(No Model.) 2 Sheets—Sheet 1.

C. P. RANDOLPH.

WASHING MACHINE.

No. 527,507. Patented Oct. 16, 1894.

Fig. 1.

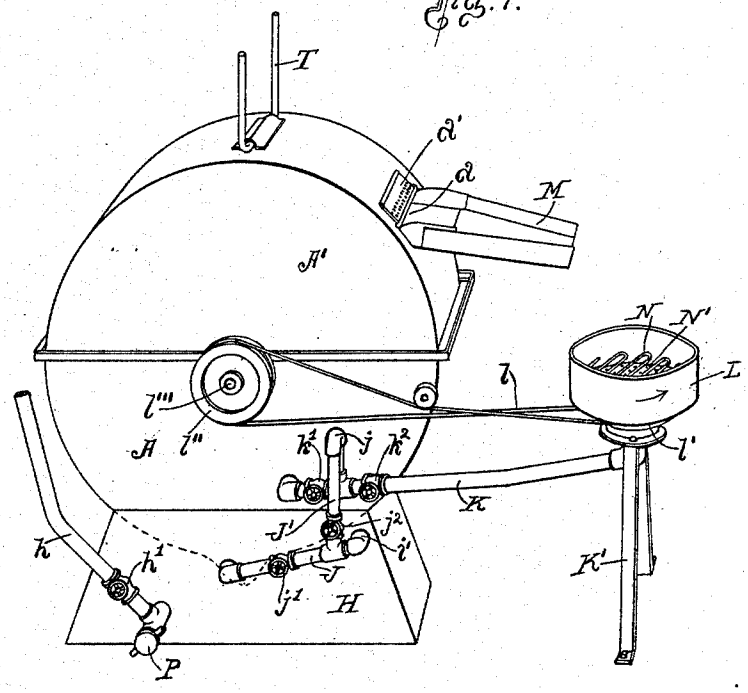
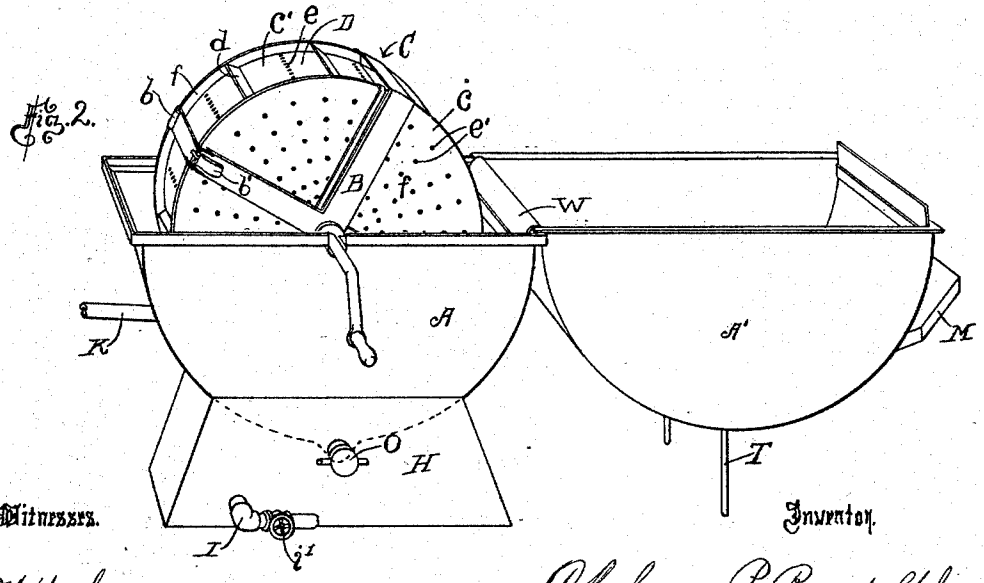


Fig. 2.



Witnesses.

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His Attys.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

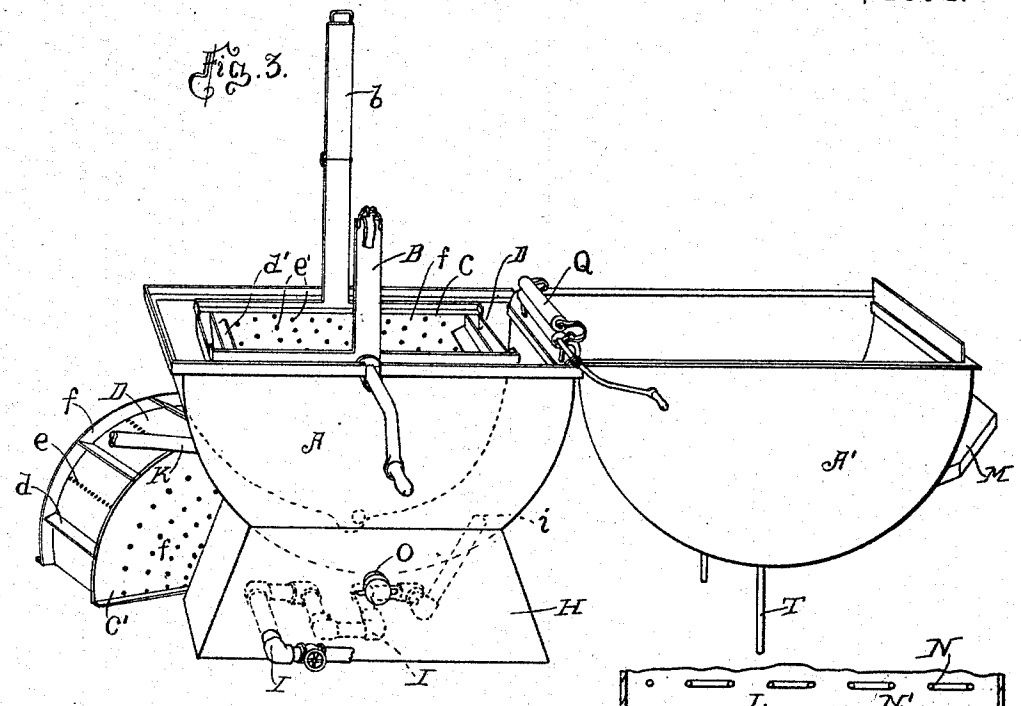


Fig. 5.

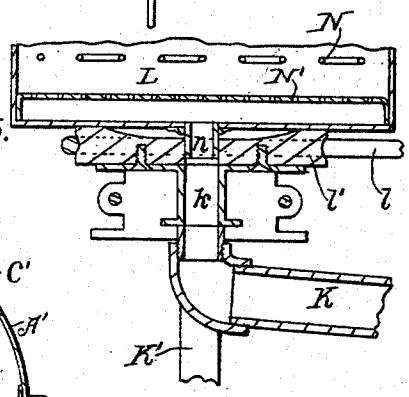


Fig. 4.

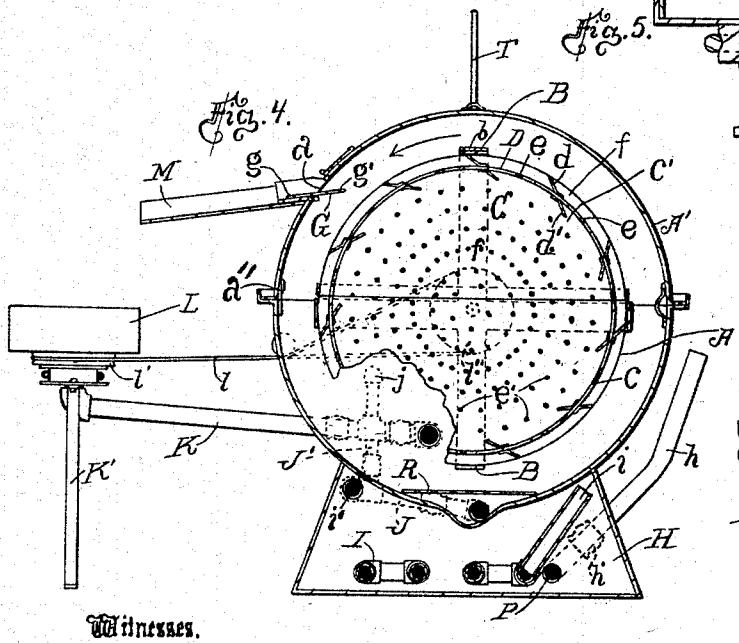
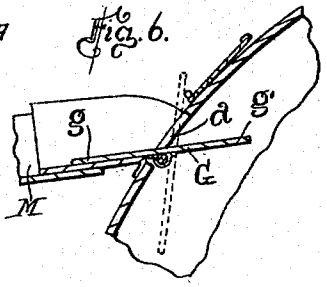


Fig. 6.



Witnesses.

P. W. Harbeson.
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Inventor.

Clabeorn P. Randolph
By
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His Attys.

UNITED STATES PATENT OFFICE.

CLABEORN P. RANDOLPH, OF LOS ANGELES, CALIFORNIA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 527,507, dated October 16, 1894.

Application filed March 28, 1894. Serial No. 505,385. (No model.)

To all whom it may concern:

Be it known that I, CLABEORN P. RANDOLPH, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Combination-Machine adapted as a General Washer, Renovator, Cooker, and Accumulator, of which the following is a specification.

The object of my invention is to provide a combination machine which is applicable for use in various capacities among which may be mentioned a clothes washer and drier, a dish washer and drier, and a steam cooker for potatoes and other vegetables in large quantities.

A more specific object of my invention is to provide a machine which is adapted for washing clothes and drying the same without the necessity of the extra handling which is required for hanging the clothes upon lines to dry in the open air, and also to provide an improved machine for washing dishes by which the dishes may be cleansed and dried without the necessity of wiping or handling the same.

The accompanying drawings illustrate my invention.

Figure 1 is a perspective view showing my combination machine in position and adjustment for use as a dish washer. Fig. 2 is a fragmental perspective view showing the machine with the cover thrown back to give access to the interior of the machine. Fig. 3 is a view showing the upper section of the cylinder removed and also showing the wringer clamped in position to wring the clothes from the cylinder used as a washing machine into the top or cover of the appliance. Fig. 4 is a vertical mid section of the machine when arranged as shown in Fig. 1. In this view the machine is viewed from a direction opposite to the point of view for Fig. 1 and the cylinder is broken away in part to show the water inlet, which leads into the case. Fig. 5 is a fragmental vertical section showing a portion of the dish washer in detail. Fig. 6 is a fragmental vertical mid section detailing the balanced valve or door for the discharge chute.

My invention embraces broadly the hollow case comprising a base member A provided with suitable means for applying steam, water or hot air to the inside thereof and a cap member A′ hinged to the base member and adapted to fit thereupon to form the inclosing case and provided with a suitable outlet *a;* a revolving frame B journaled to revolve within the case and adapted to sustain and rotate within the case suitable detachable appliances as hereinafter specified, whereby the said machine is made adaptable for the reception and operation of the said several appliances for performing the several operations set forth herein above; and suitable means for rotating the said frame.

My invention also comprises the various combinations and arrangements of parts hereinafter described.

More specifically, my invention embraces the combination with the several elements above specified; of a hollow cylinder C formed in two halves *c c′* adapted to be fastened together, having the walls thereof suitably perforated as hereinafter specified and provided with the wings *d d′* arranged around the circular wall of the cylinder projecting therefrom outward and inward respectively.

The peripheral wall D of the cylinder is provided with outwardly projecting wings *d* arranged oblique to the periphery of the cylinder and connected with the projecting side rims or walls *f* which together with the wings and peripheral wall of the cylinder form buckets so that if the cylinder is rapidly rotated the water will be carried up and will be thrown from the cylinder by centrifugal force and will strike upon the balanced door G and pass out of the case through the outlet *a*. The balanced door G is pivoted near its middle to the lower margin of the port *a* and its outer leaf *g* is heavier than its inner leaf *g′* so that when thrown horizontal as shown in Fig. 4 it will be held in that position by gravity; and the opening *a* is such that when the door is thrown vertical as shown in dotted lines Fig. 6, it will slightly overbalance and lean toward the case as shown in dotted lines, Fig. 6, thus to be held in position by gravity. The peripheral and side walls of the cylinder are provided with perforations *e*, *e′* to allow the water, steam and air to flow into the cylinder.

The means for introducing the steam, hot water or air to the lower section A may be of any suitable construction but I will now describe the particular means which I employ.

H is a boiler which sustains the base member or section A of the case. This boiler is adapted to be filled with water and placed upon a stove or range for heating if desired, *h* being a water pipe through which the boiler may be filled with water. For convenience of heating, this boiler H is provided with a steam pipe or heater I which communicates with a suitable steam generator (not shown), and is arranged in the bottom of the boiler and opens to discharge inside the boiler. The discharge port *i* is arranged near the top of said boiler above the lowest point of the case so that the steam will contact fully with the bottom of the case in flowing to the outlet.

i' indicates the outlet for the steam from the boiler.

J indicates a steam pipe leading from the outlet *i'* into the lower part of the base A of the case.

K is a water and steam pipe which communicates with the interior of the base A, and also, through the medium of the steam pipe J', with the interior of the base boiler H. The connection between the boiler H and the pipe K is provided with the curved connection *j* which resembles in outline an inverted trap whereby the pipe J' is connected with the top of the pipe K. The pipe K communicates with a suitable receptacle L which is arranged to receive the water which may be discharged through the spout M which leads from the port *a*. The receptacle L is arranged to revolve in a horizontal plane and is connected by the belt *l* and pulleys *l' l''* and shaft *l'''* with the rotating frame B so that when the frame B is rotated the receptacle L will also rotate. The receptacle L is provided with a suitable drip rack N and is detachably connected with the pipe K to allow the water to flow from the receptacle L down into the pipe K and thus into the case A.

K' is a suitable support for the pipe K. and receptacle L. The receptacle L is provided with the downwardly projecting pipe or nipple *n* through which the receptacle communicates with the pipe K through the medium of the hollow journal *k* to which the pulley *l'* is attached. By this contrivance the receptacle can be removed from the pulley *l'* upon which it normally rests as indicated in Figs. 4 and 5 and when in place thereon it can be rotated thereby.

N' is a perforated steam distributing plate which is arranged beneath the drip rack N to distribute the steam and cause it to be applied to all of the dishes in the pan or receptacle L.

O indicates an outlet from the case through which the water can be drawn.

P indicates an outlet from the base boiler H through which the water can be drawn.

j' is a valve to control the flow of water through the pipe J.

j^2 is a valve to control the flow through the steam pipe J'.

k' is a valve to close the passage in the pipe K between the inlet thereinto of the steam pipe J' and the inlet into the case, and k^2 is a valve to control the passage between the steam pipe J' and the receptacle L.

h' is a valve which controls the passage through the water pipe *h*. *i'* is a valve which controls the passage through the steam pipe I.

I will now describe the operation of the machine as a dishwasher and drier. The water may be introduced into the machine through the receptacle L and the pipe K and flows into the bottom of the case. Heat is applied to the case either through the medium of steam introduced through the steam pipe I or by water in the boiler heated by a stove or other convenient means. When the water is sufficiently heated the dishes to be washed are placed in the receptacle L, care being taken to place the same on edge so that water poured on to the dishes from above will flow down through the dishes and into the bottom of the receptacle and thence through the pipe K back into the case the valves *k'* k^2 and j^2 being open and *j'* closed. The door G is adjusted as indicated in Figs. 4 and 6. The cylinder is then rotated in the direction of the arrow in Fig. 4. The wings *d* dip into the water in the case and carry the same upward and a sufficient rapidity of rotation is imparted to the cylinder to cause the same to throw the water from the cylinder on to the door G whence it flows out through the port *a* down the spout M to fall upon the dishes in the receptacle and into the receptacle L. The receptacle L is placed at a sufficient distance below the end of the spout M to allow a hydraulic force or dashing of the falling water to be produced to apply the water forcibly to the dishes for the purpose of cleansing the same. The belt *l* is arranged with relation to the pulleys *l'* and *l''* so that when the cylinder is thus rotated the receptacle L will be rotated in the direction of the arrow shown thereon in Fig. 1 so that as the water falls into the receptacle the dishes are drawn toward the falling stream. The receptacle or pan L is so set with relation to the spout M that the water falling from spout M will fall into that half of the pan which is to the rear in Fig. 1 and to the front in Fig. 2. The water thus applied flows down through the outlet into the pipe K and thence into the base A whence it is again taken and conducted through the machine as above outlined. The water falling through the pipe K tends to carry with it the steam which enters through the pipe J' thus causing the steam to enter the water in the case and cylinder and thus heating the same in addition to the heat which is imparted to the water while passing through the boiler or base H. When the dishes have been washed, the balanced door G is thrown up into the position indicated in dotted lines in Fig. 6 so that the water no longer passes down through the spout. Then the valve *k'* is closed and the steam from the pipe J' is thus forced to

pass up through the pipe K and up through the dishes in the receptacle L thus thoroughly rinsing and heating them so that they will readily dry when removed from the receptacle. When the dishes have been thoroughly cleansed and heated the receptacle L can be lifted from its support and carried to such place as the dishes are to be deposited. When the dishes are removed the perforated distributing plate can be removed thus giving access to all parts of the receptacle for such cleansing as may be required.

The dishes while being washed do not require any handling with the hands and therefore strong lye or other cleansing solutions may be used which otherwise could not be used with safety and the dishes can thus be thoroughly cleansed from all impurities. The water thus charged with the cleansing solutions is not wasted as it returns to the bottom of the case but is used over and over again until great numbers of dishes are thoroughly cleansed.

The frame B is provided with one hinged slat or cross bar *b* fastened by a suitable clasp *b'* and when it is desired to use the appliance as a clothes washing machine, the clasp *b'* is released and the bar *b* thrown back as indicated in Fig. 3 thus allowing the upper section *c'* of the cylinder to be removed from the lower section *c* and allowing the clothes to be placed in the lower section, after which the upper section is replaced and secured by means of the cross bar and clasp. The cover of the case A' is then thrown into position shown in Fig. 4 and is secured by the clasp *a''*. The water is then introduced into the case and heated by steam or by the base which is set upon a suitable stove or other heating appliance. The balanced door G is thrown into the vertical position as indicated in dotted lines in Fig. 6 and the cylinder is then rotated in a direction opposite to the arrow at the top of Fig. 4. The door G prevents the escape of water through the outlet *a* so that the machine is used without any escape of water. As the cylinder is thus rotated the inner wings *d'* catch the clothes and the water which has entered into the cylinder through the perforations *e* and *e'*, and carries the same up toward the top of the cylinder until the clothes and water dash back to the bottom of the cylinder. This operation is continued until the clothes are cleansed. The cover A is then thrown back into the position shown in Fig. 3 and the legs T which are pivoted thereto are brought into position to sustain it. The clasp *b'* is then unfastened and the upper part of the cylinder C is removed thus allowing access to the lower section *c* of the cylinder in which the clothes remain. By forming the inner cylinder in two halves, when the upper part of the cylinder is removed the clothes in the lower part of the cylinder are thus arranged in convenient position to be removed therefrom, and greater convenience of operation is secured than is possible where the cylinder is simply provided with a door through which the clothes are introduced into and removed from the interior of the cylinder. This feature is very important, and relieves the operator of a vast amount of work, and the danger of scalding the hands, which is present where the clothing must be removed from the cylinder through a comparatively small door or opening therein, as has heretofore been proposed. A clothes wringer Q is then attached to the case close to where the cover A' is hinged and the clothes are then passed through the wringer into the cover A' which serves as a receptacle therefor. The water from the wringer flows back into the case A from which it can be drawn off. When the clothes have been thus wrung the wringer is removed and the clothes are returned to the lower section *c* of the cylinder and the upper section *c'* of the cylinder is replaced and secured by the bar and clasp. Then the cover A' is adjusted to the position shown in Fig. 1 the steam heat being applied from the steam generator (not shown) to the base of the case. The steam is shut off from the interior of the case and the valve *h'* is opened to allow the steam to escape through pipe *h*. The draw off O and the port *a* are opened thus allowing a draft of air to flow in at O and out at *a*. The cylinder is then rotated in the direction indicated by the arrow in Fig. 4 thus carrying the clothes up and causing them to drop within the cylinder while the rotation of the cylinder causes a blowing action which carries off the vapor and steam through the port *a* thus rapidly drying the clothes. When the clothes are thus dried the machine is opened again and the clothes are removed.

The machine as arranged and shown in Fig. 4 can easily be applied for the purpose of washing potatoes by operating the machine in practically the manner above described for washing dishes.

The machine can also be used for cooking potatoes and other vegetables in large quantities by placing the same in the cylinder and turning on steam through the pipes I, J and K into the case.

T represents suitable legs which are attached to the cap member and are arranged to support such cap member substantially level with the base member when the cap member is thrown back to uncover the base member as shown in Fig. 2.

W is a flexible strip which is secured to the inner side of each member of the case and extends across the hinged joint between such members so that when the wringer is applied as shown in Fig. 3, the water will be directed back into the base member A, thus preventing leakage of water through the joint between the two members.

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

1. The combination of the hollow case com-

prising a base member, a cap member adapted to fit upon the base member to form the inclosing case; a frame journaled to revolve within the case and adapted to sustain and rotate within the case suitable detachable appliances, and suitable means for rotating the frame.

2. The combination set forth of a hollow case comprising a base member provided with an inlet and a cap member adapted to fit upon the base member and provided with an outlet; a suitable passage connecting the outlet with the inlet; a hollow cylinder journaled to revolve in such case and formed in two halves adapted to be fastened together, and having its walls provided with wings arranged around the circular wall of the cylinder and projecting outward therefrom.

3. The combination of the boiler; the base member arranged upon the boiler; the cap member hinged to the base member and adapted to fit thereupon to form an inclosing case, and provided with a suitable outlet; the steam pipe arranged in the boiler and opening near the top thereof; the discharge chute leading from the outlet; the receiving receptacle arranged to receive the discharge from the discharge chute; the return pipe leading from the bottom of the receiving receptacle and opening into the base member; the steam pipe leading from the top of the boiler and communicating with the return pipe; and suitable valves arranged to control the passages in the return and steam pipes.

4. The combination of the hollow case comprising a base member provided with an inlet and a cap member adapted to fit upon the base member and provided with an outlet; a gravity valve pivoted at the mouth of such outlet and adapted to swing upward upon its pivot to close such outlet, and to be swung outward upon its pivot to open such outlet and to form a receiving ledge to receive the discharge from the inner cylinder; a hollow cylinder journaled to revolve in the case and formed of two halves adapted to be fastened together and provided with wings arranged around the circular wall of the cylinder and projecting outward therefrom; the discharge chute leading from the outlet; the receiving receptacle arranged to receive the discharge from the discharge chute and provided with the supporting rack and the distributing plate arranged beneath such supporting rack, such receptacle being provided at its bottom with the downwardly projecting nipple; the band wheel provided with the hollow journal arranged to receive the nipple of the receiving receptacle and communicating with the return pipe; the return pipe leading from such receptacle and opening into the base member; the band wheel arranged on the shaft of the hollow cylinder, and the belt trained around the two band wheels.

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