

March 5, 1935.

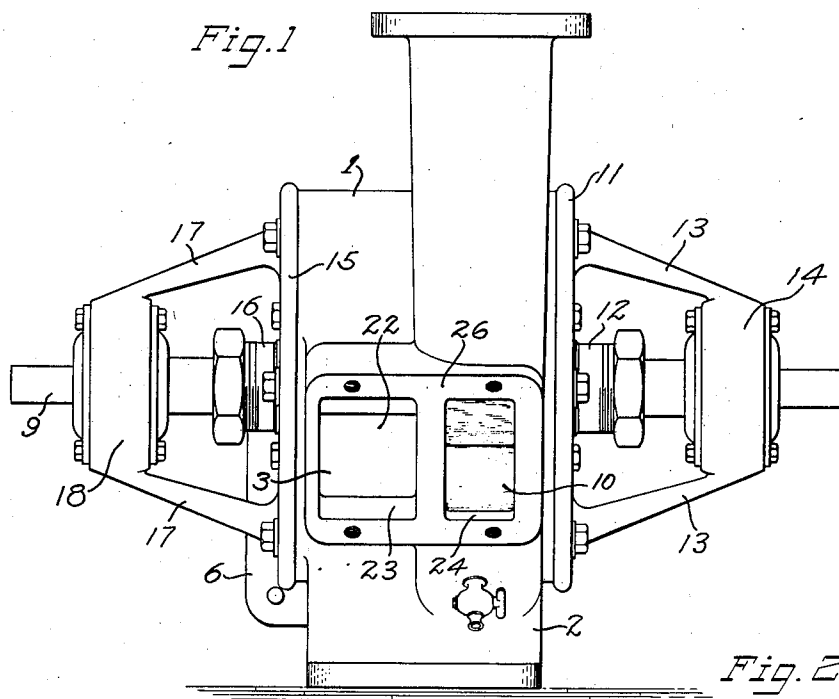
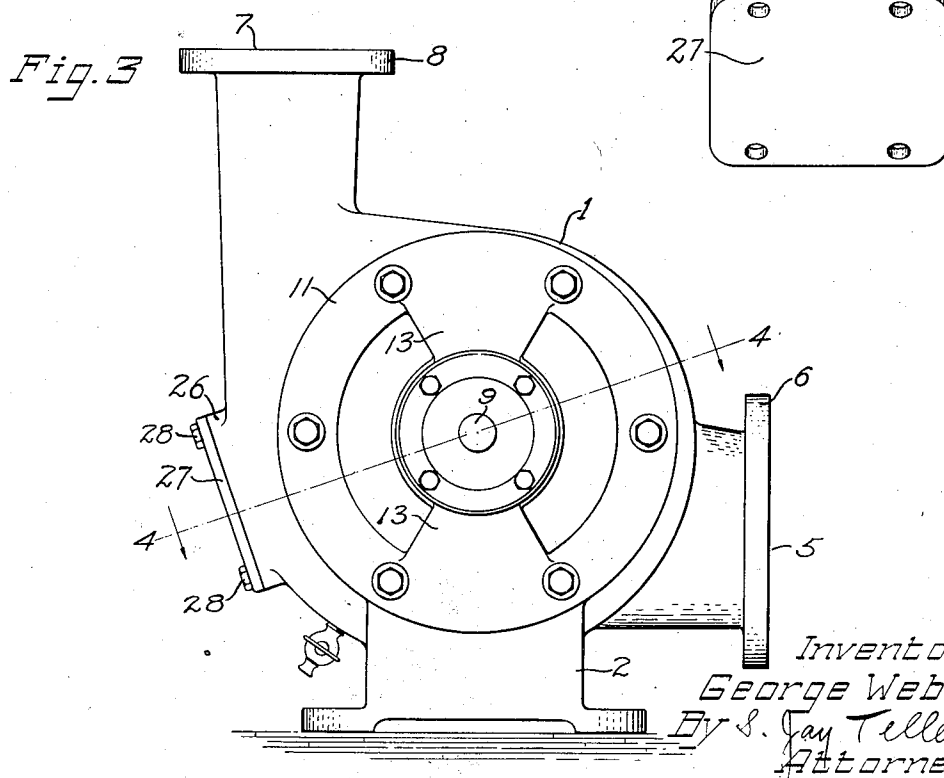
G. WEBB

1,993,423

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Filed July 14, 1932

2 Sheets-Sheet 1



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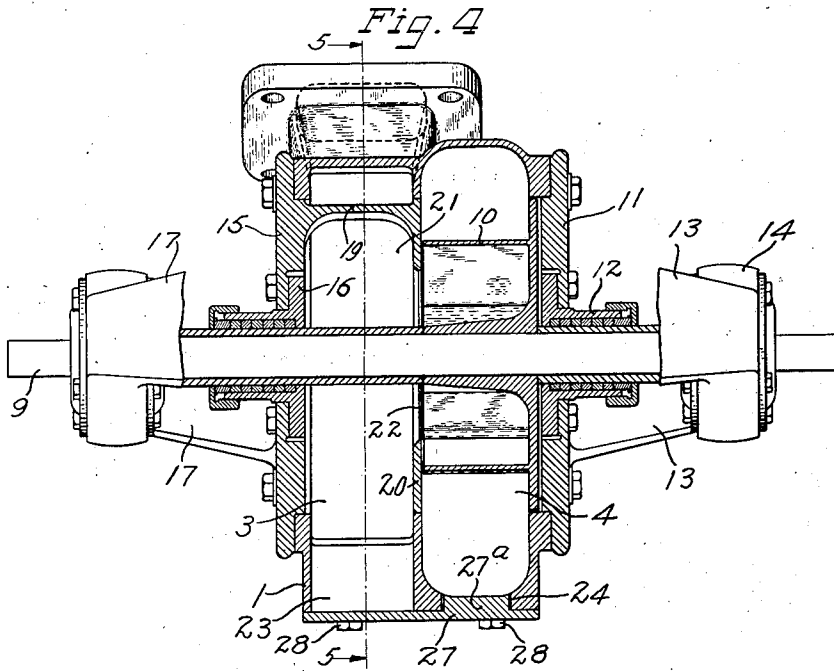
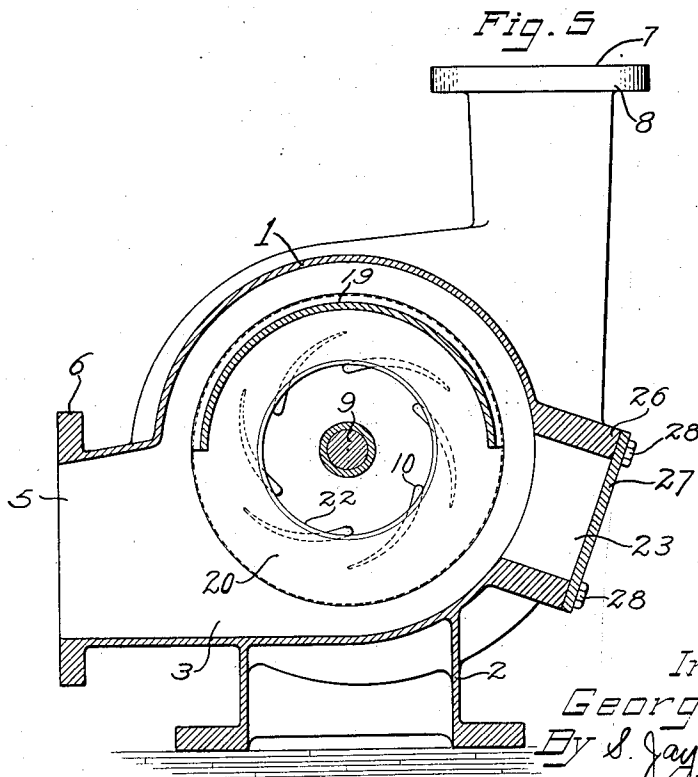
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Application July 14, 1932, Serial No. 622,494

2 Claims. (Cl. 103—111)

The present invention relates to a centrifugal pump, and particularly to such a pump intended and adapted for use with or as a part of a machine for washing dishes. In the operation of dish washing machines difficulties are frequently experienced because of the entry into the pump of solid articles such as pieces of bone, or of fibrous material such as pieces of cloth. Dish washing machines are ordinarily provided with screens to prevent the entry of such articles, but the screens are sometimes removed by the operators and foreign articles find their way into the pump.

It has heretofore been proposed to provide a centrifugal pump for a dish washing machine having a cleanout opening providing access to the impeller chamber. I have found, however, that a single opening providing access only to the impeller chamber is not sufficient, as the foreign articles sometimes become lodged in the suction chamber and do not enter the impeller chamber. In accordance with the present invention I provide two cleanout openings, one giving access to the impeller chamber and one giving access to the suction chamber, and I provide a single plate normally covering both openings, but adapted upon removal to provide access through the said openings to the impeller chamber and to the suction chamber.

In the accompanying drawings I have shown the embodiment of the invention which I now deem preferable, but it will be understood that the drawings are intended for illustrative purposes only and are not to be construed as defining or limiting the scope of the invention, the claims forming a part of this specification being relied upon for that purpose.

Of the drawings:

Fig. 1 is a front view of a pump embodying the invention, the cover for the cleanout openings being omitted.

Fig. 2 is a front view of the cover for the cleanout openings.

Fig. 3 is a right side view of the pump.

Fig. 4 is a longitudinal sectional view taken along the line 4—4 of Fig. 3.

Fig. 5 is a vertical sectional view taken along the line 5—5 of Fig. 4.

Referring to the drawings, 1 represents the pump casing which is adapted to be supported upon an integral base 2. The casing 1 is open at its ends and in its interior are provided a suction chamber 3 and an impeller chamber 4. Communicating with the suction chamber 3 is an intake opening 5 terminating in a flange 6 by

means of which the pump may be connected with a suction pipe or duct. Communicating with the impeller chamber 4 is a discharge opening 7 terminating in a flange 8 by means of which the pump may be connected with a suitable discharge duct or pipe.

Extending centrally through the casing 1 is a main shaft 9 which carries an impeller 10 positioned within the impeller chamber 4. The opening in the right end of the casing 1 is closed by a plate 11 having a stuffing box 12 thereon through which the shaft 9 projects. The plate 11 is provided with integral arms 13, 13 which carry a bearing at 14 which rotatably supports the shaft 9 at the right end thereof. The opening in the left end of the casing 1 is closed by a plate 15 having a stuffing box 16 thereon through which the shaft 9 projects. The plate 15 is provided with integral arms 17, 17 which carry a bearing at 18 similar to the bearing at 14 and which rotatably supports the shaft 9 at the left end thereof.

Formed integrally with the plate 15 is a wall 19 which projects inward through the suction chamber 3 and carries at its inner end a wall or flange 20 positioned between the suction chamber 3 and the impeller chamber 4. The wall 19 extends only partly around the periphery, and is interrupted to provide an unobstructed passageway from the intake opening 5 to the suction chamber 3. The wall or flange 20 is provided with a central opening 22 which constitutes an eye leading to the central portion of the impeller 10. Thus the two walls 19 and 20 cooperate to provide a passageway through which the fluid is guided from the intake opening 5 to the central suction portion of the impeller 10.

The casing 1 is provided at the front with two openings 23 and 24 providing access respectively to the suction chamber 3 and to the impeller chamber 4. The wall 19 is so positioned as to permit access through the opening 23 to the suction chamber 3. Surrounding the said openings 23 and 24 is a flange 26 having a flat outer surface adapted to be engaged by a closure plate 27. The said closure plate 27 is of such size as to be adapted to cover both of the openings 23 and 24, being normally held in place by means of suitable bolts 28, 28. Preferably the plate 27 has a boss 27^a thereon having an inner surface positioned to conform to the general contour of the interior of the impeller chamber 4.

It will be apparent that when the closure plate 27 is removed as shown in Fig. 1 access may be easily had through the two holes 23 and 24, to the suction chamber 3 of the pump, and to the

impeller chamber 4 thereof. It will, therefore, be apparent that the operator upon observing any retarded or otherwise abnormal action of the pump can remove the plate 27 and immediately have access simultaneously to both of the pump chambers 20 as to remove any obstruction that may be found in either chamber.

What I claim is:

1. In a centrifugal pump, the combination of
10 an impeller rotatable about a fixed axis, a casing provided with an integral supporting base at the bottom and having an impeller enclosing chamber and a suction chamber axially separated from each other but communicating with
15 each other, the said impeller and suction chambers being provided respectively with discharge and intake openings and being also provided respectively with two axially separated inspection openings separate from the discharge and intake
20 openings which inspection openings are at the periphery of the casing and spaced upward and laterally from the base, and a single removable closure plate normally covering both of the inspection openings and serving upon removal to
25 permit access to the interior of either or both

chambers from a position at one side of the pump.

2. In a centrifugal pump, the combination of an impeller rotatable about a fixed axis, a casing having a centrally apertured wall therein perpendicular to the said axis and dividing the casing to form an impeller enclosing chamber and a suction chamber communicating therewith, the said impeller and suction chambers being provided respectively with discharge and intake openings and being also provided respectively
10 with two inspection openings at the periphery of the casing and separate from the discharge and intake openings and positioned at opposite sides of the division wall, and a single removable closure plate normally covering both of the inspection
15 openings and serving upon removal to permit access to the interior of either or both chambers, the said removable plate being formed with an integral boss entering and closing the opening
20 in the impeller chamber and having an inner surface conforming to the general interior contour of the impeller chamber and terminating flush with the interior of said chamber.

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