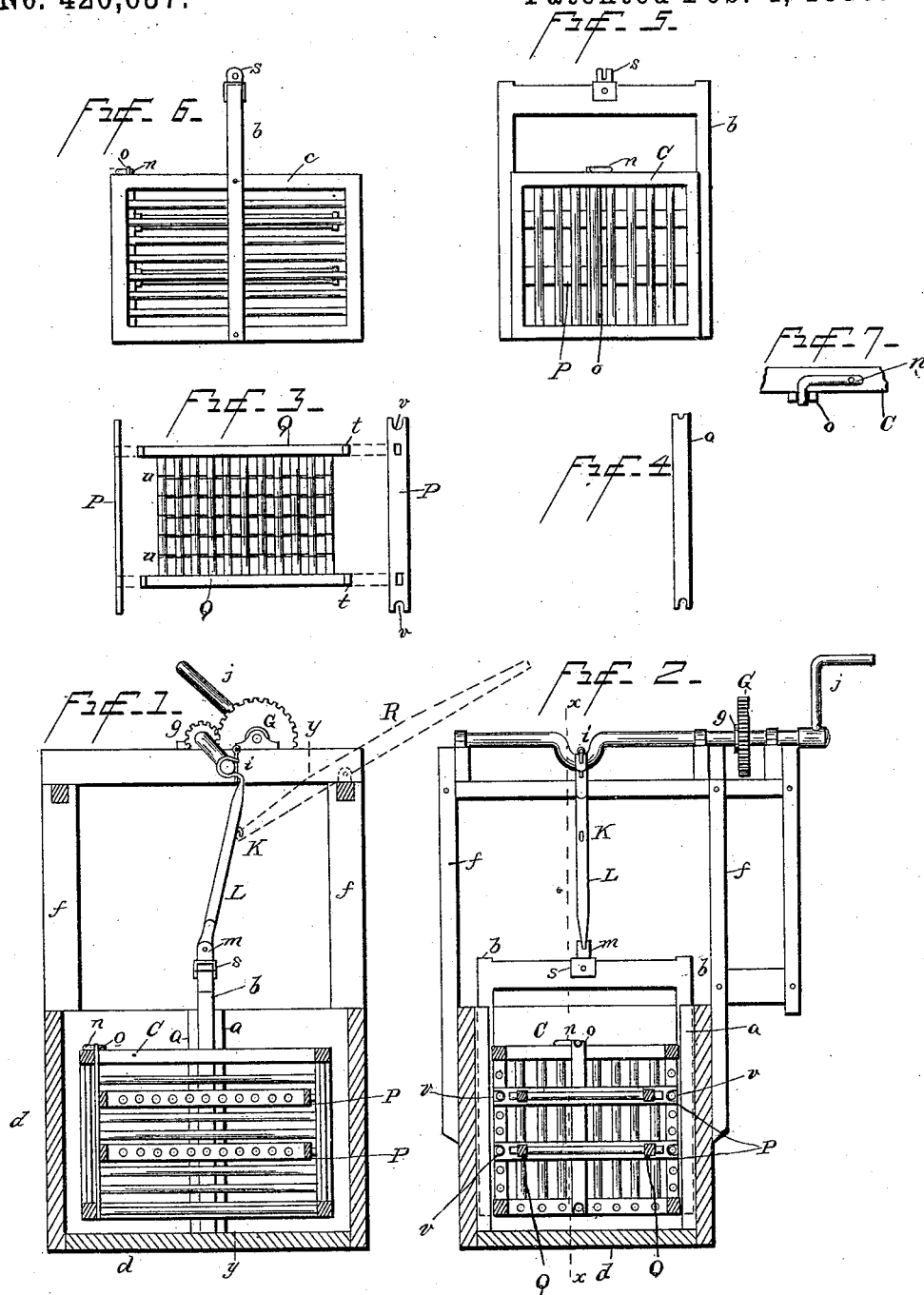


(Model.)

J. H. CARRIGER.
WASHING MACHINE.

No. 420,637.

Patented Feb. 4, 1890.



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UNITED STATES PATENT OFFICE.

JOHN HARVEY CARRIGER, OF KNOXVILLE, TENNESSEE.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 420,637, dated February 4, 1890.

Application filed May 23, 1887. Serial No. 239,156. (Model.)

To all whom it may concern:

Be it known that I, JOHN HARVEY CARRIGER, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented certain new and useful Improvements in Washing-Machines, of which the following is a full, clear, and concise description.

The object of the invention is to provide a machine for cleansing fabrics and particularly suitable for washing clothing; and it consists in the matters hereinafter described and pointed out.

In the accompanying drawings, Figure 1 is a vertical section on line *xx* of Fig. 2. Fig. 2 is a like section on line *yy* of Fig. 1. Fig. 3 is a plan view of the body of a partition, the end bars being represented as detached, an edge view of one and side view of another being given. Fig. 4 is a side view of a locking-bar. Fig. 5 is an end elevation, and Fig. 6 is a side elevation, of the cage. Fig. 7 is a plan view of a section of the cage, showing the spring in engagement with the locking-bar.

The machine belongs to that class in which a cage or receptacle to receive the article to be washed is suspended or supported in a tub or washing-vessel and moved or agitated therein and in detergent liquid employed to cleanse the same.

C indicates a cage made movable vertically in a tub or receptacle *d*. For this purpose side posts or guides of the frame *b* are fitted to slide in ways *a*, formed interiorly on the sides of the tub. Upon the tub is erected a frame *f*, which is made to support in suitable journals a shaft *h*, having a crank-arm, as at *i*. This shaft has rigidly secured upon it a pinion *g*, which gears with a wheel *G*, suitably journaled on posts or brackets, and provided with any usual means—such as a crank-arm *j*—for rotating the same. A pitman *L* is connected to the crank *i* by means of a hook and pin or in any usual way. Its opposite end has a hinged connection with a cross-bar of the frame *b*, being inserted between two arms of the bracket or clip *s*, fastened to said cross-bar and secured thereon by similar arms and pin, as indicated. The turning of the gear-wheel *G* will through the medium of the pinion *g*, crank *i*, and pitman *L* move the cage up and down in the tub or receptacle, with the ef-

fect of thoroughly cleansing its contents by means of suitable detergents placed in said receptacle.

The cage consists of a frame provided with grated sides and bottom, which frame may be either angular or circular in cross-section. Within this frame and separating it into compartments are arranged horizontal grates or partitions *Q*. Transversely to the cross-bars of these partitions, which are preferably made round, as shown, are interwoven and secured cords *u u*, to aid in retaining small articles in the compartments. The partitions are removably supported and held in the cage by the removable horizontal bars *P* and vertically-arranged locking-bar *o*. These bars *P* have in each end a slot or notch *v*, fitting the horizontal side bars of the cage, as shown in Fig. 2. They are mortised to receive correspondingly-projecting ends of the side bars *Q* of the partitions, as indicated in dotted lines in Fig. 3.

A bar *P* is placed at any desired altitude, and its slotted ends made to engage with opposite bars of the cage at one end thereof, as shown at *v*, Fig. 2. The tenons *t* at one end of the side bars *Q* of the partition are then entered in the slots of this bar, whereupon a similar bar is in like manner applied to the other end and the whole locked in position.

The locking device indicated at *o* is a bar slotted or notched at each end in manner similar to bars *P*. One slot is made to engage a bottom cross-bar of the cage, as shown in Fig. 2, and the other to receive a retaining-spring *n*. In this figure the view is from right to left of that in Fig. 1, the movable end of the retaining-spring *n* being shown in end view in the notch in bar *o*, and also a side view (in same figure) of the main body of the spring on the frame of cage *C*. An opposite view of the body of the spring appears in Fig. 5. It will be understood that the tension of the spring must be overcome, and it must be lifted vertically out of the slot or notch in the locking-bar to release the same. This bar *o*, held by the spring, retains the horizontal bars and partition in engagement. By lifting the free end of spring *n* from engagement with the bar the latter can be removed and also a bar or bars *P* and the partitions. Spring *n* may be of any usual or convenient

form. It has one end fixed to the frame and the other arranged to bear on the slotted bar *o* when the latter is in position, as indicated in Fig. 2.

5 K indicates a lug or hook formed or secured on the pitman to receive the suitably-shaped end of a lever R, fulcrumed in the frame, as indicated. The pitman can be disconnected from the crank *i*, and lever R can then be used
10 to raise the cage and its heavy contents out of the liquid contents of receptacle C to allow the contents of the cage to be drained, manipulated, or removed. This lever also furnishes a convenient means for rinsing the
15 clothes without reconnecting with the crank, and it can be employed, if desired, for washing, especially light articles.

The open-grated cage divided into compartments by the horizontal grated partitions,
20 which latter prevent the packing-together of the entire contents of the cage, facilitates the free passage of water through and around said contents, as will be readily understood, and also promotes rapid drainage and speedy
25 rinsing in fresh water to be suitably supplied. In Fig. 3 is shown one of these partitions having side bars Q, provided at each end with tenons *t*. Cords interwoven with cross-bars are indicated by *u u*. The end bars P P are
30 indicated in this figure as detached, an edge view of one being shown at the left and a plan view of another at the right.

In Fig. 4 is shown a locking-bar *o*, that bears when in use against one or more bars
35 P to retain them in place on the ends of bars Q Q, as indicated.

A cage and frame are indicated in Fig. 5,

and are shown in side elevation, the view looking toward the side of the locking-bar *o* opposite that represented in Fig. 2.

The improvement is not limited to the number of horizontal partitions, nor to particular proportions of parts, nor precise form of spring.

Having thus described my invention, what I desire to secure by Letters Patent is as follows:

1. The combination, with the tub and the upright frame, of the cage sliding in ways in the tub, and the pitman provided with a hook intermediate its ends and with suitable means
50 at its upper ends for connecting it to a crank-shaft, whereby the pitman may be connected to either a crank-shaft or to a lever for actuating the cage, all substantially as shown and described.

2. In a washing-machine, and in combination with a main receptacle or tub, a cage provided with removable grated partitions dividing said cage into horizontal compartments, removable slotted bars adapted to engage opposite bars of the cage and mortised to receive suitable tenons on the partitions, and a locking device to hold the removable partitions in place, substantially as described.

3. The combination of the tub, the grated
65 cage having adjustable and removable grated partitions, the pitman provided with a stud or hook, and the lever engaging said hook, substantially as described.

JOHN HARVEY CARRIGER.

Attest:

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