Dec. 2, 1952 R. C. HAGEN 2,619,977

WATER INLET FOR DISHWASHERS OR THE LIKE

Filed Aug. 9, 1950

Fig. 1.

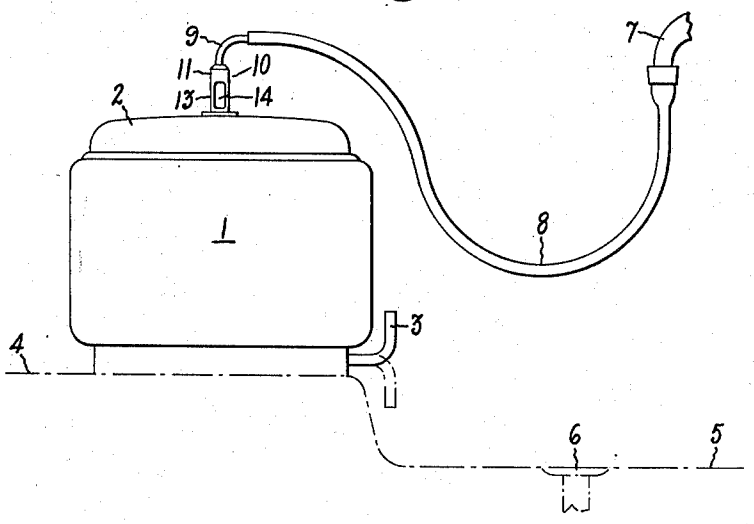
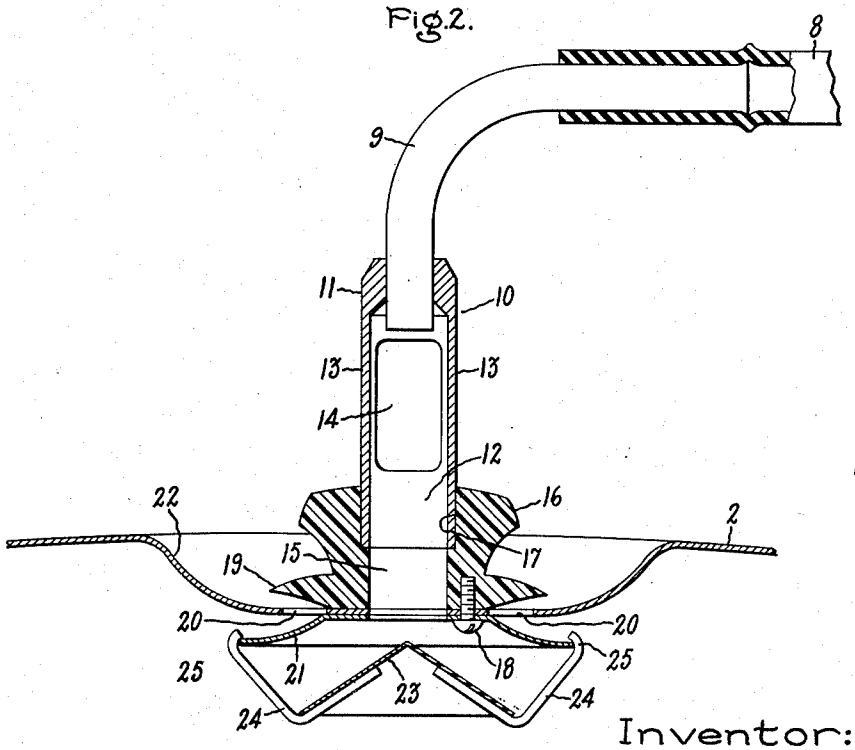


Fig. 2.



Inventor:
Robert C. Hagen,
by Morris Auerbach
His Attorney.

Patented Dec. 2, 1952

2,619,977

UNITED STATES PATENT OFFICE

2,619,977

WATER INLET FOR DISHWASHERS OR THE LIKE

Robert C. Hagen, Bridgeport, Conn., assignor to General Electric Company, a corporation of New York

Application August 9, 1950, Serial No. 178,517

2 Claims. (Cl. 134—177)

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My invention relates to dishwashers or similar machines or fixtures which use water in their operation. More particularly my invention relates to a water inlet for such machines.

Many plumbing codes require an air gap in the water supply line to dishwashers and similar fixtures, to prevent possible back-siphonage from the fixture to the water supply under abnormal conditions. My invention is designed to provide such an air gap. Another object of my invention is to provide an inexpensive and effective water inlet construction for portable dishwashers and similar machines, the inlet assembly being readily detachable from the machine.

Still another object of my invention is to utilize necessary existing parts on the machine as part of the passageway for the water inlet. A further object of my invention is to provide a deflector for water coming into the machine from the inlet so that a useful water spray may be provided inside the machine.

Other objects and details of that which I believe to be novel and my invention will be clear from the following description and claims taken with the accompanying drawing in which is illustrated an example of dishwasher embodying the present invention and incorporating my improved water inlet construction.

In the drawing Fig. 1 is a side view of a machine showing its connection to a water inlet or supply and Fig. 2 is an enlarged sectional view illustrating details of the inlet of my invention.

Although my invention will be shown and described in connection with a portable drainboard-mounted dishwasher, obviously other types of apparatus could be provided with the water inlet of my invention. For the purposes of illustration only therefore my invention is shown in connection with a dishwasher having a body or tub portion 1 having an open top which is closed by a top surface in the form of a removable cover 2. Suitable racks inside of the tub hold the dishes for washing by mechanisms also inside of the tub which form no part of the present invention. At the bottom of the tub I provide a drain spout 3 which is in the position shown in solid lines when the washer is operating, and which may be turned to the position shown in broken lines when the tub is to be drained. Such a machine is adapted to be used on a drainboard 4 which adjoins a sink 5 having a drain 6, the drainboard, sink and drain being indicated in broken lines. Above the sink is the usual faucet 7, preferably supplying hot water. Leading from the faucet and preferably removably connected thereto is a

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flexible water inlet hose 8. All of the above described elements may be regarded as more or less conventional and therefore they may take forms other than those shown.

Suitably secured inside of the flexible hose 8 at its end I provide an L-shaped nozzle tube 9. This tube is secured to and terminates inside of the hollow, generally tubular nozzle head 10 which is composed of an upper collar or ring 11, a lower collar or ring 12 and a pair of supporting and spacing legs 13 which connect the two collars and which provide an air gap 14 between the upper and lower collars. This air gap is preferably one inch or more to satisfy plumbing code requirements.

The inside diameter of the nozzle head member is made greater than the inside diameter of the end of the nozzle tube 9 so that water discharged from the nozzle tube will fall freely through the nozzle head and not outwardly through the openings in the head. For this same reason the nozzle head is vertically mounted when in use. Naturally, the lower end of the tube 9 terminates short of the top of the air gap.

For properly connecting the nozzle head to the machine the bottom end of the head is seated removably in a central hole 15 in the handle or knob 16 for the cover of the machine. This hole and the corresponding hole in the cover as well as the interior of the nozzle head form a passageway for water coming into the machine from outside. The hole 15 in the knob is made at least the same diameter as the inside of the nozzle head at the bottom for unobstructed flow of water, and is countersunk at its top as at 17 to form a seat for removably receiving the lower end of the nozzle head. It will be noted that when the nozzle head is seated in the knob the air gaps 14 are entirely above the top of the knob.

Other portions of the handle knob are designed for easy grasping so that the cover of the machine may be removed when desired. For this reason and because the cover is likely to be hot, the knob is made preferably of heat insulating material such as a suitable plastic and is secured to the cover as by screws 18 (only one shown). The knob is provided with a lower skirt portion 19 which is raised at its edges from the cover and which conceals vent holes 20 in the cover surrounding the handle. These vent holes relieve pressure from inside the fixture and prevent the build-up of excessive pressure during operation.

The vent holes 20 are covered on the inside of the machine by an outwardly flaring baffle 21 which may be secured inside of the cover by the

same screws which hold the knob in place. This baffle and the skirt on the handle present a tortuous path to retard water or suds against escaping from the dishwasher through the vent holes. The vent holes also serve as drainage openings for water from the cup-shaped depression 22 in the cover in which the handle is located.

Under the central hole in the handle and therefore under the end of the nozle head when it is seated in the handle, is a cone-shaped deflector 23. This is positioned axially in alignment with the passageway for the incoming water and has its apex pointed toward the passageway so that incoming water provides a spray rinse to raise the temperature of dishes in the machine and to flush excessive soil from the dishes before the washing operation begins. This deflector may also serve as a baffle to prevent bubbles or suds or splashing water from passing in the opposite direction when no water is coming into the machine. The deflector cone is preferably removably supported by the baffle 21 but in spaced relation therefrom. Such a support may take the form of resilient wire arms 24 which are brazed, welded or otherwise suitably secured to the deflector and have hooked ends 25 which can be snapped over the edges of the baffle as shown in Fig. 2. These arms are three or more in number so as to position the deflector properly in the path of water discharged by the nozzle into the machine.

In operation of my invention, hot water is supplied to the tube 9 from the faucet and the water drops through the nozzle head past the air gap 14 striking the top of the deflector and being sprayed into the machine. The baffle 21 prevents the sprayed water from coming out through the vent holes 20 and the vent holes prevent any build-up of pressure due to air heated by the hot water inside the machine. When enough water has been introduced into the machine the faucet is shut off and the air gap 14 will effectively prevent any back-siphonage of water from the machine either while the machine is being filled or after it has been filled. When the use of the machine has been completed, the water is drained off, the nozzle head is removed from its seat in the handle and the cover is lifted off from the machine by grasping the handle. Dishes or other articles may then be unloaded from the machine.

It will be seen that my invention provides no direct unbroken connection between the water supply and the dishwasher or similar fixture. It requires no alteration of existing machines if such machines are already provided with a vertically directed water supply opening. The cover knob is used also for a part of the inlet assembly.

As will be evident from the foregoing description certain aspects of my invention are not limited to the particular details of construction of the example illustrated, and I contemplate that various and other modifications and applications of the invention will occur to those skilled in the art. It is therefore my intention that the appended claims shall cover such modifications and applications as do not depart from the true spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A water inlet for a dishwasher or the like having a removable top cover, said inlet comprising a knob on said cover, said cover being depressed in the vicinity of said knob and having vent holes therein surrounding said knob, a skirt on said knob over said vent holes but spaced therefrom so as not to obstruct said vent holes, a passageway through said top cover and knob for conducting water to the inside of said dishwasher, a vertically extending tubular nozzle head removably seated in the knob portion of said passageway, said nozzle head being divided into two tubular portions spaced by leg members fixed therebetween to provide a substantial gap between said tubular portions, a baffle attached to the underside of said top cover and extending under said cover throughout the area occupied by said cover holes, and deflecting means carried by said cover in spaced relation with the lower end of said passageway.

2. A water inlet for a dishwasher or similar machine which uses water in its operation and has a tub body with a removable cover forming a top surface for said machine, said inlet comprising a knob on said cover, a passageway through said top surface cover and knob for conducting water from the outside to the inside of the machine, a vertically extending tubular nozzle head removably seated in the knob portion of said passageway, said nozzle head having an air gap therein in its sides, said cover having vent holes therein surrounding said knob, a baffle under said holes, and a cone-shaped deflector removably suspended from said baffle inside said cover opposite said passageway and the bottom end of said nozzle head, with the apex of the cone facing and being axially aligned with the end of the passage, said knob and vent holes being located in a depressed portion of said cover with a skirt on said knob covering but not obstructing said vent holes.

ROBERT C. HAGEN.

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