

DISH WASHING MACHINE.

Patented April 18, 1876.

A detailed diagram of a mechanical system. On the left, a set of two pulleys, labeled B and C , are mounted on a horizontal support. A rope is wound around them, with one end fixed to a wall at point A and the other end passing over pulley C and then over a pulley at the top of an inclined plane. The inclined plane is labeled i and has a vertical height h and a horizontal distance d . A weight D is suspended from the rope by a pulley at the top of the incline. On the right, another set of two pulleys, labeled E and F , are mounted on a horizontal support. A rope is wound around them, with one end fixed to a wall at point G and the other end passing over pulley F and then over pulley C . The diagram includes various labels for forces and distances: f' for forces, z for distances, and l for lengths. The pulleys are shaded with cross-hatching.

E. Wolff.
Büchler

E. P. Howard

Mumff

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWARD P. HUDSON, OF NEW YORK, N. Y.

IMPROVEMENT IN DISH-WASHING MACHINES.

Specification forming part of Letters Patent No. **176,227**, dated April 18, 1876; application filed March 28, 1874.

To all whom it may concern:

Be it known that I, EDWARD P. HUDSON, of the city, county, and State of New York, have invented a new and Improved Machine for Washing Dishes, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a vertical longitudinal section of my improved dish-washing machine on the line *c c*, Fig. 2; and Fig. 2 is a top view of the same.

Similar letters of reference indicate corresponding parts.

The object of my invention is to furnish for hotels, eating-houses, and similar places an improved dish-washing machine, by which all kinds of dishes may be rapidly and thoroughly washed and cleaned, and without being broken or otherwise injured, so that a considerable saving of time, labor, and material is obtained.

The invention will first be described in connection with the drawing and then pointed out in the claim.

In the drawing, A represents the hot-water receptacle, made of tin or other suitable water-tight material, and of oblong shape, divided by a vertical central partition-wall, *a*, into two equal chambers. The driving-roller *b* turns in bearings *b'* attached to frame A above partition *a*, and is set in motion by hand, steam, or other power.

Roller *b* imparts motion, by chains *d d* and pulleys *e e*, to the perforated hot-water tubes *f*, of which two are arranged in each chamber of receptacle A, being supported by suitable brackets *g*, and connected by T-pieces with the hot-water pipe, which conveys the water from the boiler. The water collecting in the lower part of the chamber is retained in the required temperature by suitable steam-pipes passing through the same, to assist the rapid cleansing of the dishes and produce a saving of soap. A vertical partition, *h*, extends between the driving chains and pulleys and the sponge-rollers and endless belt B, separating thereby the driving parts from the dish-cleaning and conveying parts of the machine. The forward extending part of each tube *f* is surrounded by a yielding roller or cushion, C, made of sponge or other

similar material, which is kept continually soaked with hot water by tubes *f*.

The flat dishes or plates of all kinds, &c., are placed between the sponge-cushions and carried down between them into the hot water below as tubes *f* are made to rotate against each other.

Hollow dishes are placed over the closed ends of tubes *f*, and then taken off and dropped into the water below.

The friction of the sponge-rollers against both sides of the dishes, together with the action of the hot-water thereon, cleanses them of the greater part of the impurities adhering to them. The dishes are then guided over suitable fender-bars and taken up in the lower part of receptacle A by endless belt B, which is stretched over the upper driving-roller *b* and lower roller *b'*, and provided at suitable intervals with projecting catches and guides *l*. They are conveyed on the belt up to the driving-roller *b*, and from thence to the second pair of sponge-rollers, which are moistened in similar manner by perforated rotating tubes as the first pair. The dishes pass then between the sponge-rollers into the hot water in the second part of receptacle A, where the water acts like a cushion and conveys them smoothly to the bottom of a strong basket, D, in which they settle without chipping, breaking, or being otherwise injured.

Should two hot-water chambers and sponge-rollers not suffice to wash and clean the dishes thoroughly, more chambers may be used, and the plates conveyed from one to the other by additional belts.

The basket is lifted out when nearly filled up and immediately replaced by another.

The water drips off from the dishes, which dry rapidly without wiping, as they are still hot when taken out.

The dishes are then stored away directly from the basket, the empty basket being exchanged from time to time for the full basket.

Both chambers are provided with overflows for draining off the surplus water and the greasy matter swimming on the surface, which is collected and utilized in the usual manner.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent—

The machine for washing and cleaning dishes, consisting of receptacle A, divided into separate chambers, in combination with the perforated hot-water tube *f*, having sponge-rollers C, endless belt B, and basket D, when connected and driven by suitable

motive power, and constructed and arranged substantially as and for the purpose described.

EDWARD P. HUDSON.

Witnesses:

T. B. MOSHER,

ALEX. F. ROBERTS.