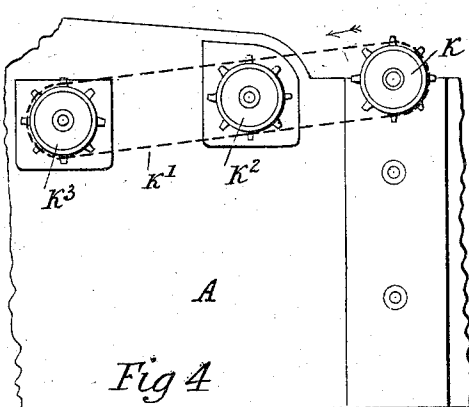
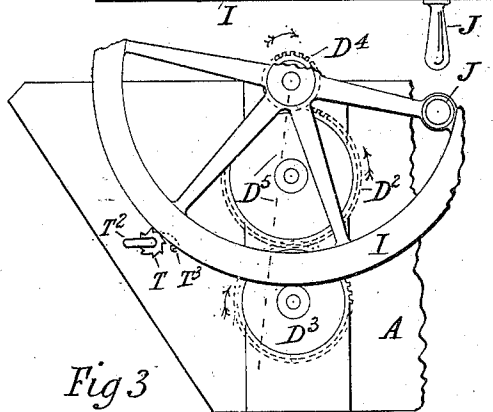
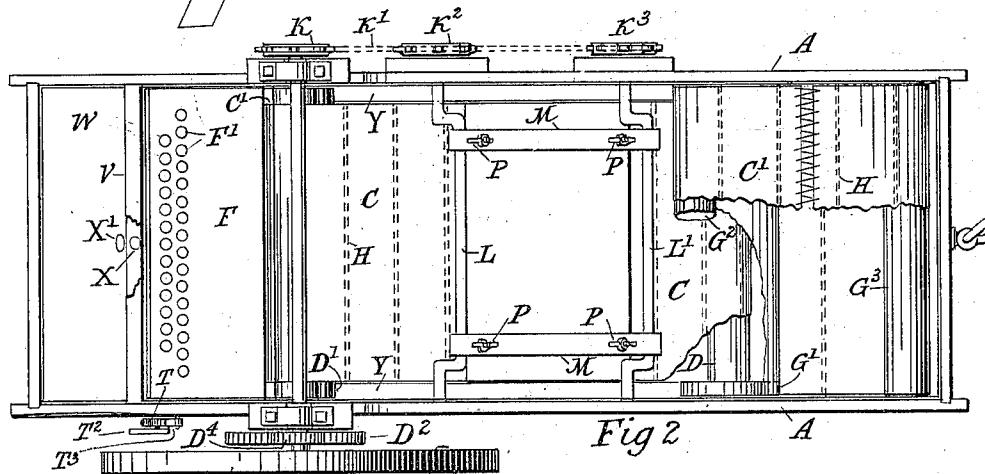
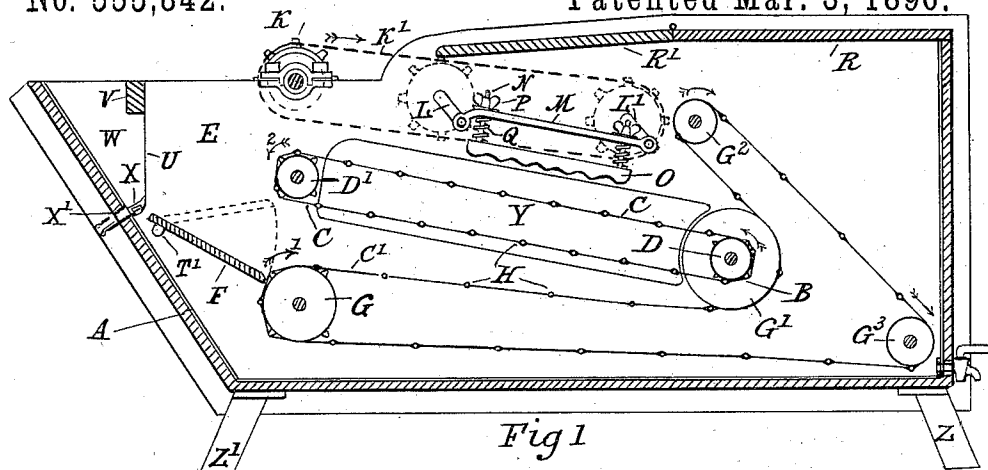


(No Model.)

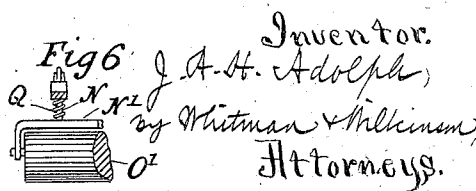
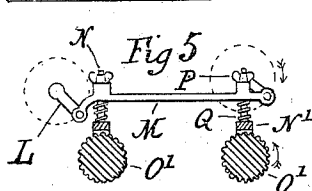
J. A. H. ADOLPH.
WASHING MACHINE.

No. 555,842.

Patented Mar. 3, 1896.



Witnesses
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J. L. Gustafson



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UNITED STATES PATENT OFFICE.

JOHANN A. H. ADOLPH, OF BIRCHIP, VICTORIA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 555,842, dated March 3, 1896.

Application filed November 4, 1895. Serial No. 567,905. (No model.)

To all whom it may concern:

Be it known that I, JOHANN AUGUST HERMANN ADOLPH, mechanic, a subject of the Emperor of Germany, and a resident of Birchip, in the Colony of Victoria, Australia, have invented certain new and useful Improvements in Machines for Washing Clothing, &c., of which the following is a specification.

This invention comprises improvements in machines for the washing of clothing and other suitable materials, whereby the desired results may be obtained expeditiously without excessive or irksome labor.

In the accompanying drawings, which form part of this specification, and in which like letters of reference indicate like parts in all the views, Figure 1 shows a sectional elevation of a machine containing my improvements. Fig. 2 shows a fragmentary plan view of the same machine. Fig. 3 shows a side elevation of part of the machine. Fig. 4 shows a side elevation of part of machine from the other side to that shown in Fig. 3. Fig. 5 shows a cross-sectional elevation of the roller "rubber," and Fig. 6 shows the connection of the end of a roller rubber to its frame.

A is a trough, within which water is kept at any suitable level, preferably such that it will be above the level of the point B where the under side of the upper broad canvas belt, C, meets the roller D. The articles to be washed are fed into the trough at its open end, at which is a receiving chamber or space E, having a movable inclined bottom F mounted on the shaft T', which bottom guides the articles being washed to the upper surface of the lower broad canvas belt, C'. The belt C is stretched between or laced up to engage rollers D and D', the latter being higher than the other, so as to keep the belt on an incline, and the belt C' passes around rollers G, G', G², and G³, respectively, as shown, the clothes or other articles to be cleansed or treated being carried downward in the direction shown by arrow 1 until the vicinity of rollers D G' is reached, when said material is squeezed between the two belts, (which at that point are closest together,) raised and carried upon belt C until it falls down at the point shown by arrow 2 to repeat the same course as has been described. The roller G' consists of two

pulleys, one next each of the trough sides and arranged on the same spindle as roller D. (See Fig. 2.)

The motion of the belts (which have horizontal wooden slats H across them at intervals to prevent slipping of the material) is effected by having the rollers ribbed and by gearing the projecting spindles of rollers D' and G together by gear-wheels D² D³ at one end outside the trough, as shown in Fig. 3, a fly-wheel I, operated by a handle J, being on another spindle, said spindle having the gear-wheel D⁴ in engagement with D². The other end of the last-named spindle projects on the other side of the trough, as shown in Fig. 4, and carries a sprocket-wheel K, which, by means of a chain K', actuates the sprocket-wheels K² and K³, which are mounted on the ends of cranked cross-shafts L L'. The cranks, which are set to move in parallel, are connected by rods M, from which there depends by pins N any suitable scrubber or rubber O.

In order that the position of O may be alterable by raising or lowering same, the tops of N are screwed and pass freely through holes in M, wing-nuts P engaging said screwed ends.

In order that the scrubber or rubber O may automatically rise or fall according as the thickness of material passing under the same increases or decreases, and may (while applying friction to such material in a longitudinal direction, as hereinafter described,) press downwardly on the material, springs Q are inserted around the pins N between the top of O and the under side of M.

We do not claim any particular rubber and may substitute for a flat one O any equivalent, as rollers O', (seen in Figs. 5 and 6,) in which case the pins N would be connected to a frame or bar N', to the ends of which the rollers are suitably connected, or instead of two rollers, as shown, there may be as many rollers mounted on M as that part will accommodate.

R is a cover, preferably fixed, and R' a movable cover hinged to R, the same being sloped so as to allow material to be conveniently soaped or handled thereon before immersion, the drainage running into the trough, the said hinged and fixed covers preventing

water splashing out of the trough while washing is proceeding.

When this machine is operated, the bands are set in motion and constantly carry the material introduced for treatment at a comparatively slow pace, as already set forth, while the rubber repeatedly subjects said material to a forward frictional combined with a downward pressing and comparatively rapid motion. While the material is still within the reach of the rubber, the latter makes several revolutions, its return motion being in each case out of contact with the material. The effect of this is to thoroughly scrub or cleanse with a degree of pressure or force regulated to suit the nature of the material under treatment, the fact that the belt or bed C is more or less yielding and is porous also assisting the cleansing of the material without injuring the same, a matter of extreme moment. When it is desired to prevent the material from being further washed, the bottom F is raised to the position shown by dotted lines in Fig. 1 and is there secured suitably by means of a toothed wheel T outside of the trough, said wheel being fixed on the end of a projecting spindle T' and having a handle T² for operating same, and being held as it may be adjusted by the attendant by a pawl T³.

F' are apertures in that part of F which is lowest when F is raised, said apertures facilitating the drainage of any material that may be allowed to remain on F.

U is a fixed partition cutting off one end of the trough from the rest and forming a distinct water-tight compartment W, and V is a stout cross-piece forming the top of U, and of material advantage for the clamping thereto of a wringer.

X X' are two apertures in W, with suitable plugs, one leading into the main trough and the other out of it. A material advantage of this arrangement of plugs is that the liquor squeezed out from the material by the wringer collects in W and causes no inconvenience, while if that liquid be suitable for return to the main trough it may be so returned per aperture X, while if unsuitable it may be disposed of per aperture X'. When the "blue" is used before the material is wrung, the compartment W is thus of advantage in collecting and retaining the blue water in good condition, and other instances might be given according to the use to which the trough might be put and the nature of the liquid which might be put in it.

As shown in Figs. 2 and 1, Y are side boards or projecting sides within the trough to prevent material getting over the edges of the belt C, said belt being necessarily narrower than the trough to allow room for the pulleys G'.

I usually find it more convenient to make the legs at one end Z' longer than at the other in order that the machine may be tilted

up at the "feed" end, and keep the bearings of the spindle of the roller G above water-level, and render special precautions against leakage unnecessary. I also usually prefer to have the axes of the three gears D³ D² D⁴ set in a straight line, which is thrown out of the perpendicular in proportion as the leg Z' is made longer than Z. Its object is to bring roller G so much beyond D' that material will drop readily from the band engaging the latter into engagement with the band C'.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a washing-machine, the combination with an inclined water-tight trough; of the rollers D and D' journaled in said trough, the roller D' being higher than the roller D, and the roller D having a pulley G' mounted upon each end thereof within said trough; the short endless apron C running upon said rollers D and D'; the rollers G and G³ journaled in said trough near the bottom thereof and the roller G² journaled in said trough near the top thereof above said apron C; the long endless apron C' running over the roller G, pulleys G' and rollers G² and G³, and adapted to first convey the articles to be cleansed downward into the water in the trough, and then upward and deliver the same upon the short apron C; a rubber mounted upon a pair of crank-shafts journaled in said trough above said apron C; sprocket-wheels upon the ends of said crank-shafts; a gear-wheel mounted upon the end of the shaft of one or more of said rollers; and means for driving said gear-wheels simultaneously with said sprocket-wheels, substantially as described.

2. In a washing-machine, the combination with an inclined water-tight trough; of the rollers D and D' journaled in said trough, the roller D' being higher than the roller D, and the roller D having a pulley G' mounted upon each end thereof within said trough; the short endless apron C running upon said rollers D and D'; the rollers G and G³ journaled in said trough near the bottom thereof and the roller G² journaled in said trough near the top thereof above said apron C; the long endless apron C' running over the roller G, pulleys G' and rollers G² and G³, and adapted to first convey the articles to be cleansed downward into the water in the trough, and then upward and deliver the same upon the short apron C; the perforated platform F hinged at one side within said trough at one end thereof, and adapted when in its lower position to receive the articles being cleansed from the apron C and deliver the same continuously upon the apron C', and adapted when raised to receive and retain the articles from the said apron C; a lever connected with said hinged platform for tilting the same; and means for holding said lever in the desired position; a rubber mounted upon crank-shafts journaled in said

trough above said apron C; sprocket-wheels
upon the ends of said crank-shafts; a gear-
wheel mounted upon the end of the shaft of
one or more of said rollers; and means for
5 driving said gear-wheels simultaneously with
said sprocket-wheels, substantially as de-
scribed.

In witness whereof I have hereunto set my
hand in the presence of two subscribing wit-
nesses.

JOHANN A. H. ADOLPH.

Witnesses:

G. G. TURRI,
E. F. NICHOLLS.