(No Model.) 2 Sheets—Sheet 1.

H. W. COOK.

WASHING MACHINE.

No. 420,589. Patented Feb. 4, 1890.

Fig. 1.

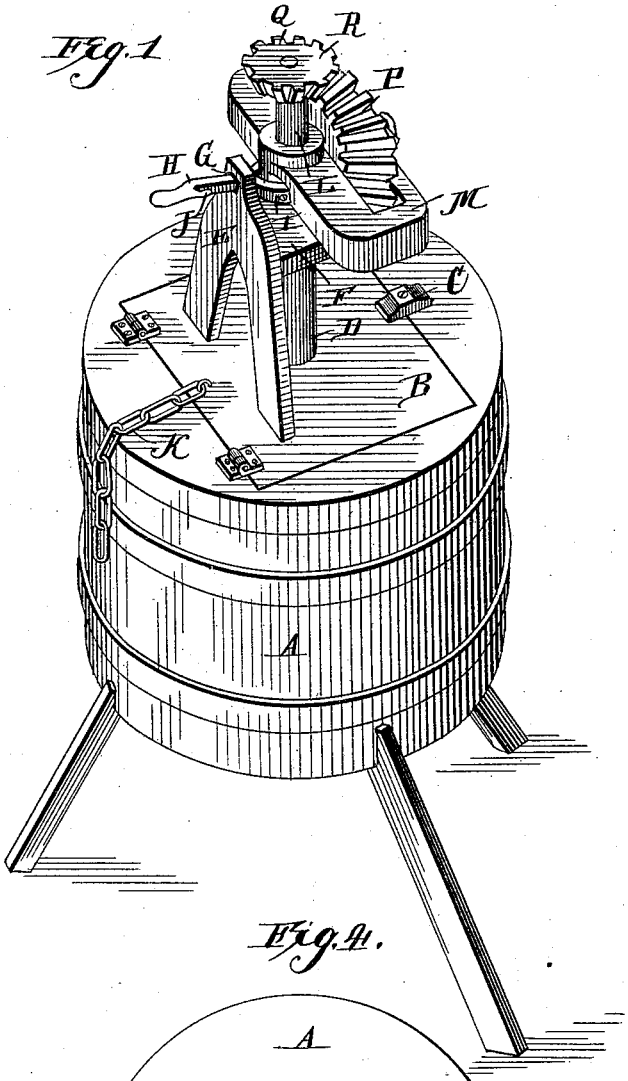
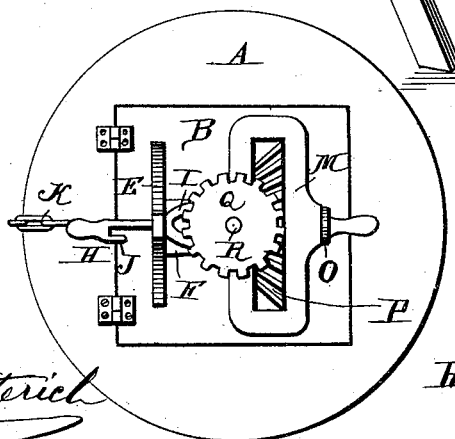


Fig. 4.



Witnesses
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(No Model.) 2 Sheets—Sheet 2.

H. W. COOK.

WASHING MACHINE.

No. 420,589. Patented Feb. 4, 1890.

Fig. 2.

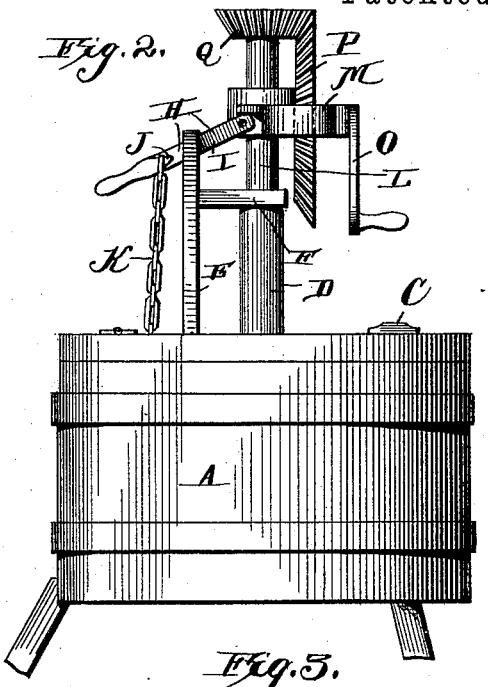


Fig. 7

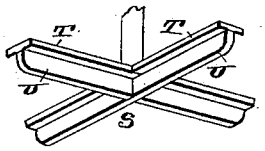


Fig. 5.

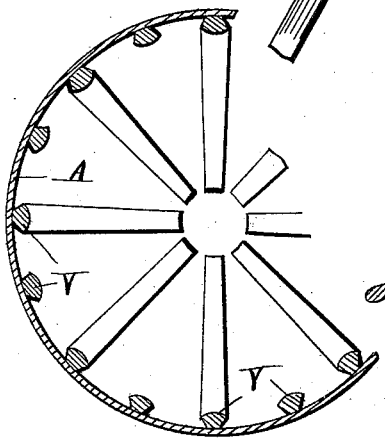


Fig. 5.

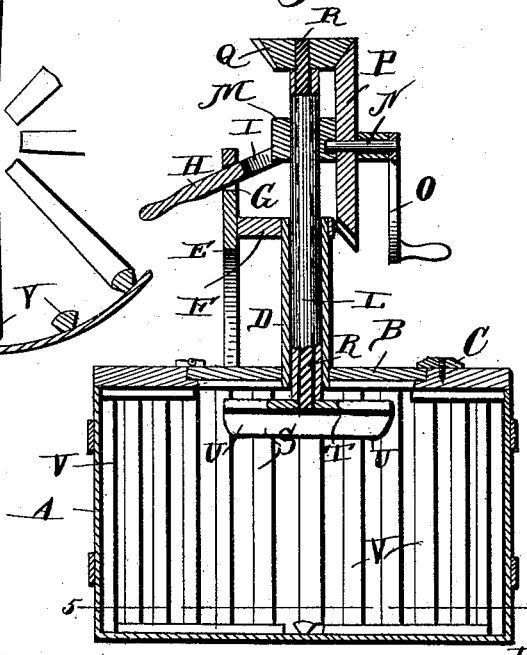
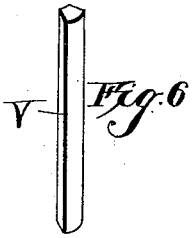


Fig. 6



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UNITED STATES PATENT OFFICE.

HARLOW W. COOK, OF OTTAWA, KANSAS.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 420,589, dated February 4, 1890.

Application filed May 2, 1889. Serial No. 309,361. (No model.)

To all whom it may concern:

Be it known that I, HARLOW W. COOK, a citizen of the United States, residing at Ottawa, in the county of Franklin and State of Kansas, have invented a new and useful Washing-Machine, of which the following is a specification.

My invention relates to improvements in washing-machines; and it consists in certain novel features hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a washing-machine provided with my improvements. Fig. 2 is a side elevation of the same, showing the parts in a different position. Fig. 3 is a vertical section, and Fig. 4 is a plan view. Fig. 5 is a horizontal section on the line 5 5 of Fig. 3. Fig. 6 is a detail view of one of the ribs. Fig. 7 is a detail view of the agitator.

The tub A may be of any desired size and is provided with a swinging lid B, which is held closed when the machine is in use by a button C, as will be readily understood. On the upper side of the lid, at the center of the same, I erect a sleeve D, which registers with the central opening in the lid, and near the said sleeve I erect on the lid a standard E, as shown. Near the upper end of the standard I provide the inwardly-projecting horizontal arm F, which extends to the upper end of the tube or sleeve D and serves to steady the same. The standard is provided at its upper end with a vertical slot G, through which a lever H is passed, the inner end of the lever being divided to form a fork I, and the outer portion of said lever being provided with a hook J, which is adapted to be engaged by a chain K, in order to hold the lever in the desired position.

Within the tube or sleeve D, I arrange a second tube L, which is somewhat longer than the said tube B and projects above and below the same. At its upper end this inner tube L is provided with a frame M, in which the horizontal driving-shaft N is journaled, and to which the ends of the fork I of the lever H are pivoted. The driving-shaft is provided at its front end with a crank-arm O, and the driving-wheel P is secured rigidly on the said shaft and plays in the frame M. The driving-wheel meshes with a pinion Q on the upper end of the agitator-shaft R, and the said agitator-shaft is mounted in the inner tube L and extends slightly below the end of the same. The agitator S is secured on the lower end of this shaft, and the agitator-shaft is of such a length that the pinion Q bears against the upper end of the inner sleeve while the agitator bears against the lower end thereof.

The agitator consists of a series of radial arms T and the blades or beaters U, secured to said arms.

Within the tub I provide a series of ribs or breakers V, which are slightly curved on their upper sides and have their edges converging toward the tub. These ribs are arranged around the side of the tub and on the bottom of the same, and also on the under side of the lid, and they serve to cause a counter-current of the water.

In practice the clothes are placed in the tub with soap and water, and the driving-shaft is rotated so as to transmit a rotary motion to the agitator, and thereby carry the clothes around in the tub through the water and against the ribs. The dirt will thus be loosened and separated from the clothes and the clothes rapidly cleansed. As the agitator is rotated, the blade on the radial arms will engage the clothes, so as to carry them around over the ribs and through the water, as will be readily understood, and this rotary motion of the agitator causes a circulation of the water, which will throw it against the ribs and into the spaces between the same, and the peculiar construction of the ribs serves to throw the water back against the clothes, and consequently produce a thorough agitation thereof.

The agitator can be raised and lowered in the tub, so as to secure the proper pressure on the clothes by means of the lever H, as by vibrating the said lever the tube L will be moved vertically and the frame M and the dasher-shaft thereby raised or lowered. The pressure applied to the driving-shaft, in order to operate the same, tends to depress the agitator onto the clothes, and this tendency is counteracted by means of the lever H and the chain K. The lever is adjusted so as to raise the inner tube L, and consequently the agitator-shaft, to the desired height, after which the chain is engaged over the hook J,

so as to prevent the outer portion of the lever rising, and consequently prevent the lowering of the inner end or fork of the said lever and pressing of the agitator onto the clothes. Should the clothes bunch under the agitator, however, the chain will allow the agitator to rise until the obstruction has been passed, when the parts will resume their former position.

The advantages of my device are thought to be obvious from the foregoing description, and further reference thereto is deemed unnecessary.

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

1. The combination, with the lid, of the tube erected thereon, an inner tube arranged within said tube and carrying the agitator-shaft, a frame on said inner tube carrying the driving mechanism, and means for raising and lowering said inner tube, as set forth.

2. The combination, with the lid, of the tube D, erected thereon, the inner tube L, arranged within the said tube D, the frame M, secured to the inner tube L, the agitator-shaft mounted in said inner tube and having a pinion at its upper end, the driving-shaft mounted in the frame M, the driving-wheel on said shaft meshing with the pinion on the agitator-shaft, and means for raising and lowering the inner tube, as set forth.

3. The combination, with the lid, of the tube D, erected thereon, the standard E, erected on the lid near the said tube, the arm F, projecting from the said standard to the tube, the inner tube L, arranged within the tube D, the lever fulcrumed on the standard E and having its inner end pivoted to the tube L, the chain secured to the lid and adapted to engage said lever, the driving mechanism carrying by the tube L, and the agitator-shaft mounted in the said tube, as set forth.

4. The combination of the lid, the tube D and standard E, erected thereon, the inner tube L, arranged within the tube D, the frame M on the said tube L, the agitator-shaft mounted in the said tube L, the driving mechanism mounted in the frame M and geared to the agitator-shaft, the lever H, fulcrumed on the standard E and having a fork I at its inner end, pivoted to the tube L and provided on its outer portion with a hook J, and a chain secured to the lid and adapted to engage said hook J, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

HARLOW W. COOK.

Witnesses:
JOHN H. SIGGERS,
E. G. SIGGERS.