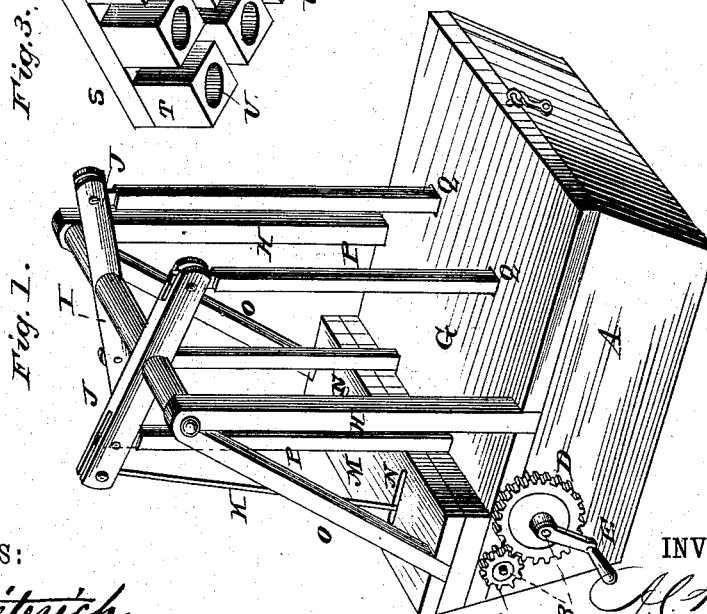
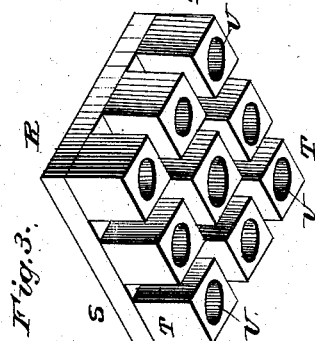
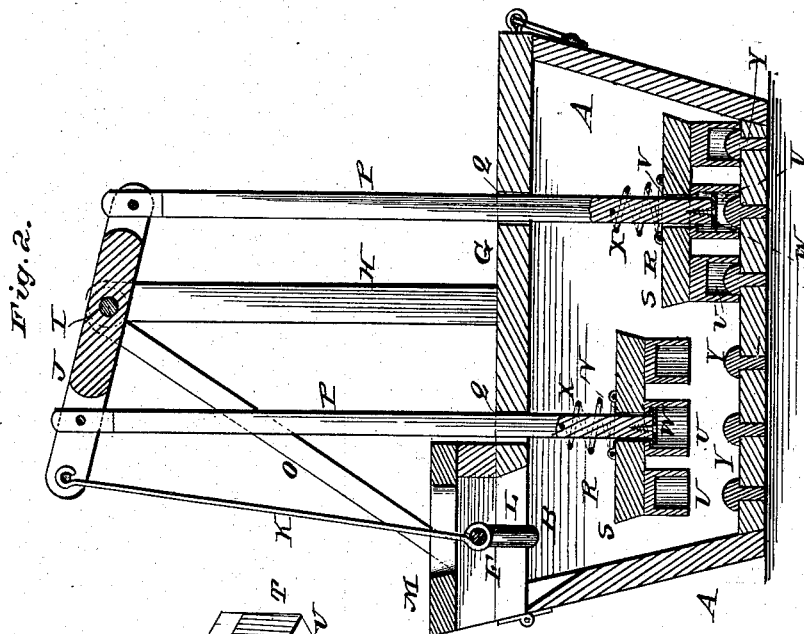


(No Model.)

A. C. KEYES.  
WASHING MACHINE.

No. 261,930.

Patented Aug. 1, 1882.



WITNESSES:

*Frederick L. Dietrich*  
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# UNITED STATES PATENT OFFICE.

ALVIN C. KEYES, OF LIVONIA, NEW YORK.

## WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 261,930, dated August 1, 1882.

Application filed May 5, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, ALVIN C. KEYES, of Livonia, in the county of Livingston and State of New York, have invented certain new and useful Improvements in Washing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Figure 1 is a perspective view. Fig. 2 is a vertical sectional view, and Fig. 3 is a perspective view of one of the beaters or pounders detached.

Corresponding parts in the several figures are denoted by like letters of reference.

This invention relates to washing-machines; and it consists in certain improvements in the construction of the same, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, A represents the suds-box, which is provided at its rear end with bearings for a transverse shaft, B, having at one end a pinion, C, meshing with a gear-wheel, D, upon a short shaft, which is journaled in the side of the box and provided with a crank, E, by which it may be operated. Cranks F F are formed upon the shaft B, as shown.

G is the cover, which is hinged, as shown, to the rear end of the box, and provided at its sides with uprights H H, connected by a cross bar or brace, I, upon which are pivoted levers J J. The rear ends of said levers are connected by pivoted rods or pitmen K with the cranks F, from which motion is thus imparted to the levers. The rear end of the cover has slots L, to afford play for the cranks, and to avoid splashing these slots are covered by a casing, M, having narrow slots N, to admit the pitmen K. Diagonal braces O extend from the sides of casing M to the upper ends of the uprights H.

P P are the beater arms or stems, which are pivoted to the levers J on both sides of their fulcrums and extend downward through openings Q in the cover G. At their lower ends these stems carry the beaters R, which consist of square blocks S, having downward-pro-

jecting studs T, in the under sides of which recesses U are formed. Each of the blocks R has a perforation, V, extending through the central stud, T, to receive the lower end of the stem P, upon which a plate or washer, W, fitting in the recess U, is secured, so as to retain the beater upon the stem. Secured to the latter a short distance above the block R is a coiled spring, X, bearing with a downward pressure upon the beater-block, which may thus have a limited sliding movement upon the stem.

The bottom of the suds-box is provided with a series of rounded or convex knobs, Y, nearly semi-spherical in shape, and corresponding in number and location to the recesses U in the studs T of the beaters.

The operation of my invention will be readily understood. The pounders receive from the operating mechanism a vertical reciprocating motion, thus subjecting the clothes in the box to an intermitting pressure, which, owing to the described attachment of the beaters to their stems, is of an elastic or yielding nature. On each downward stroke the knobs Y serve in measure to expel the air from the recesses U, thus causing a suction on the upstroke, which is very effective in cleansing the clothes.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a washing-machine, the herein-described pounders, consisting of blocks S, having studs T, provided with recesses U and central perforation, V, to receive the stem P, having plate W, sliding in the central recess, U, and spring X, arranged to force the pounder-block in a downward direction upon the stem, as set forth.

2. As an improvement in washing-machines, the suds-box A, having knobs Y, arranged, as shown, in the bottom thereof, in combination with the pounders arranged to slide vertically upon their stems, and having recessed studs T and suitable operating mechanism, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ALVIN C. KEYES.

Witnesses:

DAVID H. DENSMORE,  
EDWARD S. BURNS.