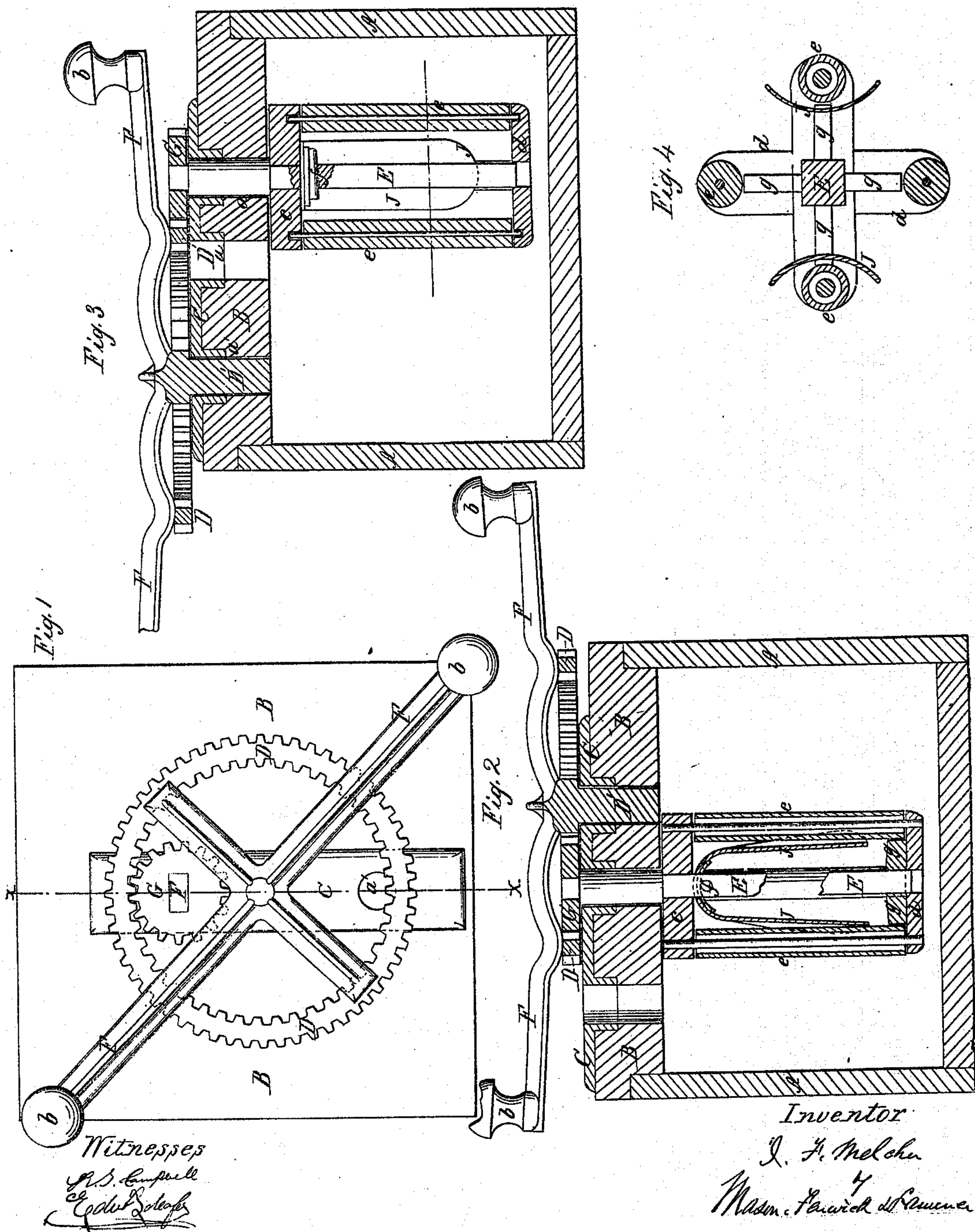


*J. F. Melcher,*

*Washing Machine,*

*N<sup>o</sup> 68,769.*

*Patented Sep. 10, 1867.*





# United States Patent Office.

JOSIAH F. MELCHER, OF BLOOMINGTON, ILLINOIS.

*Letters Patent No. 68,769, dated September 10, 1867.*

## IMPROVED WASHING MACHINE.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOSIAH F. MELCHER, of Bloomington, in the county of McLean, and State of Illinois, have invented a new and improved Washing Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a top view of the machine.

Figure 2 is a section through the machine taken in the vertical plane indicated by red line  $z z$  in fig. 1.

Figure 3 is a similar view of the same parts indicating the gearing in a different position from that shown in fig. 2.

Figure 4 is a horizontal section of the rotary rubbing device.

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

This invention relates to an improvement on washing machines, having a vertical rotary rubbing device for cleansing the articles. The nature of the invention consists mainly in a double-spurred master-wheel, which is constructed with radial arms or handles, also with arched radial spokes which will admit of the application of a pinion spur-wheel, which is on the shaft of the rubber within the circumference of the master-wheel, so that this pinion can be driven at a slow or fast speed, as circumstances may require; said master-wheel and pinion spur-wheel being applied to a batten which is fastened to the top of the wash-box, and adapted to serve as a bearing for said driving parts, as will be hereinafter described. The invention further consists in an open revolving rubbing-drum, having arranged within it a device which will operate to draw the articles toward a series of rubbing-rollers, which constitute part of said drum, and also a device which will cause the water to fly from said drum, thus keeping up a constant circulation of the water in the wash-box, as will be hereinafter explained.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In the accompanying drawings, A represents a wash-box, tub, or barrel, having a removable cover, B, applied to it. This cover is strengthened by means of a metallic batten, C, which is constructed with three holes  $a a^1 a^2$  through it, and which is firmly bolted on top of the cover, as shown in the drawings. The holes through the batten C are elongated by collars so as to afford steady bearings for the pintle of the master-wheel D and shaft E of the rotary rubbing-device, as shown in figs. 2 and 3. The master-wheel D consists of a circumferential ring having spur-teeth upon its interior and exterior surfaces, which ring is connected by means of arched spokes to a central pintle or shaft, D', which is adapted to fit the holes through the batten or bearing-plate C. Two of said radial spokes terminate at their outer ends in arms F F, having knobs or handles  $b b$  applied to their outer extremities by which a person can conveniently grasp the handles and oscillate or rotate the wheel D. A pinion spur-wheel, G, is keyed upon the upper end of the shaft E, which wheel is adapted for gearing with the interior or exterior teeth of the master-wheel according to the speed required of the rubbing-drum. Wheel G has a cylindrical hub formed on its lower side, through which the square shaft E passes, which shaft is constructed with a head upon its upper end, that is recessed into said wheel, so as to support the shaft and rubber in proper position in the wash-box or tub. The rubber consists of a circular head,  $c$ , and a crossed foot-piece,  $d$ , connected together by means of vertical rubbing-bars  $e e$ , which may be fixed or allowed to rotate. Through the centre of this rubber the square shaft E passes, and is attached firmly to it by the removable pin  $f$ , shown in figs. 2 and 3. Within this rubber, and attached centrally to it by means of the shaft E and pin  $f$ , or in any other suitable manner, is a device for drawing the articles in the wash-tub up closely against the bars  $e e$  during the operation of washing. This device consists of a metallic U-shaped plate, J, inverted and extended from the top or head  $c$  nearly to the foot-piece  $d$ . The arms of this device converge from the head  $c$ , and are bent so as to present concavo-convex surfaces, the former being outside and the latter inside, as shown in fig. 4. On top of the cross-arms forming the foot-piece  $d$  I secure floats or blades  $g g$ , the object of which is to throw the water outward or from the centre of the rubber when washing. The effect of the arms J is to draw the water inward or toward the centre of the rubber, which, in conjunction with the blades  $g g$ , will cause a rapid circulation of the water toward the upper portion of the rubber, and from the lower portion thereof. This will bring the articles in the tub in close-contact with the rubbing-bars which will operate to cleanse them with

rapidity, and without injury to the most delicate article. While this is the case the arms J J will allow currents of air to rush downward and mingle with the water during the act of washing. By removing the pin *f*, the shaft E can be withdrawn and the wheel G detached from it; then by removing the master-wheel D, the wheel G and its attachments can be adjusted either to be driven by the outside teeth on said wheel D or the inside teeth thereof, as shown in the drawings. The distance between the three holes *a a' a''* is so regulated with reference to the diameters of the two spur-wheels D and G, that the rubber can be driven at a slow or fast speed by simply moving the wheel D from one hole *a* to the other, *a'*, without removing the wheel G.

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

1. The double-spurred wheel D, constructed with arched spokes for receiving the pinion G, and also with radial arms or handles D', substantially as described.
2. The combination of the batten C provided with holes *a a' a''*, with the cover B, and with double-spurred master-wheel D, pinion G, and a vertical rotary rubbing device, substantially as described.
3. The construction of the rotary rubbing-device or bars *d d*, blades *g g*, and a U-shaped device, J, substantially as described.

JOSIAH F. MELCHER.

Witnesses:

J. F. POAGUE,  
JAMES RADBOURN.