

Feb. 24, 1942.

V. BENDIX

2,274,121

CLEANING MACHINE

Filed Dec. 22, 1938

3 Sheets-Sheet 1

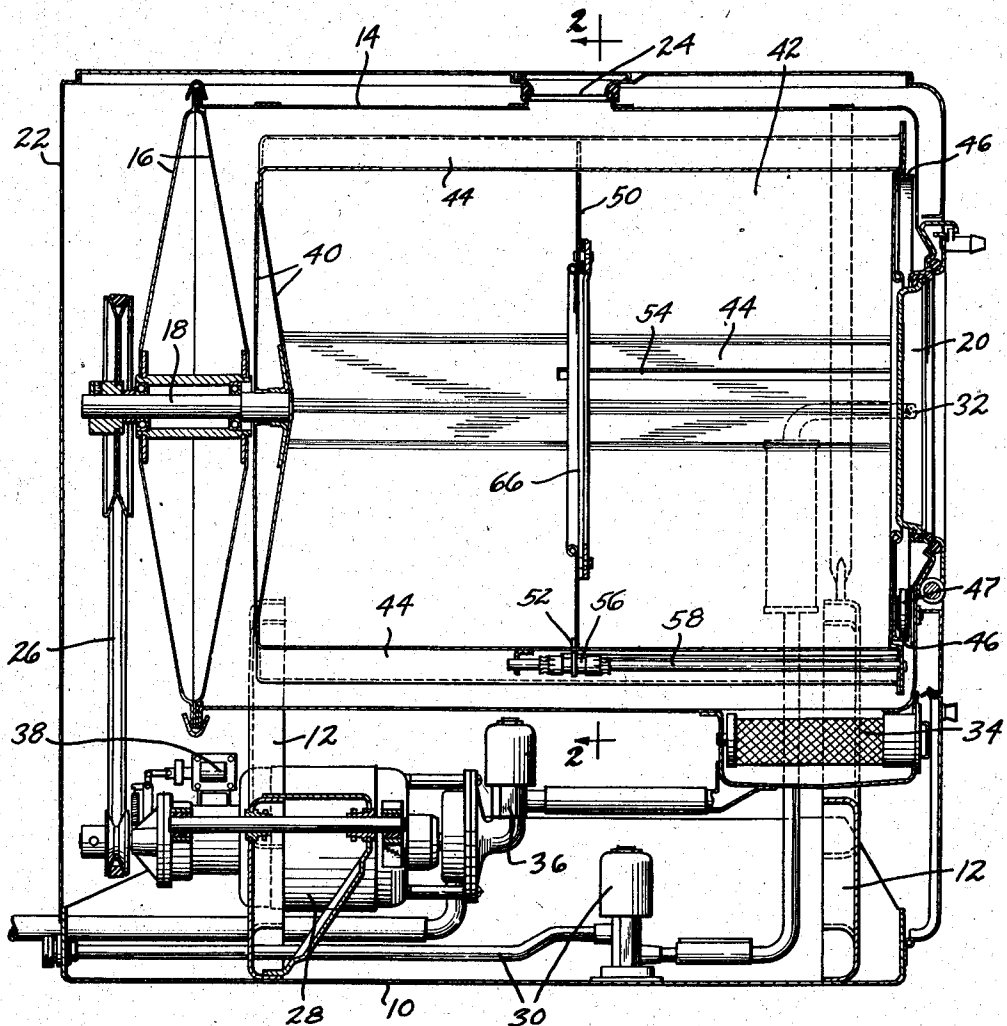


Fig. 1

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3 Sheets-Sheet 2

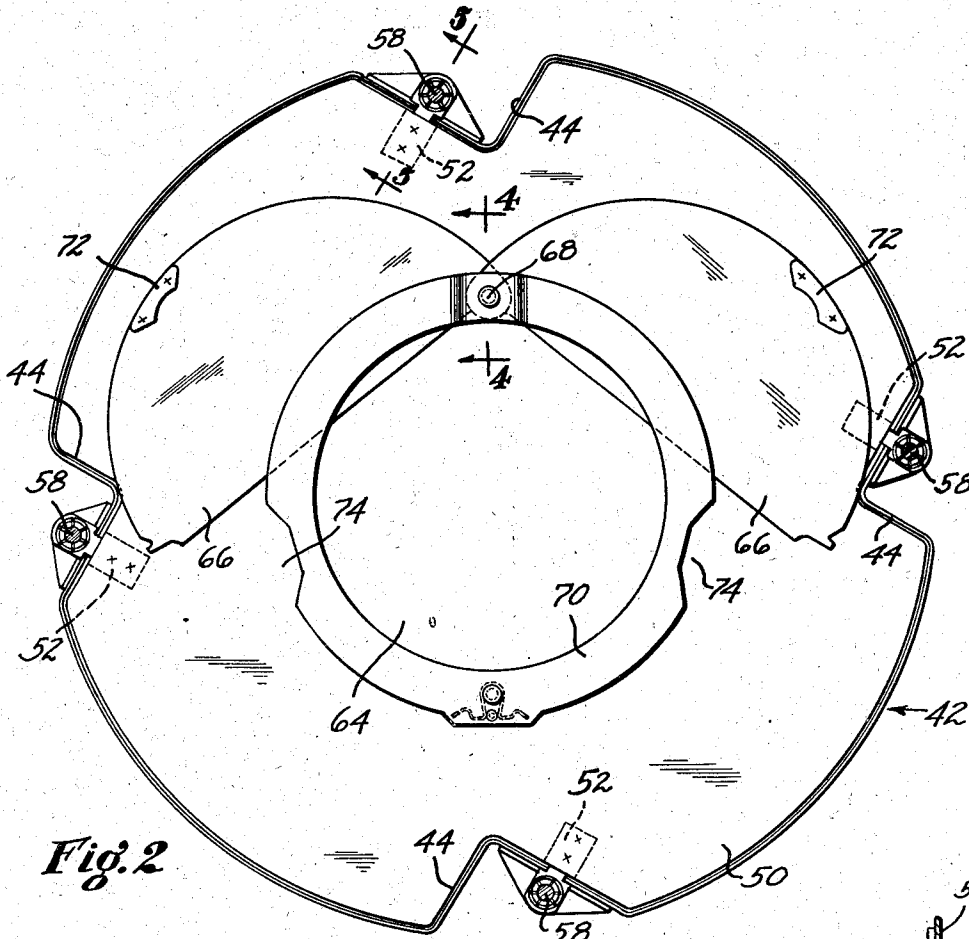


Fig. 2

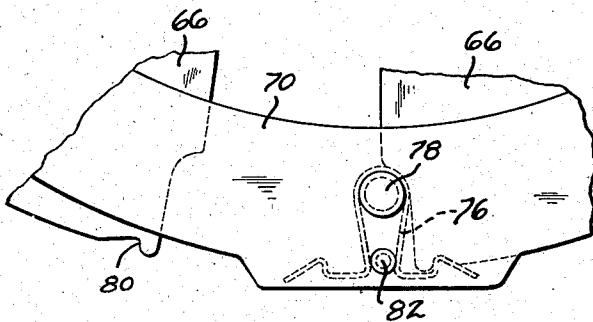


Fig. 3

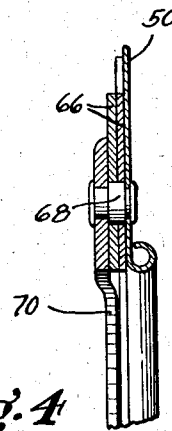


Fig. 4

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3 Sheets-Sheet 3

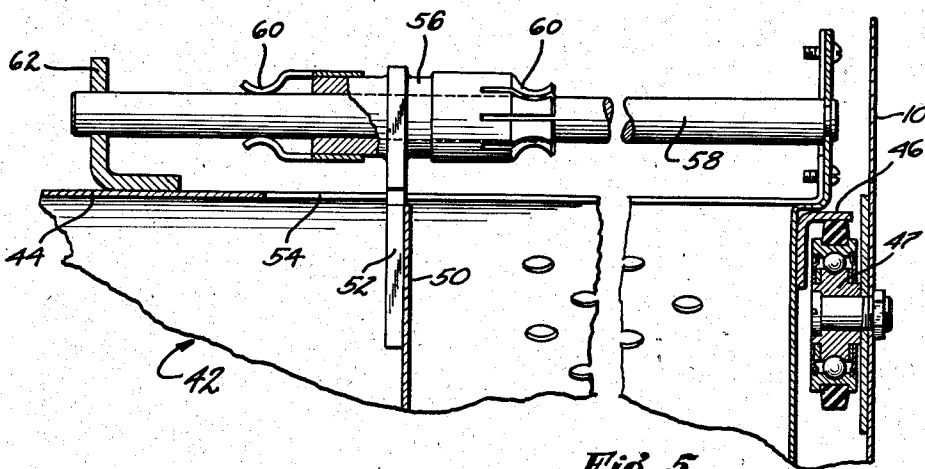


Fig. 5

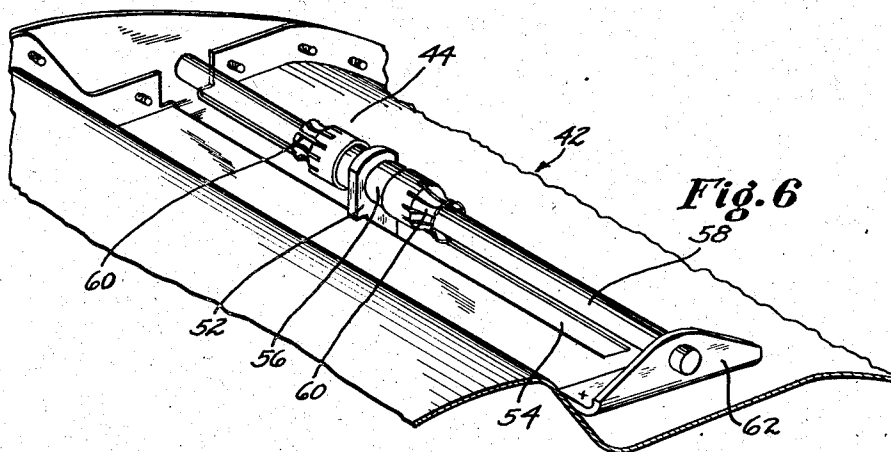


Fig. 6

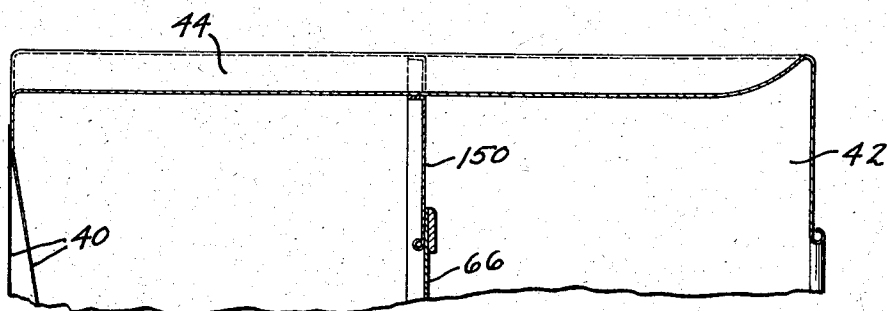


Fig. 7

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UNITED STATES PATENT OFFICE

2,274,121

CLEANING MACHINE

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Application December 22, 1938, Serial No. 247,148

4 Claims. (Cl. 68—143)

This invention relates to cleaning machines, and is illustrated as embodied in a washing machine of the open-end cylinder type adapted for operation under automatic control.

An object of the invention is to adapt a machine of this character to handle a considerable volume of work in small separate lots, by providing the rotor of the machine with a partition dividing it into compartments. Preferably the partition is adjustable axially of the rotor. Where used in a rotor of the type illustrated, intended to be loaded through an opening in one end, another object of the invention is to provide the partition with a central loading opening having a door which is shown arranged to swing outwardly against the rotor wall.

Other objects and features of the invention, including a novel arrangement for supporting the outboard end of the rotor by a bearing carried by the tub wall and surrounding the loading opening in the tub wall, and other novel constructions and desirable arrangements, will be apparent from the following description of the illustrative embodiment shown in the accompanying drawings, in which:

Figure 1 is a vertical section through the machine, in a plane passing through the rotor axis;

Figure 2 is a cross-section through the rotor, on the line 2—2 of Figure 1;

Figure 3 is a partial elevation of the lower part of the partition of the rotor;

Figures 4 and 5 are partial sections through the rotor on the lines 4—4 and 5—5 of Figure 2;

Figure 6 is a perspective view of part of the exterior of the rotor wall; and

Figure 7 is a partial section through a rotor having a fixed partition.

The machine illustrated is an automatically-controlled washing-rinsing-drying machine having a base 10 to which are welded saddles 12 carrying a horizontal cylindrical tub 14 having a loading opening in its front end and having its rear end in the form of conical stampings 16 arranged face to face and carrying bearings for a rotor shaft 18.

The loading opening is closed, when the machine is operating, by a closure such as a door 20. The machine may be housed in a suitable cabinet 22, provided with a soap door 24 communicating with the interior of the tub.

Except as further described below, the machine may be constructed and operated as described in United States Patent No. 2,165,884, of Rex Earl Bassett, Jr., and John W. Chamberlin, dated July

11, 1939, modified as described in United States Patent No. 2,173,603, of Adiel Y. Dodge, dated September 19, 1939.

As described in these patents, the rotor shaft 18 is driven either at washing or extracting speed by means such as a belt 26 driven by a motor-transmission unit 28. There are water-inlet connections 30 discharging into the tub 14 through one or more nozzles 32; there is a screened drain sump 34 controlled by a solenoid drain valve 36, and there is a solenoid 38 controlling the speed at which unit 28 drives the shaft 18. There is also float mechanism (not shown) controlling the water level.

A machine of this character is well adapted for operation under automatic control, if desired, as fully explained in the above-identified Bassett and Chamberlin patent.

The shaft 18 is attached to and projects axially outward from, cooperating stampings 40 forming the rear end of a novel horizontal cylindrical perforated rotor or washing cylinder 42. This rotor is formed with baffles 44 pressed into its peripheral wall, and which extend in the direction of the length of the rotor, and which are generally "V"-shaped in section, projecting inwardly toward the axis of the rotor.

I prefer to support the front or outboard end of the rotor upon the front wall of the tub by means of an anti-friction bearing consisting of a ring 46 having an annular flange surrounding the loading opening and its closure 20, which bears on three or more annularly positioned rubber tired sealed ball bearing rollers 47 secured to the tub end. If the shaft 18 is supported with sufficient rigidity this outboard bearing may be dispensed with.

According to an important feature of the invention, the rotor 42 is divided into compartments taking separate loads of clothes, by a partition 50 between its ends.

Preferably this partition is adjustable axially of the rotor, having welded thereto lugs 52 projecting through slots 54 in the walls of the baffles or ribs 44. These lugs 52 are rigidly secured to sleeves 56 slidably embracing rods 58 mounted on the exterior of the rotor, in the cavities formed by baffles 44. The sleeves 56 may be provided with spring fingers 60 frictionally engaging the rods 58 and holding the partition 50 in any position to which it is shifted.

It will be noted that slots 44 and rods 58 need extend rearwardly only to the positions for the rearmost adjustment desired for the partition

50. The front ends of the rods 58 are, as shown in Figure 5, riveted over or otherwise secured to the front walls of the baffles 44, while brackets 62 may be provided for supporting the rear ends.

The partition 50 is shown as formed with a central loading opening 64, aligned with the loading opening in the front rotor wall, this opening being provided with a novel closure such as a door 66.

This door is in sections which are mounted on a pivot 68 carried by the partition 50 and by reinforcing rings 70 surrounding the opening 64, and swing outwardly when open against the rotor wall. The door sections 66 are shown with positioning lugs 72 welded thereto; these lugs fit when the door is closed into recesses 74 in the rings 70 to insure correct alinement.

When the door is closed, it is held yieldingly latched by a spring latch 76 mounted on a pivot 78 carried by the ring 70 and engageable with notches 80 in the ends of the door sections 66. A pin 82 keeps the latch 76 from swinging out of position.

Figure 7 shows an arrangement with a partition 150 permanently attached (as by welding or riveting) to the wall of the rotor 42.

In the operation of this machine, two different loads of clothes can be washed at once, the rear load being inserted through the opening 64 and the door 66 closed, and then the front load being inserted ahead of the partition 50 or 150. In the arrangement of Figures 1-6, the partition 50 can be shifted to accommodate different sizes of loads.

While particular constructions have been described in detail, it is not my intention to limit the scope of the invention by the foregoing description or otherwise than by the terms of the appended claims.

I claim:

1. A washing machine rotor having a shaft

projecting axially outward at one end and having an opening in its other end, and provided with a partition between said ends dividing it into compartments, said partition being supported outside of the rotor for adjustment axially of the rotor, the supporting elements passing through slots in the side walls of the rotor extending parallel to the rotor axis.

2. A washing machine rotor having a shaft projecting axially outward at one end and having an opening in its other end, provided with a partition between said ends dividing it into compartments and which is adjustable axially of the rotor, guide rods secured to the rotor on the outer surface thereof, said rotor being formed with slots adjacent the guide rods, and supporting elements for said partition movably mounted on the guide rods and extending through said slots.

3. A washing machine rotor generally cylindrical in form and provided with internal baffles extending in the direction of its length, a partition adjustable in an axial direction, guide rods secured to the outer surface of the rotor in the depression formed by said baffles, said baffles having slots formed in the trailing surfaces of the baffles, and supporting elements for said partition movably mounted on the guide rods and extending through the slots.

4. A washing machine rotor generally cylindrical in form and provided with internal baffles extending in the direction of its length, a partition between its ends dividing it into compartments, guide rods secured to the outer surface of the rotor in the depression formed by said baffles, the wall of the rotor being formed with slots paralleling the guide rods, and supporting means for the partition extending through said slots.

VINCENT BENDIX.