July 3, 1962 C. F. CZECH 3,041,864

LINT TRAP

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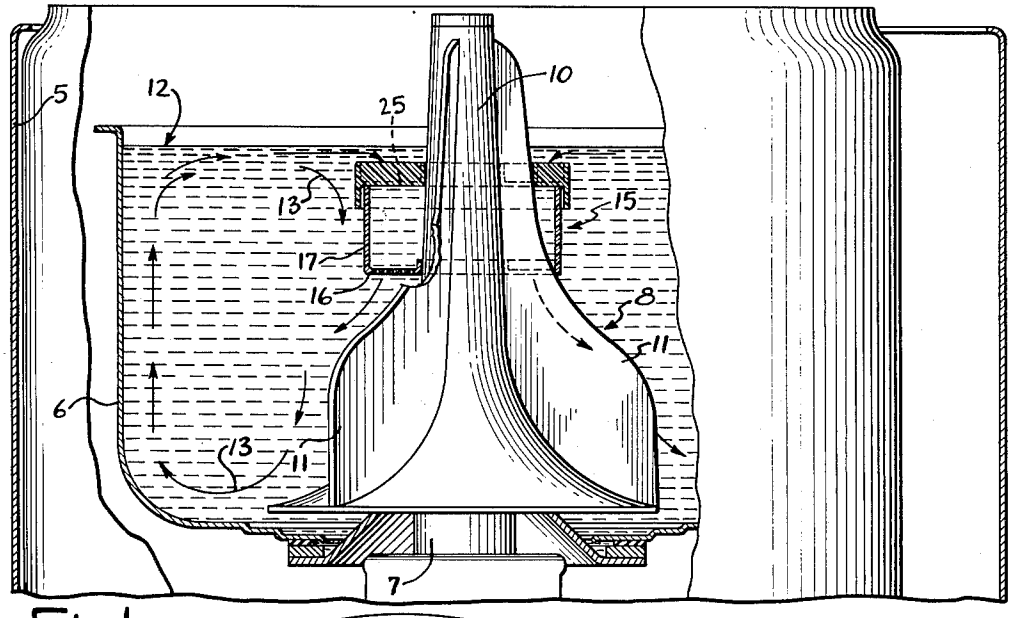

Fig. 1

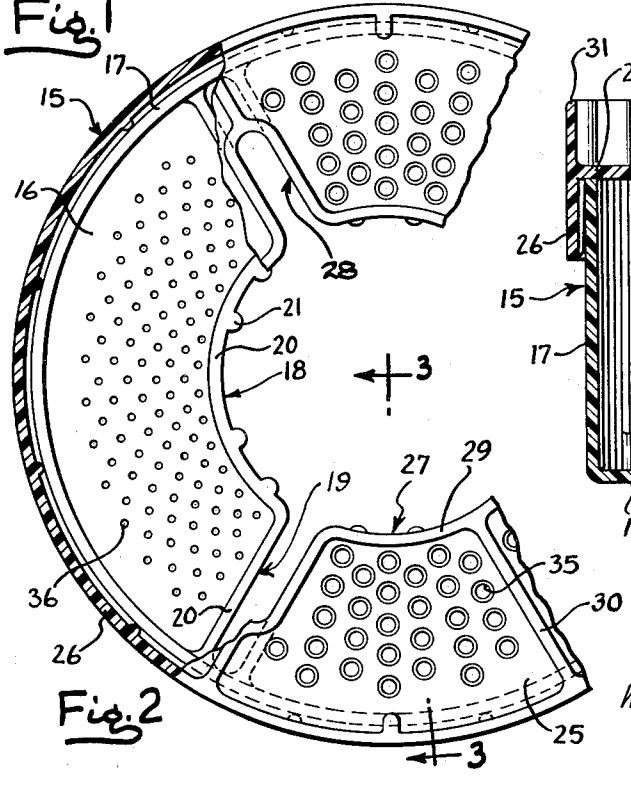

Fig. 2

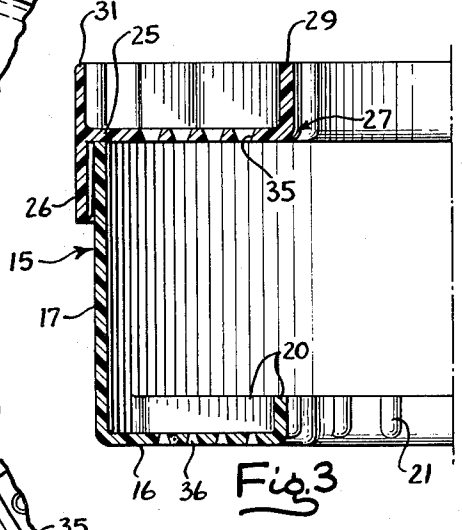

Fig. 3

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LINT TRAP

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The invention relates to washing machines generally and it is more particularly concerned with improved means for removing lint from the wash or rinse water used in such machines.

One object of the invention is to provide a lint trap which can be incorporated very quickly and easily in conventional washing machines of the agitator type and which is effective when the machine is in operation to remove a substantial portion of the lint entrained in the wash or rinse water.

Another object of the invention is to provide a lint trap which can be installed in an agitator type washing machine by simply slipping it over the agitator. An ancillary object is to provide a lint trap so constructed and arranged so that it is automatically located in an effective operating position as an incident to its being placed on the agitator.

It is also an object of the invention to provide a lint trap which can be manufactured by a low cost plastic molding operation and which can be installed in a washing machine without the use of tools and without requiring any changes or modifications of the machine with which it is associated.

Other objects and advantages of the invention will become apparent from the following detailed description of the preferred embodiment illustrated in the accompanying drawings, in which

FIGURE 1 is a fragmentary sectional view through the clothes receptacle of an agitator type washing machine equipped with a lint trap embodying the features of the invention.

FIG. 2 is a partly sectioned top view of the lint trap shown in FIGURE 1.

FIG. 3 is a fragmentary sectional view of the lint trap taken in the plane substantially on the line 3—3 of FIG. 2.

While a preferred form of the lint trap comprising the invention and its application to a particular type of washing machine have been shown and will be described herein, it is not intended that the detailed character of the disclosure should limit the invention to the particular form or application disclosed, the intention being to cover all modifications and adaptations falling within the spirit and scope of the invention as more broadly or generally characterized in the appended claims.

For purposes of illustration the invention has been shown in a form suitable for use in conventional washing machines equipped with what is known as a bottom agitator. The exemplary machine has a housing 5 in which an open topped tub or clothes receptacle 6 is supported in an upright position. In the particular machine shown, the receptacle is carried on the upper end of a hollow shaft 7 by which it can be rotated at a high speed to extract the water from a load of fabrics washed in the receptacle.

In machines of the type illustrated the washing action is effected by an agitator 8 extending upwardly through the center of the receptacle and adapted to be oscillated about a vertical axis through the medium of a drive shaft extending through the hollow shaft 7. The agitator comprises a horn shaped pedestal 10 having its outwardly flaring end located closely adjacent the bottom of the receptacle. Integral with the pedestal are a series

of projecting vanes 11—three, in this instance, uniformly spaced apart around the pedestal.

The agitator is submerged in the wash or rinse water in the receptacle and the vanes 11 are shaped to produce currents in the water effective to drive the water through the fabrics loaded into the receptacle and thus remove soil. In the exemplary machine the vanes 11 are shaped to present a relatively narrow upper section tapered outwardly to merge with a lower section extending substantially to the outer edge of the pedestal's flaring lower end. Accordingly, with the receptacle filled with water to the level indicated at 12, oscillation of the agitator will force the water outwardly adjacent the bottom of the receptacle. The current of water travels up the side of the tub and then inwardly and down along the agitator in a continuous stream. Thus, the entire mass of water in the receptacle circulates in a generally toroidal path indicated by the arrows 13 during the washing or rinsing operation.

In carrying out the invention, a lint trap 15 having a perforated screening member 16 is constructed and arranged so that it may be mounted on the washing machine agitator in a position to intercept the circulating water. In the preferred form illustrated the screening member 16 constitutes the bottom wall of a basket-like container which has an upstanding cylindrical side wall 17. The screening member or bottom wall 16 has a central opening complementally shaped and dimensioned to fit over and rest on the agitator at a point substantially midway of its length. For use with the agitator shown the opening includes a generally circular portion 18 shaped to fit the pedestal 10 with recesses 19 radiating from it to accommodate the vanes 11. It will be understood that the shape and dimensions of the opening and the number and dimensions of the recesses will be determined by the construction of the particular agitator with which it is intended to be used.

The inner marginal edge of the bottom wall 16 is bordered by an upstanding flange 20 which as shown in FIG. 2 also extends along the sides of the recess 19. The recesses permit the trap to slide down over the vanes to a point at which the ends of the recess rest on the edges of the vanes. A series of inwardly facing bosses 21 on the inner face of the flange 20 engage the surface of the pedestal and assist in retaining the trap in an upright position on the agitator.

Also assisting in retaining the trap in an upright position is a cover having a generally flat perforated top wall 25 with a depending flange 26 around its outer peripheral edge dimensioned to telescope over the side wall 17 of the basket portion of the trap. The top wall is formed with a central opening for the reception of the agitator, such opening being complementally shaped to receive the pedestal and the vanes with a snug fit. Thus, the opening has a generally circular portion 27 (FIG. 2) with radially outwardly extending recesses 28 for respectively accommodating the pedestal and the vanes. The opening, including the recesses, is desirably encircled by an upstanding flange 29 connected by radially disposed stiffening ribs 30 with an upward extension 31 of the flange 26.

The opening 18 in the bottom wall member 16 and the opening 27 with the associated recess 28 in the top wall member 25 are dimensioned to engage the elements of the agitator and support the trap with the cover below the normal water level in the receptacle. Accordingly, during the wash or rinse operation there is a continuous circulation of the water through the lint trap. Thus, a portion of the water circulated by the agitator passes downwardly through the perforated top wall of the cover and out through the perforated bottom wall of

the basket-like container. The perforations in the top member 25 indicated at 35 are preferably large enough to permit lint particles to pass freely into the trap. The perforations in the bottom wall 16 indicated at 36 are relatively small to enable them to intercept and retain a large portion of the lint particles entrained in the circulating water. Lint collecting around the perforations 36 soon forms a porous pad which effectively traps even the smallest lint particles.

While the improved lint trap may be fabricated from metal if desired, a molded plastic construction is preferred. The trap as shown herein is particularly suitable for production in the latter manner. More particularly, the basket portion is relieved or tapered downwardly to permit easy removal from a mold. The same tapering is present in the cover member and it is to be noted that neither portion of the trap includes overhanging ledges or the like to interfere with removal from a mold.

The improved trap is very easy to apply to existing washing machines as it is only necessary to slip it over the agitator and allow it to fall into place. No changes or modifications in the machine or agitator are necessary and the installation requires no tools. The trap may also be removed readily for cleaning.

I claim as my invention:

1. A lint trap for a washing machine having an upright oscillating agitator, said lint trap comprising, in combination, a cylindrical plastic container defining an enclosed chamber and having a central opening in its bottom wall adapted to fit over and rest on the agitator intermediate the upper and lower ends of the agitator, a cover including a wall member adapted to be removably secured to such container and having a central opening shaped to fit over the agitator, said cover wall member and the bottom of said container being perforated to afford passage for the flow of wash water through the container, the perforations in said cover being dimensioned to pass lint particles entrained in the wash water and the perforations in the container being dimensioned to intercept such particles.

2. In a washing machine of the type having an agitator operative to circulate wash water in a continuous toroidal path, a lint trap including an annular screening member having an upstanding cylindrical wall around its outer edge and an upstanding flange around its inner edges, said screening member and said flange defining a central opening of complemental shape to said agitator intermediate its upper and lower ends to permit said member to fit over and rest on the agitator with said

member disposed in the circulation path of the wash water, an annular cover removably supported on the upstanding wall of said screening member and complementarily shaped to fit over and snugly engage the agitator, said cover being formed with perforations dimensioned to afford passage for wash water and entrained lint particles and said screening member being formed with perforations dimensioned to intercept the lint particles.

3. In a washing machine having an upright agitator, a lint trap comprising, in combination, a cylindrical basket having a bottom portion formed with upwardly extending side walls, said bottom portion having an opening centrally contoured to receive the agitator member of the washing machine and to be snugly positioned thereon, said side walls defining a lint retaining chamber, a removable cover positioned at the open end of said basket, said cover including an annular top portion and peripherally disposed depending flange portion adapted to overlap said wall of said basket, said top portion being formed with a contoured opening centrally disposed therein for positioning the same on the agitator of the washing machine in telescoping relation about said basket, said cover and said bottom portion of said basket being formed with a plurality of perforations therein for the passage of water therethrough, said perforations in said cover being relatively large in comparison to said perforations in said bottom portion of said basket whereby water with lint entrained therein is passed through said perforation in said cover into said chamber, and the water is passed out of the chamber through said perforations in said bottom portion, which are sufficiently small to prevent the passage of the lint entrained in the water.

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