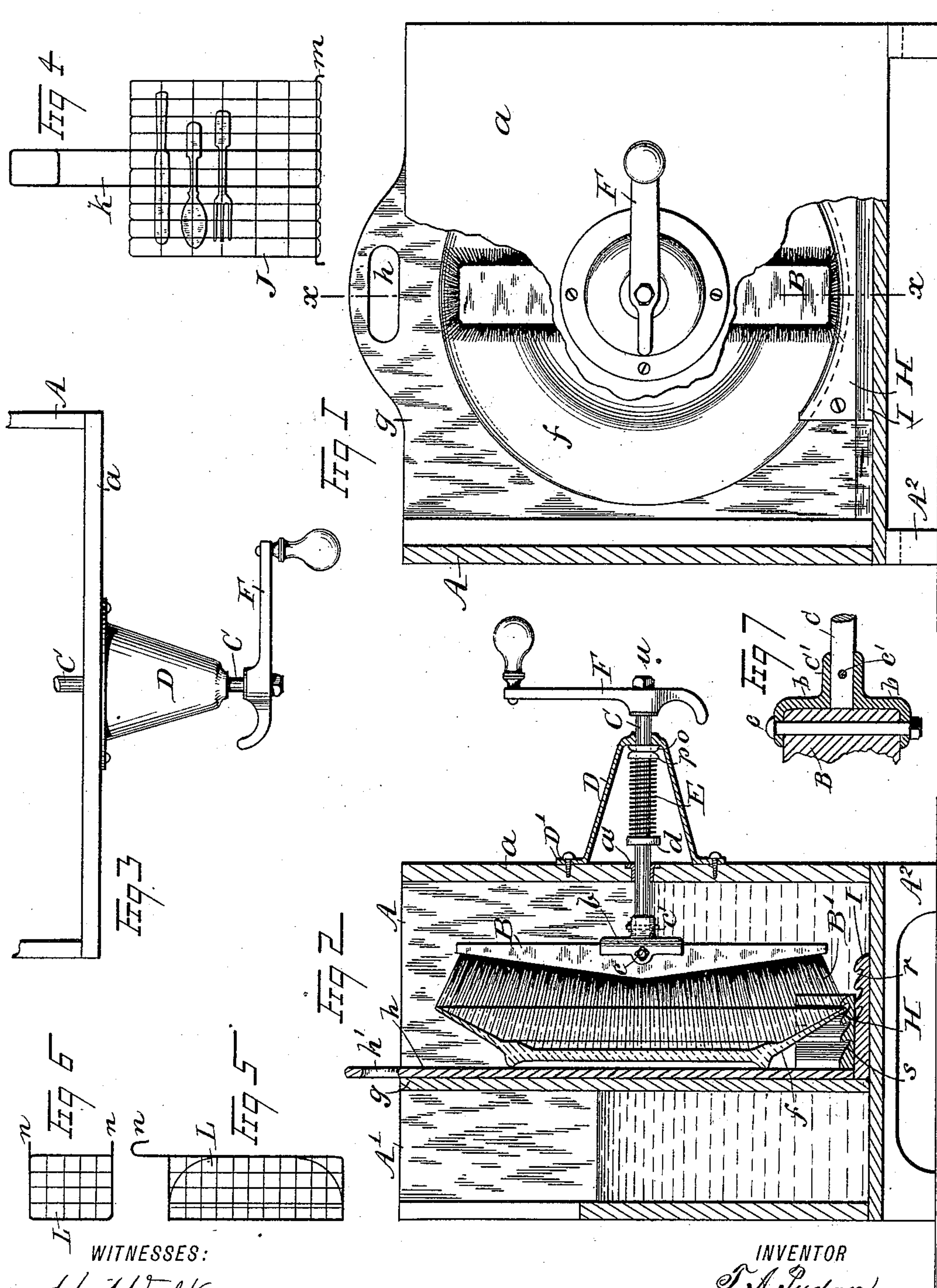


(No Model.)

T. A. & H. W. PUDAN.  
DISH WASHING MACHINE.

No. 426,739.

Patented Apr. 29, 1890.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

THOMAS A. PUDAN AND HERBERT W. PUDAN, OF SACRAMENTO, CALIFORNIA.

## DISH-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 426,739, dated April 29, 1890.

Application filed August 14, 1889. Serial No. 320,754. (No model.)

*To all whom it may concern:*

Be it known that we, THOMAS A. PUDAN and HERBERT W. PUDAN, of Sacramento, in the county of Sacramento and State of California, have invented a new and useful Improvement in Dish-Washing Machines, of which the following is a full, clear, and exact description.

This invention relates to an improvement in dish-washing machines; and its object is to simplify the construction of the machine shown and described in an application for a patent filed by Thomas A. Pudan on September 8, 1888, Serial No. 284,857, and allowed April 29, 1889, whereby increased efficiency is secured and cost of production materially reduced.

To the end named the invention consists in the novel construction of parts and their combination, as is hereinafter described, and pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of the dish-washer, having its front wall broken away to expose the interior. Fig. 2 is a side elevation in section, taken on the line *x x*, Fig. 1. Fig. 3 is a top plan view of the front portion of the casing or water-holding compartment of the dish-washer, the crank, shaft-supporting-bracket frame, and the engaged portion of the brush-operating shaft being also shown. Fig. 4 is a plan view of an adjunctive appliance used to hold a number of small articles within the washing-compartment of the machine in position to be cleaned by forced currents of hot water. Figs. 5 and 6 are side and end views, respectively, of a wire cage in which cups, saucers, and other similar articles of table-ware may be placed and suspended within the dish-washer to be operated upon; and Fig. 7 is an enlarged detached view of a device for connecting the brush removably to its actuating-shaft.

The casing of the dish-washing machine is preferably made of rectangular form, mounted on supporting-strips *A*<sup>2</sup>, and divided into two compartments *A* and *A'* (see Fig. 2) by a vertical partition *g*. The front and larger cham-

ber *A* is the dish-washing compartment. The other or rear chamber is intended to hold clean hot water for rinsing the dishes after they have been washed.

Upon the base-wall of the chamber *A* two grooved racks *H I* are secured to an upright bracket-piece *h*, that is removable from the chamber. The lower rack projecting beyond or in front of the other is furnished with a series of parallel hook-shaped projections *r*, which being spaced apart produce intervening depressions that are adapted to receive and retain in position large salvers or dishes having a substantially rectangular form. The rack *I* just mentioned is made flat or parallel with the wall of the chamber it rests upon, and above it, projecting forwardly from the vertical bracket-piece *h*, the rack *H* is secured, which is curved on its upper surface, as shown in Fig. 1. It is also provided with alternate grooves and hook-shaped projections *s*, similar in form to those produced on the other rack *I*. Both of the racks are attached to the bracket-piece *h*, which rests against the partition *g* and is provided with a handle *h'*, by which the racks may be removed from the chamber *A*.

The rack *H* is designed to receive the edges of plates or other dishes having curved or circular peripheries. There is shown in Figs. 1 and 2 a dish *f* in position, having its curved edge resting in one of the grooves of this rack, while its bottom is firmly supported by the upright bracket-piece *h*, against which it leans.

The peculiar construction of the rack *H* for the accommodation of round-edged dishes is one of the features of our present invention, and by its provision the use of cleats on the sides of the removable racks and bracket-piece is rendered unnecessary, as the curvature of the hooked projections *s* causes them to have an extended bearing on the circular edges of plates, soup-dishes, and other round articles of similar conformation, so that they will be retained in proper position to receive the scrubbing action of an engaging-brush, which will now be described.

At a point about the center of width and height of the chamber *A* upon its front wall a conical shell *D*, preferably made of metal,



is secured by its flange D'. The perforation formed in its outer end, aligning with a sleeve-shaped bearing *a'*, which is firmly inserted in a mating perforation formed in the wall *a*, produces a supporting-frame for the driving-shaft C, that is thus revolubly sustained at right angles to the front wall *a*.

The brush-head B, from which a suitable bristle brush B' projects toward the bracket-piece *h* when all parts are in position, is secured to the driving-shaft C by means of a forked hub C', the flanges *b* of which are adapted to embrace the head B, bearing thereon, as shown in Fig. 7. In an aligning perforation made through the flanges *b* and brush-head a bolt *c* is introduced, which bolt is held in place by a nut on one end. The hub C' and shaft C are held together by a transverse rivet *c'* or other preferred means. Upon the driving-shaft C two similar washers *o p* are placed. These have their adjacent faces made convex, so as to reduce their surface of contact and obviate frictional resistance between them to a great extent. The bearing-surface of the washers should be rendered true and smooth, and it will be advantageous to harden them. The washer *b* is seated upon the inner surface of the outer end of the bracket-frame D.

Between the washer *p* and the box *a'* a collar *d* is formed on or is secured to the shaft C. This collar provides an abutment for one end of the spiral spring E, the other terminal of which bears against the flat face of the washer *p*.

On the outer extremity of the shaft C a crank-arm F is mounted and clamped by the jam-nut *u*, thus affording means for the direct rotation of the brush B', and also for drawing back the brush. Owing to the resistance of the spring E, the brush will be permitted to yield and conform to the variations in shape of the articles it bears upon when in operation, and it is intended that the surface of contact between the washers *o p* will be so reduced as to allow the washer *p* to revolve along with the spring E and shaft C.

The wire frame J is intended to receive forks, knives, spoons, and similar small ware, which are clamped between two portions of the frame that are hinged at *m*. In use the frame is introduced upright against the par-

tion *g*, so as to receive the impingement of the revolving brush B'. When one side of the articles held in the frame J is cleaned, the position of the latter is reversed and the other surface of the ware brought into contact with the brush.

A cage L, constructed of wire-netting having an open mesh, (shown in Figs. 5 and 6,) is of use to hold cups, saucers, and other small articles of table-service which cannot be conveniently supported otherwise. These are not directly engaged by the bristles of the brush-head, but are cleansed by the enforced attrition of water-currents induced by the rapid rotation of the brush in the hot soapy water used as a detergent. The cage L is furnished with hooks *n*, whereby it is supported in the chamber A, the hooks engaging the upper edge of the partition-wall *g* when the cage is in position. A rinsing-chamber A' is also provided in connection with the washing device. There is nothing novel in this provision of itself, or in its combination, as shown; but it is furnished to render the machine complete and capable of thoroughly cleansing all articles of table-service or crockery-ware adapted for culinary uses. Said chamber A' is formed by the transverse partition *g*, which is secured in place and divides the receptacle into two chambers, as shown in Fig. 2, and, as previously stated, the bracket-piece *h* is adapted to rest against this partition *g* when the machine is in use and dishes are being operated upon by the brush B'.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

In a dish-washing machine, the combination, with a water-holding chamber, and a support for holding the articles to be washed, of a frame, a shaft revoluble in said frame, two opposed washers and a stop on said shaft, a spiral spring between said stop and the inner washer, and a rotary brush on the inner end of said shaft, substantially as set forth.

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Witnesses:

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