

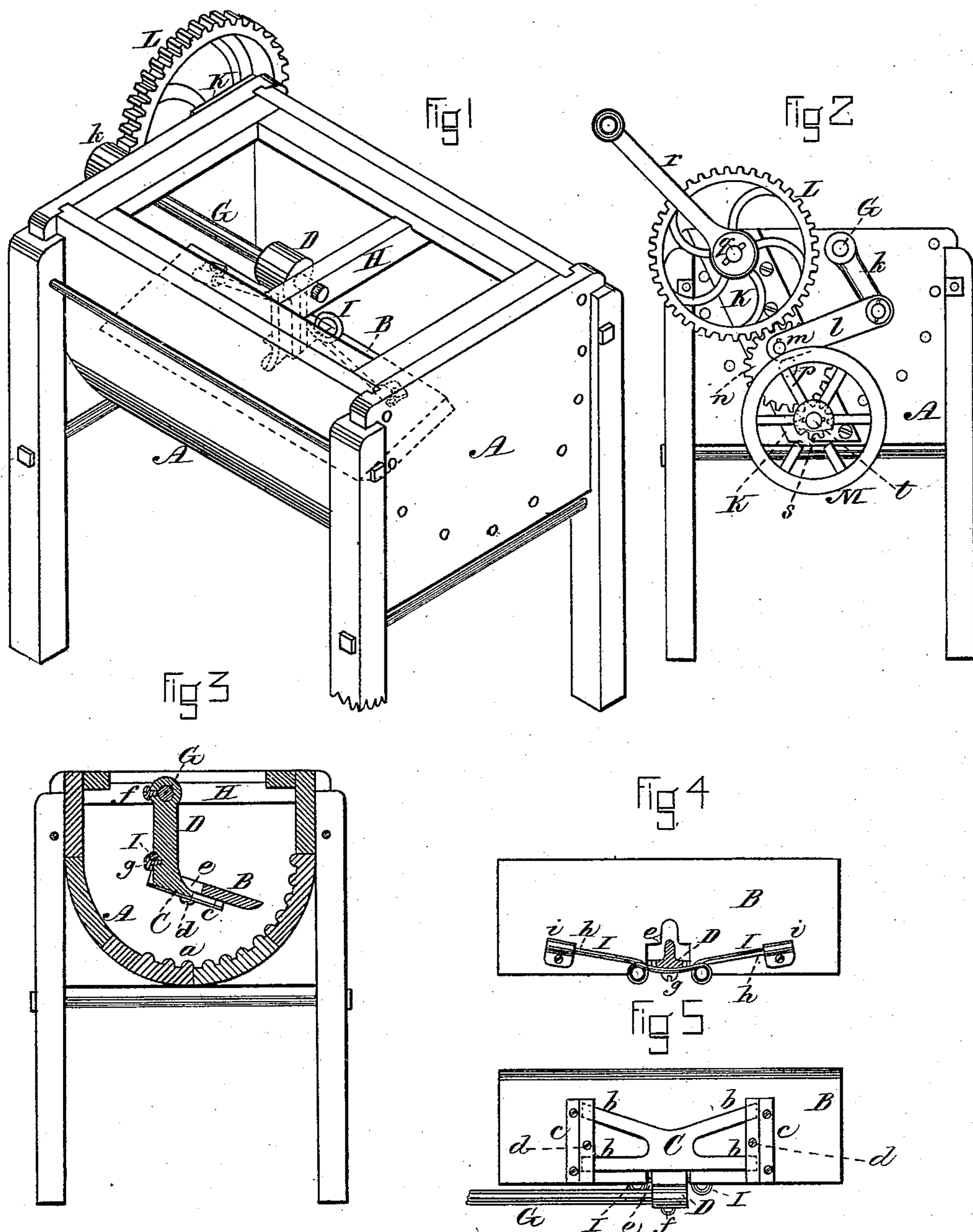
(No Model.)

M. W. ROBINSON & H. W. MARRINER.

WASHING MACHINE.

No. 316,064.

Patented Apr. 21, 1885.



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# UNITED STATES PATENT OFFICE.

MARTIN W. ROBINSON, OF SOMERVILLE, MASSACHUSETTS, AND HENRY W. MARRINER, OF BELFAST, MAINE.

## WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 316,064, dated April 21, 1885.

Application filed November 27, 1883. (No model.)

*To all whom it may concern:*

Be it known that we, MARTIN W. ROBINSON, of Somerville, in the county of Middlesex and State of Massachusetts, and HENRY W. MARRINER, of Belfast, in the county of Waldo and State of Maine, citizens of the United States, have invented certain new and useful Improvements in Washing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of a washing-machine constructed in accordance with our invention, the cover being removed from the tub. Fig. 2 is an elevation of one end of the same. Fig. 3 is a transverse vertical section of the same. Fig. 4 is plan of the upper side of the dasher, and Fig. 5 is a plan of the under side of the same.

Our invention relates to that class of washing-machines having a reciprocating dasher connected with an oscillating shaft, and has for its object to simplify the construction, reduce the cost of manufacture, and at the same time render the machine durable, efficient, and easy to operate.

To this end our invention consists in a dasher supported within the tub or receptacle for the clothes by a frame connected with an oscillating shaft by a single arm or hanger only, in combination with a spring or springs so arranged as to allow the dasher to yield to accommodate clothes of varying thickness, and relieve the strain upon the working parts of the machine; and our invention also consists in certain details of construction, as hereinafter set forth and specifically claimed.

In the said drawings, A represents the tub or receptacle for the clothes, water, &c., the interior of which is provided with longitudinal corrugations *a*, forming a wash-board which is adapted to operate in connection with the reciprocating dasher B, which consists of a board set edgewise toward the corrugated surface *a*, and inclined thereto, as shown in Fig. 3. The dasher B is supported by and slides upon a metal frame, C, Fig. 5, the ends *b* of which fit within guides *c*, secured to the under side of the dasher.

*d d* are screws which pass one through each guide *c*, between the two ends of the frame C, serving as stops to limit the sliding movement of the dasher on its supporting frame in either direction.

The frame C is provided on its upper side with an arm or hanger, D, made integral therewith, which projects up therefrom at an angle through a notch, *e*, in the edge of the dasher to a horizontal rocker-shaft, G, which passes through its upper enlarged end, and to which it is held immovably by a set-screw, *f*, this shaft, which extends a little beyond the center of the length of the tub A, being supported in suitable boxes or bearings in one end of the tub A, and in a bar or brace, H, extending transversely across the center of the same from side to side.

The sliding dasher B is forced toward the corrugated interior surface of the tub A by means of a stiff wire spring, I, of the form seen in Fig. 4, the central portion of which passes around the hanger, D, and is secured thereto by a screw, *g*, while the opposite ends, *h*, are attached to the dasher by metal guides *i*, which form guides in which the ends of the spring slide as the dasher is moved backward and forward upon its frame C.

By arranging the spring upon the upper side of the dasher, as shown, it is rendered easily accessible, so that it can be replaced by a new one if broken without taking the machine to pieces, as has heretofore been necessary. We do not, however, confine ourselves to the use of a spring of the precise construction shown, as a spring of other suitable construction may be employed, and, if desired, two or more springs may be used instead of a single one only, as shown. The form of the supporting-frame C may also be varied, if desired, and it may be connected with the sliding dasher B by a guide or guides of any suitable description which will permit the free movement of the dasher upon the frame, and hold it securely in place thereon.

We will now describe the manner in which the shaft G is oscillated to produce the required reciprocation of the dasher B within its tub or receptacle A.

To the outer end of the shaft G is secured a

crank-arm, *k*, which is connected by a pitman *l*, with a crank-pin, *m*, on a gear, *n*, which turns on a stud, *p*, projecting from a metal plate, *K*, secured to the outer side of one end of the receptacle *A*. The gear *n* is driven by a larger gear, *L*, which is mounted on a stud, *q*, also projecting from the plate *K*, and is provided with a crank or handle, *r*, to enable the machine to be operated by hand. The gear *n* engages with a small gear, *s*, mounted on another stud, *t*, projecting from the plate *K*, and secured to or cast in one piece with a fly-wheel, *M*, of suitable diameter, which also turns upon the stud *t*; and thus through the connections described, as the wheel *L* is rotated by means of the handle *r*, the dasher *B* is rapidly oscillated within the tub *A* as required, and when the tub is supplied with water or a saponaceous solution the clothes are caused to be thoroughly washed by the action of the dasher and the corrugated interior rubbing-surface *a* of the tub, the dasher yielding or sliding back on its frame *C* against the resistance of the spring *I*, to accommodate clothes of varying thickness, whereby it is prevented from becoming clogged or obstructed in case the clothes should become wedged or caught between it and the corrugated surface *a*, and all liability of their being torn or injured is thus entirely avoided.

The construction and arrangement of the outside gearing, whereby the fly-wheel is rotated very rapidly, render it possible to employ a much lighter fly-wheel than has heretofore been customary in machines of this description, the extra velocity producing an increased momentum, which renders the machine easy to operate, while the reduction in the size of the fly-wheel and in the length of the rocker-shaft *G*, and the employment of a single hanger, *D*, only, greatly simplify the machine and render it possible to construct it at a greatly reduced cost without in the least impairing its efficiency. Furthermore,

by mounting all of the gears upon studs projecting from a single metal plate secured to the outside of the tub, they are prevented from separating and being thrown out of engagement by the shrinking and swelling of the wood, as is liable to occur when the shafts or supports of the gears are separately secured to different portions of the wood forming the side of the tub.

Our improved machine may be used either as a washing-machine or a starching-machine, as it is equally adapted either for washing clothes or for beating or forcing starch therein.

We claim—

1. In a washing-machine, the combination, with the tub *A*, having a corrugated rubbing-surface, *a*, and brace *H*, of the oscillating and sliding dasher *B*, the single arm or hanger *D*, formed integral with its frame *C*, the oscillating shaft *G*, carrying said hanger on its inner end, a spring connected with the dasher by guides, and gears for oscillating the shaft, all constructed to operate as herein set forth.
2. In a washing-machine, the combination, with the tub *A*, the oscillating hanger *D*, formed integral with its frame *C*, and the slotted dasher *B*, sliding thereon toward and from the side of the tub, of the spring *I*, secured at or near the center of its length to the hanger *D* and at its opposite ends within guides *i i*, secured to the dasher, whereby the ends of the spring are adapted to slide in the said guides as the dasher is moved upon the frame *C*, all constructed to operate as and for the purpose described.

Witness our hands this 23d day of November, A. D. 1883.

MARTIN W. ROBINSON.  
HENRY W. MARRINER.

In presence of—

P. E. TESCHEMACHER,  
W. J. CAMBRIDGE.