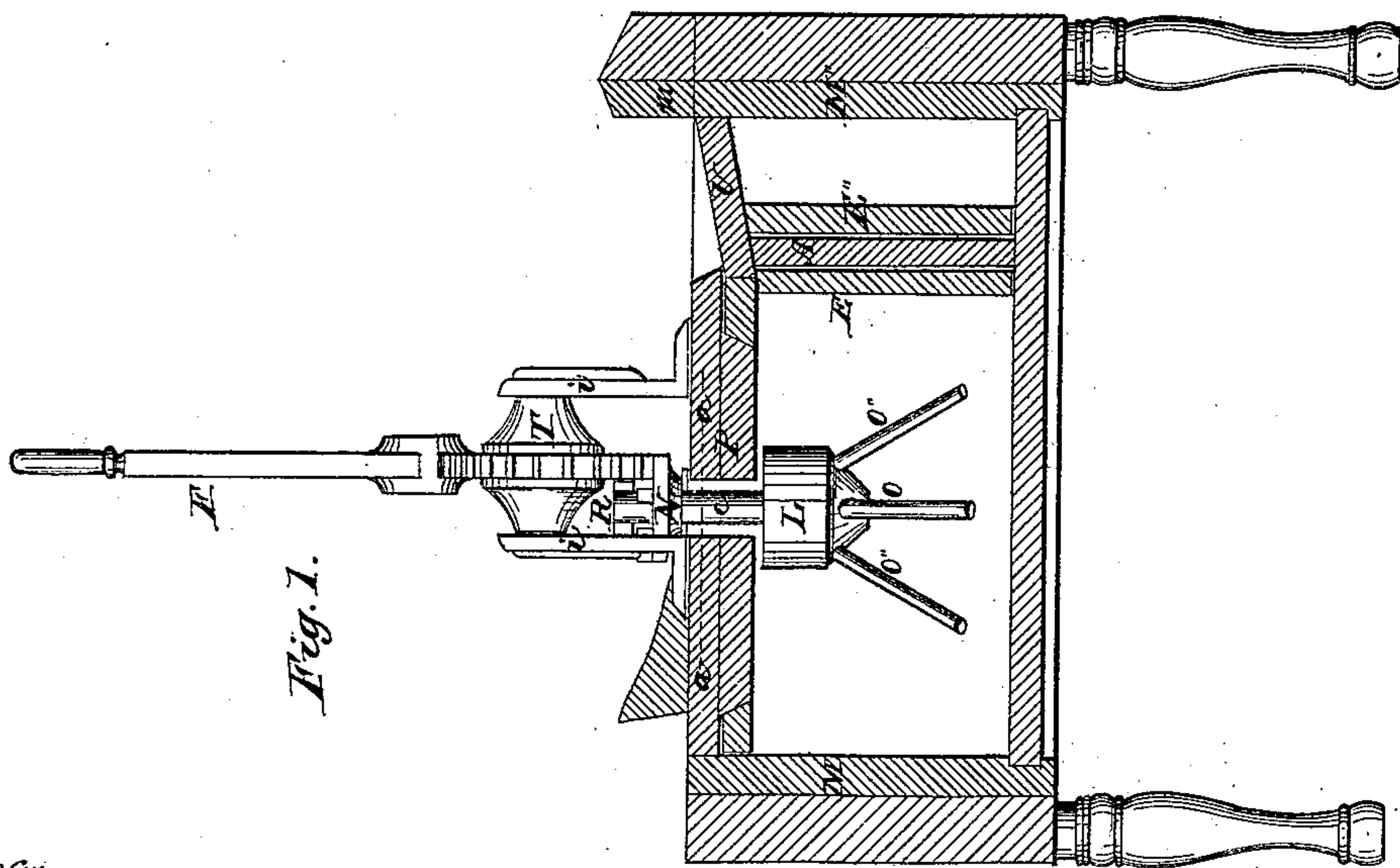
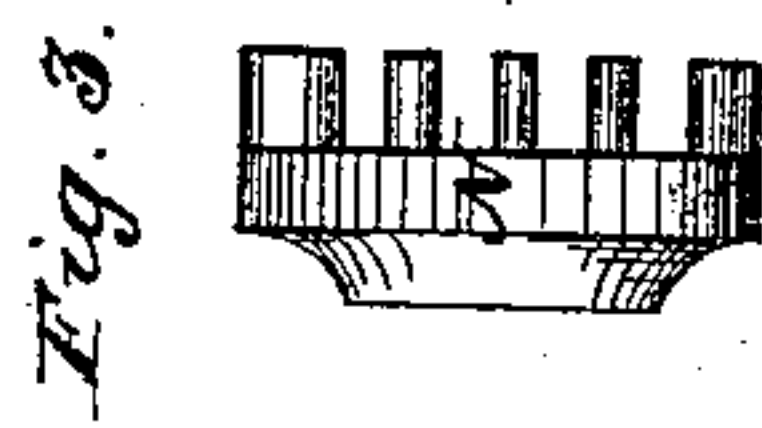
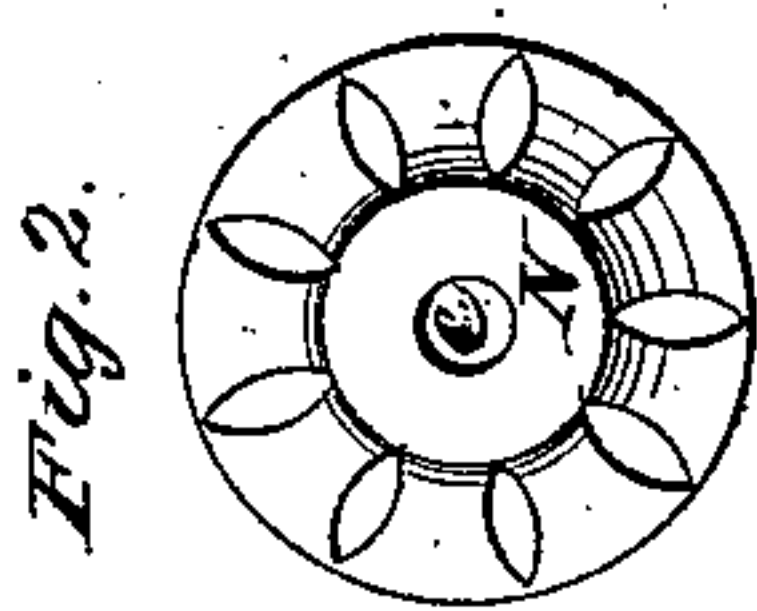
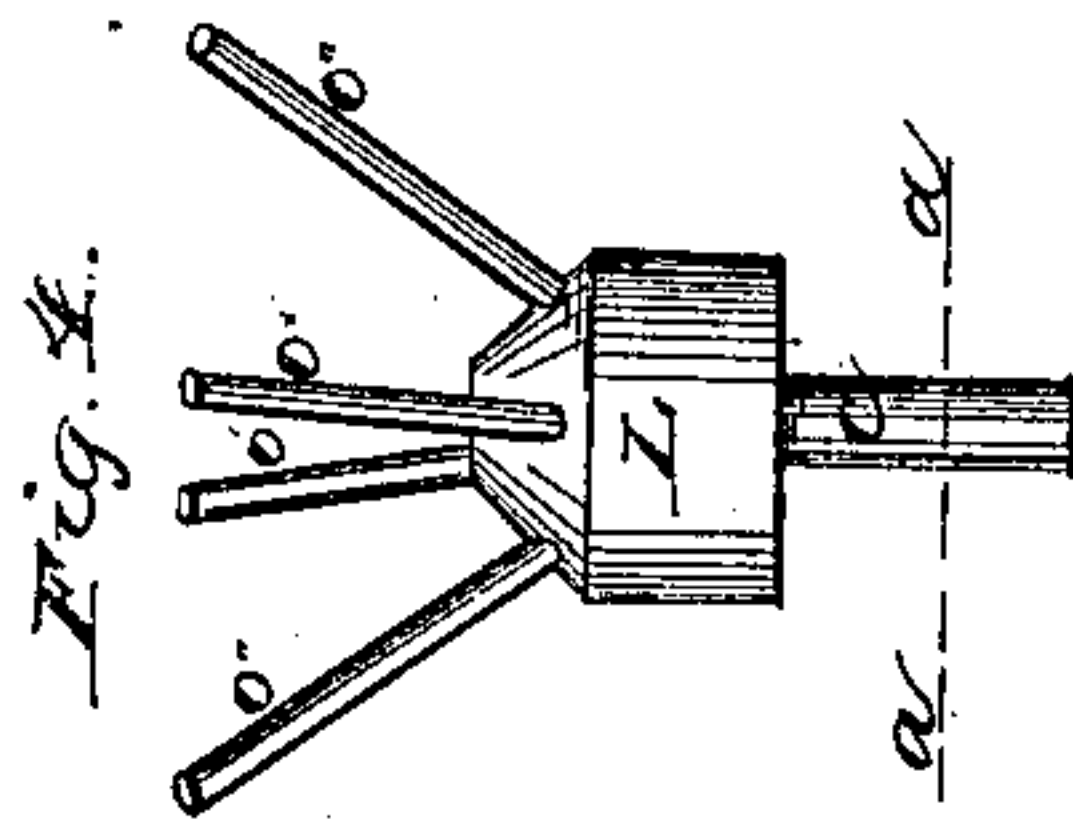


Duck & Gould,
Washing Machine,
N^o 47,167, *Patented Apr. 4, 1865.*



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN H. DUCK AND ERWIN S. GOULD, OF ELGIN, ILLINOIS.

IMPROVED WASHING-MACHINE.

Specification forming part of Letters Patent No. 47,167, dated April 4, 1865.

To all whom it may concern:

Be it known that we, J. H. DUCK and E. S. GOULD, of the city of Elgin, county of Kane, and State of Illinois, have invented a new and useful Improvement in Washing-Machines; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a vertical section of the machine. Fig. 2 an end view of the pinion. Fig. 3 represents a side view of the same. Fig. 4 represents a detached section of the rubbers on lines *a a*.

Similar letters of reference when they occur in the separate figures denote like parts of the machine in both of the drawings.

Our invention consists in the peculiar style of gearing, and in the construction of the rubbers.

To enable others skilled in the art to make and use our invention, we will proceed to describe the same with reference to the drawings.

M M'' represent the sides or body of the main tub, which may be of any of the known forms of construction. F is the lever for operating the machine, this lever being attached to a perpendicular wheel, T, which is held in position by means of two standards, I I'', these standards being fastened to the top of the main cover P. Standard I has at or near the middle a shelf or bar, R, which receives the end of shaft C. Wheel T takes into and gears with a horizontal pinion, N. On shaft C this pinion has cogs of a circular oblong form, laterally extending upward from its surface or end. These cogs are of that peculiar form, as shown in Figs. 2 and 3, as to allow them to roll into and out of gear without binding or creating friction with the cogs on wheel T. Shaft C is of wood, and passes downward through the cover P, and is made sufficient in size at the bottom to receive rubbers *o' o'* *o'' o''*, as shown in Figs. 1 and 4. At L these rubbers stand diagonally and at right angles with each other, rubbers *o' o'* being farther apart at the bottom than rubbers *o'' o''*. The object of this is to form two distinct circles as they revolve. These contrivances give the

necessary motion to all the moving parts of the machine under such restrictions or limitations as will be hereinafter explained, A being the slide or partition board, which extends through and across the machine, and is held in a perpendicular position at sufficient distance from the end to leave the vacuum in the main part of the tub in a square form by means of cleats E E''. At or over the top of this partition-board is a directing-board, U, running through and across the machine, for the purpose of directing the water into the main tub as it is forced out of the clothes by means of the wringer.

M is the end of the tub which extends above and across the top of the machine for attaching the wringer thereto, thus obviating the necessity of cutting slots in the edge of the directing-board U, as has formerly had to be done, to receive the legs of the wringer, thus leaving the tub when shut steam-tight.

u is a block which is attached to the top of the cover, which, when open, strikes against the end of the main tub, thus holding it in a horizontal position.

We are aware that washing-machines have formerly been used with what is called a "beveled-wheel and pinion," or side gear held in the same way, but the operation of such machines is far different from ours, they having a tendency to throw out of gear when put into practical use, by the resistance of the clothes upon the rubber, it throwing the pressure upon the side of the wheel, while in ours the wheel being a square or spur-gear operated directly on the edge of the wheel and operating upon the end of the pinion, makes the pressure the same in both, therefore it has no tendency to throw out of gear.

We are also aware that machines have been previously used with four horizontal arms which supports the four rubbers; but the rubbers, being perpendicular, have a tendency to keep the clothes in a compact body while in the process of washing, while in our machine the rubbers, standing diagonally from the shaft, have, when rotating, an upward action, rendering the clothes less compact and thus allowing the water to pass more readily through the clothes while the machine is in operation, which operation is produced as follows: As lever F is moved backward and for-

ward, the same communicating with wheel T, which goes into and turns pinion N on shaft C, to which is attached the rubber *o' o' o'' o''*, thus giving the same a reacting motion, which causes the clothes to move rapidly through the water, by which motion the dirt is removed therefrom.

Having fully described the nature and object of our invention, what we claim as new, and desire to secure by Letters Patent, is—

The pinion N and wheel T, in combination with the shaft C and rubbers *o' o' o'' o''*, constructed and operated substantially in the manner and for the purpose described.

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Witnesses:

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