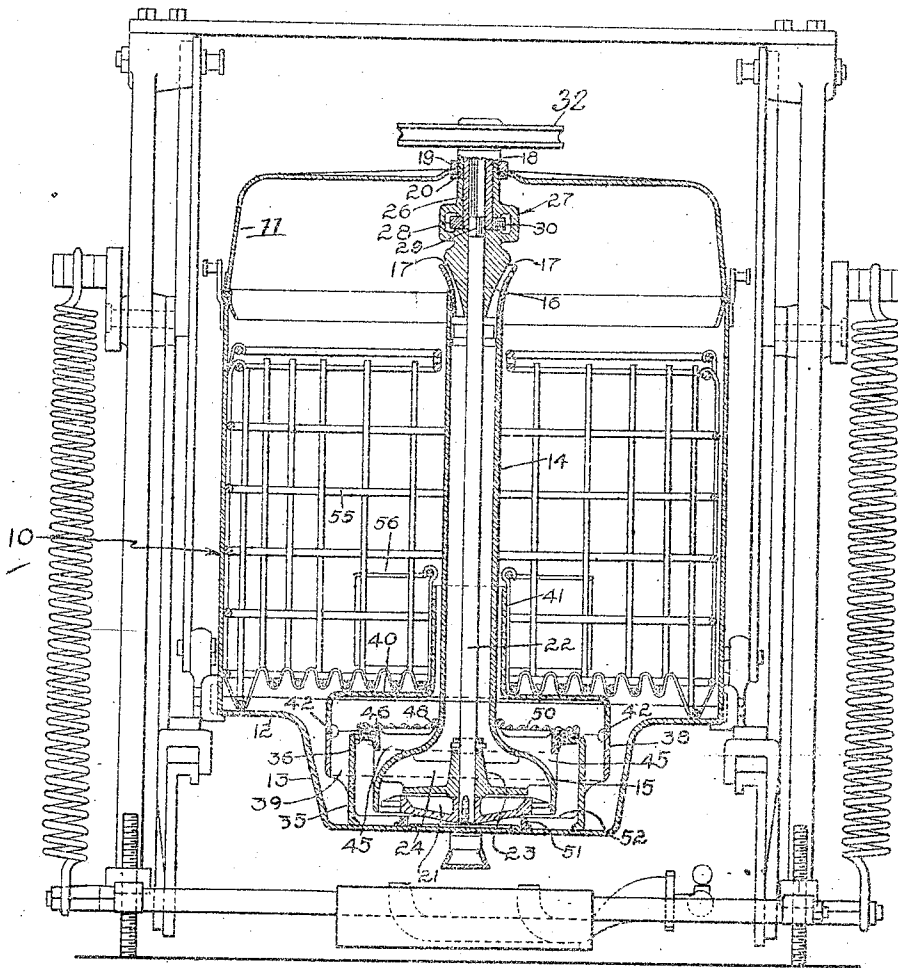


T. W. HEERMANS.
WASHING MACHINE.
APPLICATION FILED JUNE 15, 1917.

1,256,557.

Patented Feb. 19, 1918.



Witness

Walter F. Hogg.

Inventor
Thaddeus W. Heermans
by *William H. Hogg*

AMG.

UNITED STATES PATENT OFFICE.

THADDEUS W. HEERMANS, OF EVANSTON, ILLINOIS.

WASHING-MACHINE.

1,256,557.

Specification of Letters Patent.

Patented Feb. 19, 1918.

Original application filed May 16, 1917, Serial No. 168,956. Divided and this application filed June 15, 1917. Serial No. 174,856.

To all whom it may concern:

Be it known that I, THADDEUS W. HEERMANS, a citizen of the United States, and a resident of Evanston, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Washing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in washing machines for washing dishes, silverware, glasses, and other like articles, and the invention consists in the combination and arrangement of the parts shown in the drawings and described in the specification, and is pointed out in the appended claims.

The invention relates in part to a novel washing mechanism of the general character shown in my co-pending application for U. S. patent, Serial No. 98245, filed May 18, 1916, wherein the container is divided into a lower well or compartment for limiting the quantity of the wash water used and an upper washing compartment, with means for elevating the water from said well to the top of the washing compartment, where- by the dishes are washed by water which flows always in one direction, or downwardly, the washing compartment being separated from the well by a series of wall members which are constructed and arranged to provide indirect passageways from the washing compartment to the lifting device, which are so formed as to provide settling, skimming and straining means to remove the particles from the wash water so that the water returning to the water elevating means for re-use is clean.

The well is formed in a reduced bottom of the container so as to limit the amount of wash water handled and to correspondingly limit the amount of fuel used to heat the water; it being apparent that inasmuch as the water is cleaned between its periods of use, a less volume of water may be used.

The figure of the drawing is a partial front elevation and partial section of a washing machine embodying my invention.

As shown in the drawings, 10 designates a container, preferably made of sheet metal. It is provided with a removable cover 11, and the bottom wall 12 thereof is formed

with a depending reduced portion 13 which constitutes a well or compartment for the wash water. 14 designates a stand pipe that is arranged centrally within the container. The lower end of said pipe is formed with a downwardly open bell mouth 15, arranged centrally within the well. The upper end of the stand pipe extends to the top of the container and said upper open end of the stand pipe receives the lower end of a hollow bearing member 16, which is fixed to and depends from the removable cover and is formed to provide orifices 17 of an umbrella spray nozzle in a manner generally similar to the construction shown in my aforesaid application. As herein shown said bearing member 16 is provided with an upwardly extending threaded neck portion 18 that extends through the sheet metal cover 11 and is locked thereto by means of upper and lower nuts 19, 20, respectively, threaded to said neck portion 18. 21 designates a helical impeller that is rotatively mounted within the bell mouth 15 of the stand pipe and which serves, when rotated at suitable speed, to lift the wash water upwardly through the stand pipe for discharge through the orifices 17 of the nozzle. The impeller is mounted on the lower end of a vertical, rotative shaft 22 which extends upwardly through the stand pipe and is rotatively mounted at its lower end in a bearing 23 carried by ribs 24 which are made integral with the bell mouth of the stand pipe. The shaft 22 extends at its upper end into a sleeve 26 that is rotatively mounted in an internal bearing of the member 16. Said shaft 22 is provided with squared or other polygonal portion 29 which fits a like shaped portion of the opening of the sleeve, whereby the sleeve is non-rotatively locked to the shaft. Surrounding said sleeve and located in a yoke portion 27 of the member 16 is collar 28 which is locked to the sleeve by a set screw 30, said collar serving as a shoulder to hold the sleeve from rising in its bearing. Connected to or formed integral with said sleeve 26 is a driving wheel 32 which, as herein shown, is grooved for engagement with a cylindric driving belt.

Surrounding the bell mouth 15 of the stand pipe and rising from the bottom of the well is an annular or ring like shell 35 which is formed at its upper edge to provide an inturned ledge 36. The internal diameter

of said ledge is slightly greater than the external diameter of the base of the stand pipe, so that said stand pipe may be passed through the opening surrounded by the ledge, and thus removed from or inserted into place. Exterior to said annular shell 35 is an annular skirt 38 which is supported by webs 39 integral therewith and with the shell 35. Said skirt terminates some distance above the bottom of the well and its lower edge constitutes a skimming edge, for a purpose hereinafter described. The shell is surmounted by a dome shaped cover plate 40 which fits closely over and upon the upper edge of the shell and is formed with a central upwardly extending neck 41 that surrounds the stand pipe, whereby said plate may be removed upwardly over the stand pipe. Lugs 42 serve to center the dome shaped plate on said shell. Formed integral with the bell mouth of the stand pipe are a series of webs 43 which carry an integral ring 46 that rests on the ledge 36, and said ring and a shoulder 48 on the stand pipe constitute a support for an annular screen 50 that bridges the annular open space between the stand pipe and the shell 35. The stand pipe is supported on the ledge 36 through the medium of the ring 46 and webs 43, and a ring 51 that is supported on the bottom of the well is connected to the shell 35 by integral radial webs 52 that serve as means to break up the body of water in the well when the impeller is rotated, and therefore prevent the body of water from being merely swirled by the impeller, with a result of losing the lifting effect thereof.

The dishes are contained in a basket-like holder 53 which is removably supported in the container, it being adapted to be supported on the bottom wall 12 and on said dome shaped plate 40. It may be made of any suitable form and is of a size to fit closely within the container. A silver rack 56 is supported on the bottom of the holder around the stand pipe and is adapted to be removed upwardly over the stand pipe.

The operation of the machine is generally like that of the machine illustrated in my aforesaid application. Water is placed in the container to about the level indicated in the drawing. The water may be heated before it is placed in the container or the water may be heated after being placed in the container and maintained hot by a suitable burner hereinafter described. The impeller 21 is rotated rapidly through the medium of power applied to the pulley 32 and acts to force the water upwardly through the stand pipe, from whence it is discharged through the orifices of the nozzle and falls down among and through the dishes or other articles in the holder. The water after passing the dishes finds its way

to the well through the indirect passages formed between the skirt 38 and shell 35 and through the screen 50. The solid, non-floating particles carried by the water settle by gravity to the lower part of the well exterior to the shell 35, while the solid, lighter particles, which float, are prevented from passing beneath the edge of the skirt 38, so that thereby said particles may be said to be skimmed from the water by said edge. Such particles as may, by reason of the agitation of the water pass said skimming edges are removed or separated from the water by the screen 50. The water returned to the impeller for re-use, therefore, is clean water and the dishes are not subjected to the application of and emulsion of the water and solids, such as would occur if the particles were not separated from the water between the periods of use thereof.

The water is preferably heated by a burner located below the container so that it may be kept at a suitably high temperature, regardless of the chilling effect due to contact thereof with cold dishes and like articles.

The machine is herein shown as supported on a swinging elevating frame of the same construction as shown in my pending application for U. S. Letters Patent, Serial No. 168,956, filed May 16, 1917, of which this application is a division. Inasmuch as the supporting and elevating frame constitutes no part of the present invention the same is not herein specifically described.

I claim as my invention:—

1. A washing machine for the purpose set forth comprising a container provided at its bottom with a well and above the well with a washing compartment, a stand pipe extending from the well into said washing compartment, a water lifting device within the lower end of the stand pipe, means for operating it, an open top shell surrounding the lower end of the stand pipe, a skirt surrounding and spaced from the upper end of the shell, with its lower edge spaced from the bottom of the well and a cover surrounding said stand pipe and fitted over said skirt.

2. A washing machine for the purpose set forth comprising a container provided at its bottom with a well and above the well with a washing compartment, a stand pipe extending from the well into said compartment, a water lifting device within the lower end of the stand pipe, with means for operating it, an open top shell surrounding the lower end of the stand pipe, and supported on the bottom of the well, with means whereby the stand pipe is supported on said shell, a skirt surrounding and spaced from the upper end of the shell, with its lower edge spaced from the bottom of the well, a cover plate applied over said skirt and a

screen extending across the open end of said shell.

3. A washing machine for the purpose set forth comprising a container provided at its bottom with a well and above the well with a washing compartment, a stand pipe extending from the well upwardly into the washing compartment, a water lifting device within the lower end of the stand pipe, with means for operating it, an open top shell surrounding the lower end of the stand pipe, a skirt having its lower edge spaced from the bottom of the well and surrounding and spaced from the upper end of the shell to provide between the same and the shell an annular water passage, a screen surrounding the stand pipe and extending across the open top of the shell and a dome-like plate surrounding the stand pipe and supported on the upper edge of said skirt.

4. A washing machine for the purpose set forth comprising a container reduced at its bottom to provide a well and provided above said well with a washing compartment, a stand pipe removably supported in and extending from said well upwardly into the washing compartment and provided at its upper end with a spray nozzle, a water lifting device in the lower end of said stand pipe, an open top shell surrounding the lower end of the stand pipe and provided at its lower end below the water lifting device with radial webs, a skirt surrounding and separated from the upper end of the shell, with its lower edge spaced from the bottom of the well and a dome-like cover removably supported on the upper edge of the skirt and surrounding the stand pipe.

5. A washing machine for the purpose set forth comprising a container, which is reduced at its bottom to provide a well, a washing compartment above said well, an upwardly removable stand pipe open at its bottom and extending from the well upwardly into the washing compartment and provided at its upper end with a spray nozzle, a rotative water raising impeller in the lower end of said stand pipe, an open top shell surrounding the lower end of the stand pipe and of greater diameter than the lower end of the stand pipe whereby the stand pipe may be removed upwardly there-through, a skirt surrounding and spaced from the upper end of the shell, with its lower edge spaced from the bottom of the well, a cover plate surrounding said stand pipe and removably supported on the upper edge of the skirt, and straining means supported on the upper open top of said shell and extending across the space between the stand pipe and said shell.

6. A washing machine for the purpose set forth comprising a container formed at its bottom to provide a well and above the well with a washing compartment, a stand pipe extending from said well upwardly into the washing compartment and open at its lower end, a rotative water lifting impeller mounted in the lower end of said stand pipe and provided with a shaft extending upwardly through the stand pipe, a cover removably fitted to the top of the container, a bearing member secured to the cover and extending downwardly into the upper open end of the stand pipe and formed with orifices to constitute a spray nozzle and a sleeve rotatively mounted in said member and interlocked to said shaft and provided with a drive wheel.

7. A washing machine for the purpose set forth comprising a container formed at its bottom to provide a well and above the well with a washing compartment, a stand pipe extending from said well upwardly into the said washing compartment and open at its lower end, a rotative water lifting impeller mounted in the lower end of said stand pipe and provided with a shaft extending upwardly through the stand pipe, a cover removably fitted to the top of the container, a bearing member secured to the cover and extending downwardly into the upper open end of the stand pipe and formed with orifices to constitute a spray nozzle, a sleeve rotatively mounted in said member and locked to said shaft and provided with a drive wheel, said bearing member being provided with an open yoke having a downwardly facing shoulder and a collar on said sleeve and bearing against said shoulder.

8. A washing machine for the purpose set forth comprising a container provided at its bottom with a well and thereabove with a washing compartment, a stand pipe extending from the well into said compartment and provided with a water raising device, vertically overlapping and radially separated walls surrounding the lower end of said stand pipe to constitute an indirect water passage between the well and the bottom of the stand pipe and a screen arranged across said passage.

In witness whereof I claim the foregoing as my invention, I hereunto append my signature in the presence of two witnesses at Chicago, Illinois, this 9th day of June, 1917.

THADDEUS W. HEERMANS.

Witnesses:

W. L. HALL,
G. A. SOUTHWELL.