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NOZZLE FOR USING PRESSURE UNDER LIQUIDS

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FIG. 1.

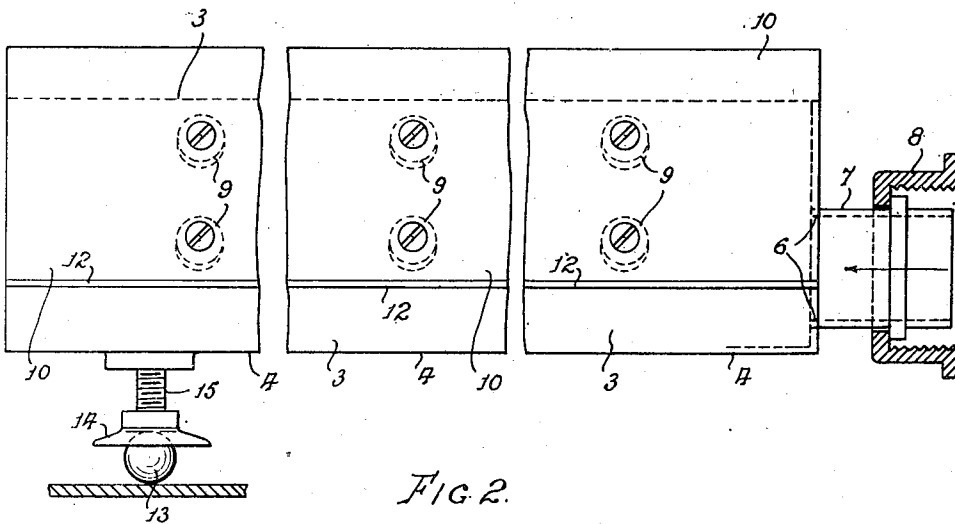
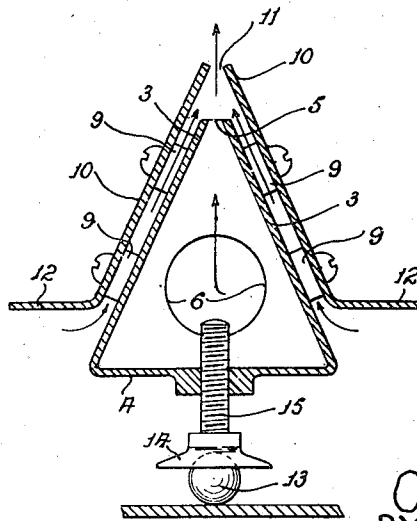


FIG. 2.



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NOZZLE FOR USING PRESSURE UNDER LIQUIDS

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2 Claims. (Cl. 259—11)

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This invention has reference to nozzles for using pressure under liquids and has for its object to provide an improved nozzle for creating turbulence and directing jets under water or other liquids, the nozzle itself being used for a variety of purposes, such as in washing machines.

According to this invention a nozzle comprises a trunk substantially of triangular shape in cross-section having a slot along the apex and otherwise closed save for an inlet or inlets for fluid under pressure, the side of the triangle opposite the slot constituting the base of the apparatus and the other two sides having plates mounted on them and spaced parallel from them, the spaces being substantially the same width as the slot along the apex of the trunk, these plates being separated above the slot in the apex of the trunk, by an opening, substantially the same width as the slot below, the plates at their lower ends being turned outwardly, the construction providing that when fluid under pressure is forced into the trunk, the whole device being under liquid, the fluid escaping by the slots along the apex of the trunk will draw the surrounding liquid up the passages between the plates and the trunk and will eject the liquid from the top.

The invention is more particularly set forth with reference to the accompanying drawings, wherein—

Fig. 1 is a broken side elevation of a nozzle according to the invention and

Fig. 2 is a cross-section.

As shown in the drawings the nozzle is made in the form of a pipe or trunk 3 of triangular shape in cross section, the shape of the triangle being preferably isosceles, though this is not necessary, but when it is isosceles as shown, the shortest face 4 constitutes the base. At the apex of the triangle there is a slot 5 from end to end of the pipe or trunk which pipe or trunk is closed at both ends, one end however, having an opening 6 with a pipe 7 and coupling 8 connectable to a supply pipe by which fluid under pressure, e. g., air, steam, water, is forced into the trunk 3 and is allowed to escape from the slot 5.

Mounted on the sides of the trunk 3 and spaced from the sides by distance pieces 9, are plates 10 and the distance between the sides of the trunk 3 and these plates 10 is the same distance as the width of the slot 3 along the apex of the trunk. The plates are carried up beyond the apex of the trunk until their edges are separated by a space 11 which also is the same width as the slot 5 in the trunk.

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The bottom edges of the plates 10 do not descend as far as the base 4 of the trunk, but terminate above this level and are flared or flanged outwardly as at 12 to form a guide or wider entrance to the passages between the trunk and the plates.

The base 4 and hence the whole apparatus, is supported on rockers or like supports, such as a ball 13 engaging a cavity in a plate 14 adjustable on a screw 15, which will hold the apparatus level, the screw 15 acting as a levelling screw, but not rigidly, as the surge of the water in the tank acting on the outwardly turned flanges of the plates may cause, and in some instances it is desirable that it should cause, the nozzle to rock.

If the apparatus is to be used in a dish-washing or like machine it is mounted in a desired part of a tank, there may, of course, be several in one tank, and when the tank is filled with water the nozzle apparatus is immersed and the liquid under pressure is turned on, through the coupling and pipe 8 and 7 respectively. This causes an out-rush of the air, gas or steam used as the pressure medium, from the slot 5, in the apex of the trunk, and this draws water along the passages between the trunk 3 and the plates 10 and ejects it from the top slot 11 formed by the edges of the converging plates 10, the operation continuing as long as the pressure is kept up. In this manner a great turbulence is set up in the liquid in which the apparatus is immersed.

While the invention has been described with reference to apparatus having one inlet for fluid under pressure, it is to be understood that more than one inlet may be used as for instance an inlet at each end or at any other suitable position or positions.

What I claim as my invention and desire to secure by Letters Patent is:

1. A nozzle for using pressure under liquids, comprising a body having a bottom wall, end walls and inclined side walls forming a trunk of triangular shape in cross-section, said trunk having a slot along its apex and an inlet opening in one of its end walls, the trunk being otherwise closed, means for connecting a supply pipe with said inlet opening, plates secured on the inclined side walls of said trunk in parallel spaced relation thereto, the space between said plates and side walls being the same as the width of the slot along the apex of the trunk, said plates having their converging upper ends spaced apart a distance corresponding to the width of said slot and having their lower ends turned outward from said trunk at some distance above the lower

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end of the trunk, and means for rockably supporting and adjusting the level of said trunk and its associated plates.

2. A nozzle as set forth in claim 1, said supporting and level-adjusting means comprising a ball and socket member and means carried thereby and threaded into the bottom wall of said trunk.

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