A. E. KENNEY.

WASHING MACHINE.

APPLICATION FILED OCT. 28, 1909.

1,010,436. Patented Dec. 5, 1911.

2 SHEETS—SHEET 1.

Fig. 3

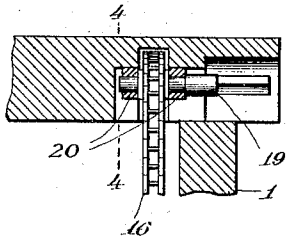


Fig. 1

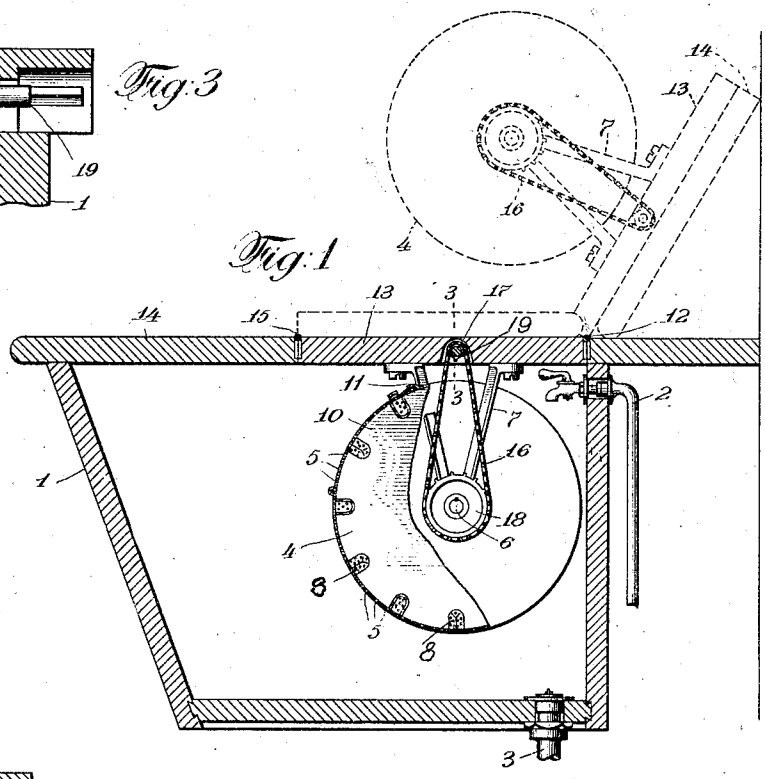


Fig. 4

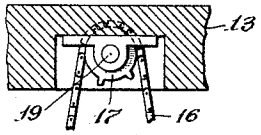
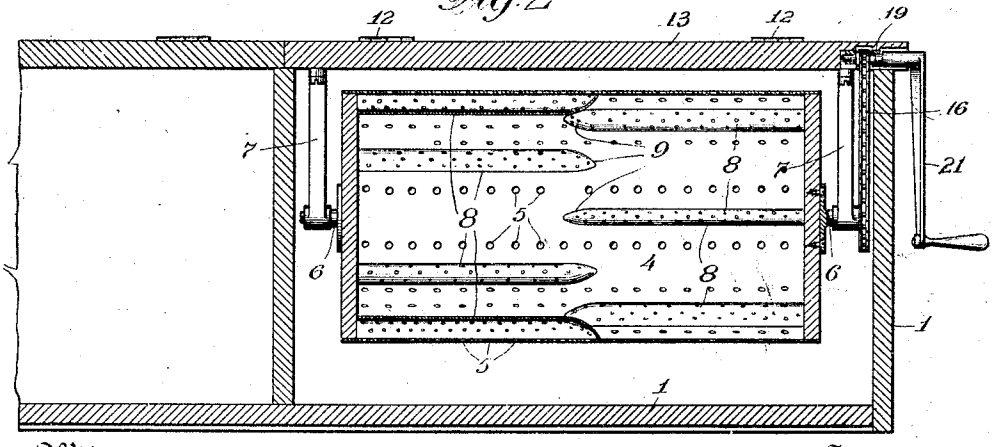


Fig. 2



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2 SHEETS—SHEET 2.

Fig. 5

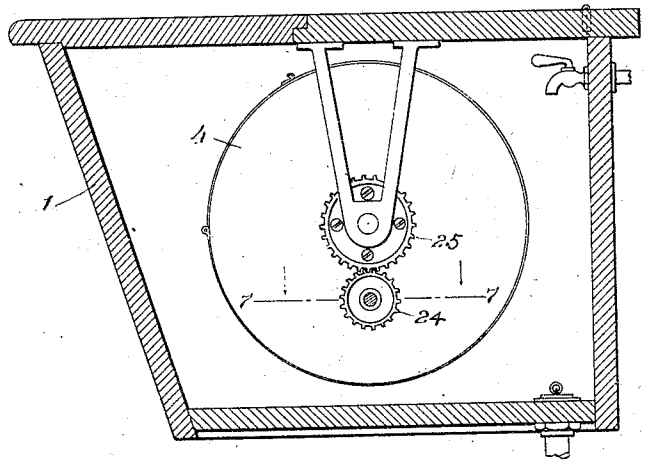


Fig. 6

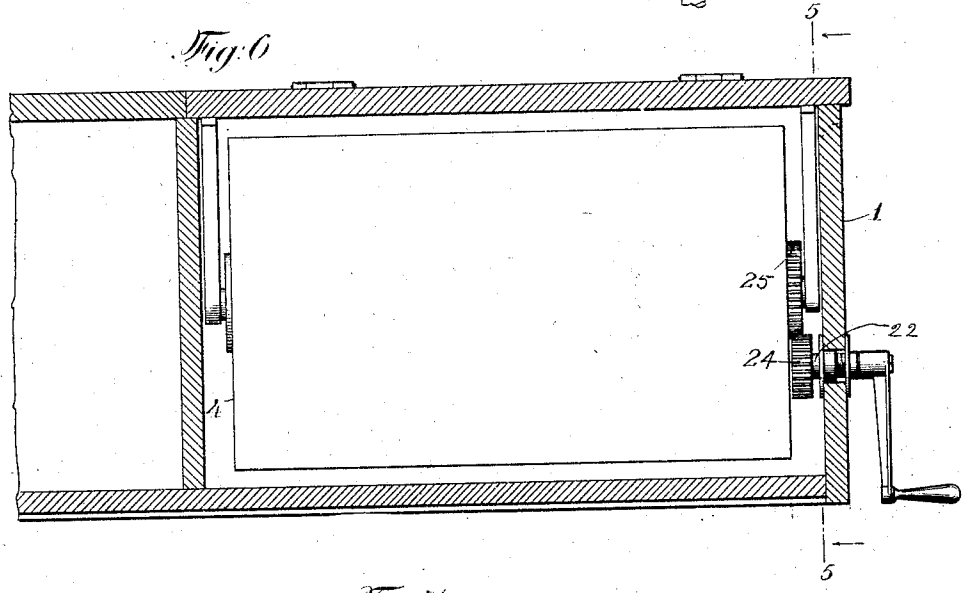
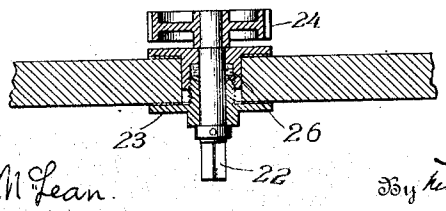


Fig. 7



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UNITED STATES PATENT OFFICE.

ANDREW E. KENNEY, OF NORTH PLAINFIELD, NEW JERSEY.

WASHING-MACHINE.

1,010,436. Specification of Letters Patent. Patented Dec. 5, 1911.

Application filed October 28, 1909. Serial No. 525,014.

To all whom it may concern:

Be it known that I, ANDREW E. KENNEY, a citizen of the United States, and a resident of North Plainfield, in the county of Somerset and State of New Jersey, have invented certain new and useful Improvements in Washing-Machines, of which the following is a specification.

My invention relates to improvements in washing machines, and its principal object is to combine with the ordinary stationary wash tub or laundry tub, a simple and efficient machine for washing clothes, which when not in actual use may be readily removed from the tub, so as to leave the tub free and unencumbered.

Another object is to so combine this machine with the stationary tub as not to take up any additional room, other than that occupied by the tub itself.

Another object is to render the invention capable of ready adaptation and application to any of the well known types of laundry tubs now in common use.

A further object is to increase the efficiency of washing machines in general, and various other objects will appear as the specification proceeds.

In its preferred form, the invention consists of a clothes container which is journaled so as to be lowered into the tub when it is desired to use the same, and so that it may be readily lifted up clear of the tub when not in use and when it is desired to use the tub for other purposes. This clothes container is preferably made in cylindrical form. Tubs of this character are usually provided with covers, and a convenient and desirable manner of supporting the clothes container, is by means of journal brackets dependent from the cover. By such means as this, the clothes container is lowered into operative position in the tub when the cover is lowered, and when the cover is raised, the container is lifted out of the tub, leaving the tub free and unobstructed. Thus by a very slight exertion the container is raised or lowered with respect to the tub. In order that the clothes may be placed in the container and removed therefrom, without the necessity of raising the cover and attached container, I preferably provide the outer edge portion of the cover with an independently movable section, permitting ready access to the container.

The clothes container or cylinder as it may be called, is preferably provided on its interior with a number of ribs or rubbers, and another feature of my invention consists in arranging these rubbers so as to give to the clothes a combined twisting and rubbing effect, thereby insuring a thorough cleansing of the articles. I accomplish this result preferably by arranging the rubbers with their inner ends extending past the center line of the cylinder but displaced circumferentially from each other so as to provide a sort of zigzag path between the ends of the adjacent rubbers, which communicates to the clothes a squeezing and twisting effect.

Several preferred embodiments of the invention are illustrated in the accompanying drawings, but it will be understood that various modifications and changes may be made therein without departing from the spirit and scope of the invention.

In the drawings: Figure 1 is an end view of the invention as applied to a stationary wash tub, the tub and parts of the clothes container appearing in section. In this view also, is shown in dotted lines, the raised position of the cover and clothes container. Fig. 2 is a longitudinal sectional view of the invention, as in the lowered position. Fig. 3 is an enlarged detail sectional view taken on line 3—3 of Fig. 1, to illustrate the driving sprocket. Fig. 4 is a similar view taken on the line 4—4 of Fig. 3. Fig. 5 is a sectional view taken on line 5—5 of Fig. 6 of a slightly modified form of the invention with the walls and cover of the tub shown in section. Fig. 6 is a longitudinal sectional view of the same. Fig. 7 is a broken sectional view on the line 7—7 of Fig. 5, with certain of the parts shown in elevation.

Like reference characters denote like parts throughout the several views.

The hub 1, here shown, is of the ordinary stationary type and is provided with stationary inlet and outlet pipe connections 2 and 3, respectively.

The clothes container is designated 4, and is here shown in the shape of a cylinder. This clothes container or cylinder is preferably made of metal and it is provided with perforations 5 to permit circulation of the water. The ends of the cylinder are provided with hub extensions 6, which are journaled in brackets 7, which brackets are preferably secured to and dependent from the cover of the tub. The cylinder may also, if desired, be supported on a shaft

passing therethrough, but I prefer the use of the short stub shafts carried by the ends of the cylinder, as shown. The rubbers 8, are preferably in the form of hollow outstanding members and these members are preferably perforated like the walls of the cylinder, so that as the cylinder rotates, the water is squirted in a number of small streams against the clothes within the cylinder. These rubbers are preferably disposed parallel and spaced circumferentially from each other, and extend from opposite ends of the cylinder with their inner ends projecting beyond the vertical center line of the cylinder. This arrangement, as seen in Fig. 2, provides a zigzag path between the ends of the adjacent rubbers, and as the cylinder rotates, this zigzag path grips the clothes, and imparts a very effective twisting and scrubbing action. The ends of the rubbers are preferably rounded off as at 9, to prevent any injury to the clothes. The cylinder is also provided with a hinged door 10 for the insertion and removal of the clothes therefrom and this door is normally held closed by a suitable catch 11.

The cover of the tub may be hinged at 12, to the rear portion of the tub and it is preferably made in two or more independently movable sections 13 and 14, which sections are preferably connected by a suitable hinge 15. The journal brackets for the cylinder are carried by the inner cover section, so as to leave the outer section free to be lifted or folded back over the first section, as indicated in the dotted lines, Fig. 1. By folding back or lifting off the outer cover section, ready access is had to the door in the clothes cylinder, and by folding back the inner cover section, (as also indicated in dotted lines in Fig. 1), the clothes container is lifted, with the cover, up out of the tub, leaving the interior of the tub free and unobstructed.

As a means for rotating the cylinder, I prefer to employ a sprocket chain 16, driven from a sprocket pinion 17, and engaging a sprocket 18, on the end of one of the hubs of the cylinder. The driving pinion may be carried by a short shaft 19, journaled in bearings 20, carried by the cover, and a crank 21, or similar driving means is employed for rotating the driving pinion. The sprockets and chain may be made of brass or of galvanized material, so as to be unaffected by the water.

Another form of driving means is illustrated in Figs. 5, 6 and 7. In this case a driving shaft 22 is journaled in a bearing 23, carried in the wall of the tub. The drive shaft here carries on its inner end a spur pinion 24, meshing with a spur gear 25 on the hub of the cylinder. A crank may be utilized here also for turning the drive shaft. The shaft bearing is preferably provided with a stuffing box 26, to prevent leakage of the water through the bearing.

While the cover is preferably made in sections so that the clothes may be placed in and removed from the container without necessitating the lifting of the container out of the tub, these sections need not necessarily be hinged together, and in fact they need not be connected together in any way. As for instance, as shown in Figs. 5 and 6, the outer cover section may be made in the form of a loose board which is entirely disconnected from the inner supporting section. As a matter of convenience, however, I prefer to connect the cover sections by means of some sort of a hinge connection as shown in Figs. 1 and 2. In this latter form of the invention, also, when the cover section supporting the clothes container is lifted, the clothes container is lifted up clear of the tub, and it will be obvious that as the clothes container is lowered and raised, the driving gears mesh and unmesh.

The ordinary washing machine and the separate tub, which is accessory thereto, occupy considerable room and it will be evident that my invention, combining as it does, a washing machine, together with a tub of unobstructed interior, is especially valuable where space is limited.

What is claimed is:

1. In a washing machine, the combination with a tub, of a horizontally disposed perforated cylinder journaled therein, means for rotating said cylinder, and rubbers on the interior wall of said cylinder arranged in staggered relation and extending each from one of the end walls to a point past the vertical center of the cylinder, whereby as the cylinder rotates the clothes are twisted between the staggered rubbers.

2. A washing machine comprising a receptacle, a perforated clothes container journaled to rotate therein, and hollow perforated rubbers on the interior walls of the container extending from the opposite ends of the container with their inner ends overlapping to form a zigzag path for the clothes.

Signed at New York in the county of New York and State of New York this 14th day of October A. D. 1909.

ANDREW E. KENNEY.

Witnesses:

AXEL V. BEEKEN,

PHILIP S. MCLEAN.