(No Model.)

C. BRANDTNER.

WASHING MACHINE.

No. 401,000. Patented Apr. 9, 1889.

FIG. 2

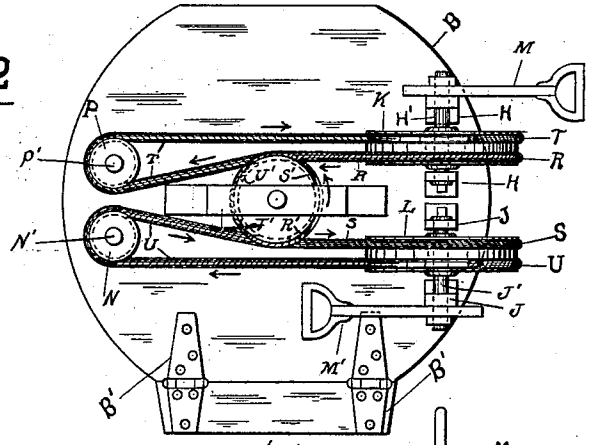
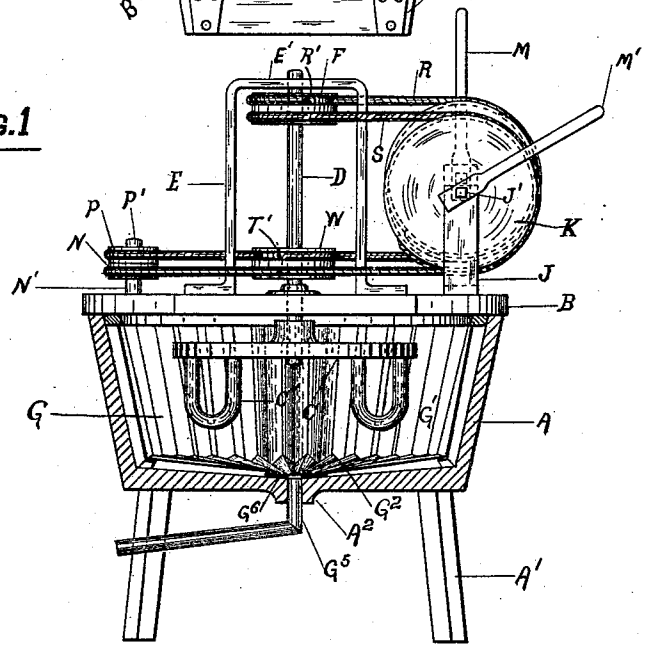


FIG. 1



WITNESSES

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INVENTOR

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UNITED STATES PATENT OFFICE.

CARL BRANDTNER, OF READING, PENNSYLVANIA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 401,000, dated April 9, 1889.

Application filed May 21, 1888. Serial No. 274,538. (No model.)

To all whom it may concern:

Be it known that I, CARL BRANDTNER, a citizen of the German Empire, residing at Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Washing-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

The object of my invention is to provide a new and advantageous means of operating washing-machines which use a rotary rubber.

The operating device is adapted to allow both hands to be used on separate levers arranged, when moved in opposite directions, to rotate the rubber alternately in either direction. Thus the pushing of one lever and the simultaneous pulling of the other will co-operate in turning the rubber one revolution more or less in one direction, and vice versa. The motion is positive, so that one hand or both may be used, the natural and perfectly balanced movement in the latter case being especially effective, and permitting a much greater amount of work to be done without becoming tiresome than when the motion is obtained with a single lever.

Figure 1 is an elevation with the tub in section; Fig. 2, a plan showing the operating mechanism.

In the drawings, A represents a tub supported on legs A′, and B is a lid or cover hinged at B′ to the tub. The rubber plate C, with rubbers C′, of any desired form, is secured to a central shaft, D, which extends upward through and considerably beyond the cover B. The upper end of the shaft D is held in the cross-bar E′ of the inverted-U-shaped yoke E, the base of which is secured to the cover B. Near the cross-bar E′ a pulley, F, is secured to the shaft, and a similar one, W, is likewise secured some distance below it above the cover B. The outer surface of each of these pulleys is formed with two circular grooves, one above the other.

To one side of the cover B standards H H and J J are fastened on either side of the center line, the two former, H H, being slightly higher than the latter to the center of the bearings which support the two independent shafts H′ and J′, respectively. To the latter are secured, between the bearings, grooved wheels or drivers K and L, and on the outer ends of each are hand-levers M and M′. Idler-pulleys N and P are adapted to revolve loosely on vertical posts or shafts N′ and P′, fastened to the cover B on the opposite side of the center, the idler P being somewhat higher than N, to correspond with the slightly-different heights of the grooves formed on the pulley W and of the drivers K and L, as before referred to.

The method of running the belts or ropes by means of which motion is conveyed to the central shaft, D, by the movement of the levers M and M′ is as follows: The upper ropes, R and S, each have one end screwed or otherwise secured to the inner grooves of the drivers K and L, respectively, and are passed over them and around the pulley F in opposite directions, the rope R from the higher driver, K, having its free end screwed to the top groove at a point, R′, while the end of rope S is fastened below it to the same pulley at S′. The lower ropes, T and U, are similarly secured to the outer grooves of the drivers, passed under them, and thence over the idlers P and N on the opposite side of the main shaft D, to the lower pulley, W, on the latter, around which the ends are passed in opposite directions and secured in the upper and lower grooves at points T′ and U′, respectively. In operating this driving mechanism the handles M are necessarily moved in opposite directions. If power is applied only to one lever M, for instance, when it is pushed toward the center, the rope T is wound up on the driver K, and the other end being positively connected to the circumference of the lower pulley, W, the shaft is rotated in the direction indicated by the arrow, the rope U being unwound from the pulley L, which is thus rotated in a direction opposite to K. It is evident, however, that if power is also applied to the handle M′, tending to unwind the rope U, it must also tend to wind up the upper rope, S, which is thus moved in the direction indicated by the arrow, and its end be-

ing fastened to the upper pulley, F, the power applied to the handle M′ combines with that applied to the handle M in rotating the shaft in the direction indicated. When the movement of the levers is reversed, it is evident that a similar effect in the opposite direction is transmitted.

The method above described of connecting four ropes to the drivers and pulleys is preferred, because a positive movement of the main shaft is insured for a corresponding movement of the levers, and also because the use of separate grooves for different ropes (or single wide grooves will do equally well) permits each rope to be wound one full revolution without doubling. I do not confine my invention, however, to this construction, as it may evidently be modified without departing from the spirit of my invention. A wire rope may be used, if preferred. The proportionate sizes of the drivers and pulleys are preferably such as will allow the main shaft to be turned about one revolution by a convenient sweep of the levers.

Having thus fully described my invention, what I desire to secure by Letters Patent are the following claims:

1. The combination, with the main shaft provided with pulleys F and W, of drivers secured to independent shafts, idlers P and N, and a flexible driving-connection between said drivers and pulleys, whereby the simultaneous movement of said drivers in opposite directions is adapted to co-operate in rotating said main shaft, substantially as set forth.

2. The combination, with the main shaft provided with pulleys F and W, of drivers secured to independent shafts supported at right angles to said main shaft, idlers P and N, and separate ropes R and S and T and U, having one end of each fastened to said drivers and the opposite ends to said pulleys F and G, respectively, whereby the simultaneous movement of said drivers in opposite directions is adapted to co-operate in positively rotating said main shaft, substantially as set forth.

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

CARL BRANDTNER.

Witnesses:
W. G. STEWART,
HOWARD P. WANNER.