(Model.)

E. G. MINNEMEYER.

WASHING MACHINE.

No. 456,222. Patented July 21, 1891.

Fig. 1.

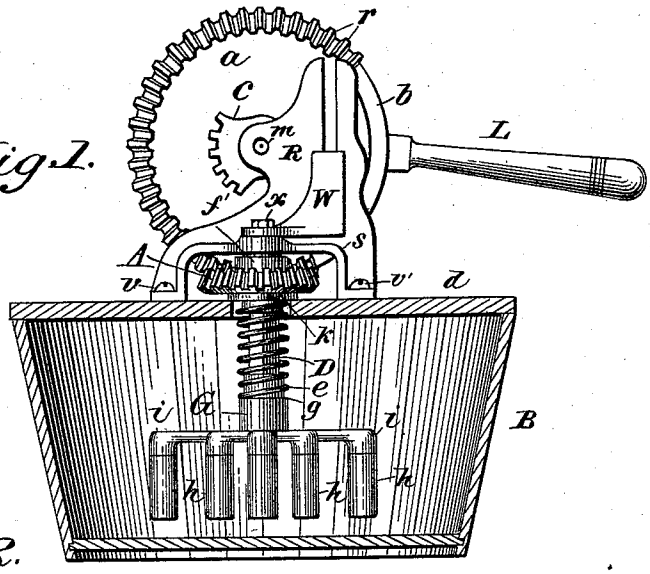


Fig. 2.

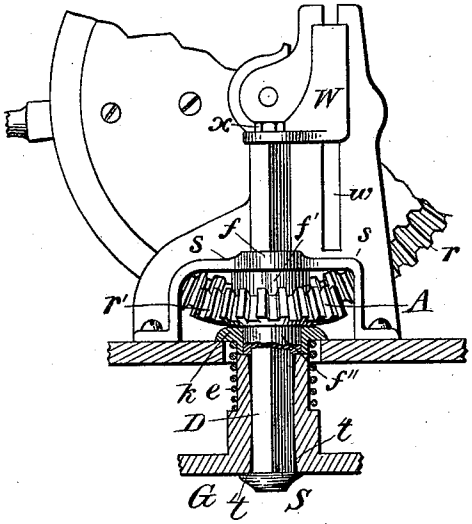


Fig. 3.

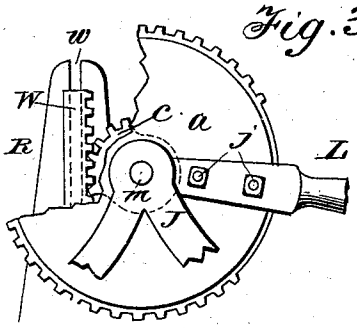
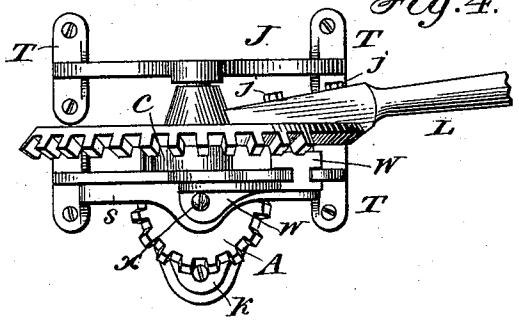


Fig. 4.



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UNITED STATES PATENT OFFICE.

EDWARD G. MINNEMEYER, OF PEORIA, ILLINOIS.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 456,222, dated July 21, 1891.

Application filed February 14, 1891. Serial No. 381,521. (Model.)

To all whom it may concern:

Be it known that I, EDWARD G. MINNEMEYER, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, 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.

My invention relates to that class of washing-machines provided with a stirring device having a rotary motion and operated by suitable mechanism in connection with a tub or vessel to which the mechanism is applied; and the object of my invention is to provide suitable mechanism for raising or lowering automatically the stirring device, as more fully described below. This object I accomplish by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 shows a side elevation of a washing-machine constructed in accordance with my invention. Fig. 2 is a detail view of the device used in raising and depressing the stirring device. Fig. 3 is a reversed side elevation showing the raising device with a portion of a beveled cog-wheel broken away. Fig. 4 is a detail view of a portion of my invention, as viewed from the top.

Similar letters refer to similar parts throughout the several views.

B represents the tub or vessel to which the machine is applied.

G represents the stirring device provided with the radiating arms *i i* and having the depending fingers *h h h h*, which said stirring device is intended to reach near to the bottom of the tub, and may, if desired, be constructed so as to rest upon the tub's bottom.

D is a square bar depending through a square perforation or opening in the collar portion G of the stirrer with a smooth tap or rounded nut upon its lower extremity to prevent its being drawn upward through the collar G of the stirrer. The said bar D, bearing upward, is carried in a square opening in the beveled cog-wheel A and rounded at its upper extremity, so as to be carried through a perforation in the flange S of the frame-work R, and is finally journaled in a perforation in an extension of the plate W and secured in a position by means of the octagon tap or nut X, thus forming the support for the stirrer G, said bar D passing through the opening in the stirrer, so as to allow said stirrer to be raised and lowered.

a is a cog-wheel which engages with and operates the pinion A. The cog-wheel *a* is provided with the handle or lever L for the purpose of imparting rotary reciprocating motion.

R is a frame-work which supports the cog-wheel *a*, as at *m*, and also forms both a support and a guide for the plate W.

The plate W, connected with the bar D, as described, is designed to have a vertical motion for the purpose of raising and lowering the stirrer G. The said plate W is grooved at its vertical middle portion to fit in a slot in the frame-work R and bears the plate of cogs on the inner side of the frame-work, as shown in Fig. 3, which said plate of cogs is designed to mesh with the segmental cog-wheel *c*, the same being fixed rigidly upon the cog-wheel *a* and journaled with the same, as at *m*.

By reference to Fig. 3 it will be seen that, because of the segmental cog-wheel *c* being rigidly attached to and journaled with the cog-wheel *a* and meshing with the plate of cogs on the plate W, by depressing the lever L the cog-wheel *a* and the segmental cog-wheel *c* are operated, imparting an upward movement to the plate of cogs W through the slot in the frame-work R, and as the plate of cogs is a part of the plate W, which is connected with the bar D, as before described, and as seen in Fig. 1 and also in Fig. 2, this operation lifts the stirrer G from the clothes and throws the plate W into position, as shown in Fig. 2, and when the stirrer comes down it presses upon the clothes in a place different from the one at which it left them before being raised. By means of this construction I am enabled more fully to remove the dirt from the clothes and to grasp them between the stirrer and the bottom of the tub in different places.

e represents the coiled spring surrounding the bar D and a portion of the collar G of the stirrer, and bears upon a shoulder provided on the said collar G, and is adapted to press the stirrer downward in order to hold

it in contact with the clothes to be operated upon.

By reference to Fig. 2, in which a cut section of the collar G of the stirrer is shown, it will be seen that the opening in which the bar D is carried is made to flare slightly outward at its extremities to permit a rocking motion of the stirrer to accommodate itself to avoid obstructions, which, if rigidly, fixed would result in damage to the stirrer. It will also be seen that the stirrer is permitted to move up and down on the bar D. I have found by experiment that this construction of the segmental cog-wheel C, rigidly attached to the cog-wheel A, the plate W, with its plate of cogs which mesh with the segmental cog-wheel *c*, and the connecting parts allows for the automatic raising and lowering of the stirrer and the parts there attached without friction and is very effective for the purpose for which such parts are designed.

The particular advantage in the use of my improved washing-machine is in its simplicity and the cheapness with which it may be constructed, and, further, that the automatic raising is perfectly smooth in its operation and unaccompanied with sudden jars, friction, or draft, since the raising is accomplished by the cog-wheel *c*, which, being small and journaled on the same shaft as the cog-wheel A, answers as the short arm of the lever and is a vast improvement over a pin or lug on the outer rim of a reciprocating wheel, purposed to engage by sudden contact with connecting means for raising a stirrer or rubber block and requires less power.

I am aware that there are others who have invented devices for lifting the stirrer or rubber-block from the clothes; but I do not know of any such device which combines the same elements of construction as herein described.

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

1. In a washing-machine of the class described, the combination of a vertically-placed segmental gear having fixed thereto a small segmental plate of cogs fixed near to and journaled upon the same journal, with a vertically-adjustable stirrer or rub-block provided with a square central opening flared at either end to permit of a rocking motion in the collar of the said rub-block, a square bar carried through the collar and carrying a pinion-wheel and connecting with a plate of cogs carried in a vertical slot in a frame-work, the pinion-wheel meshing with the segmental gear and the plate of cogs on the segmental gear meshing with the plate of cogs carried in the vertical slot in the frame-work, and a suitable spiral spring carried around the square bar and between the rub-block, all substantially as described and set forth.

2. In a washing-machine of the class named, the combination of the segmental cog-wheel *c*, fixed upon and journaled with the cog-wheel *a*, meshing with the plate of cogs on the plate W, the same working in a slot in the standard or frame R and connecting with the stirrer by means of the square bar D, all substantially as described and set forth.

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

EDWARD G. MINNEMEYER.

Witnesses:
JOSIE TEFFT,
C. V. ODEN.