(No Model.) 2 Sheets—Sheet 1.

G. W. CARTER & E. L. DUTTON.

DISH WASHER.

No. 422,049. Patented Feb. 25, 1890.

Fig 1

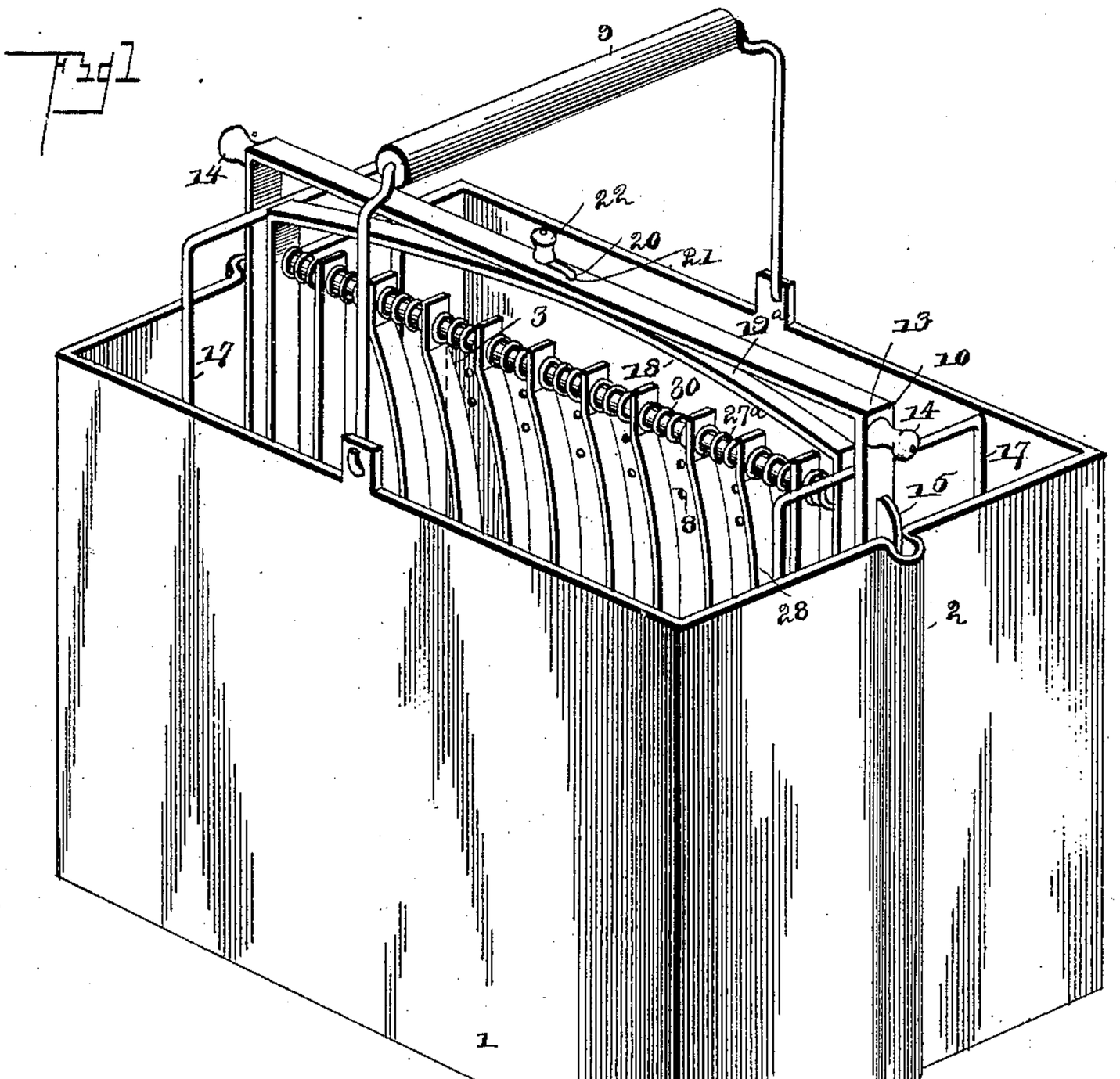
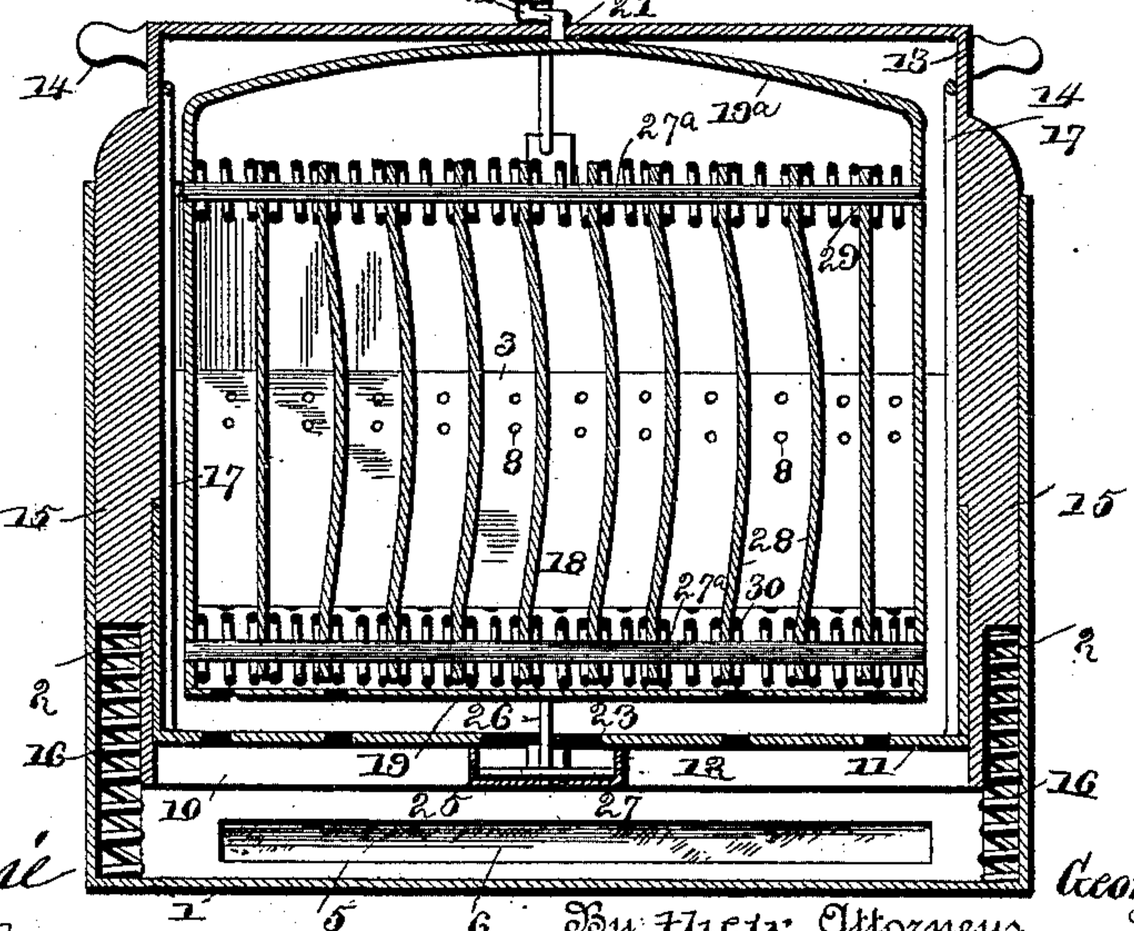


Fig 2



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(No Model.) 2 Sheets—Sheet 2.

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Fig 3

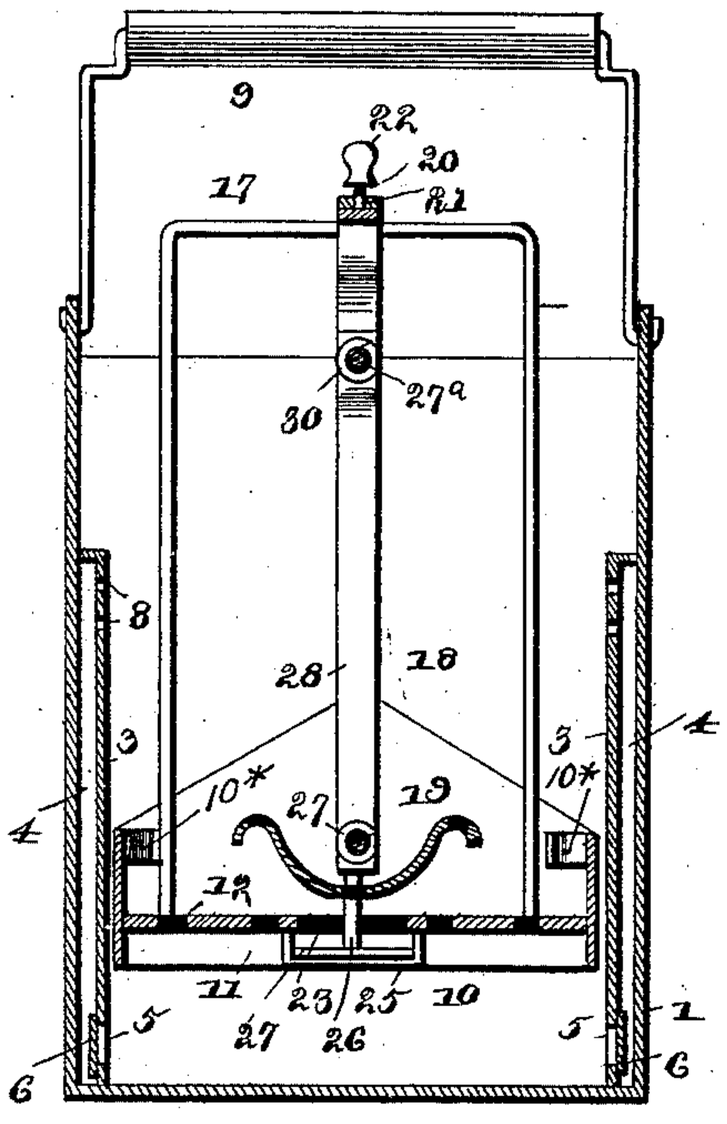
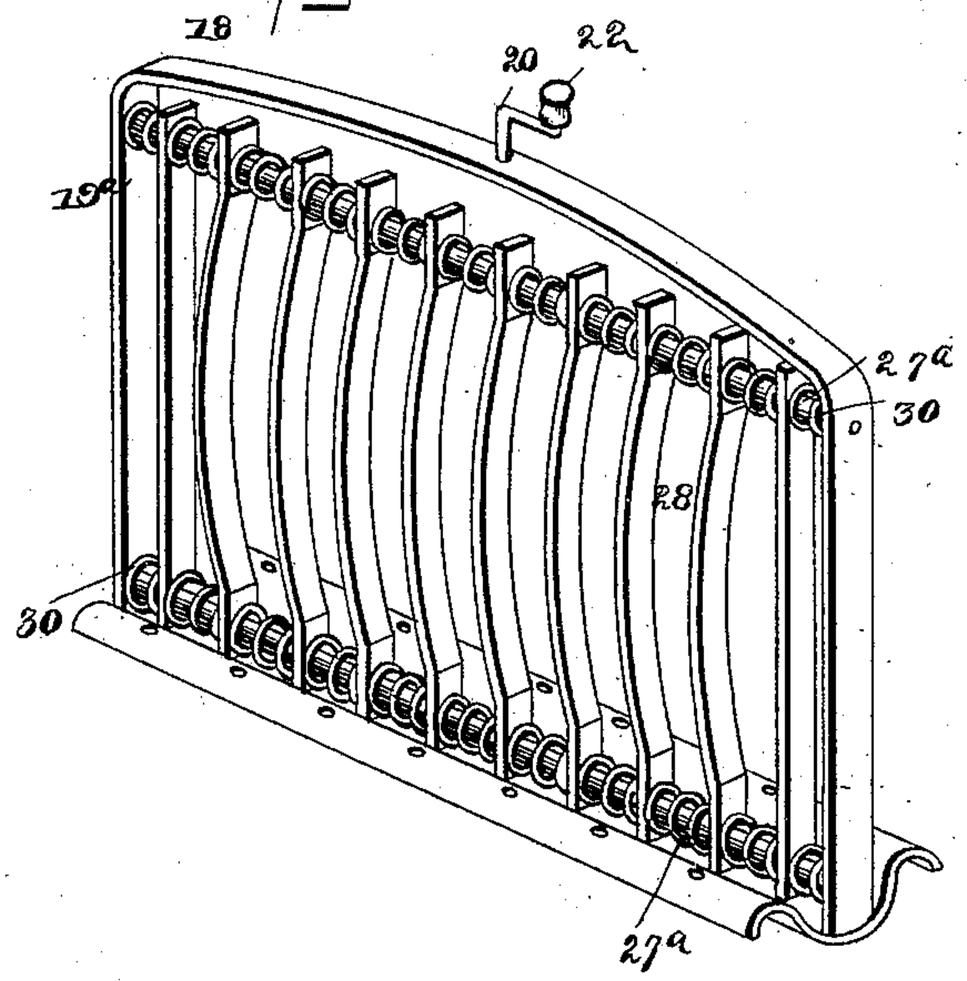


Fig 4



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UNITED STATES PATENT OFFICE.

GEORGE W. CARTER AND EBEN L. DUTTON, OF KENESAW, NEBRASKA.

DISH-WASHER.

SPECIFICATION forming part of Letters Patent No. 422,049, dated February 25, 1890.

Application filed October 22, 1889. Serial No. 327,756. (No model.)

To all whom it may concern:

Be it known that we, GEORGE W. CARTER and EBEN L. DUTTON, citizens of the United States, residing at Kenesaw, in the county of Adams and State of Nebraska, have invented a new and useful Dish-Washer, of which the following is a specification.

This invention has relation to dish-washers, and the objects and advantages of the same will hereinafter appear and the novel features be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective of a dish-washer constructed in accordance with our invention. Fig. 2 is a longitudinal section; Fig. 3, a transverse section; Fig. 4, a detail perspective of the dish-frame.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 represents a rectangular receptacle, in the opposite ends of which are formed cylindrical pockets 2, communicating with the interior of the receptacle throughout their length, the pockets in this instance being formed by means of a bending of the metal from which the receptacle is formed. The opposite longitudinal sides of the receptacle are provided with plates 3, forming at each side water-chambers 4. The lower ends of the plates are transversely slotted, as at 5, and over the same there is mounted a flexible valve or strip 6, normally adapted to close the slot or to be withdrawn away from the same inwardly. The plate extends to near the upper edge of the receptacle and is there provided with a series of discharge-orifices 8. Ears are provided at the opposite sides of the receptacle, and in the same there is loosely mounted the handle-bail 9.

10 represents a plunger, which is of a size and shape to loosely fit the receptacle 1, and the same consists of a rectangular base 11, having a perforated bottom 12, a series of agitators 10, extending from the frame inwardly over the bottom, and an inverted-U-shaped bail 13, having at each end lifting-knobs 14, and upon the sides of the bail there is provided vertical fins 15, which take into the vertical guide-pockets 2 in the ends of the receptacle 1, and in the bottom of said pockets are located coiled springs 16, upon which the lower ends of the fins are seated, said springs having a tendency to elevate the plunger-frame up and projecting from the receptacle. Rectangular standards 17, having their lower ends connected to the ends of the inclined bottom of the plunger-frame, have their upper ends connected to the bail and serve to brace the parts.

18 represents the dish-frame, and the same comprises a concaved bottom 19, having a series of perforations, and a superimposed rectangular frame 19ª. The upper end of the frame is provided with a shaft 20, which passes through an opening 21, formed in the upper end of the U-shaped bail of the plunger-frame, and is cranked and provided with a handle 22. An opening 23 is formed in the bottom of the plunger-frame, and secured to said bottom upon its under surface is a valve-frame 25, and loosely mounted therein upon a pin 26 is a valve 27, the upper end of the pin being connected to the concave bottom of the dish-frame.

27ª represents longitudinal parallel bars, which extend from side to side of the U-shaped frame of the dish-support, and upon the bars are loosely mounted a series of vertical flexible dish-retaining strips 28, the ends of the strips being perforated, as at 29, to receive the bars, and between each of said strips upon each of the bars is mounted short coiled springs 30.

The operation of the invention is as follows: The dirty dishes are inserted between the flexible strips, the strips being adapted to substantially conform to the shape of the dishes, and thus retain them in position. The receptacle is now filled to about one-half or two-thirds of its height with very hot water and the plunger-frame raised and lowered by its handles and the dish-frame turned to present the dishes at different angles. As the plunger-frame is lowered water is forced into the chambers at the sides of the receptacle, the flexible valve being forced to one side, and thus the chambers are filled. Water is also forced up through the perforations in the bottom of the plunger-frame and greatly agitated thereby and by the laterally-projecting agitators or blades. When the water is first introduced into the receptacle, the chambers at the sides thereof naturally be-

come filled, so that when the downstroke of the plunger takes place more water is forced within the chambers, and consequently streams of water are forced from the orifices at the upper ends of the chambers and discharged against the plates, which, as before mentioned, are turned at different angles, so that the entire surfaces of the plates, top and bottom, are thoroughly cleansed by the operation. After a thorough washing the plunger-frame is lifted from the receptacle and set crosswise thereon. The water, being hot, soon dries upon the plates, which are drained and the drainage carried off by the concave bottom of the dish-frame and onto the bottom of the plunger-frame, and discharged through the openings therein. By reason of the valve located in the bottom of the plunger-frame the opening therein is closed on the downstroke of the frame, thus serving to force water into the chambers, and opens on the upstroke, so that no water is lifted, and consequently no splash takes place, but simply a thorough agitation. The flexible valves located at the bottoms of the water-chambers merely serve the purpose of preventing the entrance of crumbs and other refuse, which would have a tendency to stop the orifices of the chambers.

Having described our invention what we claim is—

1. In a dish-washer, the combination, with a receptacle provided with opposite water-chambers, each provided with a valved induction-opening at its lower end and a series of perforations at its upper end, of a plunger-frame mounted in the receptacle and adapted to be reciprocated therein, and a dish-supporting frame mounted in the receptacle, substantially as specified.

2. In a dish-washer, the combination, with the receptacle having its opposite end walls bent to form vertical grooves or pockets, of a plunger-frame mounted in the receptacle and having end fins taking into the pockets, substantially as specified.

3. In a dish-washer, the combination, with the water-receptacle having its opposite ends bent to form vertical grooves or pockets communicating throughout their length with the interior of the receptacle by a contracted slot, and springs mounted in the bottom of the pockets, of a plunger-frame having fins at each end, said fins taking in the pockets and seated upon the springs, substantially as specified.

4. In a dish-washer, the combination, with the water-receptacle having end ways and opposite water-chambers having orifices in their upper ends, of a plunger-frame mounted on the guides and a dish-supporting frame pivoted in the plunger-frame and adapted to be turned so as to present the dishes at various angles to the orifices, substantially as specified.

5. In a dish-washer, a plunger-frame consisting of a main frame adapted to fit within the receptacle and provided with a series of laterally-projecting agitating-blades and a perforated bottom having the valve downwardly opening and a dish-frame pivoted in the plunger-frame, substantially as specified.

6. The combination, with the plunger-frame adapted to fit the water-receptacle and having inverted rectangular bails and a bottom, of the dish-frame comprising the perforated concaved bottom and an inverted rectangular frame mounted over the same and pivoted within the rectangular bail, substantially as specified.

7. The combination, with the concaved dish-frame bottom and the inverted rectangular frame, of parallel longitudinal bars connecting the ends of the frame and a series of strips mounted loosely on the bars, and interposed springs between each of the strips, substantially as specified.

8. The combination, with the concaved bottom having the inverted rectangular frame, of parallel bars connecting the ends of the frame, a series of flexible strips perforated and mounted over the bars, and a series of springs interposed between the strips, substantially as specified.

9. The combination, with the frame of the plunger having a bottom and an inverted bail, said bottom being provided with an opening, a downwardly-opening valve, and a valve-frame, of the dish-supporting frame adapted to be inclosed by the rectangular bail and support a series of dishes and having opposite bearings, the upper bearing being inserted through an opening in the rectangular frame and bent to form a crank, the lower bearing being inserted through the valve-opening and the valve and terminating in the valve-frame, substantially as specified.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

GEO. W. CARTER.
EBEN L. DUTTON.

Witnesses:
W. A. MINNIX,
C. A. SIPPLE.