(No Model.)

C. DIETZ, H. DIEPHAUS & E. GRAPY.

WASHING MACHINE.

No. 588,118. Patented Aug. 10, 1897.

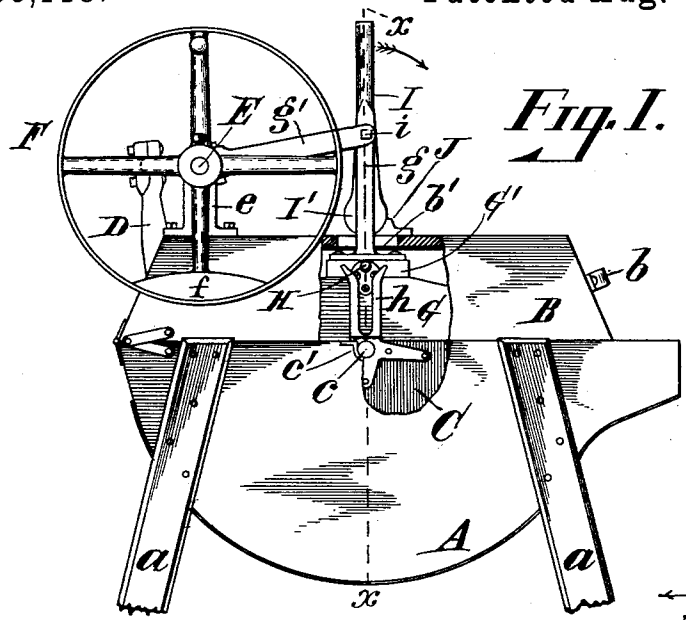


Fig. 1.

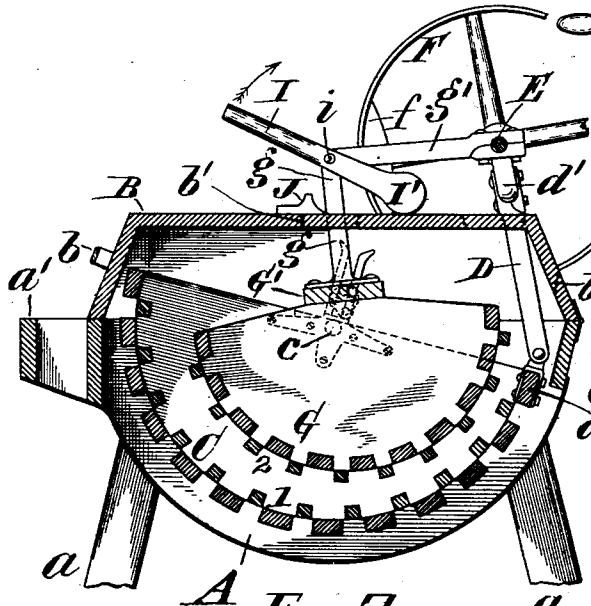


Fig. 2.

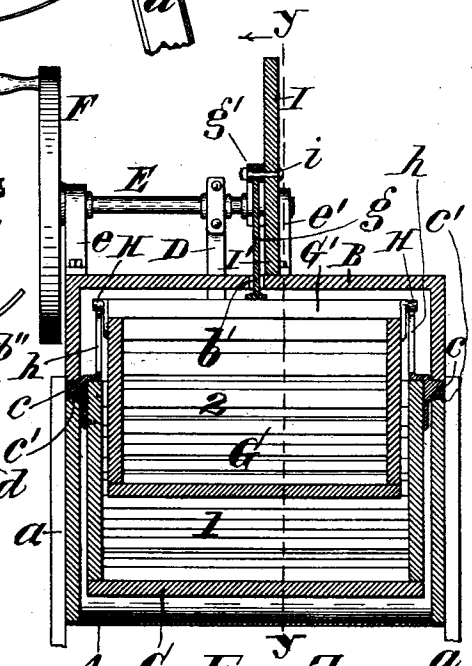


Fig. 3.

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UNITED STATES PATENT OFFICE.

CHARLES DIETZ AND HENRY DIEPHAUS, OF CINCINNATI, OHIO, AND EDWARD GRAPY, OF LAWRENCEBURG, INDIANA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 588,118, dated August 10, 1897.

Application filed May 3, 1897. Serial No. 634,899. (No model.)

To all whom it may concern:

Be it known that we, CHARLES DIETZ and HENRY DIEPHAUS, residing at Cincinnati, in the county of Hamilton and State of Ohio, and EDWARD GRAPY, residing at Lawrenceburg, in the county of Dearborn and State of Indiana, citizens of the United States, have invented certain new and useful Improvements in Washing-Machines, of which the following is a specification.

Our invention relates to improvements in what are termed "double-action" washing-machines, in which two adjacent rubbing-surfaces rock or oscillate in opposite directions with the clothes intervening; and it consists in the novel features of construction and combination of parts, such as are hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of our machine, partly broken away and in section, showing the upper rubber devices raised to the position they occupy when the lid is to be raised and lowered for both the insertion and removal of the clothes; Fig. 2, a longitudinal sectional elevation taken on line *y y* of Fig. 3, but showing the said upper rubber devices down in operating position; and Fig. 3, a transverse sectional elevation taken on line *x x*, Fig. 1.

A represents the outer casing, comprising the tub or tank in which the water is placed for washing. This is semicylindrical in form and mounted on legs *a a*, two at either side, as customary.

a' is the wringer-attaching cross-board at the rear of tub A.

B represents a covering hood or lid, hinged at its front end to the tub and having a suitable raising and lowering handle *b*.

C is the clothes-receptacle, semicylindrical in form and fitting loosely and working freely within the tub. Lateral pivots or trunnions *c c* project from the opposite sides of receptacle C and journal in open bearings or boxes *c' c'* on the sides of the tub, whereby said receptacle may rock to and fro in the arc of a circle within the tub through the instrumentality of the pitman D, pivotally intervening between the cross-bar *d* of the receptacle and the crank-arm *d'* of the transverse driving-shaft E, the latter being mounted in upright standards or bearings *e e'* on the lid B, as best seen in Fig. 3.

F is a rigidly-attached hand-wheel at one end of shaft E for driving the same. This wheel has a counterbalance weight or block *f* made therein, the purpose of which will be presently hereinafter described.

G represents the rubber, which is also semicircular in form and fits loosely and works freely within the receptacle C.

G' is a transverse bar, *g* an arm projecting upwardly therefrom, and *g'* an arm projecting loosely from the crank-shaft E, (but not turning around with the latter,) said arms *g* and *g'* being hinged or pivotally connected together and adapted to duly suspend the rubber within the clothes-receptacle, and slots *b' b''* being provided in the lid B to accommodate the arm *g* and pitman D.

H H represent lateral pins projecting from the opposite sides of the rubber G and freely engaging open standards or upright forks *h h*, mounted centrally on the opposite side walls of the receptacle C, whereby the compound or double motion is effected, the receptacle C rocking or moving in a circular direction opposite to that of the rubber, and thus properly acting on the clothes lying between their two adjacent rubbing-faces. The rubbing-faces of both parts C and G are preferably composed of transverse wooden slats or bars 1 and 2, respectively, the several series of which are arranged or spaced at suitable distances apart to leave a slit or narrow opening between adjoining slats, and thereby permit the free passage or circulation of the water upward from the tub below.

It will be noticed in Fig. 2 that we arrange narrow slats along both the inner semicircular face of the receptacle C and the outer semicircular face of the rubber G and broader slats along both the semicircular outer face of said receptacle and the semicircular inner face of the said rubber, thus presenting the narrow slats for the rubbing-surfaces and the broad slats providing broad depressions or recesses between the narrow slats for the ready entrance of the clothes, thereby laying them out in easy lines or folds, and thus greatly facilitating the washing operation.

I represents a hand-lever pivotally mounted on the pivot-bolt *i*, which latter connects or hinges the two arms *g* and *g'* together. This lever (when turned in the direction of the arrow seen in Fig. 2 to bring its lower end or head I' into engagement with the upper face of the lid) is used to raise the rubber G from operative engagement with the receptacle C to the position seen in Figs. 1 and 3, and the counterbalance *f* in the wheel F then automatically comes into action to the position seen in Fig. 1, which insures the bringing of the lateral pins H H directly in line with the open mouths of the upright standards or forks *h h* to readily guide the rubber back to operative engagement with the rocker-receptacle, the upper ends of the forks flaring outwardly and making the engagement more certain and positive, and said counterbalance preventing any undue swinging of the receptacle C on its trunnions to otherwise throw or divert the upright forks out of perpendicular line, and the hand-lever also preventing the undue wabbling or swinging back and forth of the rubber at the time the lid is being either raised or lowered for the purpose of placing and removing clothes within and from the receptacle C.

A stop J is provided on the lid to prevent the hand-lever going too far rearward and to support it firmly upright when in action or use.

We claim—

1. In a washing-machine, the combination of a tub or tank A; a clothes-receptacle C having pivots or trunnions and thereby adapted to rock within said tank; a crank-shaft E; a rubber G having lateral pins H and suspended within the receptacle by means of pivotally-connected arms *g* and *g'* from the crank-shaft E, said arm *g'* projecting freely from said crank-shaft and the latter being duly mounted on a suitable, hinged lid or cover B; a pair of upright forks *h*, *h*, mounted on the receptacle and engaged by said lateral pins H on the rubber; and a hand-lever I pivotally connected to the arms *g*, *g'*, for raising the rubber up into the lid when the latter is to be manipulated; the whole being constructed, arranged, and adapted to operate whereby a double or compound motion is effected by means of the rubber and receptacle, substantially as herein set forth.

2. In a washing-machine, the combination of a tub or tank A; a clothes-receptacle C pivotally mounted on the tub to rock therein; a suitable lid or cover hinged to the tank; a crank-shaft journaled on the lid and connected by means of a pitman with the clothes-receptacle; a hand-wheel having a counterbalance-weight *f* and mounted on said crank-shaft; a rubber G having lateral pins thereon, open standards or flaring-mouthed forks *h* on the clothes-receptacle, freely engaged by said lateral pins on the rubber G for producing combined, double action in opposite directions for the rubbing or washing operation; and a hand-lever I on the arms *g*, *g'*, for raising and lowering said rubber within the lid to and from coöperative or coupled engagement with said receptacle; said counterbalance in the hand-wheel causing the proper perpendicular lining or center balancing of the receptacle C so that the lateral pins on the rubber shall always positively drop into engagement with the upright forks when the rubber is to be lowered into said clothes-receptacle and the hand-lever serving, also, to prevent the undue wabbling or swinging back and forth of the rubber within the lid when the latter is either raised or lowered on its hinges; the whole being constructed, arranged, and adapted to operate, substantially as herein set forth.

In testimony of which invention we have hereunto set our hands.

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Witnesses:
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