

Oct. 12, 1943.

J. B. DYER

2,331,379

DOMESTIC APPLIANCE

Filed May 17, 1940

2 Sheets-Sheet 1

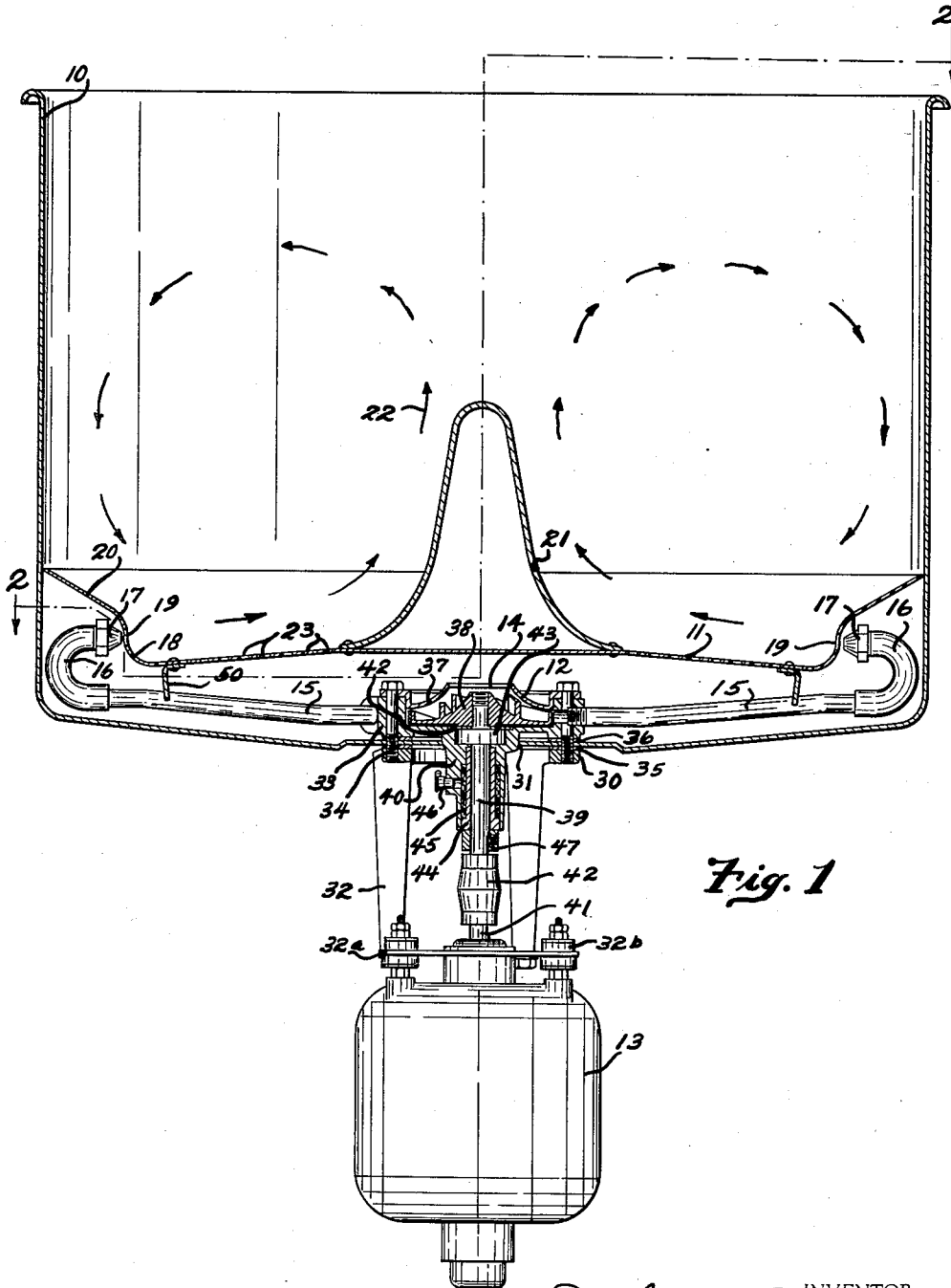


Fig. 1

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2 Sheets-Sheet 2

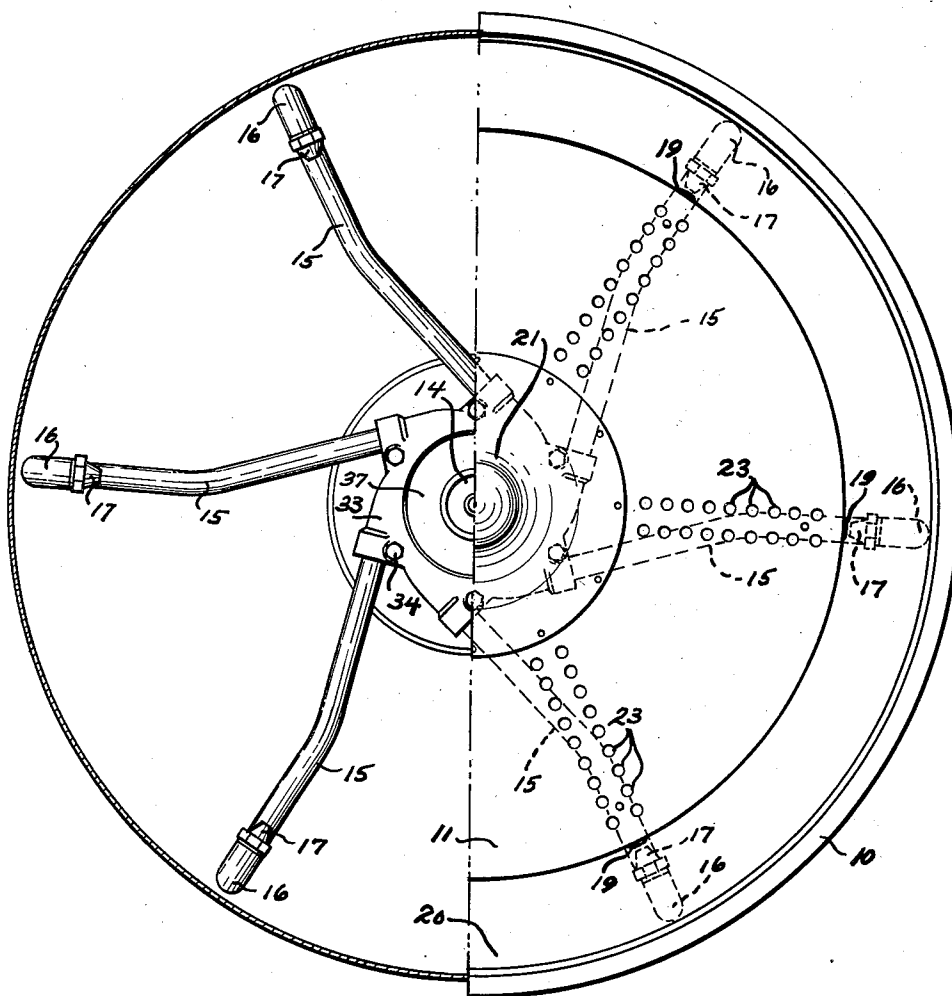


Fig. 2

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UNITED STATES PATENT OFFICE

2,331,379

DOMESTIC APPLIANCE

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Application May 17, 1940, Serial No. 335,747

2 Claims. (Cl. 68—184)

This invention relates to domestic appliances. An object of this invention is to provide an improved washing machine for washing clothes in which the clothes are agitated by the forcing of liquid into the clothes and a continuous supply of forcing liquid to the pumping device is insured.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings, wherein a preferred form of the present invention is clearly shown.

In the drawings:

Fig. 1 is a vertical cross-section of an apparatus embodying my invention; and

Fig. 2 is a horizontal section-plan view taken along the line 2—2 of Fig. 1.

A washing machine embodying my invention, in general, comprises a tub 10 provided with a false bottom 11, supported above a pump 12, which is driven by a motor 13. The pump 12 has an upwardly directed intake opening 14 and a plurality of radially directed discharge arms 15 extending to the periphery of the tub where they are bent inwardly at 16 to discharge the liquid radially inwardly through the nozzles 17. The false bottom 11 turned upwardly at this point, as indicated at 18, is provided with openings 19 through which the nozzles 17 discharge. The false bottom may be continued by a flared apron 20 to the edge of the tub. A baffle 21, preferably cone-shaped, is supported above the pump 12.

Liquid and clothes are placed in the tub, and the pump is driven by the motor 13 in such a manner that the liquid enters at 14 and is discharged in confined paths through the arms 15, bends 16 and nozzle 17 radially inward through the openings 19. The main body of liquid and the clothes are caused to be agitated and are given a toroidal action, as indicated by the arrows 22. A continuous supply of liquid for the opening 14 is insured by the flow of liquid through the perforations 23 of the false bottom 11. The false bottom 11 supports the clothes away from the opening 14. The inward discharge of washing fluid at 19 prevents the clothes from clogging the openings 23 by the forceful action of the discharge at this point.

The motor-pump structure is so arranged that it is easily assembled with the tub. For this purpose, a motor-frame structure is provided which includes a securing ring 30 located below and around the tub opening 31. The motor-frame structure also includes the motor 13 supported by the downwardly directed arms 32 carried by the ring 30. The arms 32 carry a lower

ring 32a on which the motor 13 is supported by means of the rubber supports 32b. A pump-frame structure is provided which includes a securing ring 33 secured above and around the opening 31. The rings 30 and 33 are secured together by means of bolts 34. Preferably gaskets 35 and 36 are interposed between the respective rings 30 and 33 and the tub bottom.

The pump structure, in addition to the ring 33 includes an inlet plate 37 resting on the ring 33. A rotary impeller 38 is also provided which is carried by a shaft 39 journaled in a bearing extension 40 depending and secured to the ring 33 and passing through the opening 31. The pump shaft 39 is secured to the motor shaft 41 by means of a flexible sleeve 42, made of rubber or the like, into which the shafts 39 and 41 may be inserted during assembly. The impeller 38 rides on a bearing plate 42 supported above a packing gland 43 through which the shaft 39 passes. The bearing extension 40 is provided with a porous bearing sleeve 44 and lubricant packing 45 which can be provided with lubricant through the oiling cup 46. The impeller 38 is held from axial displacement by means of the ring 47 secured to the shaft 39.

The arms 15 are secured to the ring 33 preferably so that they are a unitary assembly with the ring 33 and can be connected to the tub at the same time that the rings 30 and 33 and the intake plate 37 are secured together by the bolts 34. The false bottom 11 preferably is removable and rests in the tub by any suitable form of support, such as the brackets 50 resting on arms 15 or the like. Preferably the cone 21 is also removable and is secured to the false bottom 11.

From the foregoing description it is evident that the motor pump structure can be readily assembled on the tub after parts of the structure have been sub-assembled. Thus the motor-frame structure can be sub-assembled, the pump ring 33, together with the arms 15 can be sub-assembled, and thereafter these parts can be secured together in the tub as hereinbefore indicated. This provides a very efficient washing device which is economical to produce and operate.

While the form of embodiment of the invention as herein disclosed, constitutes a preferred form, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

What is claimed is as follows:

1. A washing machine comprising a tub having an imperforate bottom, a perforate false bottom in said tub above said imperforate bottom, a

central upstanding baffle above said false bottom, a centrally disposed pump below said false bottom having intake means between said bottoms, and radial discharge passageways from said pump extending to the periphery of said tub and discharging radially inwardly only immediately above said false bottom to create toroidal circulation of liquid above said false bottom and to sweep articles being washed away from said false bottom.

2. A washing machine comprising a tub having an imperforate bottom, a perforate false bottom in said tub above said imperforate bottom, said false bottom having a peripheral upward

bend with discharge openings therein, a central upstanding baffle above said false bottom, a centrally disposed pump below said false bottom having intake means between said bottoms, and radial discharge passageways from said pump extending to the periphery of said tub and discharging radially inwardly into said discharge openings in said false bottom to discharge forcible streams immediately above said false bottom to create toroidal circulation of liquid above said false bottom and to sweep articles being washed away from said false bottom.

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