W. TRINKS.

WASHING MACHINE.

APPLICATION FILED OCT. 4, 1915.

1,189,216. Patented June 27, 1916.

Fig. 1.

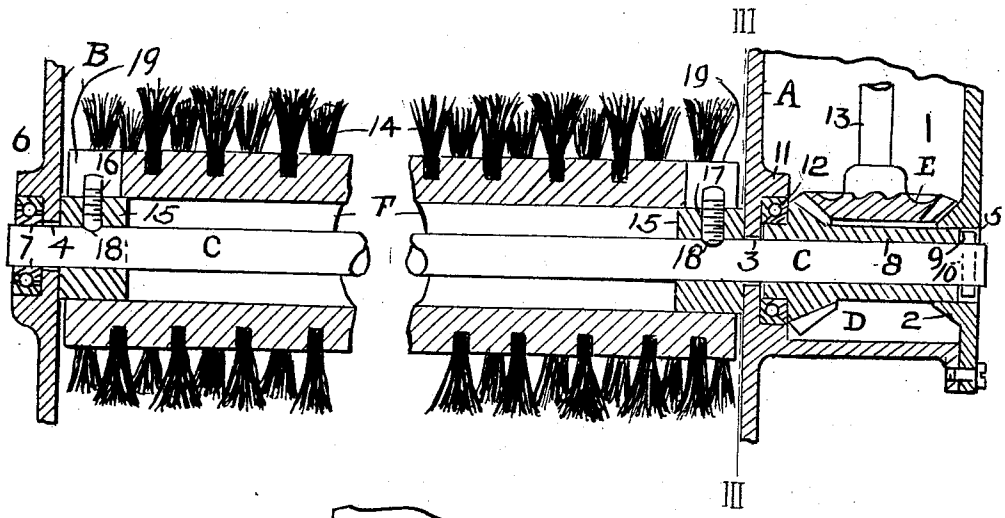


Fig. 2.

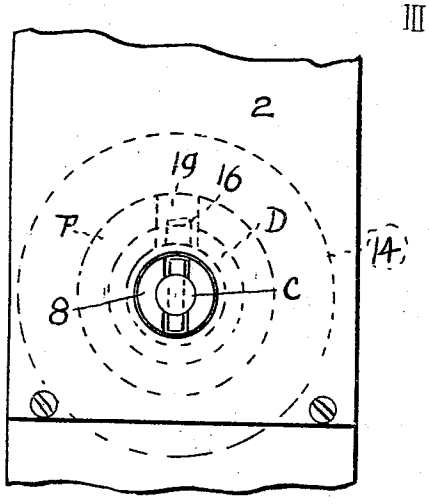
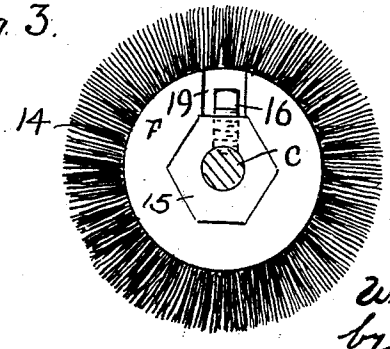


Fig. 3.



WITNESS:

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UNITED STATES PATENT OFFICE.

WILLIBALD TRINKS, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO NATIONAL BRUSH WASHING MACHINE COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF DELAWARE.

WASHING-MACHINE.

1,189,216. Specification of Letters Patent. Patented June 27, 1916.

Application filed October 4, 1915. Serial No. 53,865.

To all whom it may concern:

Be it known that I, WILLIBALD TRINKS, a citizen of the United States, and residing in the city of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented or discovered new and useful Improvements in Washing-Machines, of which the following is a specification.

My invention consists in certain new and useful improvements in rotary brush washing machines and particularly relates to the mounting of the power driven brush.

The object in view is an inexpensive, yet efficient and durable mounting for the brush which will minimize friction, facilitate the installation and removal of the brush from the machine, and permit its reversal when the bristles of the brush have become so bent from use as to trail.

In the accompanying drawings, Figure 1 is a vertical section showing the rotary brush and its mounting in the machine; Fig. 2 is a broken side elevation, looking toward the left in Fig. 1, and Fig. 3 is an end view of the brush, the power shaft being in section along the line III—III in Fig. 1.

The following is a detailed description of the drawings.

A and B indicate the side plates of a washing machine frame, the plate A having on its outer face the integral open front gear box 1 provided with a removable front plate 2.

C is a shaft which extends through loosely fitting holes 3 and 4 in the side plates A and B, respectively, and also through a hole 5 of a larger diameter in the front plate 2.

6 is an annular flange on the outer face of the plate B concentric with the hole 4. 7 is a ball bearing seated within said flange whose inner member is mounted on the shaft C.

D is a power-driven sleeve member, shown as a beveled gear, facing outwardly, mounted on the shaft C within the box 1, the outer end of the hub 8 of said gear being journaled in the hole 5 in front plate 2. The outer end of said hub 8 is slotted diametrically to receive a pin 9 which extends through a hole 10 pierced through the shaft C. When the machine is assembled the pin 9 is within the circular hole 5, so that it cannot become accidentally unseated.

11 is an annular flange on the outer face of the side plate A concentric with the hole 3, and 12 is a diagonal ball bearing seated within said flange and whose inner member is mounted on the hub 8 and abuts against the gear D. Thus the gear D is mounted independently of the shaft C and the removal of the latter does not dismount said gear.

E is a horizontal beveled gear meshing with gear D and rigidly mounted on the end of a power-driven shaft 13 to which rotary movement is imparted from a suitable prime mover, not shown.

F is a cylindrical brush body provided with radial bristles 14. The outer ends of the bore of said body are recessed into non-circular form to receive the metal bushings 15. When the brush is mounted in place, the shaft C extends through the bore thereof snugly fitting in the interiors of the bushings 15. The brush is fixed to the shaft C by means of set screws 16 screwed in threaded holes 17, extending through said bushings, and engaging flattened portions 18 on the shaft C. The ends of the body F are slotted radially, as at 19 to permit the insertion or removal of the set screws.

In assembling the parts, the gear D is installed and the front plate 2 fixed in place. The brush is next set in place, and the shaft C inserted from either side of the machine, the right end of said shaft being permitted to protrude beyond the front plate 2 to permit the insertion of the pin 9 in the hole 10 of the shaft. The shaft is then driven toward the left until said pin 9 seats in the slots in the outer end of the hub 8 within the hole 5. It is evident that the shaft C will now be rotated with the gear D and the escape of the pin 9 is prevented by the wall of hole 5. The set screws 16 are now screwed down in holes 17 to engage the shaft C and lock the brush thereto.

To dismount the apparatus, the set screws, 16, are loosened, whereupon the shaft C may be driven out toward the right or first started toward the right to expose the pin 9 and permit its removal, and then driven out toward the left.

The advantage of being able to remove the shaft in either direction is due to the fact that frequently the wall or other portion of the building or other machinery interferes with the shaft's removal in one direction,

and if the shaft were removable in one direction only, great inconvenience would result, and the advantageous placing of the machinery made difficult.

By removing the shaft, the brush may be reversed, as is sometimes necessary when the bristles from continued use are made to trail and thus lose their efficiency.

It will be noted that the gear D is separately mounted in the machine, independent of the shaft C, so that the removal of said shaft does not dismount the gear but the latter remains properly positioned. This greatly facilitates the insertion and removal of the shaft.

Endwise movement of the shaft C, when the machine is in operation, is prevented by the contact of the brush bushings with the side plates A and B. The diagonal ball bearing reduces rotary friction and also assumes the longitudinal thrusts of the beveled gear D.

What I desire to claim is:—

1. In a rotary brush washing machine, the combination of the end portions of the frame, a bearing in each of said end portions, a power-driven sleeve member independently journaled in one of said bearings, a cylindrical brush roll adapted to be supported between said end portions in alinement with said sleeve member, a shaft inserted through the bores of said sleeve member and of said brush roll and having one of its ends journaled in said sleeve member, the other end of said shaft being journaled in said other bearing, and means for fixing said shaft to said sleeve member and to said brush roll, substantially as and for the purposes set forth.

2. In a rotary brush washing machine, the combination of the end portions of the frame, a larger bearing in one of said end portions and a smaller bearing in the other end portion, a power-driven sleeve member independently journaled in said larger bearing, a cylindrical brush roll adapted to be supported between said end portions in alinement with said sleeve member, a shaft of uniform periphery inserted from either end of the machine through the bores of said sleeve member and of said brush roll, one end of said shaft being journaled in the bore of said sleeve member while the other end of said shaft is journaled in said smaller bearing, and means for removably locking said shaft to said sleeve member and said brush roll on said shaft, substantially as and for the purposes set forth.

3. In a rotary brush washing machine, the combination of the end portions of the frame, a larger bearing in one of said end portions and a smaller bearing in the other end portion, a power-driven sleeve member independently journaled in said larger bearing, a brush roll adapted to be inserted in the machine in alinement with said sleeve member, a shaft of uniform periphery inserted from either end of said machine through the bores of said sleeve member and of said brush roll, one end of said shaft being journaled in said sleeve member and the other end of said shaft being journaled in said smaller bearing, means for detachably locking said brush roll on said shaft, a seat in the outer face of said sleeve member, and a pin transfixing the end of said shaft and occupying said seat when said shaft is in operative position, said pin being held in said seat by a portion of the frame of said machine, substantially as and for the purpose set forth.

Signed at Pittsburgh, Penna., this 1st day of October 1915.

WILLIBALD TRINKS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."