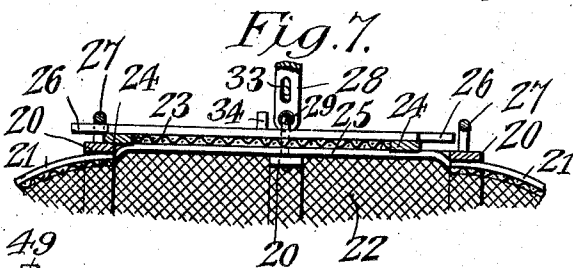
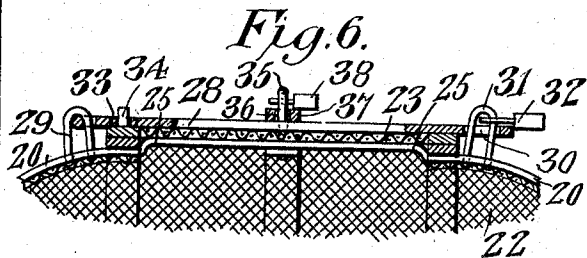
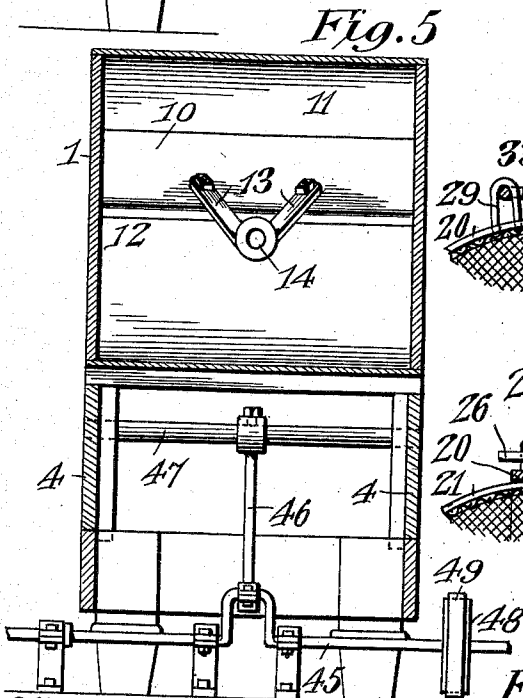
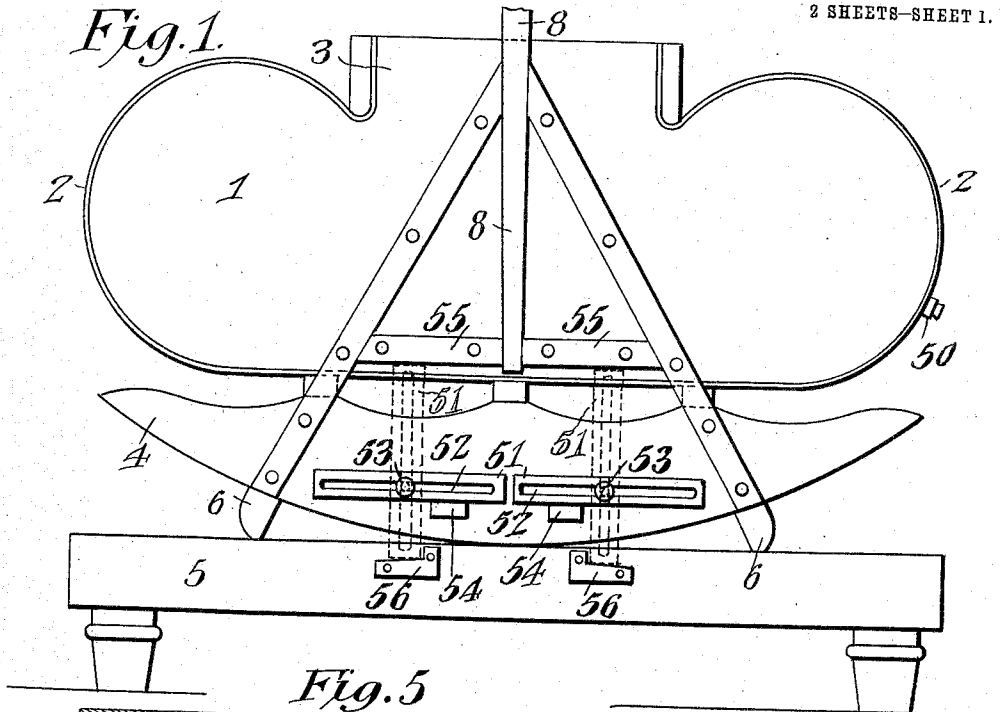


F. B. CHURCHILL.
CURRENCY WASHING MACHINE.
APPLICATION FILED JUNE 11, 1910.

981,169.

Patented Jan. 10, 1911.

2 SHEETS—SHEET 1.



Witnesses

Jas. E. McLaughlin
R. H. Bishop

Frank B. Churchill, Inventor

By

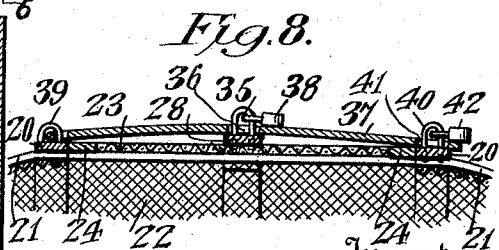
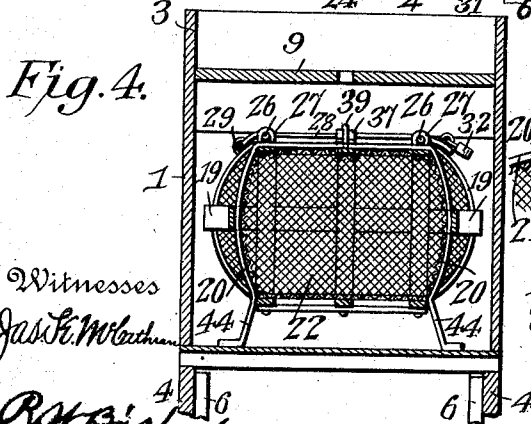
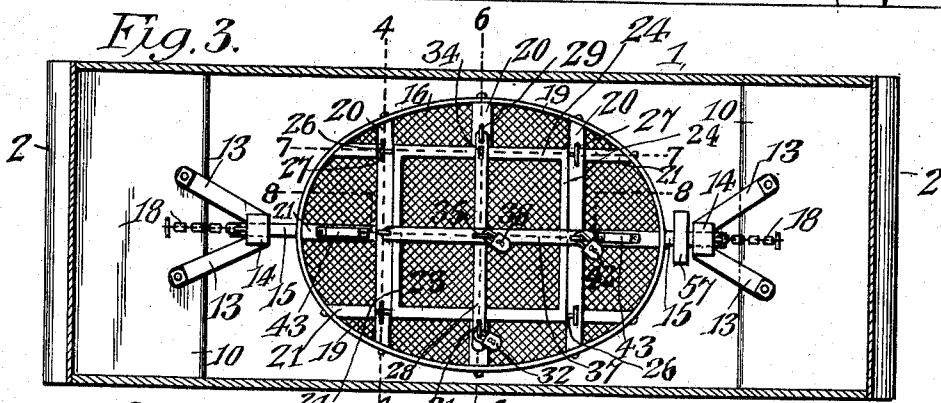
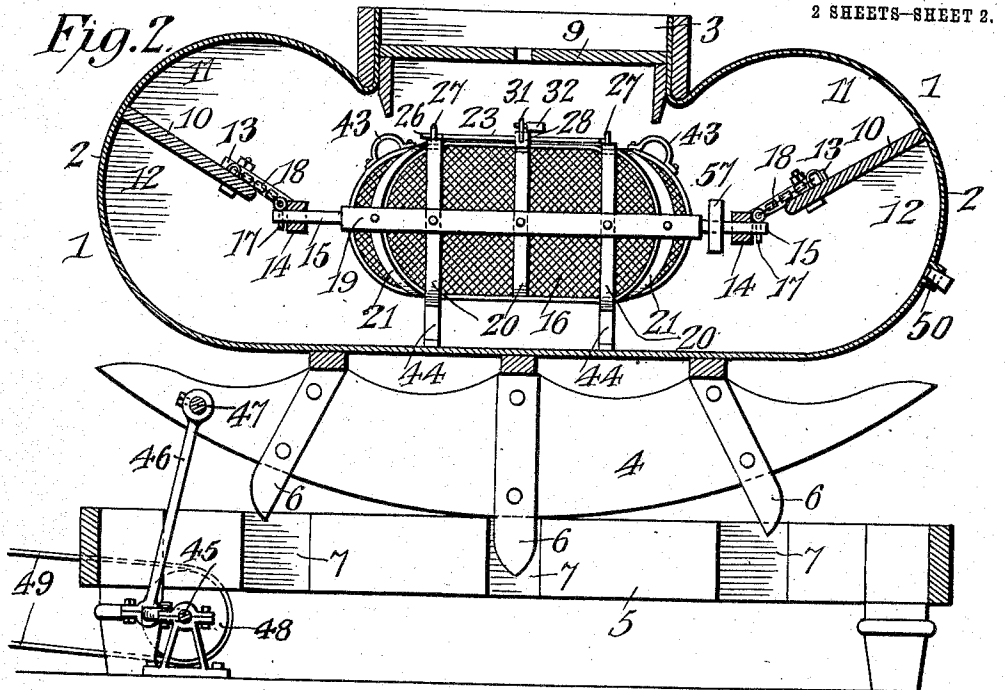
E. G. Siggers
Attorney

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2 SHEETS-SHEET 2.



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UNITED STATES PATENT OFFICE.

FRANK B. CHURCHILL, OF SHELBYVILLE, INDIANA.

CURRENCY-WASHING MACHINE.

981,169.

Specification of Letters Patent.

Patented Jan. 10, 1911.

Application filed June 11, 1910. Serial No. 566,387.

To all whom it may concern:

Be it known that I, FRANK B. CHURCHILL, a citizen of the United States, residing at Shelbyville, in the county of Shelby and State of Indiana, have invented a new and useful Currency-Washing Machine, of which the following is a specification.

This invention relates to improvements in washing machines and has for its object the provision of a simple and easily operated apparatus by the use of which currency and similar articles may be readily cleaned so that they may be used repeatedly without liability of transmitting disease.

The invention also seeks to provide an apparatus for the stated purpose by which the loss of the bills will be prevented and the washing effected in an expeditious manner.

These objects, and such other incidental objects as will hereinafter appear, are attained in the use of the mechanism illustrated in the accompanying drawings, and the invention consists in certain novel features of the same which will be hereinafter first fully described and then subsequently pointed out in the claims.

In the drawings,—Figure 1 is a side elevation of a washing machine adapted for the purposes of my invention. Fig. 2 is a view, partly in longitudinal section and partly in elevation, of my improvements. Fig. 3 is a view, partly in horizontal section and partly in plan, of the invention. Fig. 4 is a transverse vertical section on line 4—4 of Fig. 3. Fig. 5 is a view partly in end elevation and partly in vertical section showing a mechanical operating mechanism, as well as a bracket for supporting the basket which contains the securities during the washing operation. Fig. 6 is a detail section taken on the line 6—6 of Fig. 3. Fig. 7 is a similar view taken on the line 7—7 of Fig. 3. Fig. 8 is a similar view taken on the line 8—8 of Fig. 3.

In carrying out my present invention, I will employ a body 1 having curved end lobes or compartments 2 and a central upwardly projecting neck 3 which constitutes the entrance through which the articles to be washed may be placed in the body. The body is also equipped with rockers 4 which are arranged to operate upon a platform or base 5 and are held in proper position upon

the platform by retaining spurs 6 adapted to fit into notches 7 in the base. The body is also provided with an upwardly projecting lever or handle 8 by which it may be operated and is also provided with a cover 9 fitting within the extension 3, the apparatus thus far described being the same as that disclosed in Letters Patent No. 673,194, granted to me April 30, 1901. Within the end lobes or compartments 2 are air-tight transverse downwardly inclined partitions whereby air chambers 11 and 12 are formed at the ends of the body above and below the partitions as explained in my aforesaid patent.

In carrying out my present improvements, I secure to the partitions 10, at the inner lower edges of the same, the V-shaped brackets 13 having circular bearings 14 at their centers beyond the edges of the partitions, as clearly shown. These bearings 14 are adapted to receive pins or journals 15 at the opposite ends of a basket 16 which is adapted to contain the currency or other valuables which are to be treated, and linch pins 17 are secured to the partitions 10 by chains 18 and adapted to be inserted through the ends of the journals beyond the bearings 14 in order to retain the basket in place. The basket 16 is of a foraminous character so that while the bills may be held within the basket and prevented from floating around in the body of the machine, the water or other cleansing agent may have ready access to the bills so as to act thereon and remove the dirt therefrom. The basket comprises a main frame bar 19 which will ordinarily be of an elliptical form in plan view and of a size determined by the desired capacity of the machine. The journals 15 are formed upon and project from this main bar, and at intervals along the same I provide transverse straps or bars 20 and longitudinal straps 21 constituting a framework to and within which a perforated or open covering 22 is secured, said covering being of wire netting or cloth fabric, as may be preferred. It will be readily noted, upon reference to the drawings, that the transverse and longitudinal bars or straps 20 and 21 are shaped to provide curved sides and ends to the basket so that the formation of corners in the basket is overcome and no angles will be presented to tear or otherwise

mutilate the currency. It will be noted that
 in the form of basket illustrated I have em-
 ployed three transverse bars and three lon-
 gitudinal bars. The outer bars of each set
 of three are continuous across the top of the
 basket, while the intermediate bars of each
 set terminate at the bars intersected by them
 in order that an opening may be provided
 in the top of the basket to permit the bills
 to be placed therein. This opening may be
 covered by a door consisting of a perforated
 or open-mesh fabric 23 secured to a frame
 consisting of side and end bars 24, the side
 bars resting upon the longitudinal bars 21
 at the sides of the door opening and the end
 bars fitting between and against the trans-
 verse bars 20 at the ends of the door open-
 ing. In order to provide a firm support for
 the door at all four sides of the same, the
 longitudinal bars 21 are slightly arched be-
 tween the end bars 20, as indicated at 25,
 so that the upper surfaces of all the bars
 will be brought into the same horizontal
 plane, as will be readily understood. The
 side bars of the door are provided with elon-
 gated pins 26 at their ends which are adapt-
 ed to engage staples or similar retainers 27
 on the upper sides of the outer transverse
 bars 20, as shown clearly in Figs. 3 and 7.
 The staples or keepers 27 are spaced apart
 a distance slightly greater than the distance
 between the inner ends of the pins 26 so
 that by sliding the door slightly upon the
 basket, the pins may be engaged in or dis-
 engaged from the keepers so as to permit
 the removal or application of the door, as
 will be readily understood on reference to
 Fig. 7. In order to secure the door in its
 closed position to prevent the loss or ab-
 straction of any of the bills placed therein,
 I provide a latch bar 28 which is secured
 to the central transverse bar 20 at one side
 of the door opening by a hinge 29 and is
 provided at its free end with a slot 30 adapt-
 ed to receive a hasp 31 through which a
 lock 32 may be engaged above the latch so
 as to hold the latch securely across the door.
 The latch, it will be seen at once, clamps
 the door against the basket, and in order
 to prevent sliding of the door under the
 latch I provide a slot 33 in the latch, near
 its hinged end, which may be engaged by a
 pin 34 rising from the adjacent side bar of
 the door, as clearly shown in Figs. 3, 6
 and 7.

At the center of the latch bar 28 I provide
 a staple 35 which is adapted to project
 through a slot 36 in a latch bar 37 and re-
 ceives a lock 38 by which independent move-
 ment of the latch bars will be prevented.
 The latch bar 37 is engaged over a hook,
 staple or other hinge device 39 upon one of
 the outer transverse bars 20 and extends
 across the door and over the latch bar 28,

as clearly shown, the free end of the latch
 37 being engaged over a staple 40 by means
 of a slot 41. The staple 40 rises from the
 frame of the basket and receives a lock 42
 whereby the latch will be firmly secured in
 its locked position, in which it will not only
 press upon the latch 28, but will extend over
 the door and bear upon the end bars of the
 same so as to firmly clamp the door in its
 position to close the basket.

It will be readily understood from the
 foregoing description that the bills to be
 cleaned are placed in the basket and re-
 tained therein by inserting the door and
 locking the same, after which the filled bas-
 ket is inserted through the entrance neck 3
 into the body and its journals 15 engaged
 in the bearings 14 and secured therein,
 whereupon the machine body is oscillated so
 as to cause the water or other cleaning agent,
 previously placed in the body, to permeate
 back and forth through the basket and the
 currency therein. In order to facilitate the
 insertion and removal of the basket, handles
 43 are provided on the central longitudinal
 bars 21 at the ends of the basket, and in
 order to brace the basket within the machine
 body, the end transverse bars 20 are shaped
 to provide depending feet 44 adapted to
 bear against the bottom of the body, as
 shown in Fig. 4. The feet 44, by bearing
 against the bottom of the tub or oscillatory
 body, serve as braces to hold the basket
 firmly in engagement with the brackets 13
 so that the basket will follow the movement
 of the body without floating around therein.
 During the washing operation, the bills will
 be prevented from working from the basket
 by reason of the close mesh of the fabric
 covering the same, and the door will be held
 closely and tightly in the door opening of
 the basket by reason of the two latches ar-
 ranged at right angles to each other, the
 upper latch 37 being sprung somewhat over
 the latch 28 so that it will bear strongly
 upon the door and prevent movement of the
 same.

In Fig. 1, I have shown the machine ar-
 ranged for manual operation in the same
 manner as disclosed in my hereinbefore men-
 tioned patent. I contemplate, however, op-
 erating the apparatus mechanically from an
 electric or other motor and for this purpose
 I provide a crank shaft 45 under one end
 of the machine which is connected by a pit-
 man 46 with a transverse rod 47 secured to
 and extending between the rockers 4. A
 driving pulley 48 is provided at a conven-
 ient point of this crank shaft and a belt or
 similar device 49 is engaged with this driv-
 ing pulley in order that motion may be im-
 parted thereto and through it to the crank
 shaft from any convenient form of motor.

The tub or body is provided at one end

with a suitable outlet or discharge 50 whereby it may be drained after using, and in order to hold the body stationary to facilitate the insertion or removal of the basket, I employ the props or locking bars 51 which are provided with longitudinal slots 52 engaging pins 53 on the sides of the rockers and resting normally upon the projections 54 on the rockers. When it is desired to operate the machine, the locking bars will be in the position shown in full lines in Fig. 1, but when it is desired to hold the body at rest, the bars are swung upon the pins 53 as pivots to the position shown in dotted lines in said figure, and are shifted longitudinally upon the said pivot pins so that one end of each locking bar will engage the under side of a rib or cleat 55 on the side of the body while the opposite end of the locking bar will bear upon rests or offsets 56 on the side of the base. Inasmuch as the locking bars are arranged at opposite sides of the central line of the body, the engagement of the bars with the cleats 55 and the offsets 56 will prevent the oscillation of the body so that the basket may be easily inserted or removed.

The basket having been filled and the door secured, as before stated, the basket will be tilted so as to be easily inserted through the entrance in the top of the oscillatory basket or tub and the journals 15 are then engaged in the brackets 13 and secured by the engagement of the linch pins 17, after which the cover 9 is fitted in place and the body vibrated. The water or other cleaning fluid will be caused to rush from end to end of the body as the same is oscillated and will be forced to circulate through the basket. As the water rushes to the end of the body it will compress the air within the air chambers 11 and 12 which will react by its expansion so as to force the same through the basket with sufficient power to remove from the bills therein all foreign matter collected upon the same. The liquid is thus violently agitated by the movement of the tub or body so that the bills within the basket will be rapidly and thoroughly cleaned and by this means will be made again fit for use without fear of transmitting disease.

The washing of currency because of the character of the material being treated presents problems not found in the washing of other materials, since in the washing of currency the safety of the currency is paramount, and special precautions must be taken against either injury or loss, the operations being performed under the supervision of but not by the official or officials charged with the safety of the currency. It is, therefore, imperative that the structure be capable of having the currency safely locked in the receptacle for the same without

possibility of any of the currency being surreptitiously removed, and this condition of safety must prevail until the currency has been cleansed and dried, so that it may be easily removed either by the responsible party or parties or by others under proper supervision, and if need be can be readily counted as a check against improper removal of any of the currency.

In order to prevent mutilation or any injury whatsoever to the currency, the basket 16 is free from internal obstruction, and the walls are by preference curved throughout, so that no angles are presented to the currency. The strengthening framework of the basket is outside the same and the perforated or open covering of foraminous material is interior to the framework, thus presenting nothing within the basket upon which the currency might catch to thereby become mutilated.

After the currency has been washed, it must be dried, and for this purpose the action of heat and centrifugal force is utilized, the basket with the currency therein being removable as a whole from the washer and is introduceable as a whole into a drier described and claimed in application No. 566388 for a currency drier, filed by me on June 11, 1910, but the claims which relate to the structures common to both the present case and the drier are made in this case.

Only those parts which are common to both the washing and the drying operations are made removable from the washing structure and insertible into the drying structure, and these parts are made removable as a whole, so that after the currency is locked in the basket, there is no necessity of unlocking the basket, or of having access to the interior thereof from the time the currency is first placed in the basket until the drying operation has been completed. For this purpose the basket is provided with alined journals adapted to and removable from suitable bearings in the washing machine, and likewise adapted to and removable from suitable bearings in the drier, and, furthermore, the basket is provided with feet which serve to steady it in the washing machine and hold it against rotative movement, since rotation is not desirable in the washing machine, but it will not interfere with rotative movements necessary to generate the centrifugal force to drive off the washing fluid in the drier.

Having thus described my invention, what I claim is:—

1. A receptacle for currency having pervious walls and a removable cover, said receptacle being provided with oppositely disposed journals and having its interior wholly unobstructed.

2. A receptacle for currency comprising a

basket having pervious walls defining a chamber, the interior of which is wholly unobstructed, and a supporting frame for the pervious walls exterior thereto and to which the walls are fixedly secured.

3. A receptacle for currency having pervious walls and a supporting framework therefor to which the walls are fixedly secured, said receptacle being provided with a removable cover, and the interior of the basket being wholly unobstructed, and oppositely disposed journals and supporting feet carried by the frame of the basket.

4. The combination with an oscillatory tub, of brackets within the same at the ends thereof, and a foraminous basket provided at opposite ends with journals adapted to engage said brackets, and on its under side with depending feet adapted to bear upon the bottom of the tub.

5. The combination with an oscillatory tub, of a foraminous basket adapted to be removably secured within the tub, said basket comprising longitudinal and transverse intersecting bars, a perforated fabric secured to said bars, a door detachably engaging the top of the basket, and means for securing the door upon the basket.

6. The combination with an oscillatory tub, of a foraminous basket removably fitted therein and comprising intersecting bars, a perforated fabric secured to said bars, some of the bars terminating at the intersecting bars to provide an opening in the top of the basket, a door fitting said opening, and latches secured upon the basket and extending over the door and provided with securing means whereby they will clamp the door in place.

7. The combination with an oscillatory tub, of a foraminous basket removably fitted therein, and consisting of intersecting bars and a perforated fabric secured to the same, some of the bars terminating at the intersecting bars to provide a door opening, retaining devices secured upon the basket adjacent the said opening, a door fitting the said opening and provided with elongated pins adapted to engage said retaining devices, and a latch secured to the basket and extending over the door to secure the door in place.

8. The combination with an oscillatory tub, of a foraminous basket removably fitted therein, and consisting of intersecting bars and a perforated fabric secured to the same, some of the bars terminating at the intersecting bars to provide a door opening, retaining devices secured upon the basket adjacent the said opening, a door fitting the said opening and provided with elongated pins adapted to engage said retaining devices, an upstanding pin on the door, and a latch bar hinged upon the basket at one side

of the door and provided adjacent the hinge with a longitudinal slot to engage the said pin and adapted to be locked to the basket at the opposite side of the door.

9. The combination with an oscillatory tub, of a foraminous basket removably fitted therein, and consisting of intersecting bars and a perforated fabric secured to the same, some of the bars terminating at the intersecting bars to provide a door opening, retaining devices secured upon the basket adjacent the said opening, a door fitting the said opening and provided with elongated pins adapted to engage said retaining devices, a latch hinged upon the basket at one side of the door and adapted to extend over the door and the first-mentioned latch and be secured to the basket at the opposite end of the door, the said second latch being provided with an opening to receive a locking means carried by the first-mentioned latch.

10. A currency washing machine comprising an oscillatory tub provided with interior journal bearings in line one with the other, and in a plane longitudinal of the tub and perpendicular to the axis of oscillation, and a pervious basket provided with oppositely disposed journals adapted to the journal bearings within the tub.

11. The combination with an oscillatory tub, of a foraminous basket removably secured at its ends within the tub and provided on its under side with feet adapted to bear upon the bottom of the tub.

12. A currency washing machine comprising an oscillatory tub having an opening for access to the interior thereof, a cover for closing said opening, bearings within the tub in line one with the other, and a basket having an unobstructed interior and pervious walls defining such interior and provided with journals adapted to the bearings, and locking means for removably securing the journals in the bearings, said basket having a removable cover and locking means therefor, the opening in the tub being of a size to permit the introduction and removal of the basket with its journals and with the cover locked to the basket.

13. The combination with a receptacle having interior supports, of a basket having pervious walls and an unobstructed interior defined by said walls, said basket having a removable cover, means for locking the cover to the basket and oppositely disposed journals adapted to the supports within the receptacle, the basket with its cover in the locked position and with its journals being introduceable and removable as a whole with respect to the receptacle.

14. A receptacle for currency having an unobstructed interior inclosed by pervious walls and provided with a removable cover, and locking means for the cover.

15. A receptacle for currency having a wholly unobstructed interior and pervious walls defining such interior, a supporting framework for the walls exterior thereto and to which the walls are in fixed relation, a
5 removable cover for the receptacle, oppositely disposed journals carried by and fast to the frame of the receptacle, and a container for the receptacle having supports for
10 the journals, said receptacle being as a whole

readily introduceable in and removable from the container.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

FRANK B. CHURCHILL.

Witnesses:

JOHN H. SIGGERS,
R. W. BISHOP.