

(No Model.)

L. CHRISTIANSEN.
WASHING MACHINE.

No. 292,734.

Patented Jan. 29, 1884.

Fig. 1.

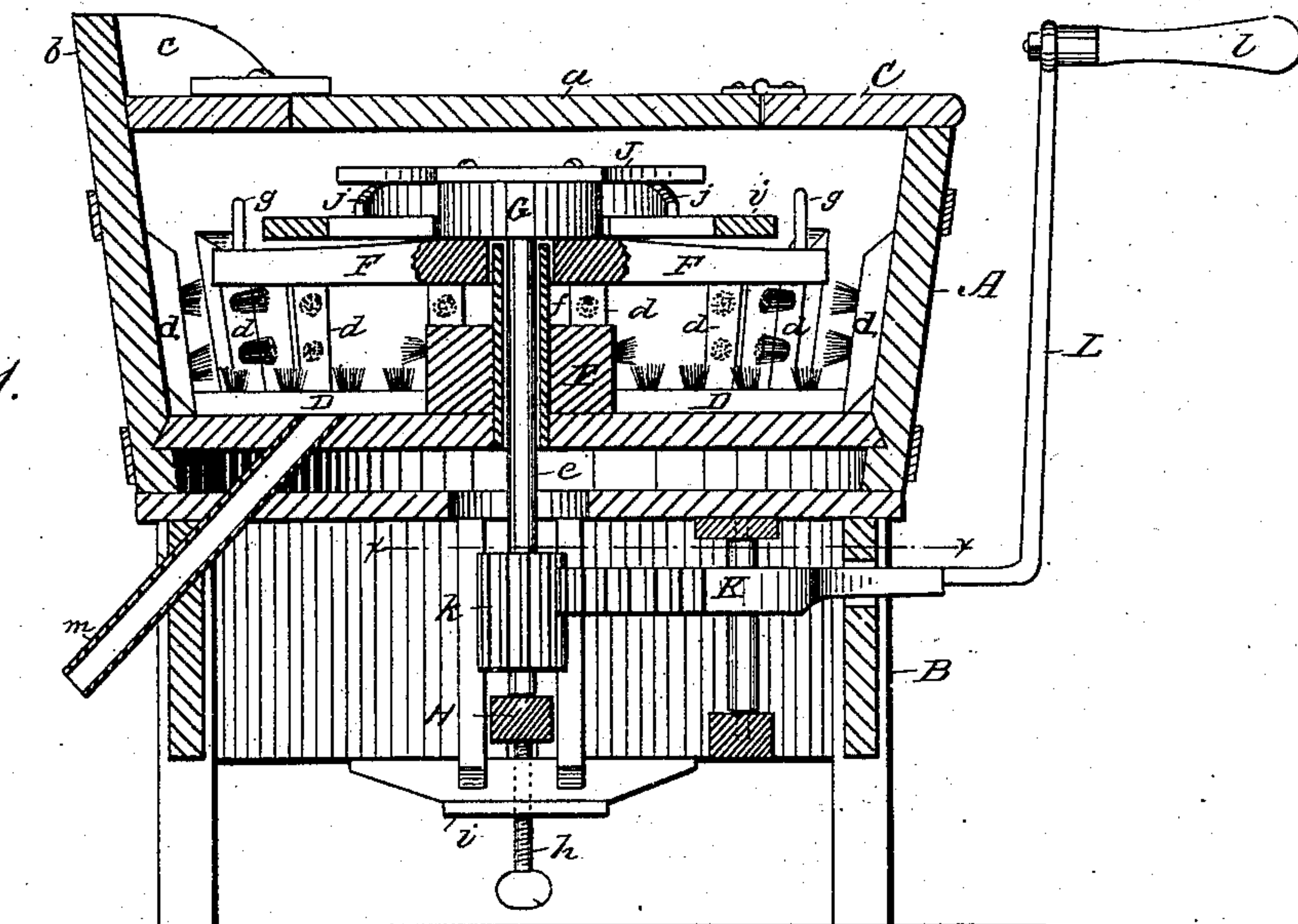


Fig. 2.

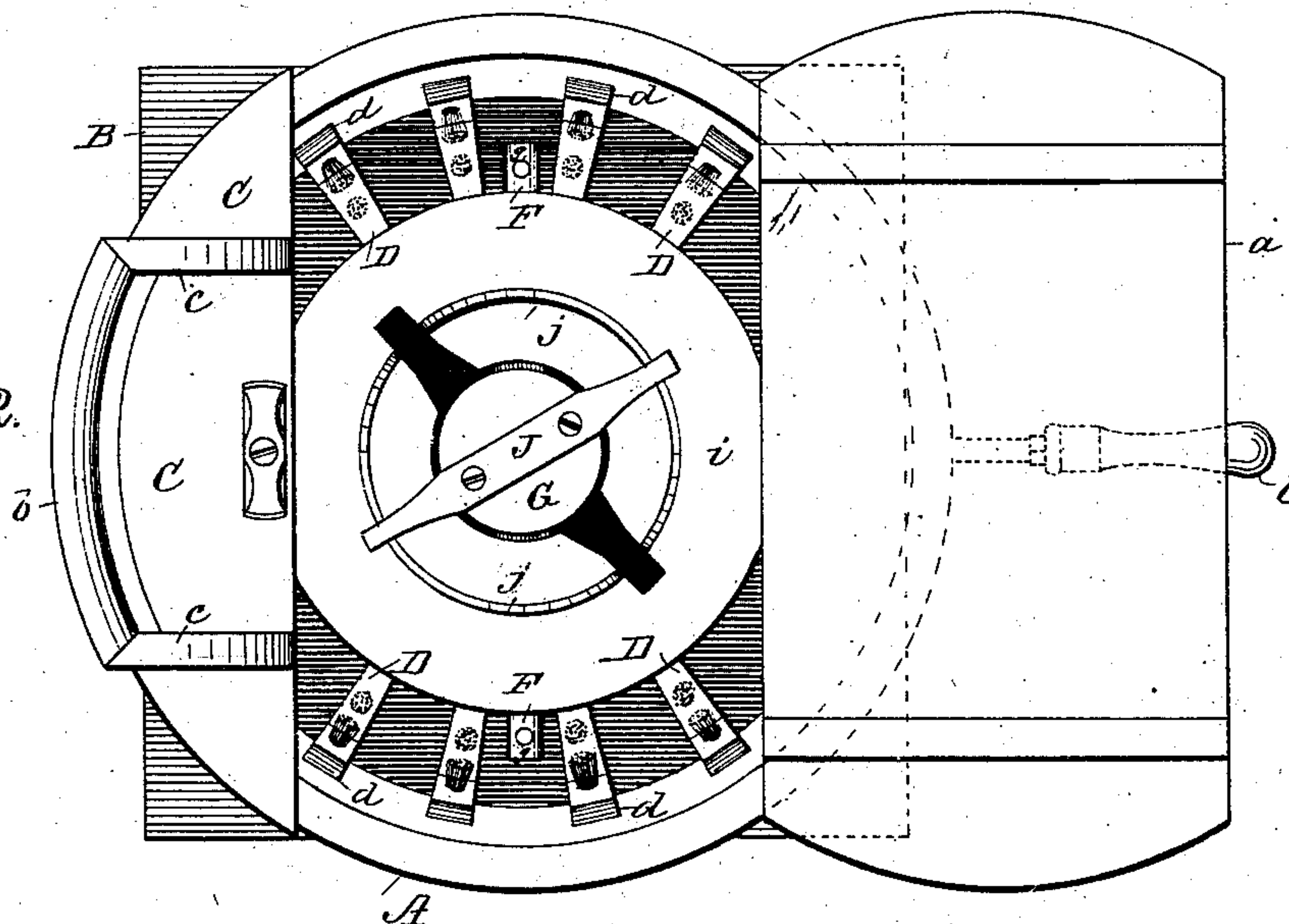
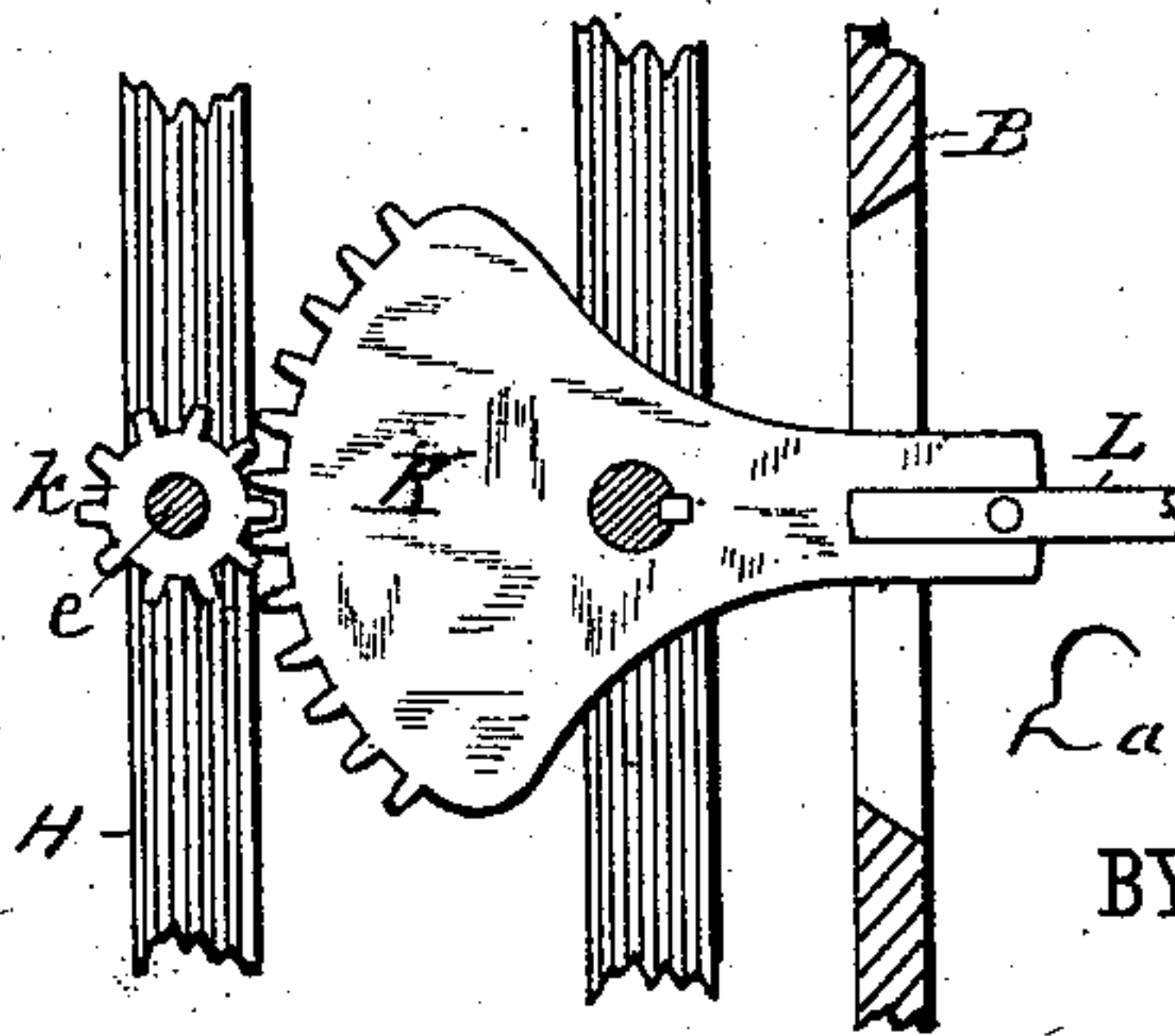


Fig. 3.

WITNESSES:
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LARS CHRISTIANSEN, OF COUNCIL BLUFFS, IOWA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 292,734, dated January 29, 1887.

Application filed March 27, 1883. (No model.)

To all whom it may concern:

Be it known that I, LARS CHRISTIANSEN, a citizen of the United States, residing at Council Bluffs, in the county of Pottawattamie and State of Iowa, have invented a new and useful Improvement in Washing-Machines, of which the following is a specification.

My invention relates to that class of washing-machines in which a rotary motion is given to the clothes in a tub to rub them against stationary rubbers; and its object is to provide means whereby clothes may be well and quickly washed without rubbing by hand.

To this end my invention consists in the construction and combination of parts forming a washing-machine, hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a transverse vertical section, part in elevation. Fig. 2 is a plan view of the interior of the machine with the lid removed; and Fig. 3 is a horizontal section and plan view at plane *x x*, Fig. 1.

A is the tub, firmly secured upon a bench, B. The tub is provided with a cover, in which is a hinged lid, *a*. The front edge of the tub *b* rises above the general level of the top C, and has side boards, *c*, extending across the front board, C, of the top, forming a guard to protect the operator from being wet in taking clothes from the tub and while arranging clothes in the tub.

D D represent bristle brushes, whose bodies are secured radially to the inner face of the tub-bottom, their bristles projecting upward.

d d are similar brushes, secured at their backs vertically to the inner sides of the tub, and E is a cylindrical brush surrounding the central vertical shaft, *e*. This shaft is provided with a tubular bearing, *f*, in the tub, surrounded by brush E, high enough to prevent water from escaping through the shaft-hole.

F F are two or more arms, secured upon the shaft *e* by means of a hub, G, to revolve therewith; and *g* represents a vertical pin in each arm near its outer end, on which portions of the clothes may be wound. The clothes to be washed are secured to these arms by being looped or wound thereon and revolved, thereby rubbing against the brushes D *d* E to wash the clothes. The hub G, to the lower face of

which the arms F are secured, is secured near its upper end to the shaft *e*, but is hollowed out around the shaft to turn freely around the bearing *f*, in order that the arms may be raised or lowered to suit the amount of clothes to be washed. To maintain the said arms at any required height, the shaft *e* is stepped on a cross-bar, H, which rests at its ends on vertical adjusting-screws *h*, passing through cross-pieces I of the bench.

i is a cover, to be crowded down on the clothes to keep them in place on the arms F.

J is a cross-arm, secured on top of the hub G, to hold the cover down. The cover is centrally perforated by a hole shaped like the hub and cross-bar to pass down over them, and is provided with annular wedges *j* on its upper face, which pass beneath the ends of arms J when partially rotated, and thus wedge said cover downward, clamping the clothes upon the arms F, and revolving therewith. The lower end of shaft *e* is provided with an elongated pinion, *k*, engaging a toothed segment K, by which it is revolved. This segment is provided with a lever, L, having a vertical offset, by which its handle *l* is elevated to a height convenient to the hand of the operator. The handle, being oscillated in a horizontal plane, oscillates the segment K, which, being much larger than the pinion *k*, turns it a complete revolution first one way, then the other.

To prevent the water slopping out, the lid *a* will be closed and buttoned down. A spout, *m*, is provided to discharge the waste water, and the brush-backs are cut away in the corner of the tub to allow the water to run and be wholly drawn out.

What I claim as my invention, and wish to secure by Letters Patent, is—

1. A suds box or tub having a series of brushes whose bodies are secured radially to the tub-bottom and whose bristles stand vertically, another series of brushes whose bodies are secured vertically to the sides of the tub and whose bristles stand radially, toward center, a hub fixed permanently to stand in the center of the tub, having a series of brushes secured to its circumference, whose bristles stand radially therefrom, in combination with a vertical shaft revolving in the center of the tub, radial arms secured to said shaft within the tub, a

cover and means for holding it upon said arms, whereby portions of clothes may be held between said cover and arms, and the remaining portions of the clothes rubbed against the stationary brushes described, by rotating the arms, as specified.

2. The combination, with the tub, the shaft *e* therein, the hub *G* on said shaft, and the arms *F* and *J*, attached to said hub, of the perforated cover *i*, provided with the annular wedges *j*, as described, whereby clothes may be held and rotated, as described.

3. The combination, with the tub and rotary

arms described, of the shaft *e*, carrying said arms, the step *H*, for shaft *e*, and means for adjusting the same vertically, the pinion *k*, on shaft *e*, of a thickness greater than the range of vertical adjustability of said shaft, and the toothed gear-segment *K*, having the upward-bent arm *L* secured to it, and the handle *I* on said arm, as and for the purpose specified.

LARS CHRISTIANSEN.

Witnesses:

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