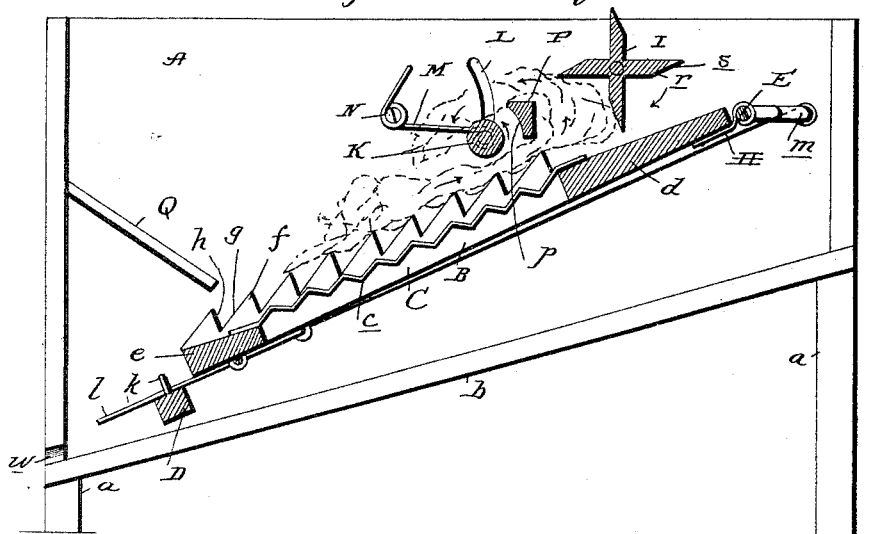
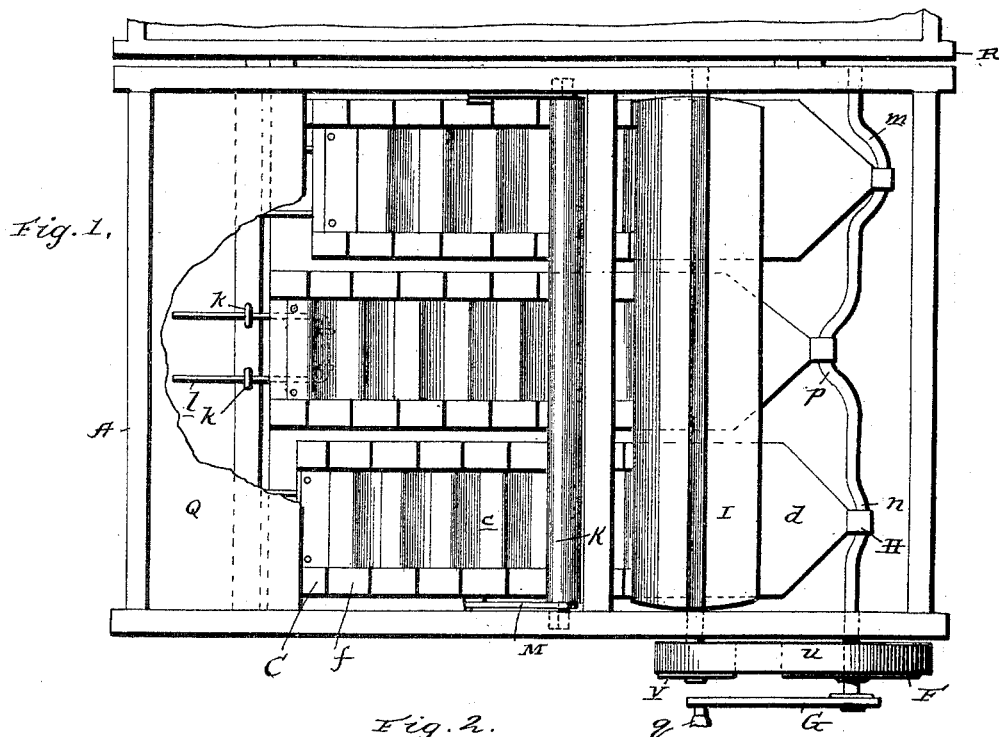


(No Model.)

J. BOUCHARD.
WASHING MACHINE.

No. 491,520.

Patented Feb. 14, 1893.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOSEPH BOUCHARD, OF ST. ANNE, ILLINOIS.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 491,520, dated February 14, 1893.

Application filed April 16, 1892. Serial No. 429,471. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH BOUCHARD, a citizen of the United States, residing at St. Anne, in the county of Kankakee and State of Illinois, have invented certain new and useful Improvements in Washing-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has relation to that class of clothes washing machines, in which a series of inclined or obliquely arranged rubbers are made to reciprocate alternately, and are given a rising and falling motion, during their reciprocatory motion, and a pressure roll is employed so as to hold the clothes against the face of the rubbers during operation.

The invention and its advantages will appear from the following description and claims when taken in connection with the annexed drawings in which:

Figure 1, is a plan view of my improved washing machine with the cover raised and partly broken away, and: Fig. 2, is a longitudinal section view with the cover removed.

Referring by letter to said drawings: A, indicates the suds box or holder, which is arranged upon suitable legs or supports *a*, and is provided with an inclined bottom, *b*.

B, indicates the obliquely arranged reciprocating rubbers; there being three shown in the present illustration. These rubbers are composed of corrugated metallic facing strips *c*, which are secured at their upper ends to a cross bar *d*, and at their lower ends to a cross bar *e*, in a manner similar to an ordinary wash board, and these rubbers are respectively provided at their longitudinal sides with strips *C*, which may be composed of wood or other suitable material, having teeth *f*, cut so as to present a long oblique side *g*, and a short side *h*, arranged in a plane relatively at right angles to the longitudinal plane of the strips, and these teeth are so disposed that they will have a tendency to engage and elevate the clothes in an inclined plane during operation. Each reciprocating rubber has a bearing at its lower end on a cross bar D, which is secured at opposite ends to the side walls of the box or frame and at a short distance above the deepest portion of the inclined bottom *b*.

This transverse supporting bar D, may be provided on its upper side with guide eyes *k*, there being two for each rubber, and the lower cross bar *e*, of the rubbers, are each provided with a sustaining guide rod, which may be composed of a single piece of wire or other suitable material secured to the under lower sides of the rubbers and thence carried downwardly through the eyes *k*, in branches *l*.

E, indicates a rotatable shaft. This shaft is cranked as shown, according to the number of rubbers used. In using three rubbers such as I have shown, I provide a crank *m*, near one end, a crank or bend *n*, near its opposite end, of much less pitch than the first bend or crank, and a bend *p*, intermediate of the first and second named bends, which is in a direction opposite to both, and may be of greater or less pitch than either. This cranked rod or shaft has one end projecting beyond one of the side walls of the box or casing, and has fixed to it a belt wheel F, for a purpose which will be presently explained, and the projected end of this shaft is furthermore provided with a handle or lever G, whereby the shaft may be rotated by means of the hand; a hand grasp *q*, being arranged at the outer end of the handle or lever G. The upper ends of the reciprocating rubbers are usually connected with the respective ends of the cranks of the shaft E, by means of straps H, which are secured at one end to the frames of the rubbers and their opposite ends terminate in an eye to receive the shaft. As the rubbers may reciprocate in different oblique planes, the shaft after having the cranks or bends formed thereon, may be further bent so as to change such planes of movement of the rubbers, that is to say, after the cranks have been shaped on the shaft, the shaft is then twisted at points between the cranks.

I, indicates a rotary beater. This beater is journaled transversely in the box or frame in advance of the crank shaft above the reciprocating rubbers, and is preferably composed of flat blades *r*, arranged in a cruciform manner and having one of their longitudinal edges beveled as shown at *s*.

K, indicates a pressure roll. This pressure roll has its journal ends arranged in curvilinear slots L, formed in the opposite inner

sides of the box in a point in advance of the beater, and is held yieldingly depressed by springs M, which is secured at one end to the inner walls of the box as shown at N, and
 5 having their opposite ends secured to or bearing upon the journal ends of the roller.

P, indicates a guard for the pressure roller. This guard is also arranged transversely of the box at a point between the roller and
 10 beater, and is preferably of a form as shown, having its face adjacent the roller recessed in a curvilinear manner as shown at *p*—so as to permit the roller moving close thereto while being shielded in its vertical movements.

15 Q, indicates a deflector which is arranged transversely of the box at its deepest portion, and may be composed of a strip of wood or other suitable material arranged on a pitch or incline toward the reciprocating rubbers
 20 and while serving to prevent the clothes from passing down to the ends of and under the rubbers, will also tend to direct the clothes upon the rubbers so that they may be returned to the action of the pressure roll and
 25 beater. The box is preferably provided with a hinged cover R, although it is obvious that any suitable cover might be employed.

In operation:—Suds having been placed in the box, and a sufficient quantity of clothes
 30 placed on the rubbers, the operator takes hold of the handle of the crank shaft and turns the same, when an oblique reciprocatory movement will be imparted to the rubbers so that some will be moving downwardly in the oblique plane while others will be moving in an
 35 opposite direction. Motion is simultaneously imparted to the rotatable beater by means of a belt *u*, passing over a band wheel or pulley *v*, on the end of the beater shaft, and the belt
 40 wheel or pulley *f*, on the end of the crank shaft, and while the corrugated faces of the rubbers, are rapidly operating upon the clothes, the teeth F, on the side strips are successively raising the clothes up and under
 45 the pressure roller, where they are subjected to the action of the rotary beater when driven over the shield P, and thence over the top of the roller to be carried back and over the course to the beater again.

50 The tub or box may be provided with the discharge aperture *w*, for drawing off the dirty or soiled water.

While I have described the parts in the

exact construction shown, yet I do not wish to be limited to the precise construction or 55 combination of devices, as I am aware that many of them might be modified without departing from the spirit of my invention.

Having described my invention what I claim is:—

60 1. In a washing machine the combination with a box or case, of a cranked shaft journaled transversely in the upper sides thereof, and a supporting strip arranged transversely in the lower side of said box, reciprocating 65 and oscillating rubbers connected at their upper ends to the respective cranks of the shaft, and having guides at their lower ends bearing upon said lower cross bars, a yielding pressure roll journaled above the rubbers and 70 guarded as described and a rotary beater arranged transversely above the rubbers at their upper ends, substantially as specified.

2. The improved washing machine comprising the box or frame provided with an inclined bottom, the cranked shaft journaled transversely in one end thereof, and provided with an operating handle and a belt pulley, the cross bar arranged in the lower end of said box and having the guide eyes, 80 the reciprocating rubbers having the metallic corrugated faces, and the toothed side strips projected above said faces, the guide rods secured to the lower ends of the rubbers and passing through the eyes in the transverse 85 bar, the straps connecting the upper ends of the rubbers with the cranks of the shaft, the pressure roller, arranged above the rubbers and having its journals bearing in curvilinear guides, the springs for exerting downward 90 pressure on said roller, the rotatable beater also journaled transversely above the rubbers, and having a pulley at one end, a belt connecting said pulley with the crank shaft, the guard arranged transversely between 95 the beater and pressure roller, and the deflector arranged transversely above the lower portions of the rubbers, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH ^{his} X BOUCHARD.
 mark

Witnesses:

JOHN LIFERTY,
 A. J. CHANGERON.