J. VIERLING.

WASHING MACHINE.

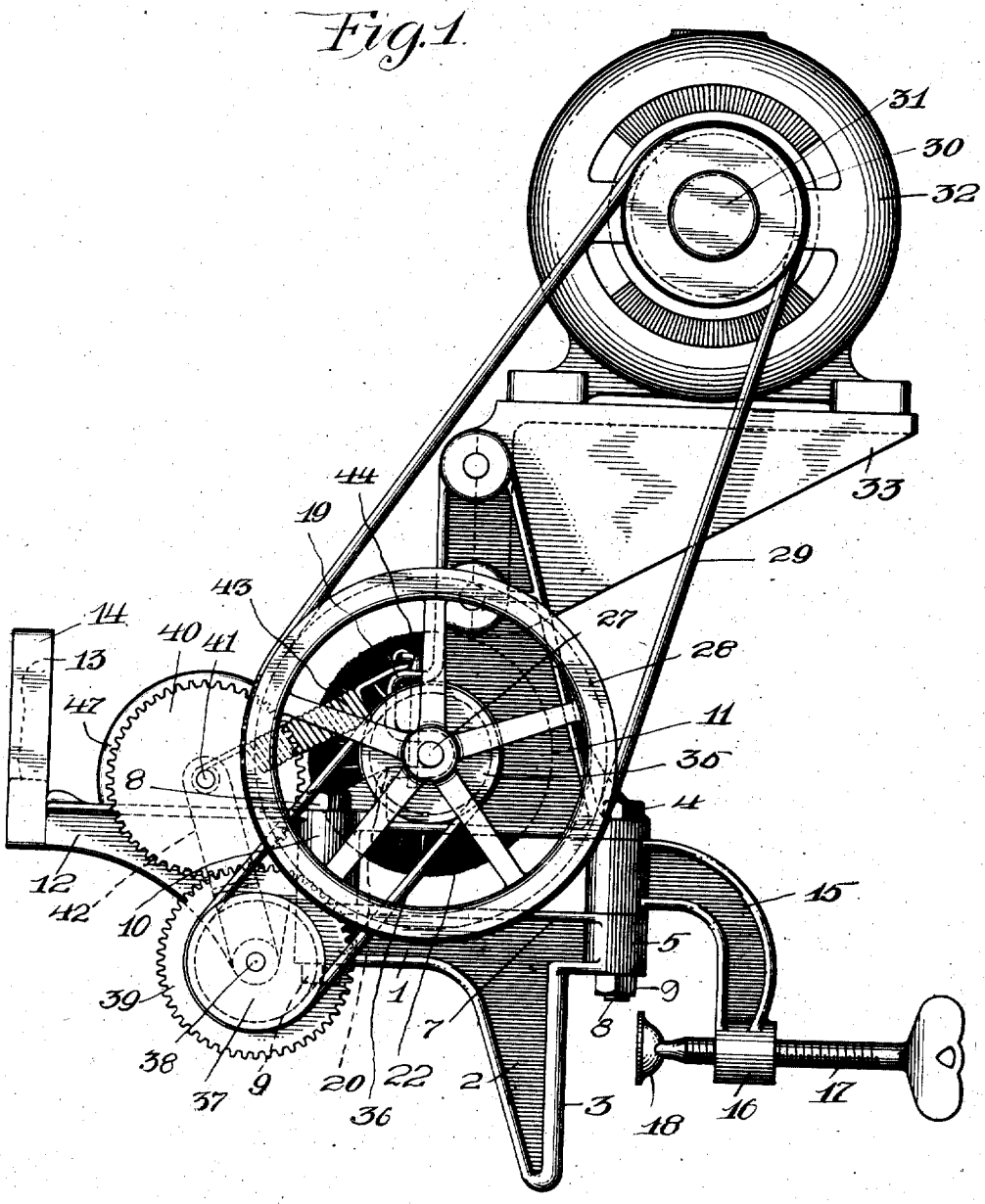
APPLICATION FILED SEPT. 23, 1910.

994,548.

Patented June 6, 1911.

2 SHEETS—SHEET 1.

Fig. 1.




WITNESSES

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2 SHEETS—SHEET 2.

Fig. 2.

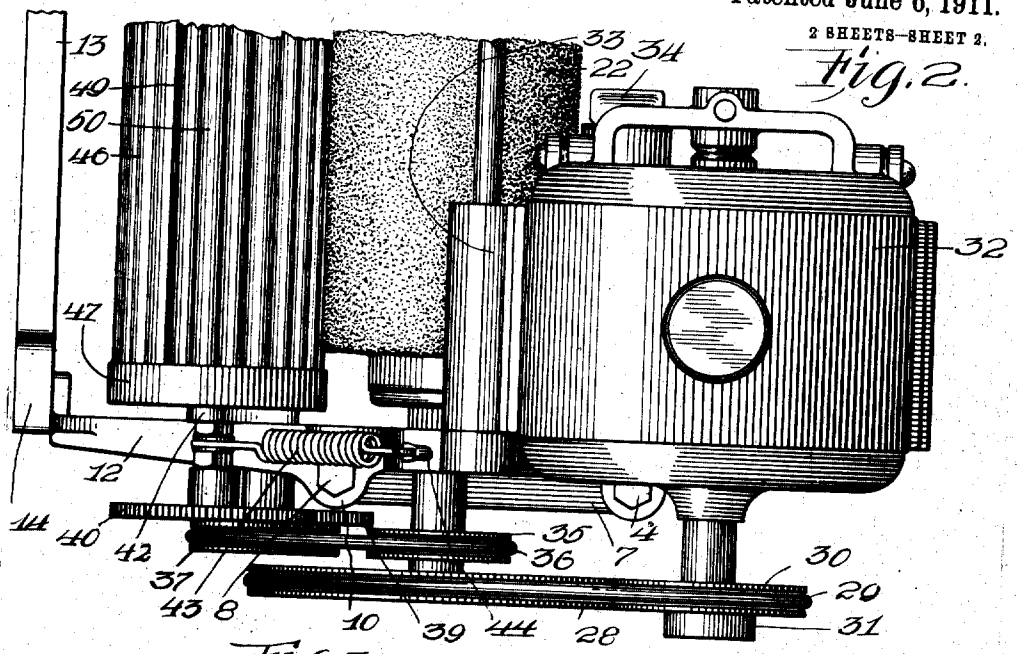



Fig. 3.

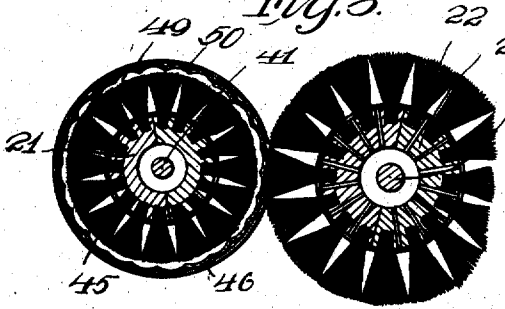



Fig. 4.

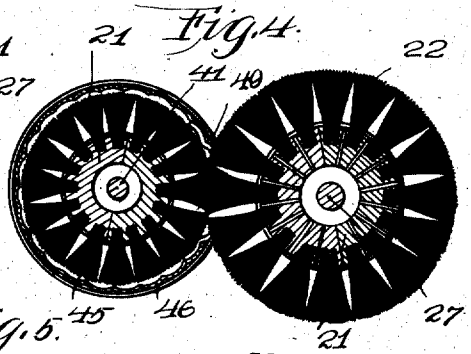
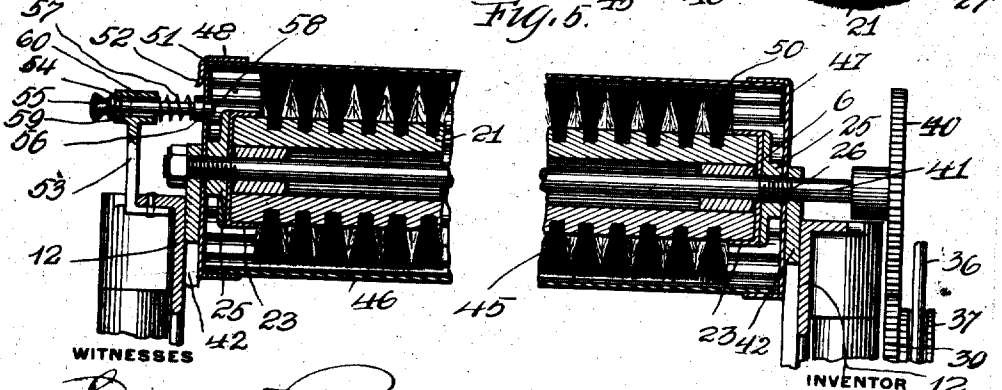



Fig. 5.

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# UNITED STATES PATENT OFFICE.

JOSEPH VIERLING, OF PITTSBURG, PENNSYLVANIA.

## WASHING-MACHINE.

994,548. Specification of Letters Patent. Patented June 6, 1911.

Application filed September 23, 1910. Serial No. 583,408.

*To all whom it may concern:*

Be it known that I, JOSEPH VIERLING, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Washing-Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention is an improvement upon my Patent No. 962,803, granted June 28, 1910, for an improvement in washing machines of that class which are adapted to be detachably connected to the side of a tub or receptacle.

A further object of the invention is to provide a washing machine with two revoluble cleansing bodies, one of which is maintained in yieldable relation to the other and provided with means whereby it may be either active or idle, thereby permitting of a piece of cloth or fabric having one or both sides cleansed in the machine.

With the above and such other objects in view as may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts to be hereinafter specifically described and then claimed.

Reference will now be had to the drawings wherein I have illustrated a portion of the machine disclosed in my prior patent, together with such details that set forth the present invention, but it is to be understood that the structural details are susceptible to such changes as fall within the scope of the claims appended hereunto.

In the drawings:—Figure 1 is a side elevation of a machine in accordance with this invention, Fig. 2 is a plan of a portion of the same, Fig. 3 is a cross sectional view of the rotary brushes, showing one of the brushes in an inactive position, Fig. 4 is a similar view showing both of the brushes in an active position, and Fig. 5 is a vertical sectional view of a portion of the adjustable rotary brush of the machine.

In illustrating the details of my invention, I have deemed it only necessary to illustrate a portion of the machine in connection with which I have made improvements, and when describing certain parts of the machine, it is to be understood that these parts, while not shown, are duplicate.

The reference numeral 1 denotes one of the brackets of the machine having a depending tub engaging arm 2 provided with rounded surfaces 3 for engaging the inner sides of a tub or other receptacle. The end of the bracket 1 is provided with a cylindrical vertically disposed socket 5, said socket upon the outer side of the bracket 1 being connected by a strength reinforcing rib 7.

Connected to the socket 5 of the bracket 1 by a bolt 8 and a nut 9 is one of the vertical sockets 10 of a housing for the rotary active or inactive brush of the washing machine. The housing comprises two side frames, one of which is designated 11, said frame having a forward extension 12, said extension having the forward lower end thereof connected to the opposite extension by a transverse clothes supporting bar 13, this bar having the ends thereof provided with uprights 14 serving functionally as guides for preventing the clothes that pass over said bar from interfering with the operating mechanism of the machine. The frame 11 is connected by a bolt 4 to the socket 5 of the bracket 1, and pivotally mounted upon the bolt 4 between the frame 11 and the socket 5 is a depending clamping arm 15 having the lower end thereof provided with an outwardly extending interiorly screw threaded bearing 16 for a screw 17, said screw having a swiveled clamping head 18 adapted to coöperate with the depending arm 2 of the bracket 1 in gripping the upper edges of a receptacle and supporting the washing machine at one side thereof. The frame 11 has the forward edge thereof off-set, as at 19 and provided with a horizontal slot 20, open at the forward edge of said frame.

The machine comprises the rotary scrubbing or agitating brush which is detachably mounted in position in a manner as hereinafter referred to and said brush includes a tubular sectional body 21 preferably made of wood and of two semi-cylindrical sections, said body having longitudinal rows of bristles 22 with the rows radial relative to the longitudinal axis of the body 21, the bristles being closely arranged whereby the entire or exposed surface of the body 21 will be of bristles. The ends of the body 21 are provided with tubular plugs 6 and caps 23, the latter being secured to nuts 25 mounted upon the threaded portions 26 of a shaft

27 extending longitudinally of the body 21, said shaft having the ends thereof journaled in the frame 11.

Mounted upon one end of the shaft 27 is a large grooved belt wheel 28 and engaging this wheel is an endless belt 29, said belt passing over a grooved pulley 30 mounted upon the armature shaft 31 of an electric motor 32, carried by a bracket 33, supported at one end of the frame 11. The motor 32 is adapted to be operated from a suitable source of electrical energy and its operation is controlled by a switch 34.

Mounted upon the shaft 27 or the hub of the grooved belt wheel 28 is a small grooved pulley 35 and engaging this pulley is an endless belt 36, said belt engaging over a grooved pulley 37 mounted upon a shaft 38, journaled in the extension 12 of the frame 11. The shaft 38 is provided with a gear wheel 39 meshing with a gear wheel 40 mounted upon the end of a shaft 41, journaled in the upper ends of side arms 42, said arms being pivotally mounted upon the ends of the shaft 38. The upper ends of the arms 42 are connected by coiled springs 43 to pins 44, carried by the off-set portions of the frames 11, said springs serving functionally as tension devices, as will presently appear.

Mounted upon the shaft 41 is a rotary brush 45 constructed similar to the rotary scrubbing or agitating brush previously described, with the exception that the brush 45 is smaller in diameter. The brush 45 is inclosed by a longitudinally ribbed or corrugated tubular roll 46 having the ends thereof provided with caps 47 and 48, the caps 47 and 48 being held between the nuts 25 and the arms 42. The roll 46 is provided with a longitudinal opening 49 adapted to be closed by a longitudinally ribbed or corrugated slide 50 extending through an opening 51 in the cap 48, the outer end of the slide 50 having a handle 52 whereby it can be easily moved.

The extension 12 of the frame 11 on that side of the machine opposite the gear wheels 39 and 40 is provided with a bracket 53 and movably mounted in said bracket is a locking device, comprising a rod 54 having one end thereof provided with a knob 55 and adjacent to the opposite end is a head 56. Interposed between the head 56 and the bracket 53 is a coiled compression spring 57 encircling the rod 54, said spring being adapted to hold the end of the rod 54 in an opening 58 provided therefor in the cap 48 of the roll 46. The rod 54 is provided with oppositely disposed longitudinal ribs 59 adapted to engage in oppositely disposed grooves 60 provided therefor in the bracket 53, these ribs when engaging the end of the bracket retaining the end of the rod 54 out of engagement with the cap 48. It is only necessary to pull outwardly upon the rod 54 and rotate it a quarter of a revolution to retain the rod 54 out of engagement with the cap 48 and the spring 57 under tension.

The roll 46 is loosely mounted upon the shaft 41 while the brush 45 is fixed to said shaft, and the only time that the roll 46 rotates with the brush 45 is when the rod 54 is out of engagement with the cap 43 of the roll 46. The roll 46 will be rotated by the friction of the large brush engaging the periphery thereof, consequently the fabric will be carried over the roll 46 and between said roll and the large scouring brush. With the roll 46 revolving and the slide 51 in a closed position, simply one side of the fabric will be cleansed by the large scrubbing brush, but when it is desired to cleanse both sides of the fabric, the slide 51 is removed, the roll 46 turned until the opening 49 is opposite the large scrubbing brush, or the opening 58 of the cap 48 opposite the end of the rod 54. The rod 54 is then released to allow the end thereof to engage in the opening 58 and hold the roll 46 stationary. The periphery of the large scrubbing brush can then engage the periphery of the brush 45 and in consequence of which both sides of the fabric will be cleansed as it is carried between said brushes. It is through the medium of the tension devices 43 that the roll 46 is normally held in frictional engagement with the large scrubbing brush, said devices allowing the roll to yield relatively to the large scrubbing brush when a large quantity of fabric passes between said roll and the large brush.

From the foregoing it will be observed that the roll 46 is employed for placing the rotary brush 45 either in an active or inactive position relatively to the large scrubbing brush, consequently the washing machine can be used for very delicate fabrics as well as for cleansing coarser fabrics. In either instance, the corrugated roll prevents a piece of fabric from being unduly drawn or stretched when passing between the brushes, as would be the case if the fabric was allowed to cling to the periphery of the brush 45 as it rotates. In other words, the roll 46 coöperates with the bar 13 in removing the weight of the fabric from the brush 45 and the tension devices that normally retain the brush 45 in position.

What I claim is:—

1. In a washing machine, rotary coöperating brushes, a corrugated roll inclosing one of said brushes and provided with an opening to allow of said brushes to contact, and means carried by said roll for closing said opening thereby preventing contact of the brushes.

2. In a washing machine, a pair of rotary coöperating brushes, a corrugated roll inclosing one of said brushes and provided with an opening to allow of said brushes to

contact, said roll being shiftable, means carried by said roll for closing said opening, and means engaging in one end of the roll for locking it in a fixed position.

3. In a washing machine, a pair of brushes normally in contact with each other and adapted to engage both sides of a fabric as it passes therebetween, and a shiftable roll inclosing one of said brushes and provided with means whereby but one of the brushes will engage the fabric.

4. In a washing machine, rotary coöperating brushes, a corrugated roll surrounding one of said brushes, said roll having an opening formed therein to allow said brushes to contact, means carried by said roll for closing said opening, and means in connection with said machine for locking said roll in a fixed position.

In testimony whereof I affix my signature in the presence of two witnesses.

JOSEPH VIERLING.

Witnesses:
JOHN T. JAKUBOWSKI,
JOHN R. STEPHENSON.