

J. F. HILSCHER.
DISH WASHING MACHINE.
APPLICATION FILED NOV. 26, 1910.

1,016,995.

Patented Feb. 13, 1912.

2 SHEETS—SHEET 1.

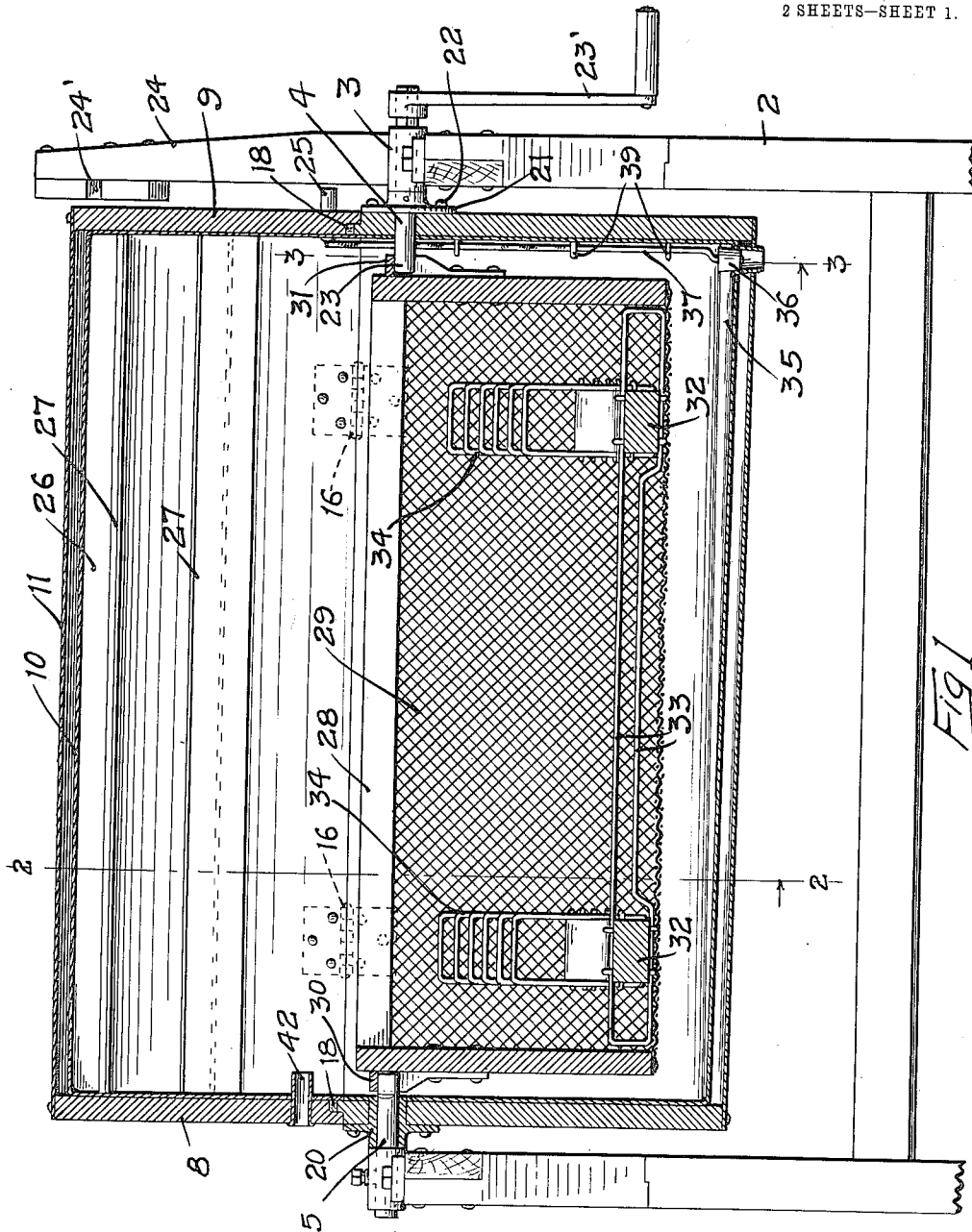


Fig. 1.

WITNESSES
E. A. Paul

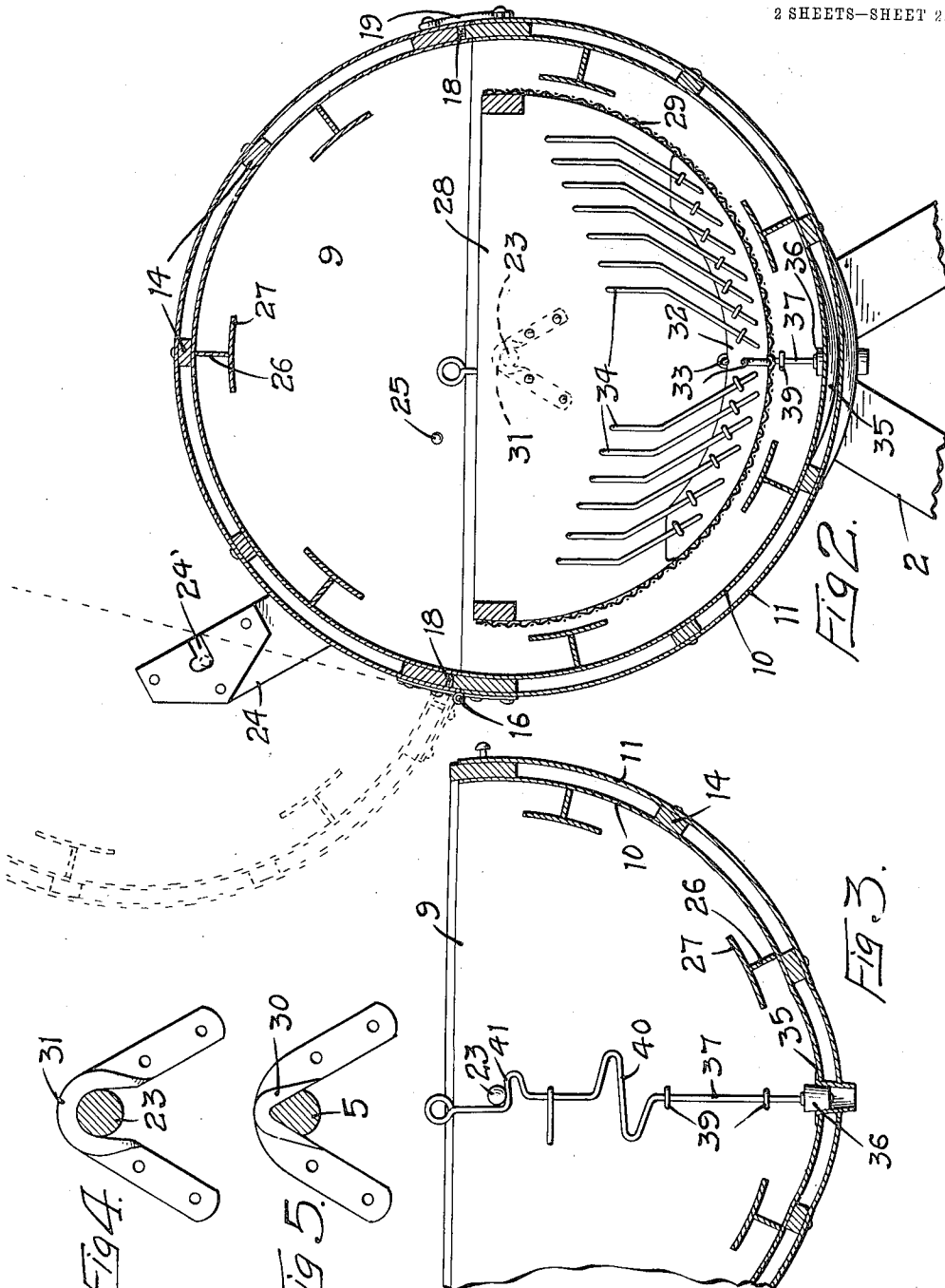
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ATTORNEYS
BY *Richard Paul*

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UNITED STATES PATENT OFFICE.

JOHN F. HILSCHER, OF ST. PAUL, MINNESOTA.

DISH-WASHING MACHINE.

1,016,995.

Specification of Letters Patent.

Patented Feb. 13, 1912.

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To all whom it may concern:

Be it known that I, JOHN F. HILSCHER, of St. Paul, county of Ramsey, and State of Minnesota, have invented certain Improve-
5 ments in Dish-Washing Machines, of which the following is a specification.

This invention relates to improvements in machines designed for washing dishes, and the objects I have in view are to provide a
10 machine that is simple and economical in construction so that it can be put upon the market at a small price, and which is particularly adapted for use in ordinary house-
15 holds, thus enabling the members of the family to quickly and expeditiously wash, at one operation, all of the dishes used at the family meal. The machine may, without
20 change, be made on a larger scale so as to be adapted for use in hotels, restaurants, or public eating houses.

The invention consists generally in the constructions and combinations hereinafter described and particularly pointed out in the claims.

25 In the accompanying drawings forming part of this specification; Figure 1 is a longitudinal, vertical section of a dish washing machine embodying my invention, Fig. 2 is a transverse section on line 2—2 of Fig. 1,
30 Fig. 3 is a detail section on line 3—3 of Fig. 1. Figs. 4 and 5 are details of the hangers and supports for the basket.

In all of the drawings, 2 represents the frame of the machine which may be formed
35 of wood or metal, and is of any suitable size or construction. As here shown it is made in the form of an upright frame having at one end a bearing box 3, in which a suitable shaft 4 is supported, so as to be free to rotate
40 therein, and having at the other end a support for a stationary or stub shaft 5 secured to said frame, in any suitable manner.

Mounted so as to rotate freely with the shaft 4 and upon the shaft 5 is a drum com-
45 posed of wooden heads 8 and 9, and double cylindrical walls 10 and 11, the ends of said walls being secured in any suitable manner to the heads of the drum. I prefer to form the interior wall 10 of the drum of sheet
50 zinc, and the outer wall 11 of any suitable sheet metal, and to separate the two walls by strips of asbestos 14. An air space is thereby provided between the two walls of the drum, which are separated by said air
55 space and said strips of asbestos, and by this arrangement I prevent transmission of

heat from the hot water within the drum to the outer wall of said drum. This outer wall will, therefore, always be kept cool even when the machine is in use. At a short
60 distance above its center, the drum is divided longitudinally, thereby forming a lid section, which is hinged at 16 to the main body section of the drum, and a suitable
65 packing 18 is arranged on the meeting edges of the two sections of the drum so as to form a water-tight joint between them when the sections are closed together. A hasp or other fastening 19 is provided, by which the
70 lid section of the drum is securely clamped to the main body section when the device is in use. At one end the drum is provided with a box 20 through which the stationary stub shaft 5 passes, forming a water-tight
75 joint therewith. The inner end of this stub shaft is preferably wedge shaped in cross-section. At its other end the drum has the short shaft 4 secured to it by means of the plate 21 and the bolts 22, and the end of the
80 shaft 4, projecting through the wall of the drum, forms a stud 23 that extends a short distance into the interior of said drum. A suitable crank 23' may be applied to the shaft 4 for the purpose of rotating said
85 drum.

I have provided the frame of the machine with an upwardly projecting bracket or standard 24. This standard carries near its upper end a block which is formed with a slot 24'. This slot at its inner end has an
90 upward extension. The lid section of the drum is provided with a stud 25. The rotating drum is stopped with the lid at the upper side and when this lid is opened, the stud 25 may be placed in the slot 24'. In-
95 asmuch as the lid is hingedly connected with the other section of the drum, any unequal pressure on the drum cannot rotate the drum in a counter-clockwise direction as viewed in Fig. 2, as the stud 25 will be carried
100 against the under face of the slot. On the other hand, any pressure on the front of the drum which would tend to rotate the same in the opposite direction, will cause the stud to engage the extension in the slot and pre-
105 vent any movement of the drum. By this construction, I have provided devices which effectively prevent the rotation of the drum while the lid is opened.

In the interior of the drum I provide a
110 series of longitudinal ribs 26, to each of which is secured a plate 27. These plates

are wider than the thickness of the rib 26 and preferably conform to the circular shape of the interior of the drum, and thereby form, with the rib, a longitudinally extending pocket at each side of said rib.

Arranged within the drum is an open tray or basket 28, the ends of which are preferably made of substantially semi-circular wooden plates, and to which a sheet of wire netting 29 is secured, thereby forming a substantially semi-cylindrical tray or basket, with solid ends and a wire netting circumferential wall. This tray is provided at one end with an inverted V-shaped bearing 30, and at the other end with an inverted U-shaped bearing 31. The tray is set down into the drum so that the end of the stub shaft 5 and the stud 23, forming the end of the shaft 4, are engaged by the bearings 30 and 31. The bearing 30, being of V-shape, engages the wedge shaped end of the rigid shaft 5 and locks said basket in position so as to prevent it from turning with the drum. The stud 23, while it supports the ends of the basket, turns freely in the U-shaped bearing on the end of said basket.

Arranged in the basket is a movable rack, provided with cross bars 32, a longitudinally connecting bar 33 and spring dish holders 34. The flat dishes, such as plates, saucers, etc., may be stood nearly upright between the spring holders 34, while other dishes may be piled in the bottom of the basket between the ends of said rack, with the soiled portions thereof uppermost.

In using the device the dishes are placed in the rack, preferably, in the manner specified. A suitable amount of hot water is turned into the drum, the lid section of which is then closed and locked. The drum is rotated slowly in one direction and then in the other. The longitudinal pockets on the interior surface of the drum each take up a supply of water, and carry it up to a point above the top of the basket, when it is poured over the top of the basket on to the dishes held in said basket and tray. After turning the drum slowly a number of revolutions in one direction, its motion is reversed and it is turned slowly a number of revolutions in the other direction. These operations are repeated for a period of two or three minutes when the lid section is opened, the water is drawn off and a small amount of hot water is then poured over the dishes for the purpose of rinsing them and they will then be found to be thoroughly clean.

I prefer to provide a bulge or extension

35 in the drum near one end thereof in which is provided a drain opening which may be closed by a suitable plug 36 thereby giving an incline or slant to the bottom of the drain when stationary. When the drum is in a stationary position with the drain opening downward and the plug is removed, the water will run out through this opening into a suitable receptacle which may be placed beneath. The plug 36 is preferably mounted on a spring wire stem 37 arranged to slide on the interior of the drum head, being guided by suitable staples 39. This stem is provided with the flat loops 40 which add to its resiliency and with an upper loop 41 which catches under the stud 23 and holds the plug in position.

In the head, or lid part of the cylinder, and preferably near the line of division from the lower part, I prefer to insert a vent tube 42 of suitable size, so as to permit the escape of the steam from the hot water used in washing, and prevent undue expansion of the cylinder.

I claim as my invention:

1. In a dish washing machine, the combination of a frame, a water-tight drum rotatably supported in the frame, said drum having a hinged lid section, a stationary dish holder within the drum, means on the inside of the drum adapted to carry the water above the dish holder and discharge the water into the dish holder, and means rigidly carried by the frame and having devices for engaging the lid when the same is raised, whereby the drum is held against rotation in either direction.

2. In a dish washing machine, the combination of a frame, a water-tight drum rotatably supported in the frame, said drum having a hinged lid section, a stationary dish holder within the drum, means on the inside of the drum adapted to carry the water above the dish holder and discharge the water into the dish holder, a bracket carried by the frame, said bracket being provided with a downwardly inclined slot having an offset extension, and a stud carried by the lid section of the drum adapted to enter the slot when the lid is raised, whereby the drum is held against rotation in either direction.

In witness whereof, I have hereunto set my hand this 11th day of November 1910.

JOHN F. HILSCHER.

Witnesses:

GENEVIEVE E. SORENSEN,
EDWARD A. PAUL.