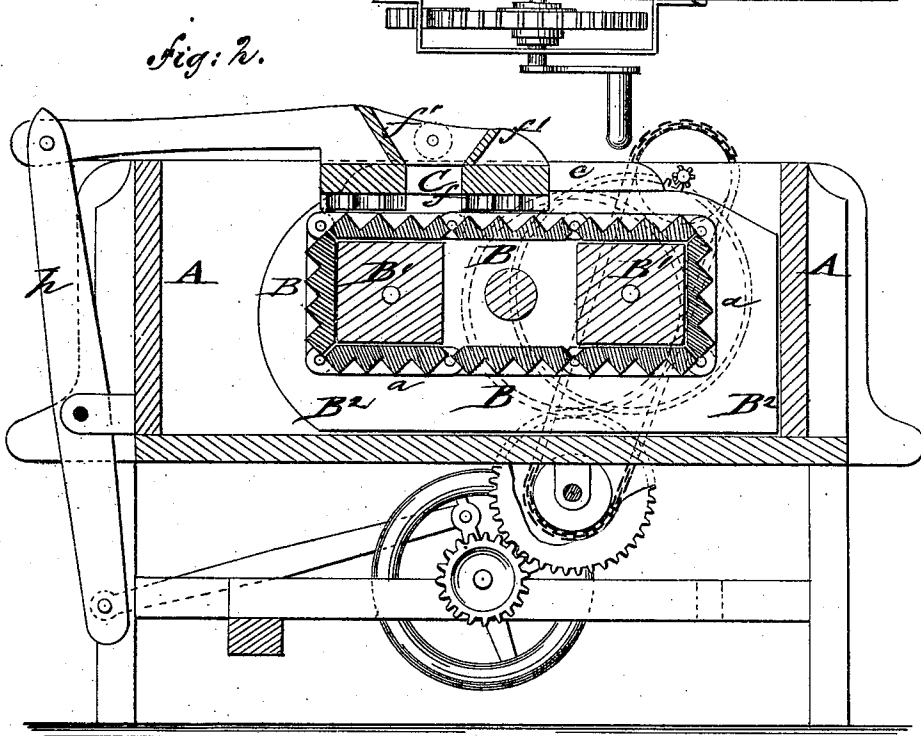
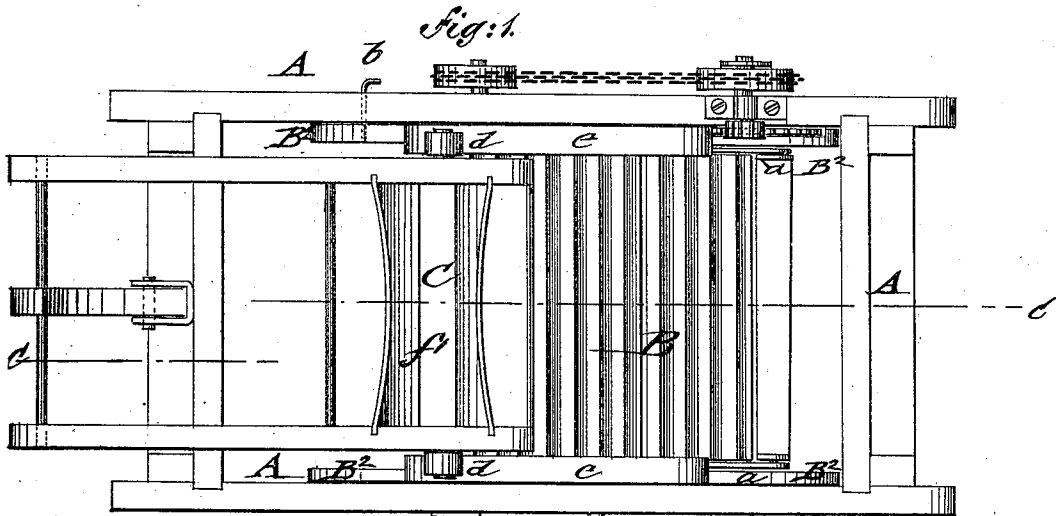


J. KLEIN.
 WASHING-MACHINE.

No. 179,570.

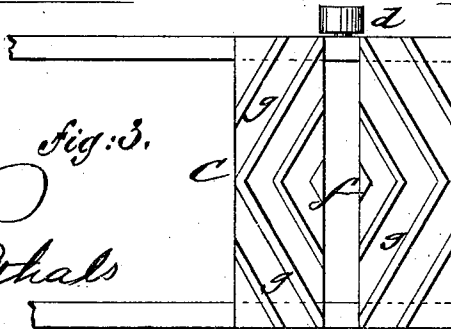
Patented July 4, 1876.



WITNESSES:

Chas. Nott
John Goethals

Fig: 3.



INVENTOR:

C. J. Klein
BY
Munn & Co.
 ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOSEPH KLEIN, OF ALLENTOWN, PENNSYLVANIA.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **179,570**, dated July 4, 1876; application filed May 1, 1876.

To all whom it may concern:

Be it known that I, JOSEPH KLEIN, of Allentown, county of Lehigh and State of Pennsylvania, have invented a new and useful Improvement in Washing-Machines, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a top view of my improved washing-machine; Fig. 2, a vertical longitudinal section of the same on line *c c*, Fig. 1, and Fig. 3 a bottom view of the reciprocating rubber.

Similar letters of reference indicate corresponding parts.

My invention relates to an improved washing-machine; and consists of a revolving endless belt made of hinged, grooved, or corrugated sections set into a wash-tub, and of a reciprocating rubber with elastic ribs working thereon.

In the drawing, A represents a wash-tub of oblong or other shape, supported in a strong frame. An endless belt, B, made of a number of grooved or corrugated plates or sections, is revolved by square carrier-blocks B¹ that turn in bearings of side frame boards, B², of the tub. The grooved sections are connected by hinged end links *a*, and continually moved forward by the rotations of the carrying-blocks B¹. The driving-block is turned by a gear-wheel, which is set into a recess of the side board B², and geared with a pinion turned by belt or chain and pulley connection, with a lateral bottom shaft revolved by suitable gearing from the crank-shaft. The endless grooved sections B may be detached from the tub by withdrawing a locking-pin, *b*, of the tub and sliding the side frame forward to disengage the intermeshing gear-wheel of the driving-block from its actuating position. The tub may readily be cleaned after taking out the endless mechan-

ism, and brought in position again by securing the locking-pin. A reciprocating rubber, C, moves horizontally above the grooved sections B by means of small side rollers *d* running on top guides *e* of side frame B². The rubber C has a central slot or opening, *f*, with a hopper-shaped top part, *f'*, for clothes, soap, &c., and projecting diagonal ribs *g*, (shown in Fig. 3,) of rubber or other elastic material, that press on the clothes placed on the grooved sections. The rubber C is reciprocated by means of a fulcrumed lever, *h*, pivoted to cross-rod of the rubber-arms, the lower end of the lever *h* being connected by a lever-rod to a crank-wheel, revolved by gearing from the crank-shaft of the machine, as shown in Fig. 2. The rubber C is readily swung up from the traveling blocks D, and the clothes are fed forward thereon under the simultaneous action of the rubber, which imitates effectively the friction of the hands on the common washing-board, and rubs the clothes in effective manner without injury or damage to them.

The machine is operated by one hand, and the clothes are fed to the action of the rubber by the other hand, the hopper serving also as a handle to readily lift the rubber when required.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

The combination of rubber belt B, made in grooved sections and arranged on square blocks B¹, with the ribbed rubber C, having slot *f* and hopper *f'*, arranged substantially as and for the purpose specified.

JOSEPH KLEIN.

Witnesses:

PAUL GOEPEL,
T. B. MOSHER.