

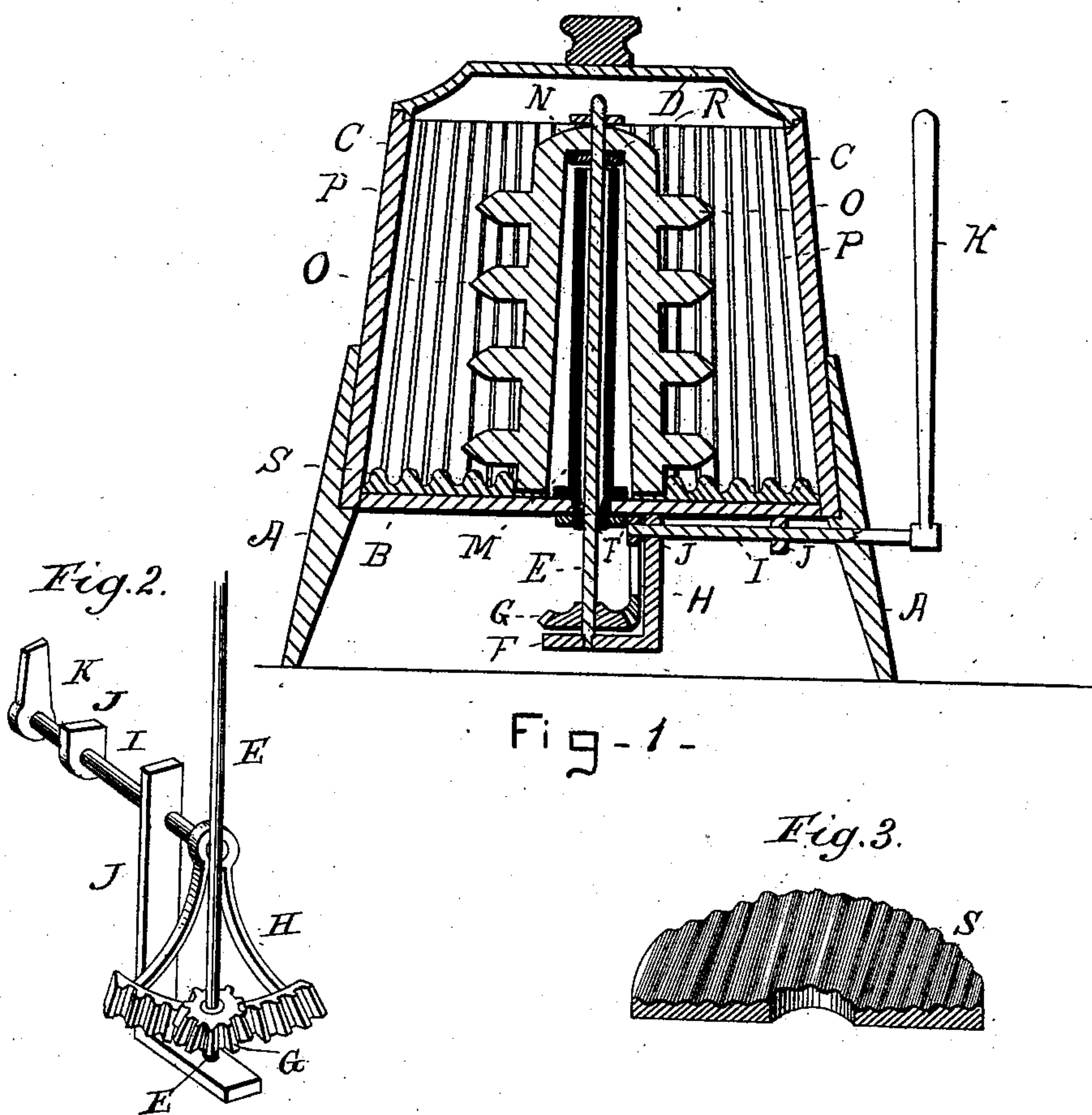
(No Model.)

H. R. HAMER.
WASHING MACHINE.

2 Sheets—Sheet 1.

No. 358,264.

Patented Feb. 22, 1887.



Witnesses:
Joseph M. Crave
Evelyn French

Inventor.
H. R. Hamer
By
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(No Model.)

2 Sheets—Sheet 2.

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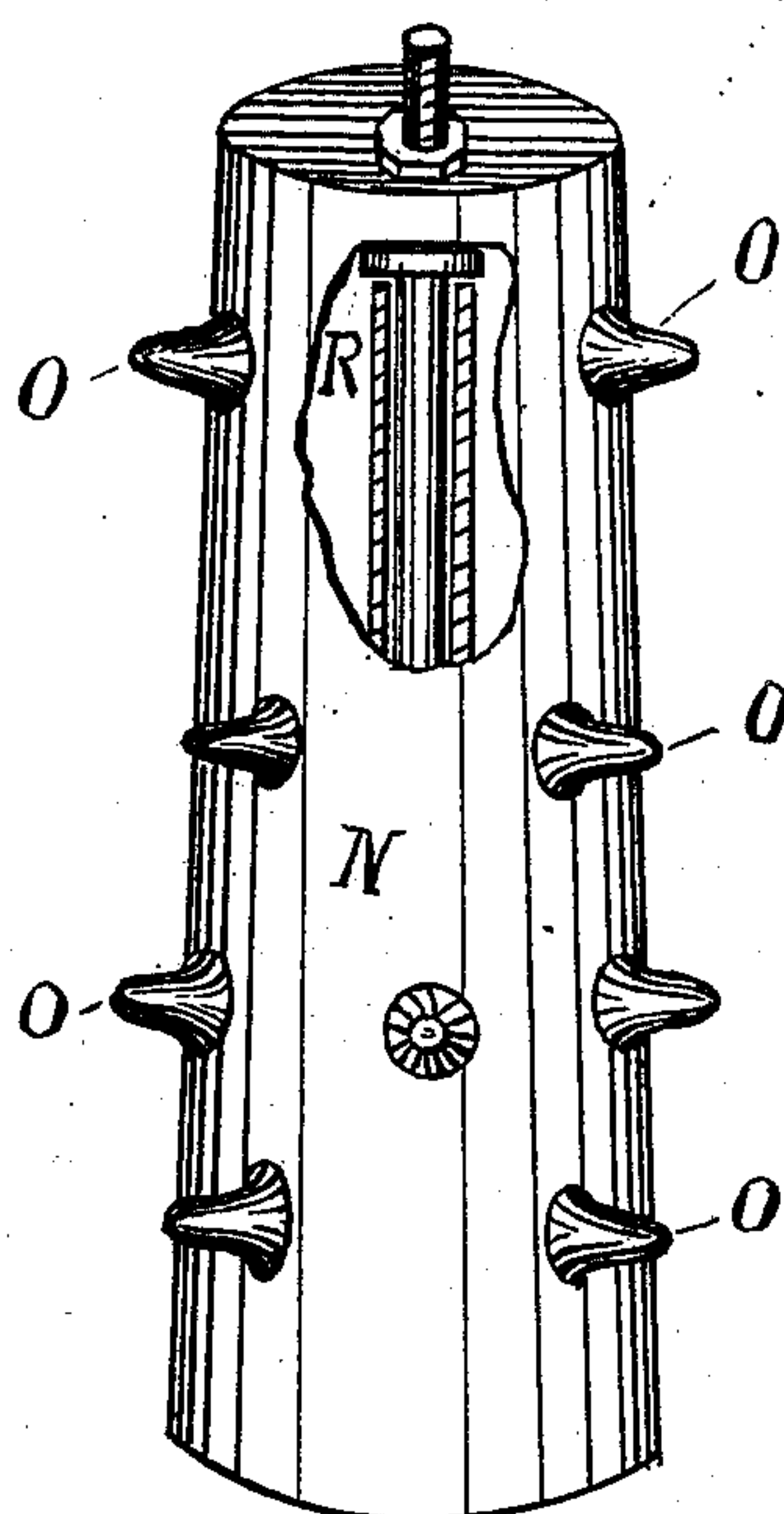


Fig - 4 -

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Inventor:
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his Atty.

UNITED STATES PATENT OFFICE.

HARRY R. HAMER, OF NORTH ADAMS, MASSACHUSETTS.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 358,264, dated February 22, 1887.

Application filed September 1, 1884. Serial No. 142,003. (No model.)

To all whom it may concern:

Be it known that I, HARRY R. HAMER, a citizen of the United States, and a resident of North Adams, county of Berkshire, in the State of Massachusetts, have invented new and useful Improvements in Washing-Machines, of which the following, taken in connection with the drawings, is a specification.

My invention relates to improvements in washing-machines of that class having a vertically-arranged revolving cylinder operating at and through the center of a cylindrical tub for carrying the clothing or contents to be washed and presenting the same to the corrugated sides of the tub; and it consists, principally, in the combination, with the parts before referred to, of a tubular shaft or sleeve securely fixed to or within the base or bottom of the tub, extending upward and near the top, or to a point above the water-line, so as to protect the shaft, and also to prevent leakage about the latter, as well as to prevent oil or other lubricating matter from working out of the bearing into the water and materials operated upon; and it further consists of the arrangement of the operating mechanism below the tub instead of above, so as to permit of an unobstructed opening at the top, whereby the operator may supply and remove the material to be operated upon without the necessity of removing parts other than the cover.

Referring to the drawings, Figure 1 represents a sectional view of my improved machine; Fig. 2, a section showing part of the shaft, lever, and gearing; Fig. 3, a section of corrugated bottom; Fig. 4, a perspective view of the cylindrical carrier with its center broken away, showing its manner of connection to the shaft.

A A are legs supporting the tub; B, bottom of the tub; C, the curb or sides of the tub; D, cover; E, driving-shaft, to which the cylindrical carrier N is secured either by being clamped between the collar R and the nut on the end of shaft E; F, foot or support for lower end of shaft E.

G and H are the pinions and sectional gears, respectively.

I and K constitute a hand-lever for operating the vertical shaft E, which lever consists of the horizontally-arranged shaft K, united to the lever I, (although it will be obvious that

the two shafts may be formed in one piece,) the principal object of which is to support and carry the section of the gear H which intersects the pinion G for operating the cylindrical carrier N, with its projections O O, in a reciprocatory rotary manner. This lever is supported in bearings located at points indicated at J J in the drawings, which may be of any suitable form and varied in their relation to each other.

P are ribs on the inside of curb C, against which the articles to be washed are rubbed when moved against it by the carrier.

M is a tubular shaft or sleeve, in this instance having a collar or flange just above the thread at its lower end and clamped to the bottom of the tub by a nut. The vertical shaft is supported at its lower end by a step or end bearing, (represented in the drawings at F,) and by a journal-support at F', formed by inserting a bushing in the lower end of the sleeve M. To this shaft, at or near its upper end, the cylindrical carrier N, with its projections, is detachably secured by any suitable means, although in the particular instance by collar or flange R and screw-nut, the object being to enable the operator to remove the carrier whenever desirable without the necessity of removing other parts of the operating mechanism, which is of great importance in such machines. I provide a detachable corrugated bottom, S, which may be inserted into the tub and rest at the base thereof, which is desirable at times when the coarser and very dirty goods are operated upon, and which may be removed when the finer and less dirty fabrics are to be operated upon.

The drawings fully disclosing to one skilled in the art how to construct my improved washing-machine, a further description would seem superfluous.

The operation of my machine is as follows: Place the material to be washed into the tub, which is first provided with water of a suitable temperature, and then oscillate the cylindrical carrier by vibrating the upright lever by the hand back and forth, which causes the said carrier, through the medium of the gearing, to partially rotate, carrying with it the material operated upon, and by the centrifugal action produced by the carrier the clothes are forced against the corrugations with which

the inner walls of the tub are provided, the pins or projections serving to engage and carry the fabric around and against the corrugated walls of the tub, as before stated, allowing the suds to be forced through the material by reason of such vibrating motion, the carrier serving to move the clothes and serve as a rubber. The suds may be withdrawn by a faucet in the usual manner.

10 Having thus set forth my invention, what I claim as new, and desire to secure by Letters Patent of the United States of America, is—
The combination of the corrugated tub, the

tubular carrier arranged vertically therein and provided with pins or projections on its outer side, the driving-shaft extending through the bottom of the tub and through said carrier, the gears and operating-lever, and the sleeve interposed between the driving-shaft and the inner walls of the carrier, all substantially as described. 15 20

HARRY R. HAMER.

Witnesses:

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JOSEPH M. CRANE.