

(No Model.)

T. McCROSSAN.
WASHING MACHINE.

No. 516,443.

Patented Mar. 13, 1894.

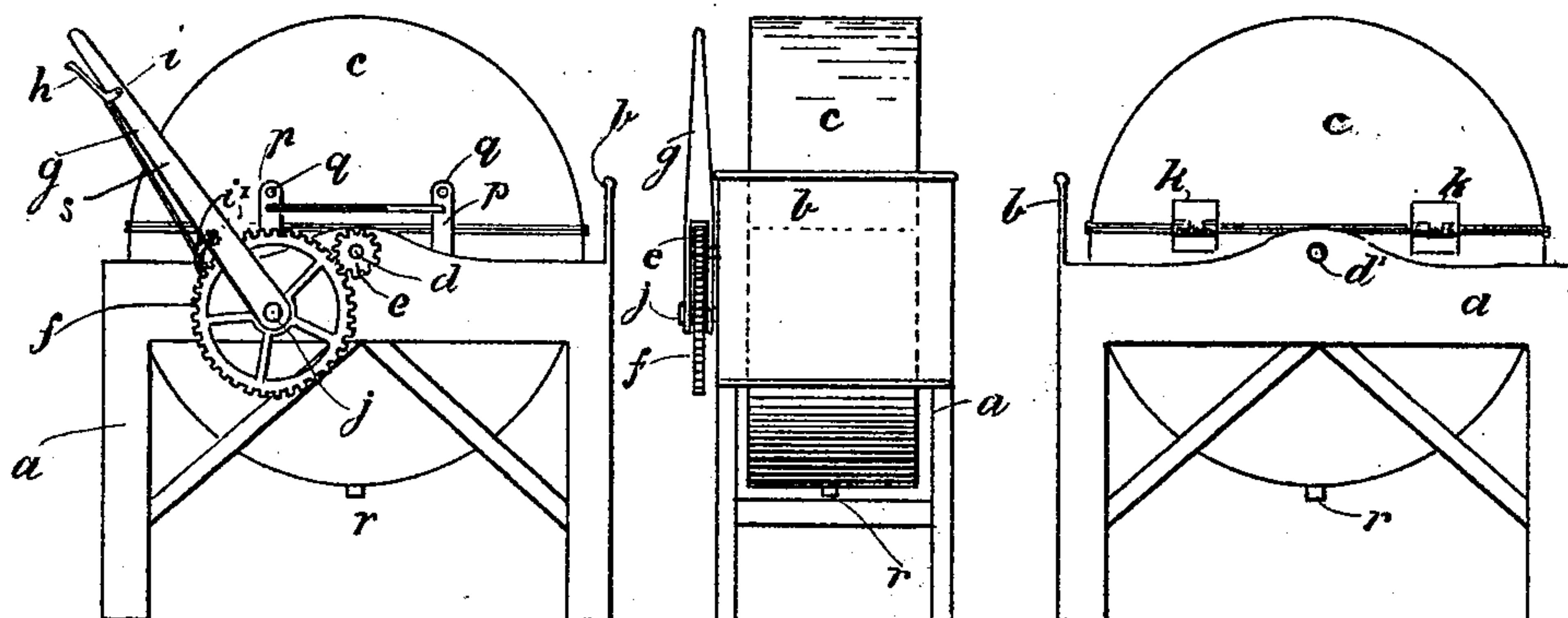


Fig. 1.

Fig. 2.

Fig. 3.

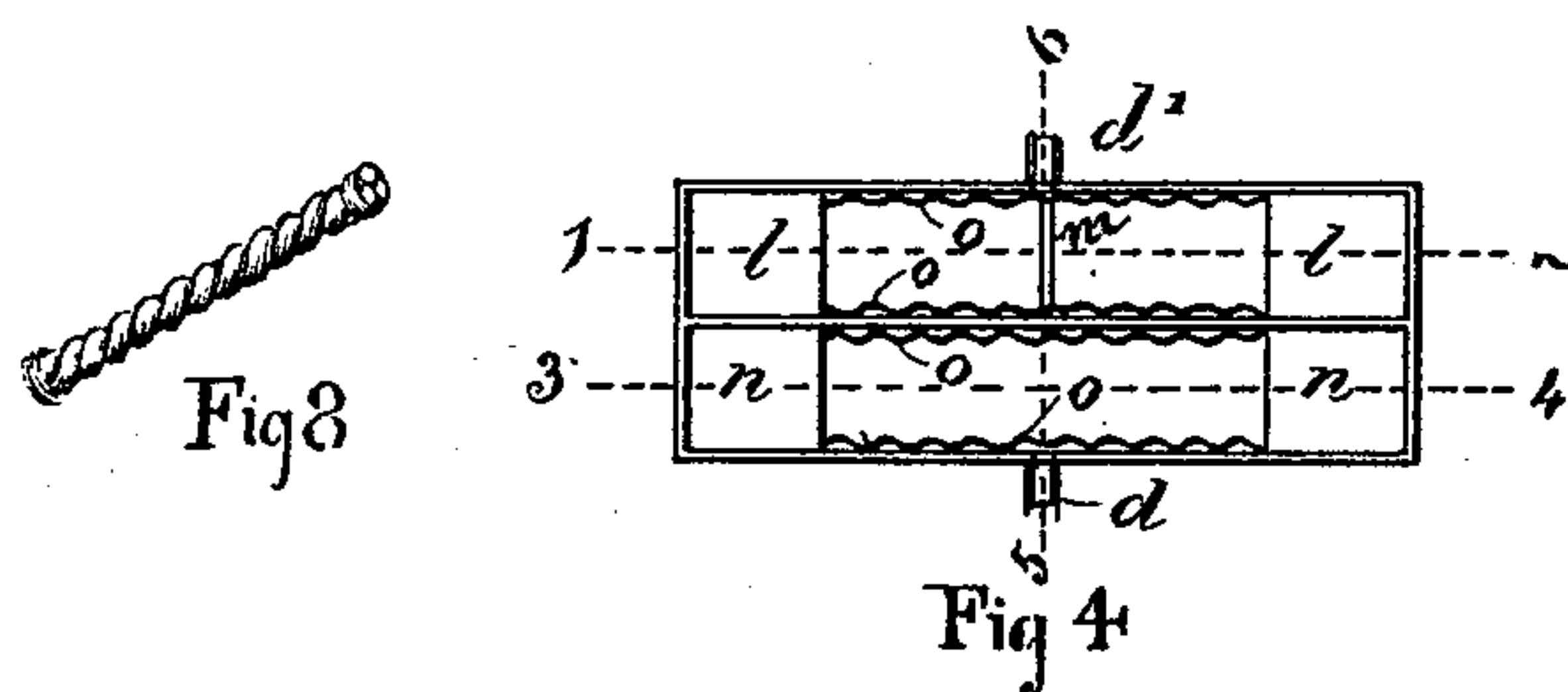


Fig. 8

Fig. 4.

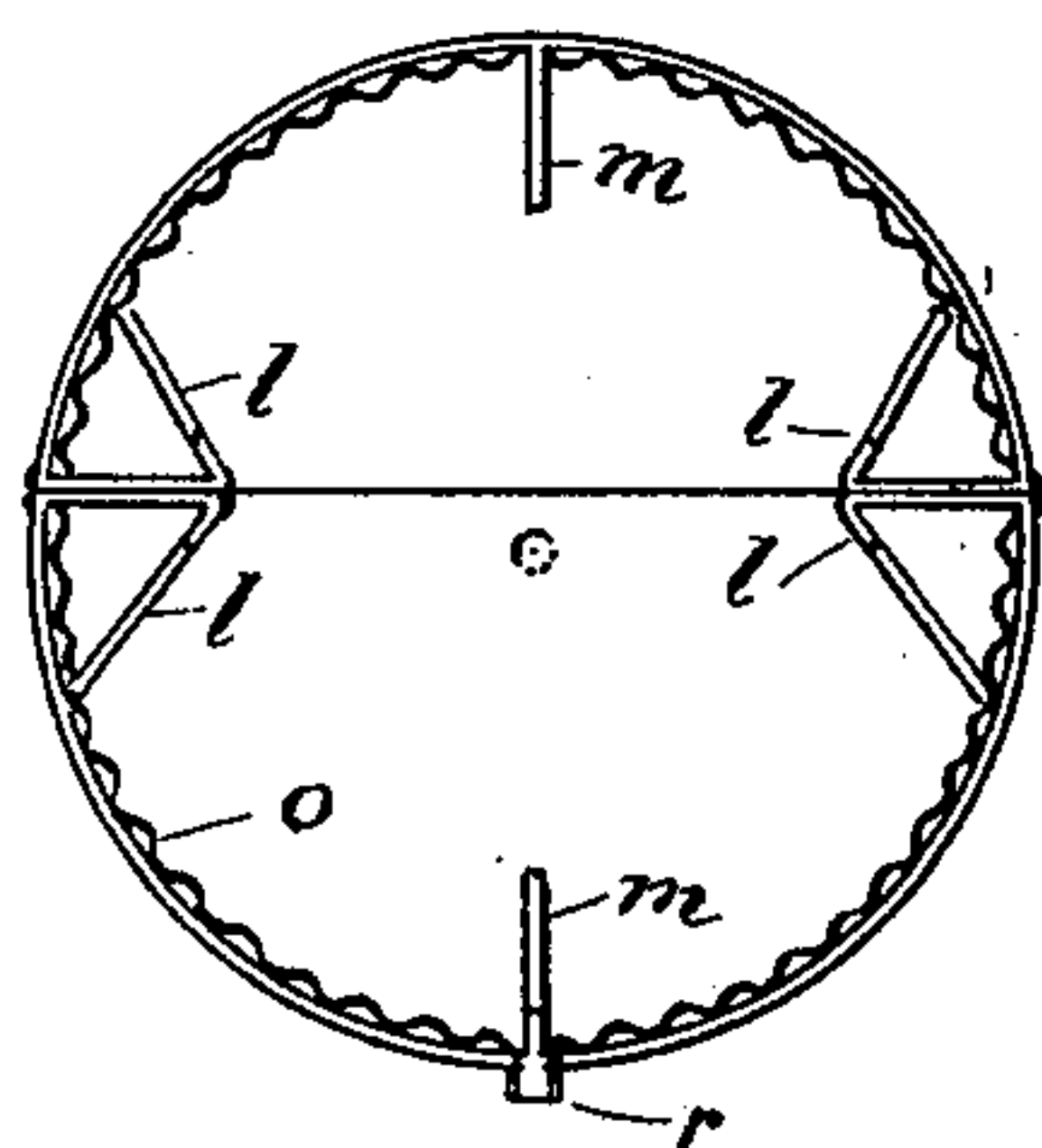


Fig. 5.

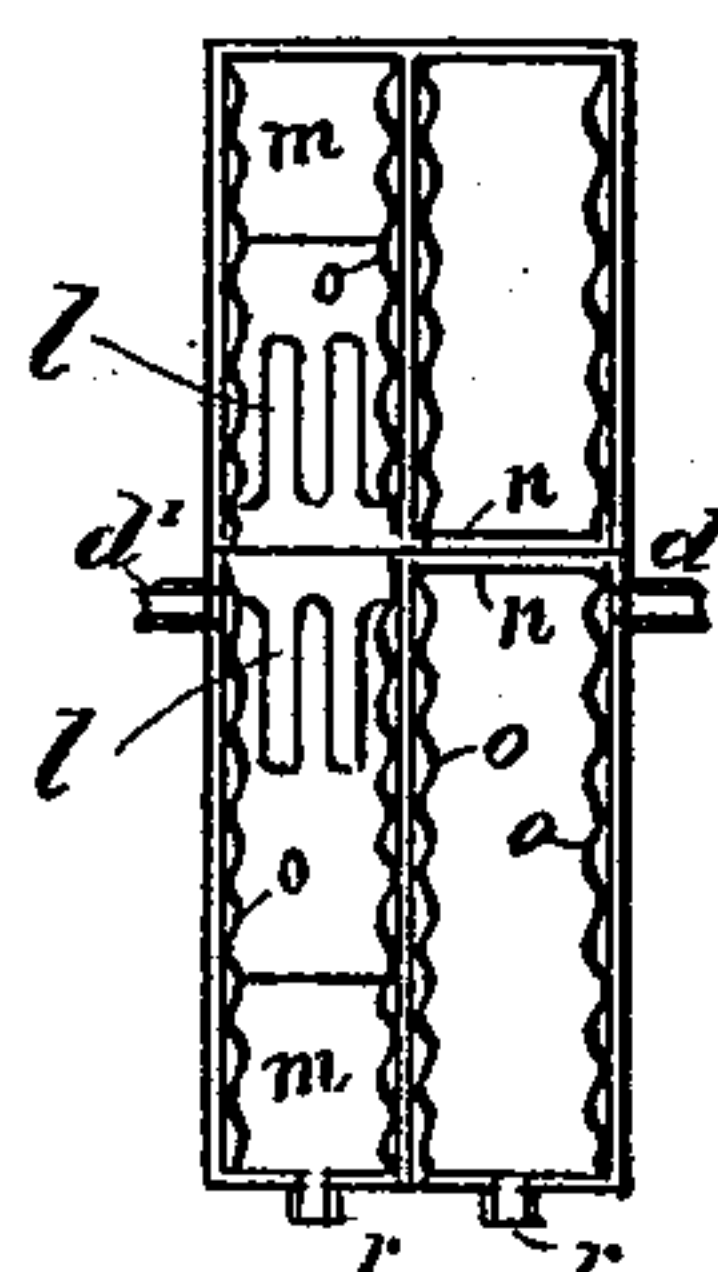


Fig. 6.

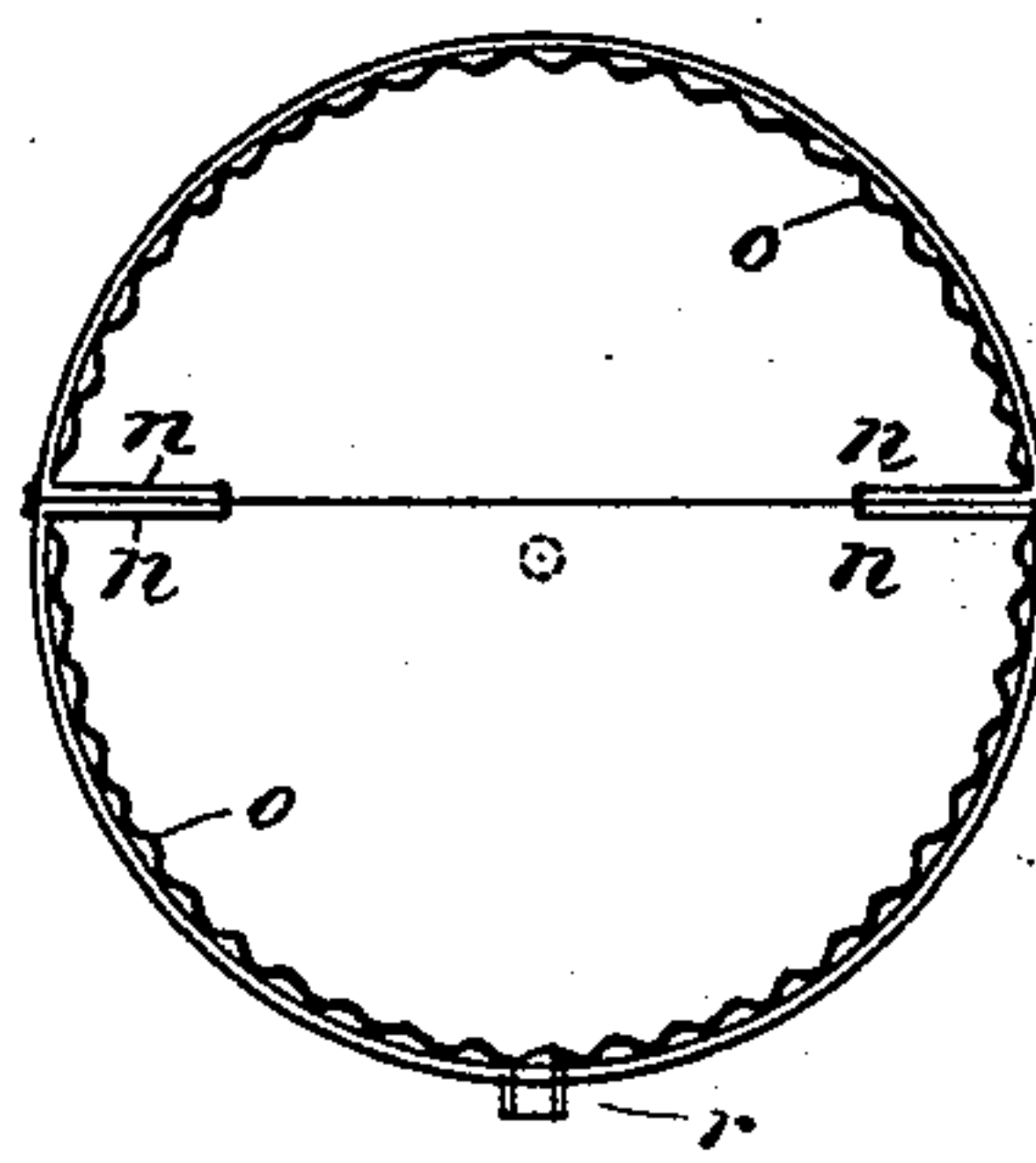


Fig. 7.

Witnesses

Robert Burns Thomas McCrossan Inventor.
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UNITED STATES PATENT OFFICE.

THOMAS McCROSSAN, OF WINNIPEG, CANADA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 516,443, dated March 13, 1894.

Application filed August 21, 1893. Serial No. 483,706. (No model.) Patented in Canada September 5, 1893, No. 44,169.

To all whom it may concern:

Be it known that I, THOMAS McCROSSAN, merchant, of the city of Winnipeg, in the county of Selkirk and Province of Manitoba, Canada, have invented certain new and useful Improvements in Washing-Machines, (patented in the Dominion of Canada September 5, 1893, No. 44,169;) and I do hereby declare that the following is a full, clear, and exact description of the same, reference being made to the accompanying drawings, in which—

Figure 1. is a front elevation of a machine embodying my invention. Fig. 2. is an end view of the same; Fig. 3. a rear view. Fig. 4. is a horizontal section of cylinder *c* on the line of division between the two parts of the cylinder; Fig. 5. section on lines 1—2. Fig. 6. is a vertical section on line 5—6; Fig. 7. section on the line 3—4. Fig. 8. is a view of one of the short pieces of rope (enlarged).

My invention relates to improvements in washing machines by means of which the cylinder containing the clothes and water is made to revolve upon hollow axes or tubes and is so arranged that the weight is distributed according to the number of chambers in the cylinder. The clothing is raised out of the water by shelves placed in the cylinder until they fall by gravitation and the remaining water is poured upon them, and the corrugations of the interior cause the clothing continually to revolve upon themselves thus causing a thorough cleansing of the fabrics.

The details of construction, arrangement and operation are as hereinafter described.

In the drawings *a* is an ordinary frame or stand.

b is a board fixed at one end to which the wringer may be attached.

c is a cylinder which is divided by a central partition into two separated, equal-size compartments, which number is sufficient for machines intended for domestic use. Each compartment is intended to receive clothes independently of the other, and, in general, clothes of one quality or fineness are placed in one compartment and those of a different quality in the other. The axes, *d d*, of the cylinder are hollow, or tubular, to admit the injection of steam or hot water.

e is a small cog wheel or pinion, secured to *d*.

f is a larger cog wheel secured to the frame by the fulcrum pin *j*.

g is an ordinary ratchet lever working on the fulcrum *j* and having the smaller lever *h* working on the fulcrum *i* which is connected with the ratchet *i'* by the rod *s* (Fig. 1). The upper portion of the cylinder *c* is connected with the lower by the hinges *k k*. Fig. 3; and in the front the double spring catch *p. p.* is secured to the lower portion of the cylinder *c* with apertures at their upper end which admit the pins *q. q.* in the upper portion of the cylinder thus holding the parts closely together. The cylinder compartments are corrugated internally on the parallel sides as well as the periphery, as shown at *o*, Figs. 2 and 6.

At the joint line of the cylinder are shelves *n. n.* and *l l* which hold a certain quantity of water in the cylinder when the cylinder is turned and prevent its coming out the shelves *n. n.* Fig. 7 are plain and straight occurring at the joint as shown; the shelves *l l* which occupy a similar position in the other compartment have a forked apron attached to or forming part of them as shown in Figs. 5 and 6. Apertures at the bottom of the cylinder at *r. r.* are intended to draw off the water and may be fitted with ordinary taps or plugs. The ends of the shelves *l* and *n* are united or joined to the sides of their respective compartments so that no water can pass at that point. One shelf, *l* or *n*, lies in close contact with another, *l* or *n*, and in practice they are about six inches in width. The pairs of shelves, *l l*, and *l l*, are opposite each other, and the division plates, *m m*, also opposite each other, but in alternation with the shelves, that is to say, at points removed seventy degrees from the shelves, as shown.

Divisions *m. m.* are placed at right angles to the shelves above mentioned so that in the act of rotation a portion of the clothing is carried up at a time and in due course is precipitated to the bottom by gravitation so soon as the shelf reaches the proper angle and a portion of the water, that which is retained by the apron pieces flows between the forks and falls upon them; and so on. It will be seen that by the arrangements of hollow axes

and plugs the water may be drawn off or added without removing the clothing and water or steam may be injected while the cylinder revolves. It is also evident that the lever *g* with the wheels *f* and *e* may be removed and the machine worked, by steam, electric or other power with the ordinary pulley and band or chain connections. And further that in cylinders having a greater number of compartments they may be divided into any number of convenient parts by as many shelves as may be required. Washing is further facilitated in my invention by the introduction of short pieces of hard twisted rope securely bound at either end Fig. 8 which are placed loosely between the several articles to be washed and take the place of the old hand work, the number of pieces of rope employed depending on the size and character of the things to be washed.

In operation of the machine, as the cylinder rotates, the clothes in one compartment are being raised while those in the other compartment fall back into the suds at the bottom, so that the weight of the entire collection of clothes in the two compartments is never lifted at once—which obviously enables the machine to be worked with a corresponding reduction of power. There is no leakage at the point between the meeting surfaces of the parts *l l* and *n n*, since water is

not filled into the cylinder to depth sufficient to overflow said parts, save as the cylinder rotates. The shelves *l* take up a quantity of water at each rotation and gradually discharge it upon the clothes as they rise above the latter.

What I claim is—

1. In a washing machine of the class described, the vertical, rotatable cylinder having two vertical compartments arranged side by side, one being provided on its inner periphery with division plates, *m*, and the other with division plates, *n*, which are arranged in alternation with those (*m*) of the other compartment, whereby the clothes in one compartment are raised as those in the other fall, as shown and described.

2. In a washing machine of the class described, the vertical, rotatable cylinder having its interior corrugated on all sides, and containing the two pairs of shelves *l l* and *l l* arranged oppositely and adapted to take and discharge water, and the division plates *m m*, also arranged opposite each other and in alternation with the said pairs of shelves, as shown and described.

THOMAS McCROSSAN.

Witnesses:

R. H. WINRAM,
ROBERT BURNS.