Aug. 19, 1924. 1,505,881

A. J. FISHER

WASHING MACHINE

Original Filed Oct. 7, 1921

Fig. 1.

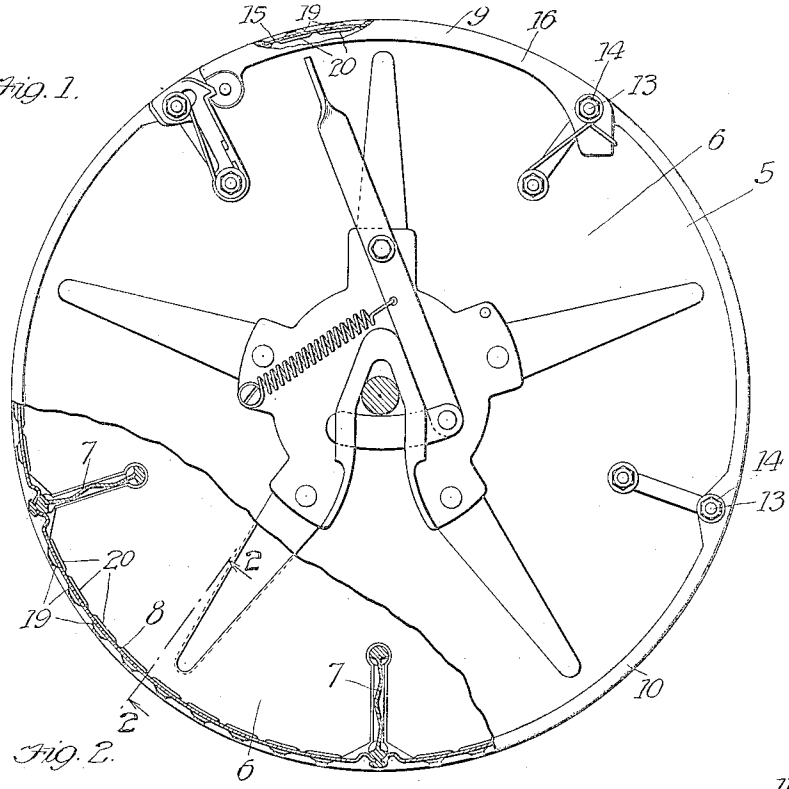


Fig. 2.

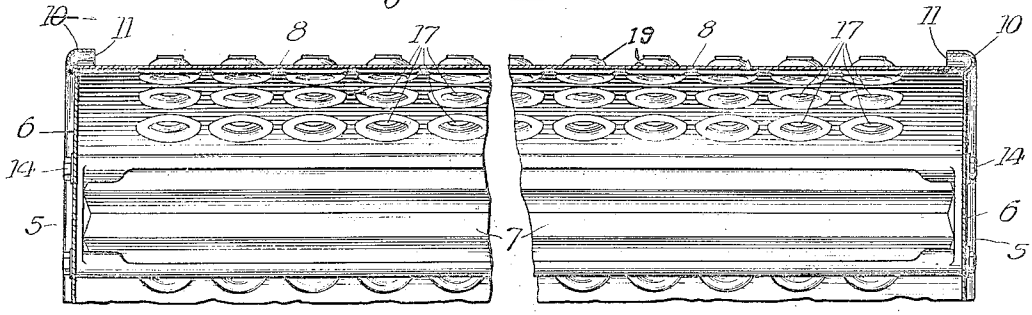
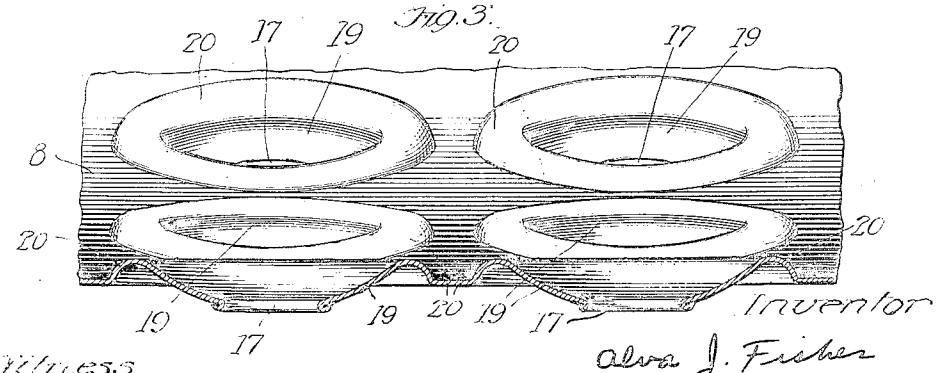


Fig. 3.



Witness
Martin F. Olsen.

Inventor
Alva J. Fisher
By Rector, Hibben, Davis & Macauley
Attys.

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UNITED STATES PATENT OFFICE.

ALVA J. FISHER, OF EVANSTON, ILLINOIS, ASSIGNOR TO HURLEY MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

WASHING MACHINE.

Original application filed October 7, 1921, Serial No. 505,977. Divided and this application filed October 6, 1923. Serial No. 666,966.

To all whom it may concern:

Be it known that I, ALVA J. FISHER, a citizen of the United States, residing at Evanston, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Washing Machines, of which the following is a specification.

This invention relates to the rotating cylinder or container for tumbling or agitating the laundry, and more particularly to the novel features of construction of the portions of the cylindrical wall of the cylinder around and forming the holes or apertures which permit circulation of the air and water. The principal objects of the invention are to form the metal surrounding these holes or apertures so that the cylinder performs more efficiently in washing the laundry and to form the edges of the holes so that they are smooth and rounded being free from all cracks or crevices and sharp or rough corners. To accomplish these objects, I have formed the holes in the apexes of frustro-conical depressions, the bases of which are pressed inwardly to form annular interior ribs and the apexes of which project beyond the periphery of the cylinder, with the metal bounding each hole rolled back upon itself to form a smooth continuous rounded edge, so that there is no jagged, rough or sharp corners or edges. As the depressions project out beyond the periphery and are conical shape they act as little buckets or pockets which lift the water and convey it to and spill it over the clothes during the rotation of the cylinder, thus more effectively circulating the water through the laundry which results in greatly increasing the efficiency of the machine. The metal around the holes is rolled back so that no sharp edges exist upon which the clothes would catch. The exterior grooves, formed at the bases of the conical depressions by the inwardly extending annular ribs, are preferably comparatively wide, the sides of the depressions gradually sloping to form the cones, so that dirt or grime will not be permitted to lodge in the grooves. Other and incidental objects of the invention will be apparent from the following description of the preferred form of embodiment of my invention which is illustrated in the accompanying drawings forming part of this specification.

In the drawings, Fig. 1 is an end view of a washing machine cylinder partly shown in section to disclose the present invention more clearly to view; Fig. 2 is a detail longitudinal section through the rotating cylinder, as on the line 2—2 of Fig. 1, and Fig. 3 is an enlarged fragmentary sectional view showing the construction around the holes or apertures in the cylindrical wall.

As more fully described and illustrated in my co-pending application, Serial No. 505,977, filed October 7, 1921, of which the present application is a division, the rotating cylinder 5 comprises ends or heads 6, suitably connected by metal baffles or agitating bars 7, a plurality of curved sheet metal sections 8 forming the cylindrical wall, and a cover or door 9. The ends or heads 6 are preferably formed of sheet-metal and carry the trunnions for supporting the cylinder in the tub which may be of any suitable construction or such as that shown in my above mentioned parent application. Adjacent the periphery, each head is provided with an annular rib, forming a circular groove 10 opening inwardly and also forming an overhanging flange, as shown in Fig. 2.

The four sections 8, forming the cylindrical wall of the cylinder, are preferably alike in construction and each is formed from a blank of thin sheet-metal, being given the desired shape by means of suitable dies. The transverse edge portions of the sections 8 are curved outwardly and then towards each other to form curved edges 11 and over-hanging flanges so that when the sections are assembled on the heads 6 the curved edges 11 seat firmly in the grooves 10. The ends of the baffles or agitators 7 abut against the heads and the heads are secured thereto by means of screws 13 which project from the ends of the baffles through openings in the heads, and on which are screwed the nuts 14.

The main panel 15 of the door or cover 9 is preferably formed of the same kind of sheet-metal as the sections 8 and is curved on the same radius to complete the cylindrical form of the cylinder. Riveted

or otherwise secured to the transverse edges of the main panel of the door are plates 16 having exterior depending flanges. The screws 13, in alignment with the rear edge of the door, project through the rear ends of these flanges for the purpose of pivotally mounting the door, as more fully shown and described in my said co-pending application.

The main panel 15 of the door and the sections 8 are provided with numerous holes or apertures 17 which are preferably arranged in parallel longitudinal and transverse rows. The metal around the holes is pressed or stamped outwardly to form frustro-conical depressions 19 with the holes in their apexes. The metal at the bases of the depressions is bent inwardly to form annular interior ribs 20. It will be observed that the metal at the edge of each hole is rolled back upon itself to form a smooth continuous rounded edge around the hole which is free from cracks or rough or sharp edges or corners so that the laundry will not be caught or cut. It will also be seen that the conical depressions project outwardly beyond the periphery of the cylinder and this is a very important feature of my invention as the depressions are thus adapted to act as little buckets which convey the water more freely to the laundry and collect water as they pass through the water in the bottom of the tub, and then dump and spill it on the clothes during the continued rotation of the drum or cylinder. The depressions extend through the cylindrical plane or periphery of the cylinder, i. e. lie on both sides of such plane, and the walls or sides of the depression are curved or approximate a spherical form, to provide pockets or buckets of greater capacity than would short conical depressions with straight sides projecting only to one side of the periphery of the cylinder. The diameter of the apertures 17 are also substantially smaller than the diameter of the inner ends of the depressions to give the depressions proper capacity. The portions of the depressions extending outwardly from the periphery of the cylinder also aid in agitating the water in the tub and thus assist in making suds. It will also be noted that the exterior grooves, formed around the base of the conical depressions 19 by the ribs 20, are quite wide, which is also an important feature as the water is permitted to wash them and hence dislodge and prevent the accumulation of dirt and grime in the grooves. The annular ribs 20, besides increasing the capacity of the depressions, also aid in strengthening the cylindrical wall and the double-thickness of metal around the holes in addition to its above mentioned advantages, aids in providing a rigid construction and prevents the metal from cracking adjacent the holes.

I claim:

1. In a cylinder for washing machines, a metal wall having numerous outwardly extending conical depressions projecting beyond the periphery of the wall and each provided with a hole in its apex of substantially smaller diameter than that of the base of the cone to provide water pockets, the sides of the depressions being outwardly curved; the metal bounding each hole and integral with the wall being rolled outwardly back upon itself to form a smooth, unbroken rounded edge around the hole.

2. In a cylinder for washing machines, a metal wall having numerous outwardly extending conical depressions projecting beyond the periphery of the cylinder and each provided with a hole in its apex, the metal bounding each hole and integral with the wall being rolled outwardly back upon itself to form a smooth unbroken rounded edge around the hole, and the metal adjacent the base of the depression being pressed inwardly to form a smooth annular rib on the inside of the cylinder.

3. In a cylinder for washing machines, a metal wall having numerous outwardly extending conical depressions projecting beyond the periphery of the cylinder and each provided with a hole in its apex, the metal adjacent the edge of each hole and integral with the wall being rolled outwardly back upon itself to form a smooth unbroken rounded edge around the hole, and the metal adjacent the base of each depression being pressed inwardly to provide a smooth annular rib on the inside of the cylinder and a groove on the exterior of the wall, said groove being of substantial width to prevent the accumulation of dirt.

ALVA J. FISHER.