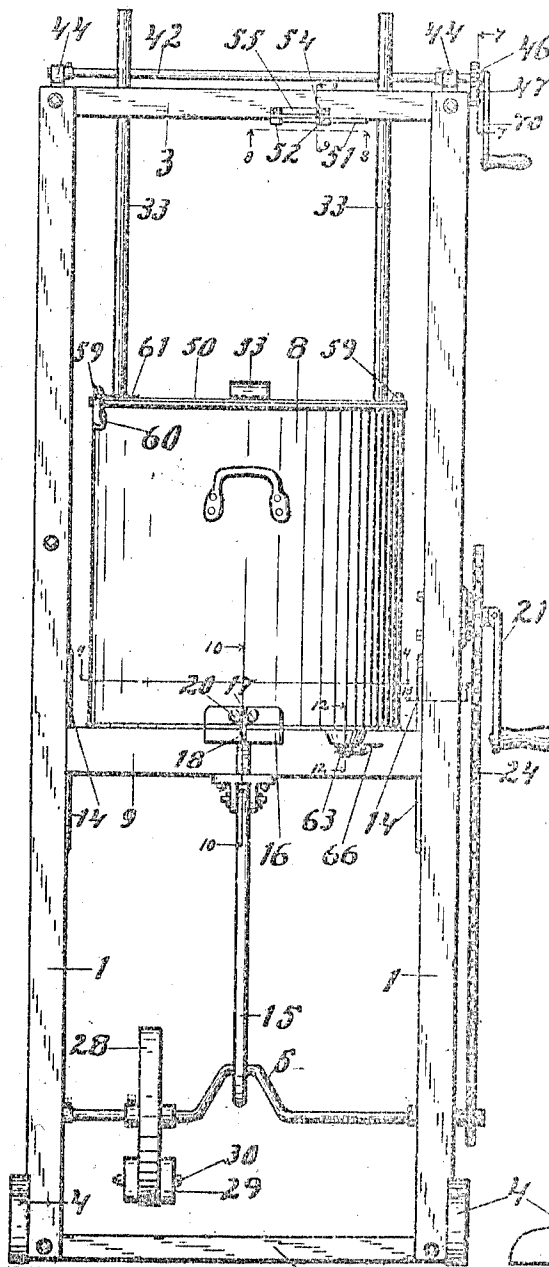


D. A. DRUMMOND.
DISH WASHING MACHINE.
APPLICATION FILED AUG. 5, 1912.

1,064,135.

Patented June 10, 1913.

4 SHEETS-SHEET 1.



Witnesses

FIG. I.

Lulu Greenfield
Margaret Glasgow

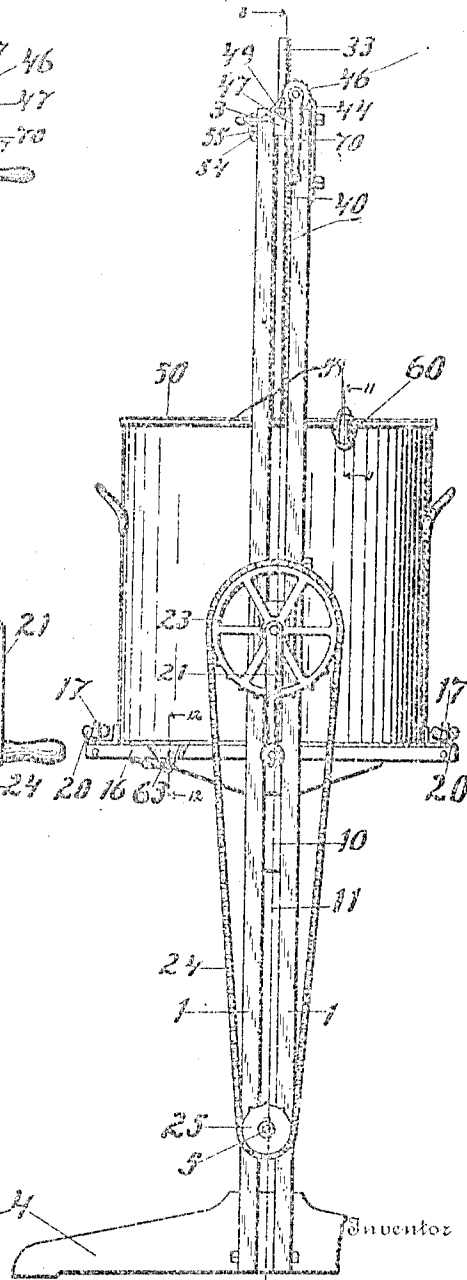


FIG. II.

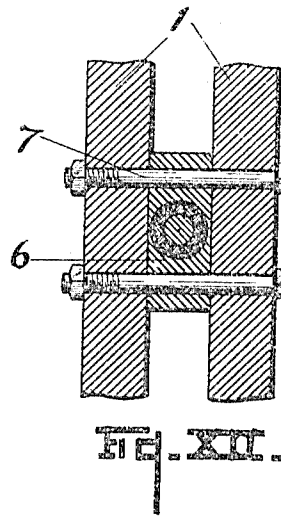
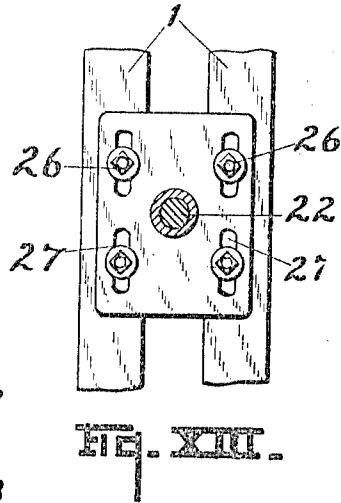
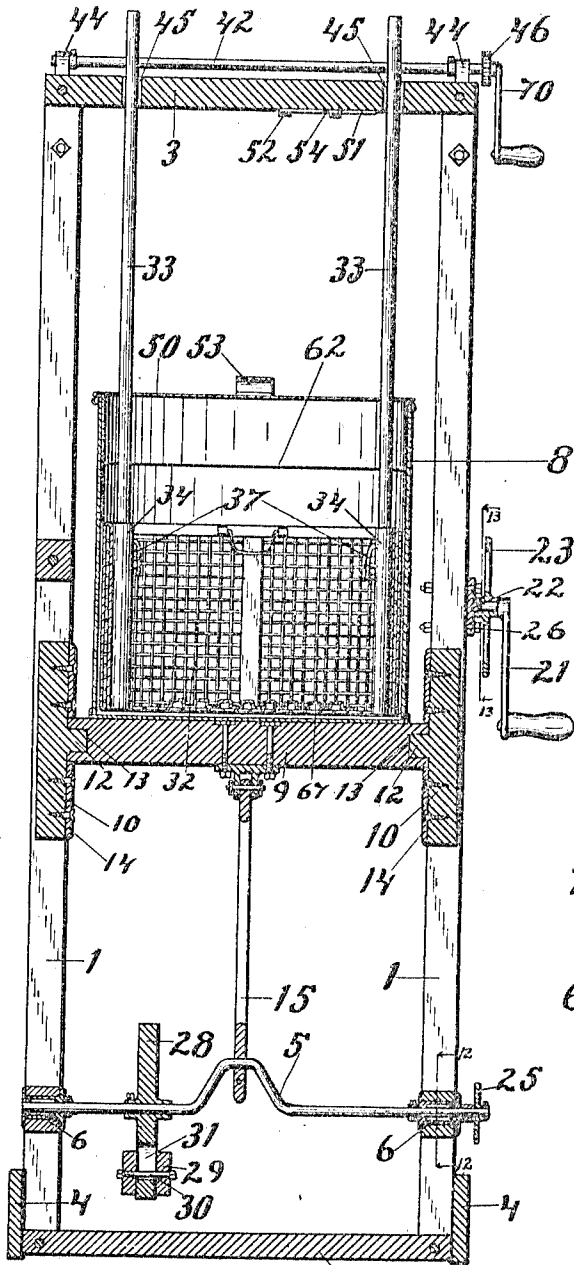
By Daniel A. Drummond
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4 SHEETS—SHEET 2.



Witnesses **Fig. III.** 2

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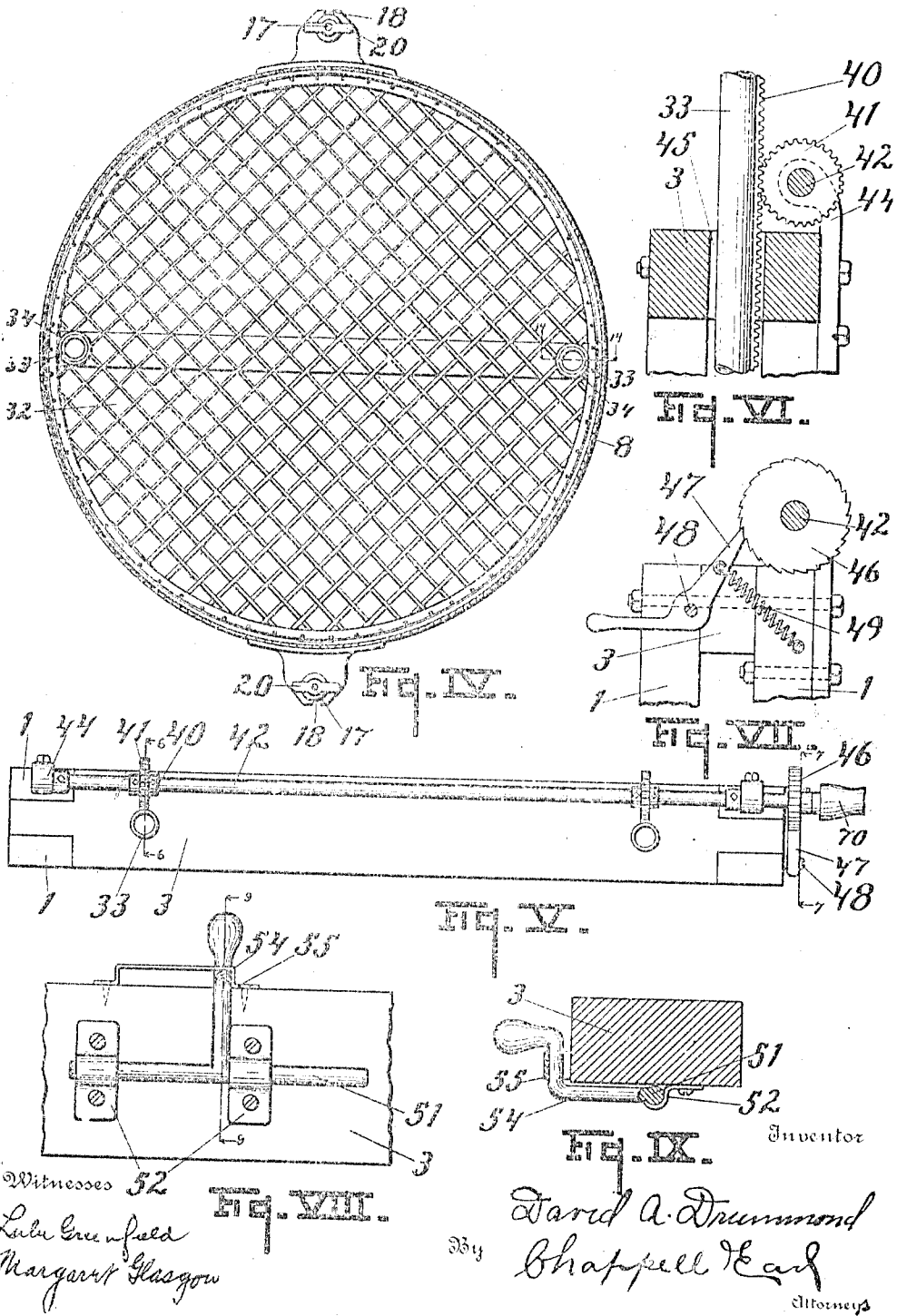
Attorneys

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4 SHEETS—SHEET 3.



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4 SHEETS-SHEET 4.

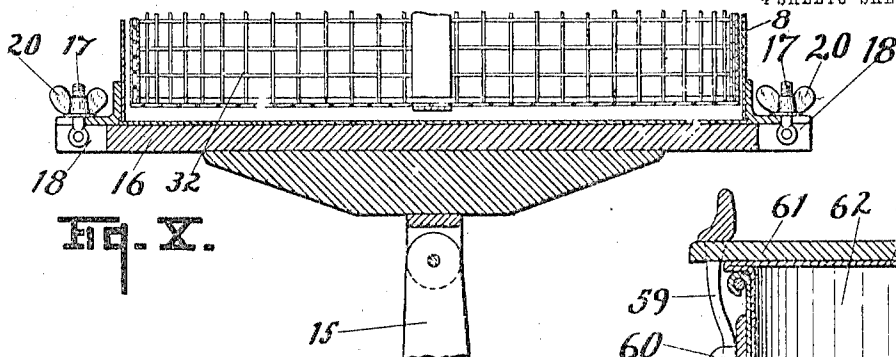


Fig. X.

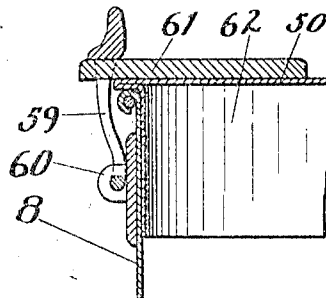


Fig. XI.

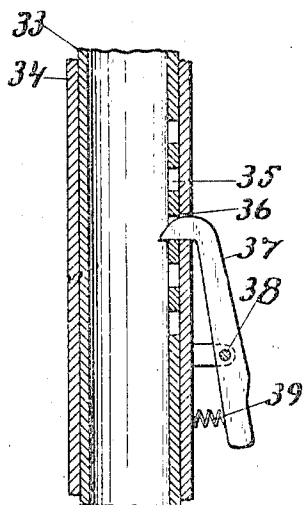


Fig. XIV.

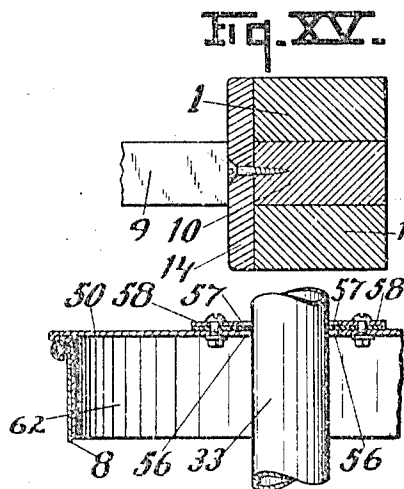


Fig. XV.

Inventor

Witnesses

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Attorneys

UNITED STATES PATENT OFFICE.

DAVID A. DRUMMOND, OF GRAND RAPIDS, MICHIGAN.

DISH-WASHING MACHINE.

1,064,135.

Specification of Letters Patent.

Patented June 10, 1913.

Application filed August 5, 1912. Serial No. 713,382.

To all whom it may concern:

Be it known that I, DAVID A. DRUMMOND, a citizen of the United States, residing at the city of Grand Rapids, county of Kent, State of Michigan, have invented certain new and useful Improvements in Dish-Washing Machines, of which the following is a specification.

This invention relates to improvements in dish washing machines.

The main objects of this invention are, first, to provide an improved dish washing machine of high efficiency which is simple and easy to operate. Second, to provide an improved washing machine having these advantages, which is comparatively simple and economical in structure and very durable.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is clearly illustrated in the accompanying drawing forming a part of this specification, in which:

Figure I is a side elevation of a structure embodying the features of my invention. Fig. II is a side elevation looking from the right of Fig. I. Fig. III is a vertical section on a line corresponding to line 3—3 of Fig. II. Fig. IV is a horizontal section through the tank or receptacle and the basket on a line corresponding to line 4—4 of Figs. I and II. Fig. V is a detail top or plan view of the upper end of the frame and parts mounted thereon. Fig. VI is a detail vertical section on a line corresponding to line 6—6 of Fig. V, showing the means for elevating the basket. Fig. VII is a detail section on a line corresponding to line 7—7 of Fig. V showing the means for holding the shaft 42. Fig. VIII is a detail bottom plan view of the cover hanger or support. Fig. IX is a detail section on a line corresponding to line 9—9 of Fig. VIII. Fig. X is an enlarged detail vertical section on a line corresponding to line 10—10 of Fig. I showing the mounting for the receptacle and the basket therein. Fig. XI is a detail section on a line corresponding to line 11—11 of Fig. II, showing details of

the cover securing means. Fig. XII is a vertical section through the crank shaft bearings on a line corresponding to line 12—12 of Fig. III. Fig. XIII is a detail section on a line corresponding to line 13—13 of Fig. III, showing the adjustable support for the crank spindle. Fig. XIV is an enlarged detail vertical section through one of the basket supports on a line corresponding to line 14—14 of Fig. IV, showing the catch for adjustably securing the basket to the support. Fig. XV is a detail section on a line corresponding to line 15—15 of Fig. I, showing the details of the cross head slides. Fig. XVI is a detail vertical section showing the closure for the openings through which the supports for the basket are arranged.

In the drawing similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Reference being had to the drawing, the frame of my improved washing machine as illustrated, consists of the uprights 1, bottom cross piece 2, and top cross piece 3. The uprights are bolted on the sides of the top and bottom cross pieces which support the uprights in a spaced relation to provide slide-ways for the cross head 9. The base pieces 4 are secured upon the outer sides of the uprights. Toward the bottom of the frame is a crank shaft 5, the crank shaft being supported by bearings 6 secured between the pairs of uprights by the bolts 7 see Fig. III. These bearings are preferably roller bearings, as illustrated.

The tank or receptacle 8 is carried by the cross head 9. The cross head is provided with slides 10 at its ends arranged in the slot-like ways 11 formed by the spaced uprights. The slides 10 are provided with tenon-like projections 12 engaging the mortises 13 in the ends of the cross heads. The slides are provided with flange plates 14 bearing against the inner sides of the uprights to prevent lateral movement of the cross head. The cross head is carried by the pitman 15 mounted on the crank shaft 5. The receptacle or tank 8 is detachably secured to the cross head by providing the head with a transverse bar 16 having pivoted bolts 17 at its ends adapted to be engaged with the slots 18 in ears 19 on the receptacle. The bolts 17 are provided with

winged nuts 20 for clamping the ears, see Fig. X. The shaft 5 is driven from the crank 21 which is mounted on the spindle 22 on the uprights, the crank being provided with a sprocket wheel 23 which is connected by the sprocket chain 24 to the sprocket 25 on the shaft 5. The crank spindle 22 is made adjustable by arranging its securing bolts 26 in slots 27 in the spindle support so that the sprocket chain may be tightened as desired. The crank shaft 5 is provided with a balance wheel 28 having an adjustable weight 29 thereon, the weight being secured to the wheel by means of the bolt 30 arranged in the radial slot 31, see Fig. III. The object of this adjustment is to counterbalance the cross head and tank and the weight of the water used in the tank.

The dish basket 32 is removably secured to the supporting rods 33. In the structure illustrated, the rods 33 are tubular and are telescoped into tubular members 34 secured within the basket. The rods 33 are provided with a series of holes 35 adapted to be brought into register with the holes 36 in the members 34, see Fig. XIV. On the tubes 34 are catches 37 adapted to engage the openings when they are brought into register thus adjustably and removably connecting the basket to the supporting rods. The catches 37 are pivoted at 38 and are held yieldingly in engaging position by the springs 39. By means of these supports, the basket is held in a relatively fixed relation to the tank or receptacle so that as the receptacle is reciprocated, the water contained in the receptacle is agitated and dashed over the articles in the basket.

As a convenient means for supporting the basket and raising it out of the tank and lowering into the tank, I provide the supports 33 with racks 40 which are engaged with the pinions 41 on the shaft 42 which is mounted on the bearings 44 on the upper end of the frame. The supports 33 are arranged through guide openings 45 in the top cross piece 3. The shaft 42 is provided with a ratchet wheel 46 with which the pawl 47 pivoted at 48 on the frame coacts. The spring 49 retains the pawl normally in its engaging position. See Figs. V, VI and VII. The cover is supported in its raised position by means of the bolt 51 which is mounted in the slides 52 on the under side of the top cross piece 3 to be slipped into engagement with the cover handle 53. See Figs. I, VIII and IX. For convenience, the bolt is provided with a laterally projecting hand piece 54 which is bent upwardly at the side of the cross piece 3 through the supporting strap 55. The cover 50 has openings 56 for the basket supports 33 and in order to retain the steam in the receptacle and prevent splashing through these openings, flexible packing rings 57 are provided,

the packing rings being disk-like in form and supported by the washer-like retainers 58, see Fig. XVI. The cover is secured by means of the latches 59 which are pivoted on the ears 60 on the sides of the tank and adapted to be swung into slots provided therefor in the keeper members 61 on the cover. The cover has a downwardly projecting annular flange 62. See Fig. XI.

While the receptacle may be easily removed from the cross head, I preferably provide the tank with a draw-off cock 63, provided with a handle 66. In use, the articles to be washed are placed within the basket and as a means for supporting plates and the like in an upright position, I provide a plate holder 67. See Fig. I.

While the dishes are being placed in the basket, the cover is suspended from its suspending bolt or holder 51 and the basket may, if desired, be supported in an elevated position for convenience in placing the dishes therein, or the basket may be removed from its supports and carried to the table. After the articles to be washed are satisfactorily arranged in the basket, the basket is lowered so that its bottom is a short distance above the bottom of the tank or receptacle when the tank or receptacle is in its highest position, as is shown in Fig. III. The balance wheel 28 is balanced so that the tank ordinarily stops in this elevated position, as is shown in this figure. The water is then introduced and the cover released and secured to the tank. The receptacle is then reciprocated by means of the crank 21 or suitable power means which dashes and agitates the water over the dishes in the basket and the same are effectively cleaned. The washing water can then be drawn off and rinsing water introduced as may be desired. When the dishes are clean, the basket can be raised by means of the crank 70 on the shaft 42 and the articles permitted to dry in the basket or removed as desired.

By thus arranging the parts, I provide a very efficient device which is simple and easy to operate.

I have illustrated and described my improved washing machine in a simple and practical form in which I have embodied the same. Various modifications are possible, but I have not illustrated the same as the disclosures made will enable those skilled in the art to apply my inventions as taste or conditions may require.

I desire to be understood as claiming my improvements specifically in the form illustrated as well as broadly within the scope of the appended claims.

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

1. In a washing machine, the combination with the frame provided with vertical ways,

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of a crank shaft; a cross head provided with slides arranged in said ways; a pitman connecting said cross head to said crank shaft; driving means for said crank shaft; a tank or receptacle carried by said cross head; a basket; supporting rods for said basket provided with racks; and means for raising and lowering said rods.

2. In a washing machine, the combination with the frame provided with vertical ways, of a crank shaft; a cross head provided with slides arranged in said ways; a pitman connecting said cross head to said crank shaft; driving means for said crank shaft; a tank or receptacle carried by said cross head; a basket; supporting rods for said basket, said basket being adjustably and removably secured to said supporting rods; and means for raising and lowering said rods.

3. In a washing machine, the combination with the frame; a reciprocating member; a tank or receptacle carried by said reciprocating member; a basket; supporting rods

for said basket; members on said basket adapted to receive said rods; and catches on said basket members, said rods being provided with openings adapted to receive said catches.

4. In a washing machine, the combination with the frame provided with vertical ways, of a member reciprocating in said ways, means for actuating said reciprocating member, a tank or receptacle carried by said reciprocating member, a basket, a receptacle cover, means extending through said cover for supporting said basket within said receptacle, and means for securing said cover to said receptacle.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

DAVID A. DRUMMOND. [L. S.]

Witnesses:

OLIVER M. SMITH,

JOHN McLEAN.