

S. S. BLOCHER.
WASHING MACHINE.
APPLICATION FILED AUG. 16, 1909.

950,743.

Patented Mar. 1, 1910.
2 SHEETS—SHEET 1.

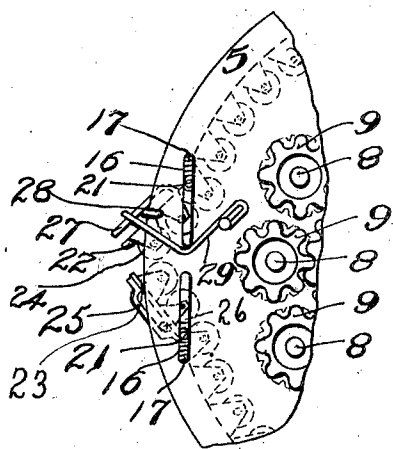


Fig. 4.

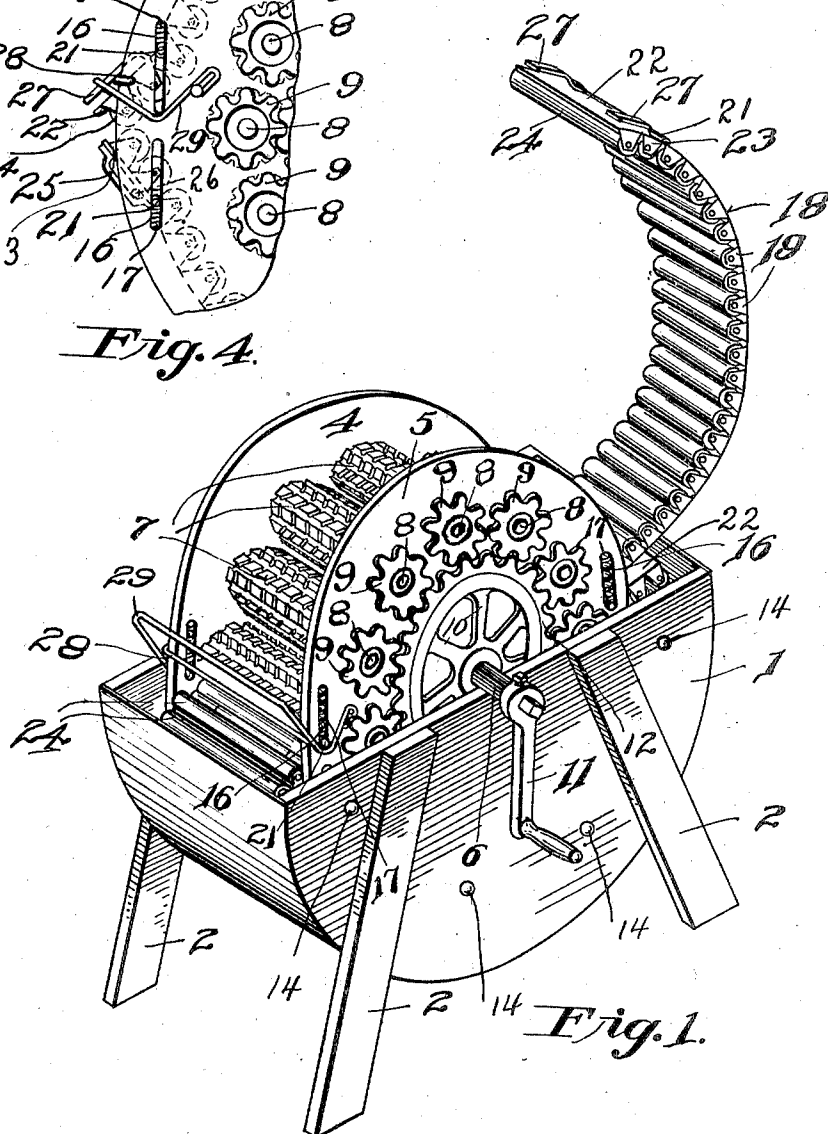


Fig. 1.

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2 SHEETS—SHEET 2.

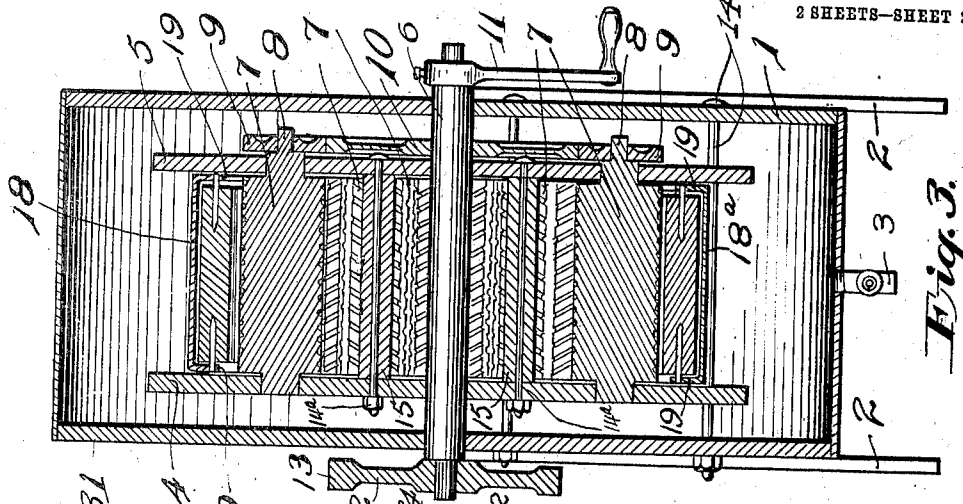


Fig. 3.

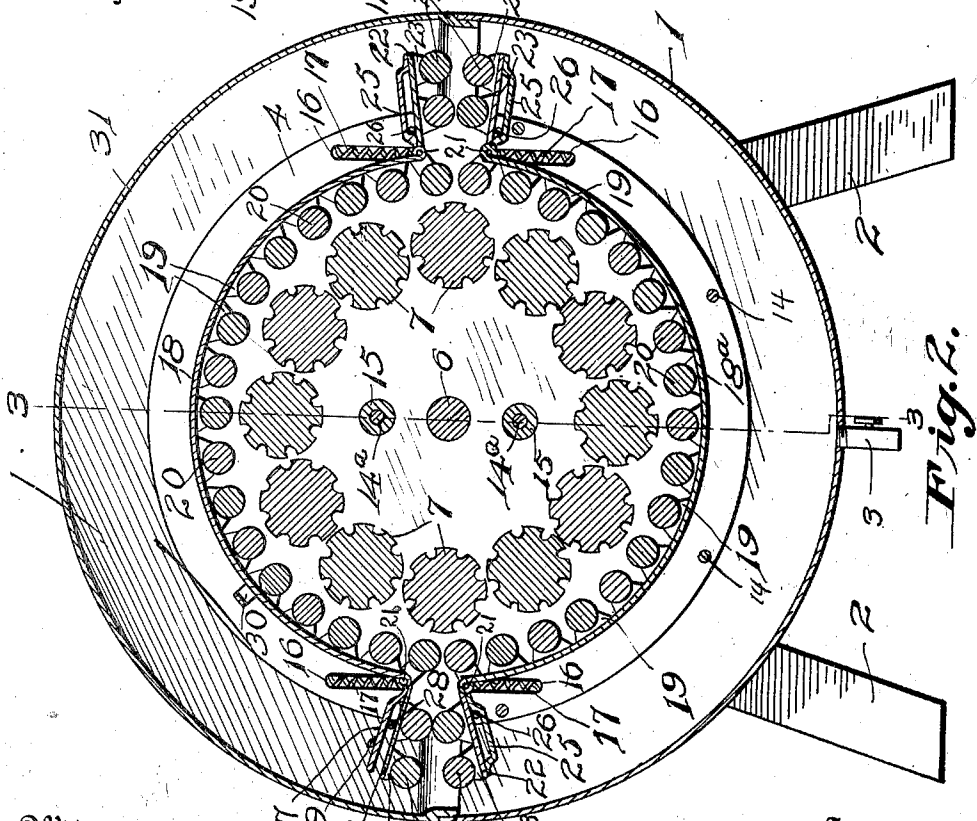


Fig. 2.

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UNITED STATES PATENT OFFICE.

SAMUEL S. BLOCHER, OF YORK, NORTH DAKOTA.

WASHING-MACHINE.

950,743.

Specification of Letters Patent.

Patented Mar. 1, 1910.

Application filed August 16, 1909. Serial No. 513,103.

To all whom it may concern:

Be it known that I, SAMUEL S. BLOCHER, a citizen of the United States, residing at York, in the county of Benson and State of North Dakota, 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:

10 This invention relates to washing machines, and the principal object of the same is to provide a novel type of cylinder with which a pair of scrubbing bands cooperate to cause the clothes to travel around said 15 cylinder and at the same time be thoroughly scrubbed between the rollers of said cylinder and the rollers of said bands.

In carrying out the object of the invention generally stated above it is contemplated 20 employing a tub in which a stationary cylinder is mounted and provided with inter-gear peripheral rollers, and a pair of flexible bands which are provided with rollers, said bands being arranged to surround the 25 said cylinder and yieldingly connected with the same so that they will expand to permit various amounts of washings to be placed between them and said cylinder.

In the practical application of the invention it will be understood, of course, that 30 the essential features thereof are necessarily susceptible of changes in details and structural arrangements, but a preferred and practical embodiment of the same is shown 35 in the accompanying drawings, wherein—

Figure 1 is a perspective view of the improved washing machine shown open ready for the insertion of the articles to be washed. Fig. 2 is a central vertical sectional view of 40 the washing machine, shown ready for operation. Fig. 3 is a similar view taken on the line 3—3, Fig. 2. Fig. 4 is a fragmentary detail view of a portion of the washing machine cylinder, showing the manner of 45 fastening one end of the scrubbing bands thereto.

Referring to said drawings by numerals 1 designates the tub of the improved washing machine which is supported by standards 2 50 and provided with the usual bottom drain cock 3. A cylinder, composed of a pair of spaced apart disks 4—5 mounted upon a shaft 6, is supported within said tub by means of said shaft which rests in suitable bearings 55 formed in the upper edges of said tub. A plu-

rality of rollers 7 are arranged between said disks 4—5 adjacent to the peripheries thereof, the shaft 8 of each roller having its ends journaled in said disks. The shaft of each roller projects through one of the disks and 60 carries a gear wheel 9. A large gear wheel 10 is mounted on the shaft 6 and is in mesh with said gears 9, so that when said shaft 6 is rotated by means of the handle 11, all of the rollers 7 will be revolved. As is suggested 65 in Fig. 3, the end of shaft 6 opposite to that provided with the handle 11, projects beyond the disk in which it is journaled and also beyond the bearing of the tub, and has a balance wheel 12 thereon, the periph- 70 ery of which is flat as indicated at 13 so that the said shaft may have a belt connection with a source of power when it is not desired to operate the machine manually. Bolts 14 pass through the tub and disks to 75 hold said disks stationary relative to said tub. Another set of bolts 14^a are employed to connect said disks, said bolts each carrying a sleeve 15 which assists in retaining the said disks in spaced relation. 80

The rollers 7 are preferably longitudinally ribbed, and each rib is provided with transverse notches, this type of roller being employed to assure of a firm engagement between the articles being washed, and also to 85 mangle the same as will be obvious.

The disks 4 and 5 of the cylinder are each provided with two pairs of recesses or slots 16, the pairs of slots being disposed on opposite edge portions of each disk. A tension 90 spring 17 is mounted in each slot. An upper and a lower band 18—18^a surround said cylinder and are arranged so that they will be fitted between the disks and upon the rollers 7. Said bands are of flexible or resilient 95 metal and have their longitudinal edges turned at an angle and slitted to form bearings 19 for the rollers 20. The ends of said bands carry outstanding lugs or pins 21 which are slidably mounted in said slots 16 100 and upon the free ends of said springs 17. Each band also carries end sections 22 which are hinged to the bands, said sections being also formed of resilient or flexible metal and are provided with bearings 23 formed in 105 the same manner as the described bearings of the bands and in which the rollers 24 are mounted. The sections at the end of the lower band 18^a and the section at one end of the upper band 18 are provided with a guiding 110

loop 25 adjacent each longitudinal edge into which guide pins 26 carried by the disks 4 and 5 project. The other section of the band 18^a is provided with guide arms 27 which are engaged by a keeper loop 28 carried by the disks 4 and 5. Said arms 27 are of spring metal and are normally clamped against the loop 28 by means of second loop 29 also carried by the disks 4 and 5 which engages over said arms, as is indicated in Fig. 4.

Normally the hinged sections of the bands are in the outwardly projecting position shown in Fig. 2. When the machine is to be used, the loop 29 is removed from the arms 27, and the band 18 raised by means of the handle 30 to the position shown in Fig. 1 and the articles to be washed placed within the cylinder, and the said band returned to its former position and clamped therein by means of said loop 29. The cover 31 is then placed over the tub and cylinder, and the cylinder rotated by means of the handle or by power applied to the balance wheel 12. It will be seen that the rotation of the rollers 7 will cause the articles being washed to traverse the said rollers, which movement, of course, also rotates the rollers of the bands, causing the said articles to be carried through the water in the tub and at the same time thoroughly scrubbed by said rollers. Obviously, as the articles absorb the water of the tub they will increase in bulk, which increase in bulk is compensated for by the described yielding connection between the scrubbing bands and the slots of the disks.

What I claim as my invention is:—

1. A washing machine comprising a tub, a cylinder therein, rollers carried by said cylinder, means for rotating said rollers, bands surrounding said cylinder, rollers carried by said bands and cooperating with said cylinder rollers, hinged sections carried by each band, and an expansible connection between each section and said cylinder.

2. A washing machine comprising a tub, a cylinder therein, peripheral rollers carried by said cylinder, means for rotating said rollers, an upper and a lower band fitted over said rollers, rollers carried by said bands, a hinged section carried by the ends of said bands, and an expansible connection between the ends of the lower band and one end of the upper band with said cylinder, and a detachable connection between the other end of said upper band and said cylinder.

3. A washing machine comprising a tub, a shaft mounted therein, a pair of spaced apart disks mounted on said shaft, means for holding said disks stationary relatively to said tub, peripheral rollers journaled between said disks, means for rotating said rollers, a pair of bands fitted over said rollers, rollers carried by said bands, and

an expansible connection between the ends of said bands and said disks.

4. A machine of the character described comprising a tub, a stationary cylinder therein, rollers carried by said cylinder, an upper and a lower band surrounding said cylinder and fitted over said rollers, rollers carried by said bands, hinged sections carried by the ends of said bands, a connection between the ends of said lower band and said cylinder, and a connection between one end of said upper band and said cylinder and a detachable connection between the other end and said cylinder.

5. A machine of the character described comprising a tub, a pair of stationary disks therein, said disks being provided with oppositely disposed pairs of slots, a tension spring in each slot, rollers carried by said disks, scrubbing bands fitted over said rollers, and pins carried by the end portions of said bands and slidably mounted in said slots.

6. A machine of the character described comprising a tub, a pair of stationary disks therein, said disks being provided with oppositely disposed pairs of slots, a tension spring in each slot, rollers carried by said disks, scrubbing bands fitted over said rollers, rollers carried by said bands, and a slidable connection between the end portions of said bands and said slots.

7. A machine of the character described comprising a tub, a cylinder stationary therein, rollers carried by said cylinder, means for rotating said rollers, a pair of bands fitted over said rollers, one of said bands having both ends and the other band having one end slidably connected to said cylinder, a pair of arms carried by one end of one of said bands, a loop carried by said cylinder and slidably engaging said arms, and a second loop also carried by said cylinder for clamping said arms to the first mentioned loop.

8. A washing machine comprising a tub, a cylinder therein, rollers carried by said cylinder, means for rotating said rollers, an upper and a lower band fitted over said rollers, rollers carried by said bands, end sections hinged to said bands, guide arms carried by one of the hinged sections of the upper band, means for detachably engaging said arms to said cylinder, guiding loops carried by the other sections, and guiding pins carried by the cylinder and slidably engaging with said loops.

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

SAMUEL S. BLOCHER.

Witnesses:

ALBERT JOHNSON,

JOHN O. GULLICKSON.