

Jan. 22, 1924.

S. L. GOLDMAN ET AL

1,481,601

DISHWASHING MACHINE

Filed May 29, 1922

3 Sheets-Sheet 1

Fig. 1.

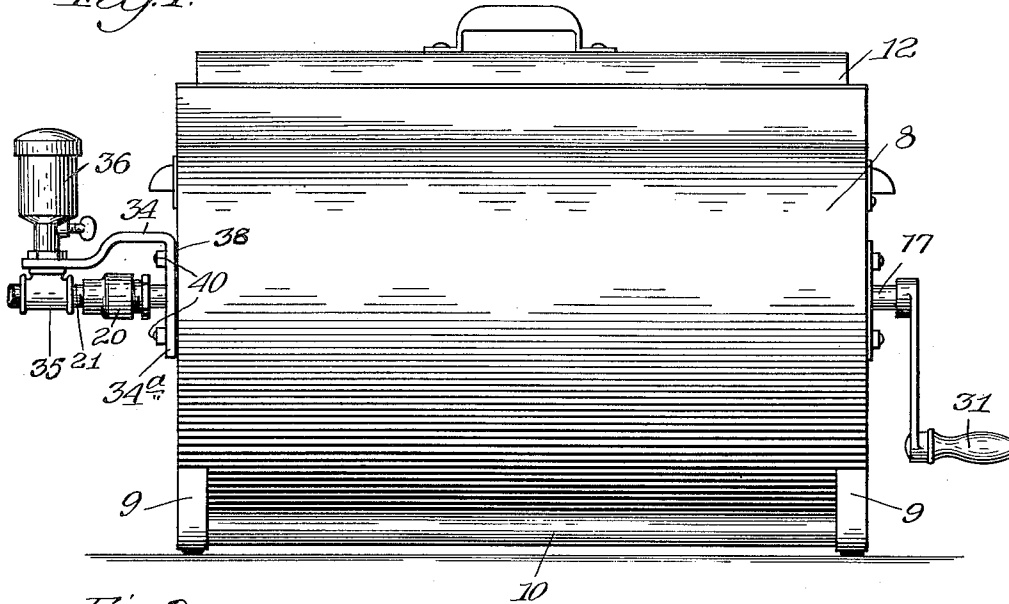


Fig. 2.

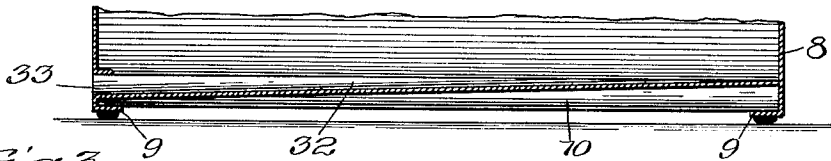
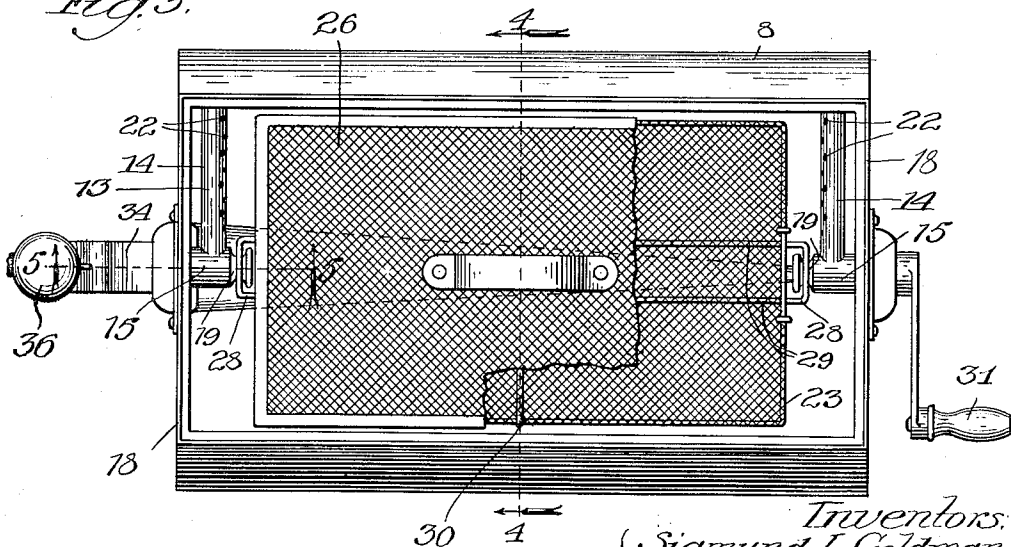


Fig. 3.



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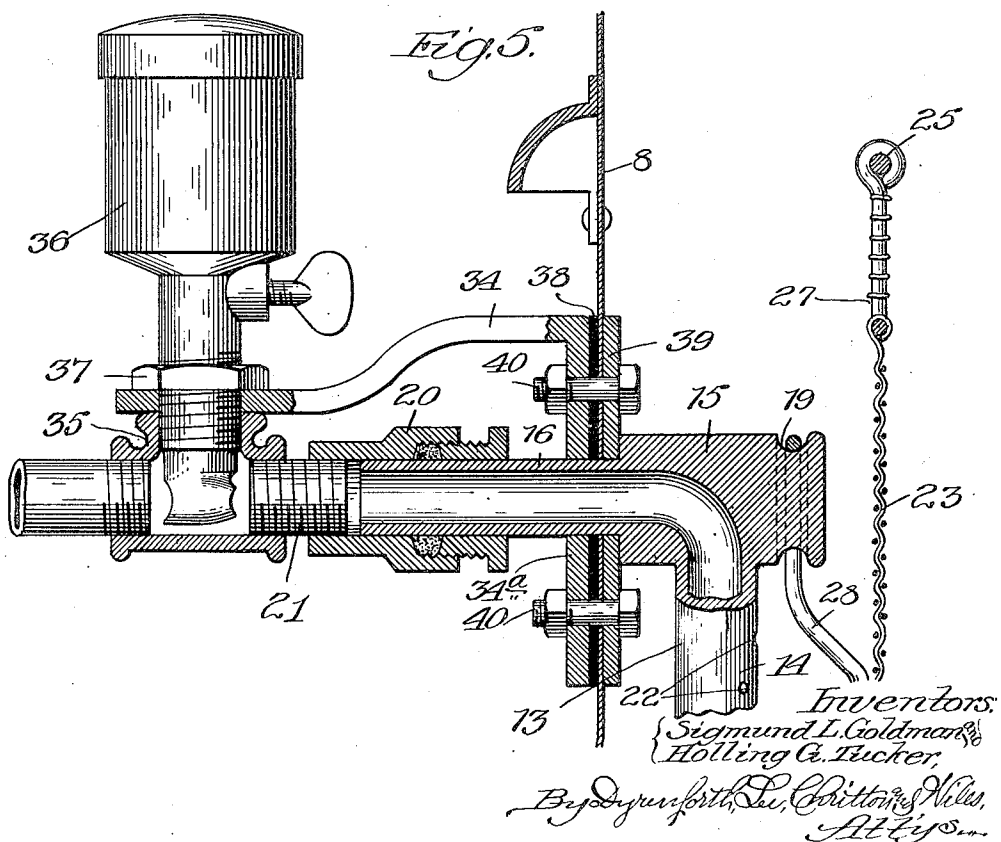
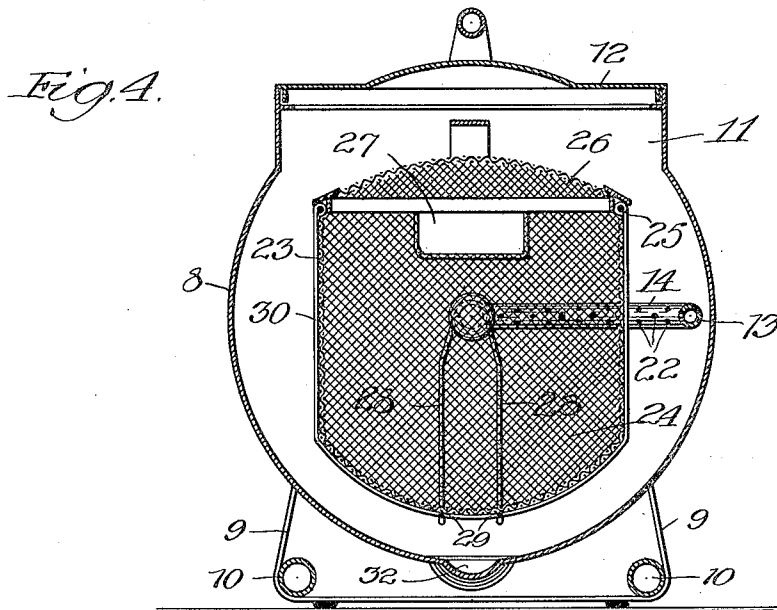
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3 Sheets-Sheet 2



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DISHWASHING MACHINE

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3 Sheets-Sheet 3

Fig. 6.

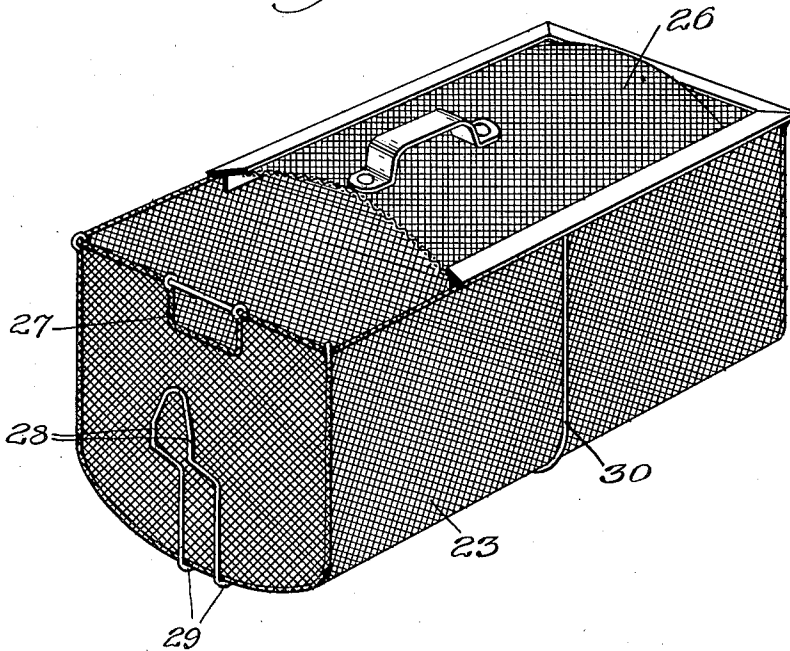
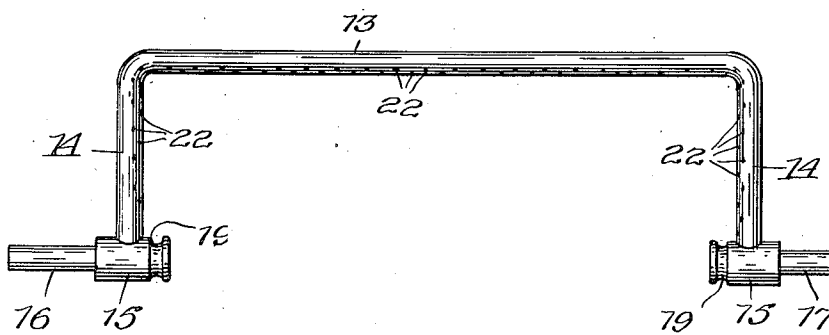


Fig. 7.



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UNITED STATES PATENT OFFICE.

SIGMUND L. GOLDMAN AND HOLLING G. TUCKER, OF CHICAGO, ILLINOIS; SAID TUCKER
ASSIGNOR TO SAID GOLDMAN.

DISHWASHING MACHINE.

Application filed May 29, 1922. Serial No. 564,585.

To all whom it may concern:

Be it known that we, SIGMUND L. GOLDMAN and HOLLING G. TUCKER, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Dishwashing Machines, of which the following is a specification.

One of our objects is to provide a novel, simple and inexpensive construction of dishwashing machine which shall operate with the maximum efficiency for the amount of water used and which may be readily cleansed; another object is to provide a construction wherein the holder for the dishes may be readily and quickly removed and easily cleansed; another object is to provide for the substantially equal distribution of the washing water over all of the dishes; another object is to provide a machine which may be readily operated by hand, if desired; and another object is generally to so improve upon washing machines as hitherto constructed as to render the same better adapted for performing the purpose for which they are provided.

Referring to the accompanying drawings:

Figure 1 is a view in side elevation of a dish-washing machine constructed in accordance with our invention. Figure 2 is a broken view in longitudinal sectional elevation of the lower end of the casing of the machine. Figure 3 is a plan sectional view of the machine with the cover of the casing removed. Figure 4 is a section taken at the line 4 on Fig. 3 and viewed in the direction of the arrow. Figure 5 is an enlarged broken section taken at the line 5 on Fig. 3 and viewed in the direction of the arrow. Figure 6 is a perspective view of the holder, or basket, for receiving the dishes to be washed; and Figure 7, a view in side elevation of the rotatable water-conducting pipe through which the washing water is supplied to the dishes.

According to the particular, illustrated, embodiment of our invention, the machine comprises a casing represented at 8 which is preferably made of sheet metal and of generally circular shape in cross-section, the casing being provided with a supporting structure at its under side, shown as formed of the end members 9, which may be formed of sheet metal, and the connecting tubular members 10 which extend lengthwise of the

casing at opposite sides thereof and are connected with the members 9 in any suitable way, the members 10 preferably being of cylindrical form, as shown. The casing 8, which has an opening 11 in its top, is provided with a handle-equipped removable and replaceable cover 12. The machine also involves, in its preferred embodiment, a U-shape water-conducting pipe, represented at 13, which is mounted in the casing to turn on a substantially horizontal axis about a holder, or basket, hereinafter described, for the dishes, the pipe 13 being disposed in straddling position relative to the holder, as shown. The end portions 14 of the pipe 13 and which extend transversely of the casing 8, are disposed adjacent the end walls of the casing and are connected with, and open into, hollow coupling members 15 from one of which a pipe 16, which communicates with the interior of this coupling, extends, the other coupling 15 being connected with a stub shaft 17 aligning with the pipe 16. The pipe 16 and stub shaft 17 form trunnions for the water-distributing pipe 13, these trunnions being journaled in the end walls 18 of the casing 8, as shown of the pipe section 16 in Fig. 5, the inner ends of the couplers 15 containing annular grooves which extend inwardly beyond the portions 14 of the pipe 13, as shown more particularly in Fig. 7 and at which portions the holder hereinbefore referred to is adapted to be supported in the casing. The pipe 16 is connected by a stuffing box 20, in which the pipe 16 is rotatable, with a pipe 21 which would lead from any suitable source of water-supply from which water of the desired temperature would be supplied to the pipe 13, the latter being apertured along the opposing surfaces of the pipe sections 14 and along the surface of the portion of the pipe 13 connecting the pipe sections 14 which opposes the dishes in the holder hereinbefore referred to, the apertured portion of the pipe 13 being shown as provided by forming series of perforations 22 in the said portions of the pipe, these perforations being so disposed, as stated, that water will be directed against the dishes regardless of the position to which the pipe 13 is rotated in the casing on the trunnions 16 and 17.

The holder hereinbefore referred to, for

the dishes, and represented at 23, is shown as in the form of an openwork basket located in the casing 8, this basket being made of any desirable material, as for example relatively wide mesh wire fabric, the bottom of which is preferably of curved contour as shown in Fig. 4. The basket is formed in two sections, one, a lower body section 24 open at its top, the upper edges of the body section 24 being reenforced by a wire 25, and a cover section 26 adapted to be applied to the body portion 24 to close its upper end, this cover section being preferably in the main of openwork construction, as for example by forming it of wire fabric as shown. To facilitate the handling of the holder, in the positioning of the same in the casing and its removal therefrom, the basket is provided with hand holes at its opposite ends, the hand hole at one end thereof being represented at 27.

Means are provided for supporting the holder 23 in the casing 8 in a position wherein the pipe 13 may be freely rotated on its trunnions 16 and 17 without obstruction, the means shown comprising loops 28 at opposite ends of the holder 23 adapted to be hooked over the inner extremities of the couplers 15 and enter the upper portions of the annular grooves 19 as shown in Fig. 5, whereby the holder is supported by the trunnions 16 and 17. The loops 28 are preferably constructed of relatively heavy wire formed in a single length bent to form the two loops 28 and provide the portions 29 which extend lengthwise along the holder 23 at its under surface throughout the length of the holder, thereby forming a sort of cradle for the portion of the holder confined within this structure, the latter being secured to the body portion 24 of the holder in any suitable way.

Where the holder is made of wire mesh, as shown, it is desirable that a reenforcing frame-like member, represented at 30, which may be of relatively rigid wire and shown as in the form of a yoke straddling the wire network of the body portion 24, be employed, to which the wire mesh may be soldered, if desired, and the upper ends of which would preferably be connected with the marginal wire 25.

From the foregoing description it will be understood that water supplied to the pipe 16 and issuing from the apertures 22 in the pipe 13 will be directed against the dishes located within the holder 23 and preferably arranged to extend crosswise of the holder, and that by turning the pipe 13 at its trunnions 16 and 17, as for example by a crank-handle represented at 31 and connected with the outer end of the stub shaft 17, the washing water will be caused to flow against the dishes at different angles thereto during the said turning movement, it being preferred,

though not indispensable to the embodiment of our invention in a machine, to so provide the structure that the pipe 13 may be freely rotated throughout a complete circle, as shown. It will also be noted that the washing water not only issues from the portion of the pipe which extends lengthwise of the holder but also from the portions thereof which oppose the ends of the holder, this feature, in connection with that of providing for the turning of the pipe 13 about the holder, serving to effect rapid and thorough cleansing of the dishes, it being noted that the washing water is thus caused to be substantially uniformly distributed over the dishes.

It is desirable that the casing 8 be so constructed as to provide for the draining therefrom of the washing water, this being preferably accomplished by forming the bottom of the casing in vertical alignment with the trunnions 16 and 17, with a trough-like depression 32 which inclines from one end to the other of the casing and opens through one end thereof as represented at 33.

By constructing the holder as stated it may be readily removed from the casing, as for example for cleansing, by lifting it from the supporting couplers 15, the loops 28 being so formed that no manipulation of any fastening means are required to free these loops from engagement with the couplings.

The construction shown is provided with an angle-shaped bracket 34 carried by one end wall 18 of the casing. The outer end of this bracket contains an aperture which is disposed in vertical alignment with the vertically extending opening of a T-coupling 35 interposed in the pipe 21. A soap-distributing device, represented generally at 36 and which may be of any desirable construction for supplying soap to the water as it is being supplied to the pipe 13, is provided with a threaded lower open end which extends through the aperture in the bracket and screws into the vertical opening of the T-coupling 35, a nut 37 located above the apertured portion of the bracket screwing upon the threaded end of the soap-distributor and downwardly against the bracket to rigidly clamp the latter between this nut and the T-coupling. Thus the bracket 34 serves as a support for the pipe 21 and also for the soap-distributor to cause this part of the structure to present the desired rigidity. As shown, the bracket 34 is connected with the casing wall 18 by a depending portion 34^a of the bracket which flatwise opposes this wall with a gasket 38 interposed therebetween. A plate 39 is located at the inner side of this end wall, and all of these parts are secured together to produce a tight joint about the pipe trunnion 16, as by means of the bolts 40.

While we have illustrated and described a

particular construction embodying our invention, we do not wish to be understood as intending to limit it thereto as the same may be variously modified and altered without departing from the spirit of our invention.

What we claim as new, and desire to secure by Letters Patent, is:

1. In a dish-washing machine, the combination of a casing, a water-conducting pipe of U-shape trunnioned at opposite ends in said casing, and a holder for dishes to be washed mounted on the trunnions of said pipe in a position in which it is straddled by said pipe.

2. In a dish-washing machine, the combination of a casing, a water-conducting pipe of U-shape having trunnions at its ends which are journaled in said casing, and a holder for dishes to be washed mounted on said trunnions in a position in which it is straddled by said pipe.

3. In a dish-washing machine, the combination of a casing, a water-conducting pipe of U-shape trunnioned in said casing, and a holder for dishes to be washed remov-

ably mounted on the trunnions of said pipe in a position in which it is straddled by said pipe.

4. In a dish-washing machine, the combination of a casing, a water-conducting pipe of U-shape trunnioned in said casing, the trunnions of said pipe extending inwardly beyond the side portions of said pipe, and a holder for dishes to be washed mounted on the inner extended ends of said trunnions in a position in which it is straddled by said pipe.

5. In a dish-washing machine, the combination of a casing, a water-conducting pipe of U-shape trunnioned in said casing, the trunnions of said pipe extending inwardly beyond the side portions of said pipe, and a holder for dishes to be washed provided at its opposite ends with loops by which it is supported on the inner extended ends of said trunnions in a position in which it is straddled by said pipe.

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HOLLING G. TUCKER.