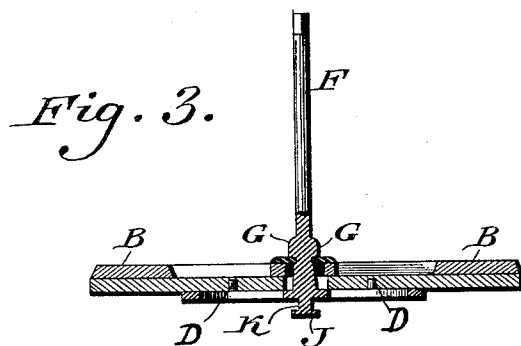
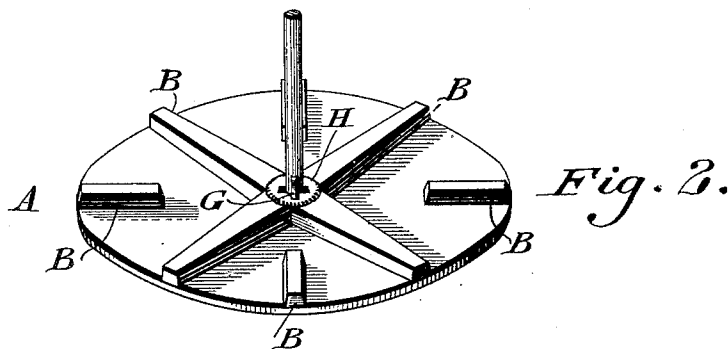
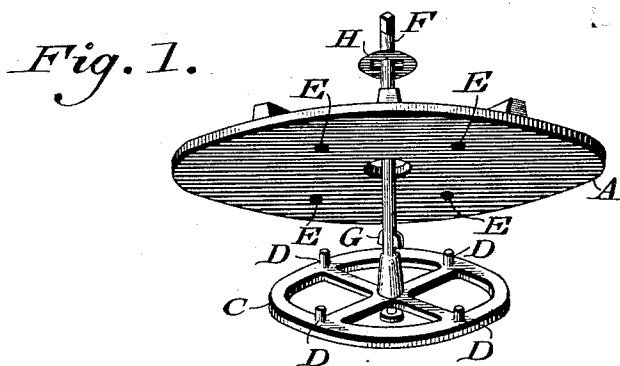


(No Model.)

J. E. WATKINS.
WASHING MACHINE.

No. 462,521.

Patented Nov. 3, 1891.



WITNESSES:

O. F. Nagle.
L. Douville.

JAMES E. WATKINS, INVENTOR
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UNITED STATES PATENT OFFICE.

JAMES E. WATKINS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-
HALF TO JOHN WILSON, OF SAME PLACE.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 462,521, dated November 3, 1891.

Application filed January 14, 1891. Serial No. 377,754. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. WATKINS, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Washing-Machines, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a novel manner of securing the beater or rubber and a strengthening-spider of a washing-machine, as will be hereinafter more fully set forth.

Figures 1 and 2 represent perspective views of a portion of a washing-machine embodying my invention. Fig. 3 represents a vertical section thereof.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates a rubber or beater of a washing-machine, the same consisting of a head with rubbers B thereon, said parts being preferably formed of wood.

C designates a spider formed of metal, whose upper face is formed with studs or pins D, which enter openings E in the head A, said spider being connected with a rotatable shaft F, the latter passing through the head. Projecting from the shaft F, just above the head A, are lugs G, it being noticed that the portion of the shaft below said lugs is of conical form to accord with that of the opening in the head A.

H designates a key consisting of a plate having an oblong opening, said key being fitted on the shaft F and adapted to pass over the lugs G, but when rotated to interlock with said lugs and thus prevent separation of the spider and head. In referring to the oblong shape of the opening of the key it is to be understood that the length is greater than the width.

The operation is as follows: The spider is applied to the head and the studs D fitted into the openings E. The lugs G now being above said head, the key is lowered and readily passes the lugs, owing to the long direction of the opening of the same registering with said lugs. The key is then turned, whereby the long direction of the opening is at a right angle with the lugs, and said key is then interlocked with the lugs within the same, thus connecting the spider and head and preventing separation of the same until the key is again properly turned, so as to be raised clear of the lugs.

The lower end of the shaft F is provided with a head K for connecting the shaft with the bottom of the tub, similar to that shown in the application for Letters Patent, Serial No. 356,666, filed on or about the 25th day of June, 1890.

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

1. In a washing-machine, a shaft rigidly connected to a spider or plate, a rubber resting on said spider and having the said shaft passing through its center, lugs on said shaft above the rubber, and a slotted key-plate removably fitted between said lugs and the rubber, said parts being combined substantially as described.

2. A spider or plate C, having studs D, and a head A, having openings E to receive said studs and a central opening for an operating-shaft, in combination with a key H, which is fitted to said shaft and engages with lugs on said shaft above said head, substantially as described.

JAMES E. WATKINS.

Witnesses:

JOHN A. WIEDERSHEIM,
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