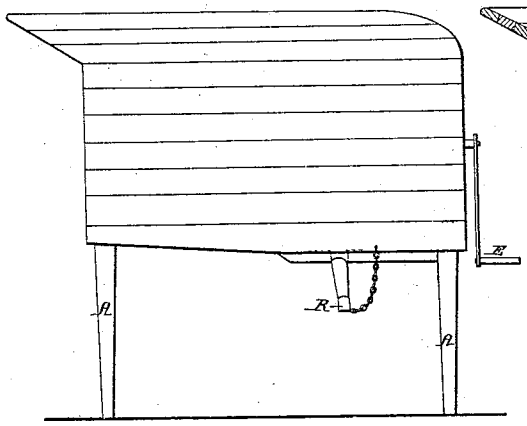
S. A. Andrus,

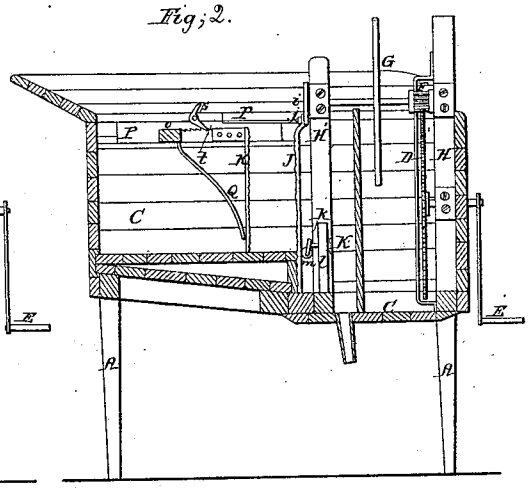
Washing Machine,

No. 26,240. Patented Nov. 29, 1859.

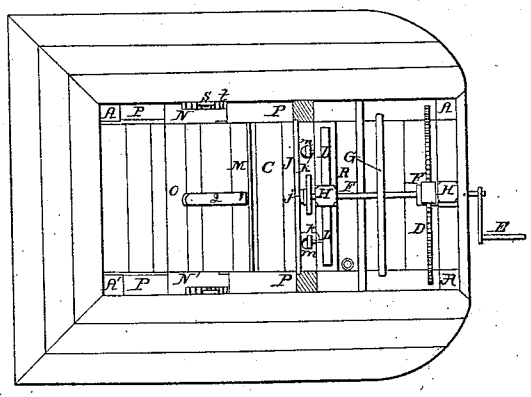
Fig; 1.



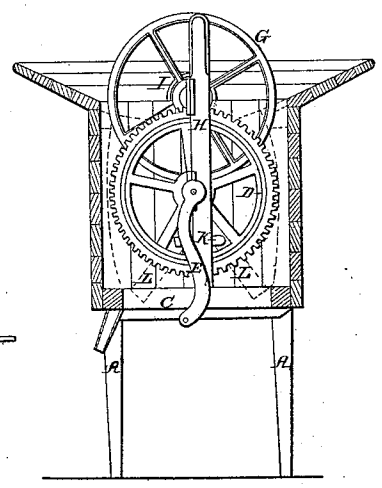
Fig; 2.



Fig; 3.



Fig; 4.



Witnesses;
A. Holcomb
E. E. Warren

Inventor;
Seth A. Andrus

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

SETH A. ANDRUS, OF ROSCOE, ILLINOIS.

WASHING-MACHINE.

Specification of Letters Patent No. 26,240, dated November 29, 1859.

To all whom it may concern:

Be it known that I, SETH A. ANDRUS, of Roscoe, in the county of Winnebago and State of Illinois, have invented certain Improvements in Washing-Machines, the construction and operation of which I have described in the following specification and illustrated in its accompanying drawings with sufficient clearness to enable competent and skilful workmen in the arts to which it pertains or is most nearly allied to make and use my invention.

My said invention consists in:—1st. The arrangement and disposition of parts by which I am enabled to give to one of two parallel corrugated surfaces, two distinct motions at the same time, that is to say, a reciprocating vertical motion, and a lateral vibratory motion, by means of which motions I am enabled so to agitate a quantity of clothes which may be placed between the said corrugated surfaces for the purpose of being washed, as to bring every part of the surfaces of said clothes in contact with one or another, or both of the said corrugated surfaces, thereby effectually washing and cleaning them from dirt, as hereinafter more fully set forth. 2nd. The combination of two caster rollers with the spring hereinafter described, and so constructed and arranged that while said rollers are pressed against the back of the rubber so as to keep it in position, they are capable of changing their positions so as to accommodate themselves to the motion of the said rubber, and by that means nearly neutralize the effect which the pressure would otherwise have upon the motion of the said rubber, as hereinafter more fully set forth.

My invention is illustrated in the accompanying drawings as follows:—

Figure 1, is a side elevation of my improved machine, showing the external appearance. Fig. 2, is also a side elevation showing the internal parts, the side covering being removed for that purpose. Fig. 3, is a plan. Fig. 4 is an end elevation, the end covering or casing being removed so that the interior may be seen.

A, A, are the legs or supports of my machine.

B, B, is the frame work of the interior to which the outside casing and bottom C, C, are attached in the usual manner.

The cog wheel D is operated by the crank E; the teeth of this wheel mesh into the leaves of the pinion F, to the axis of which the fly wheel G is attached for the purpose of equalizing and steadying the motion. The axis of this pinion is supported upon the standards or uprights H, H′, in the usual manner, and projects beyond the latter standard or upright a sufficient distance to allow the circular plate I to be fixed concentrically upon its extremity, and when so fixed, to revolve with the said axis clear of the said upright or standard H′. This circular plate is perforated near its circumference to receive the pin or crank wrist *i*, which also passes through the lug *j*, said lug passing upward from, and forming part of the corrugated plate J, being a continuation of its plane above the upper line of its rubbing surface. The pin *i*, not being coincident with the axis of the pinion F, must therefore move in a small circle around the axis, and must consequently, in every revolution of the said pinion, communicate to the corrugated plate J, two kinds or species of motion, that is to say, a vibratory lateral motion, and a reciprocating vertical motion, as before stated. This plate J has a series of parallel circular corrugations on that surface which is not in contact with the circular plate I.

The bottom of that part of my machine which extends from the plate J to the end of the machine adjacent to the cog wheel D, is made deeper than the floor or bottom of the remaining part of the machine, and the two floors are connected by a vertical surface; the object of this difference of depth will be explained hereafter.

The double spring K is attached at its center or thickest part to the upright or standard H′, and is of sufficient length to allow two pins *k*, *k′*, which are riveted to its extremities, to pass through the struts or braces L, L, which support the said standard H′, and keep it in an upright position. The other extremities of these pins carry, each of them, an arm *l*, or *l′*, at right angles to the said pins, and so fixed as to be capable of moving around the said pins in a circular arc. These arms are forked at the other extremities, and into these forks I insert two friction or caster rollers *m*, *m′*, the axes of which are let into the sides of the said forks, the pins *k*, *k′*, being of such length that the casters when fixed will be in contact with the corrugated plate J. The result of this arrangement is that the elasticity

of the spring K will keep the rollers pressed against the plate J, while the capability of motion possessed by the arms *l*, *l'*, around the pins *k*, *k'*, allows the rollers *m*, *m'*, to accommodate themselves to the compound motion of the corrugated plate J. By this device I am enabled to keep the said plate J close against the vertical plane which connects the two bottoms before described, while at the same time, by the action of the casters against the plate or rubber J, I nearly neutralize the effect which the pressure would otherwise have upon its motion. It is evident that the axis of the pinion may be connected to the pin *j* by an arm instead of the circular plate, and the same effect be produced.

The corrugated plate M is hung to the frame N N' O by pins projecting from the extremities of its upper edge in the manner shown upon the drawings. This frame is composed of two ends and a side, and is movable upon the ledges P, P', in a direction parallel to the length of the machine, the sides N, N, sliding in grooves formed by planting the cleats P, P', upon the sides of the machine a sufficient distance above the ledges R, R', for that purpose. This frame is kept in position by the ratchet *s* working into the toothed rail *t*, embedded in the side N so as to be flush with the upper surface.

A spring Q is secured to the inner vertical surface of the slide O, and passing downward into the body of the machine, presses against the bottom of the corrugated plate M. This plate has a series of parallel horizontal corrugations on the side adjacent to the other plate J.

The mode of operation is as follows:—The clothes to be washed having been introduced between the plates J and M, the latter is brought to the required position by sliding the frame N N' O back or forward as may be required, so as to make it press against the clothes, and is then secured by means of the ratchet *s*. A sufficiency of water is then introduced, and the crank E being operated, a motion of the nature before described is by this means given to the plate J; and this plate and the plate M being prevented from receding from each other, the former by the casters and the latter by the spring Q, it follows that the amount of pressure and consequent friction they exert against the clothes must be constant so long as their distance apart is allowed to remain unchanged; and this distance may be diminished as the process of cleansing advances, by raising the ratchet *s*, moving the frame N N' O, and again letting down the ratchet.

The different directions of the corrugations upon the surfaces of the plates J and M will have the effect of keeping the clothes in a state of continual agitation; it will also be readily perceived that from the difference of configuration of the corrugations of the two surfaces the clothes will be rotated by the compound motion of the rubber J, so that all parts of their surface will be presented to be operated by one or other, or both of the corrugated surfaces, and thereby cleanse and purify them effectually.

As the dirt which will be removed from the clothes by the process of washing will naturally, from its greater gravity, sink to the bottom, I have so constructed my machine that the portion of it between the plate J and the crank E is of a much greater depth than the part in which the clothes are deposited, as before explained; by this contrivance the dirt is allowed to settle and accumulate at a lower level than the bottom of the washing place, and in such a position with respect to the working parts of the machine that it is not liable to be lifted up so as to be again mixed with the water between the plates or in the other part of the machine. By this contrivance I keep the water in which the clothes are deposited comparatively pure, and altogether free from sediment. When the operation of washing is concluded, the plug T is withdrawn, and the water allowed to run off.

The particular improvements which constitute my said invention, and which I claim as having been originally and first invented by me are:—

1. The combination of the circular plate or crank I, with the rubber J, as before described, and so constructed and arranged that by operating the said crank I am enabled to communicate to the said rubber J two motions at the same time, that is a vertical reciprocating motion and a lateral vibratory motion.

2. The combination of the caster rollers *m*, *m'*, with the double spring K, constructed and arranged in connection with the rubber J, as hereinbefore more fully set forth, and for the purposes stated.

SETH A. ANDRUS.

Witnesses:
A. HOLCOMB,
THOMAS J. LANG.