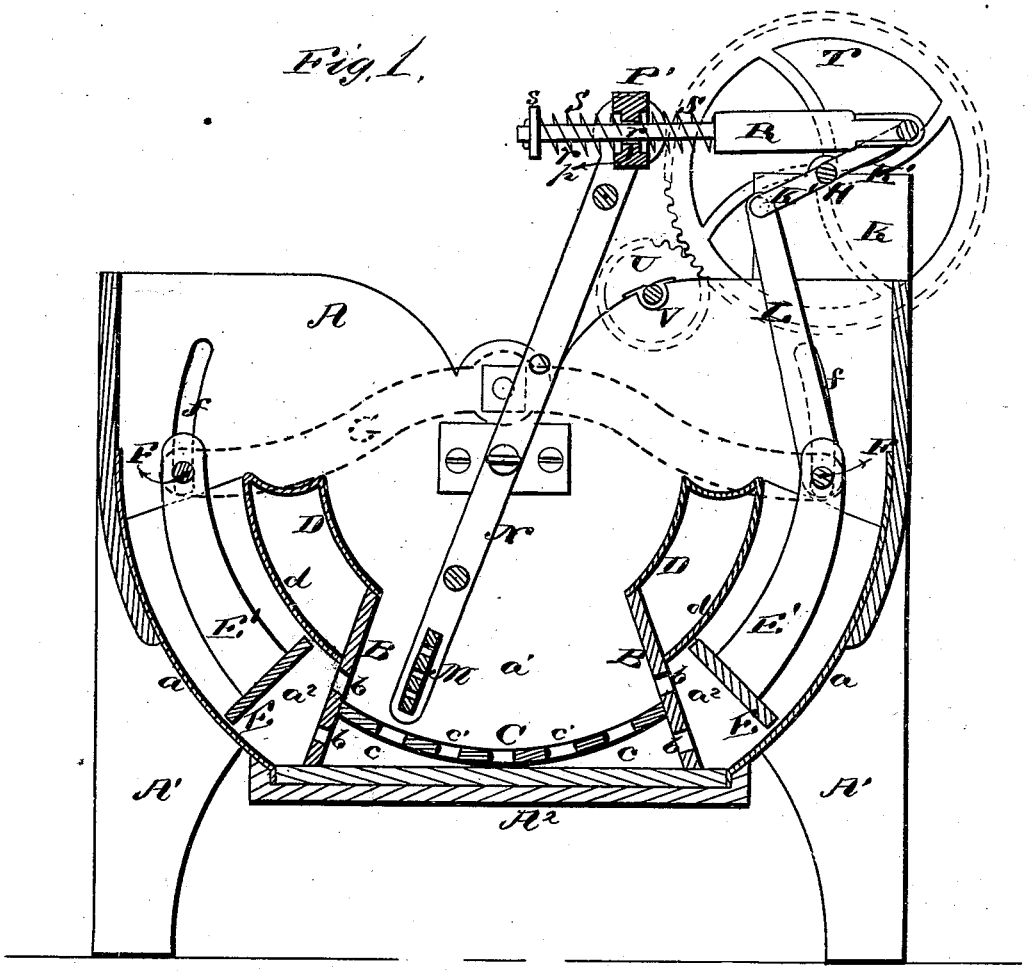
2 Sheets—Sheet 1.

J. B. LAUFFER.

WASHING-MACHINE.

No. 188,381. Patented March 13, 1877.

Fig. 1.



WITNESSES.
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2 Sheets—Sheet 2.

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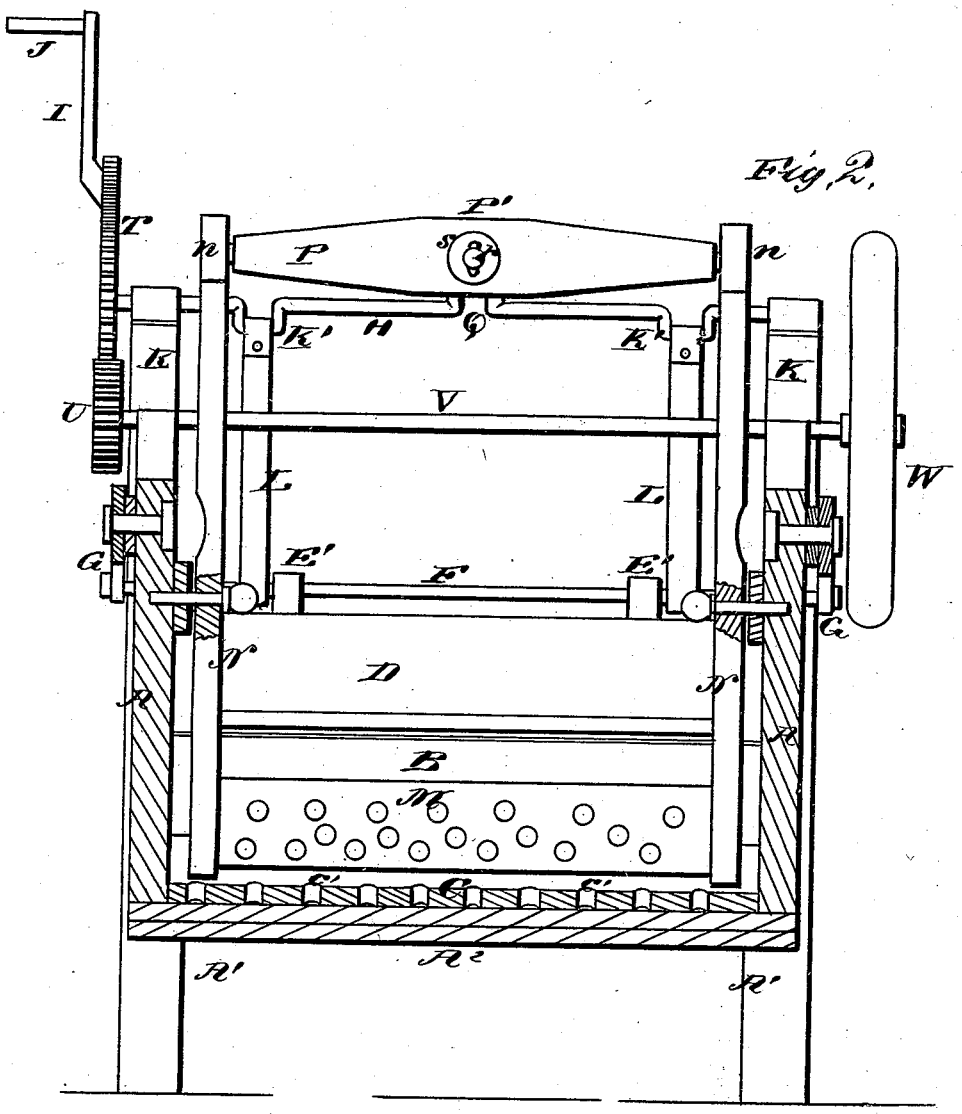
Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE

JOSIAH B. LAUFFER, OF HARRISON CITY, PENNSYLVANIA.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **188,381**, dated March 13, 1877; application filed February 10, 1877.

To all whom it may concern:

Be it known that I, JOSIAH B. LAUFFER, of Harrison City, in the county of Westmoreland and State of Pennsylvania, have invented a new and valuable Improvement in Washing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a longitudinal vertical section of my washing-machine, and Fig. 2 is a transverse vertical sectional view of the same.

This invention relates to washing-machines; and it consists in the construction and combination of the parts hereinafter set forth and claimed.

In the accompanying drawing, A designates a wash tub or box, supported upon four standards, A^1. Said tub or box has flat sides, but is rounded inwardly from the top of the ends to a flat bottom piece, A^2. The lower parts of said curved ends are formed by metal plates *a*, the remainder of the box or tub being preferably of wood. B B designate two inclined partitions, secured to the bottom and sides of the interior of said box, and extending upward and inward toward each other. These partitions divide the lower part of said wash-tub or wash-box into a middle compartment, a^1, and two curved end compartments, a^2 a^2. They are perforated at *b b* to allow communication between said compartments. C designates a curved wash-board, which rests upon the bottom of compartment a^1, with its concavity upward, so as to leave a small space, *c*, between it and the bottom of said compartment on each side of the middle line of said curved wash-board. Some of the perforations *b* already described communicate with said spaces *c*. Said curved wash-board C is provided with a number of similar perforations, *c'*. D D designate bent guide-plates or shells, secured to said partitions B B, and also to blocks on the inner faces of the sides of said wash-tub or wash-box, and provided with curved outer faces *d d*, which serve to guide curvilinearly-reciprocating pistons E in the spaces a^2. The upper sides or backs of said pistons are provided with rigid arms E', through perforations in the upper ends of which long guide-rods F are passed. The ends of said guide-rods F play in curved guide-slots *f* in the flat sides of said wash-tub or wash-box. The ends of said rods on each side of said wash-box are loosely connected by one of two metal yokes, G, which are pivoted at their middle parts to the respective sides of said wash-box A. H designates a rotating crank-shaft, turned by a crank-arm, I, and handle J, and journaled in raised bearings K on the top of box A at one end of the same. Said shaft is provided with two double cranks, K' K', (one being near each end thereof,) which operate plunger-rods L L, that are pivoted at their lower ends to one of the said guide-rods F. At every rotation of the said crank-shaft H one of the pistons E is forced downward and inward, and the other is retracted upward and outward by the action of the said shaft and the plungers and yoke hereinbefore described. By this alternate movement of the said pistons a co-operating suction and pressure are simultaneously applied to the water in said wash-box, which suction and pressure are alternately reversed or shifted from side to side. Thus a rapid and alternately-reversing current is made to pass through perforations *b* and *c* and through the clothes in space a^1. Said clothes are carried by a perforated board, M, at the bottom of a rocking frame, N, which is pivoted by the middle to blocks or bearings on the inner sides of the side pieces of said wash-tub. Blocks *n n* at the upper end of said frame are recessed to serve as bearings for a transverse rock-shaft, P, which has a middle enlargement, P', perforated at *p*. Driving-shaft H is provided at its middle with a large double crank, Q, which operates a pitman, R, that has on its forward end a reduced extension piece or rod, *r*, provided with a surrounding helical spring, S, and washer *s*. Said rod *r* and spring S pass through perforation *p*, and spring S engages with the sides of said perforation, so that the said frame N is rocked backward and forward at each rotation of shaft H. Thus, the same movement which gives alternating reciprocating movement to the pistons E also causes the clothes or other fabrics to be rocked backward and forward.

The washing is effected by the attrition of said clothes against wash-board C and partitions *b b*, in connection with the reversing currents of water forced through the same by the mechanism previously described. Shaft H carries a cog-wheel, T, which may be formed in one piece with the operating crank-arm I, and gears with a smaller wheel, U, on a shaft, V. Said shaft V is journaled in bearings on the top of the wash-box A, and extends across the same, having at its other end a fly-wheel, W.

I do not confine myself to the precise construction shown, as the various parts of my machine may be considerably modified without departing from the spirit of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of concave perforated wash-board C with perforated partitions *b b*, guiding-shells D D, pistons E E, guide-rods F F, yokes G G, crank-shaft H, and plungers L L, substantially as and for the purpose set forth.

2. The combination of crank-shaft H, having double cranks K′ K′ and Q, with plungers L L, guide-rods F F, arms E′ E′, pistons E E, pitman R, rod *r*, spring S, and rocking clothes-frame N, substantially as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOSIAH B. LAUFFER.

Witnesses:
JOHN COLGAN,
OBADIA SHEARER.