

M. D. GIBSON.
 WASHING MACHINE.
 APPLICATION FILED MAY 15, 1916.

1,339,818.

Patented May 11, 1920.
 2 SHEETS--SHEET 1.

Fig. 1.

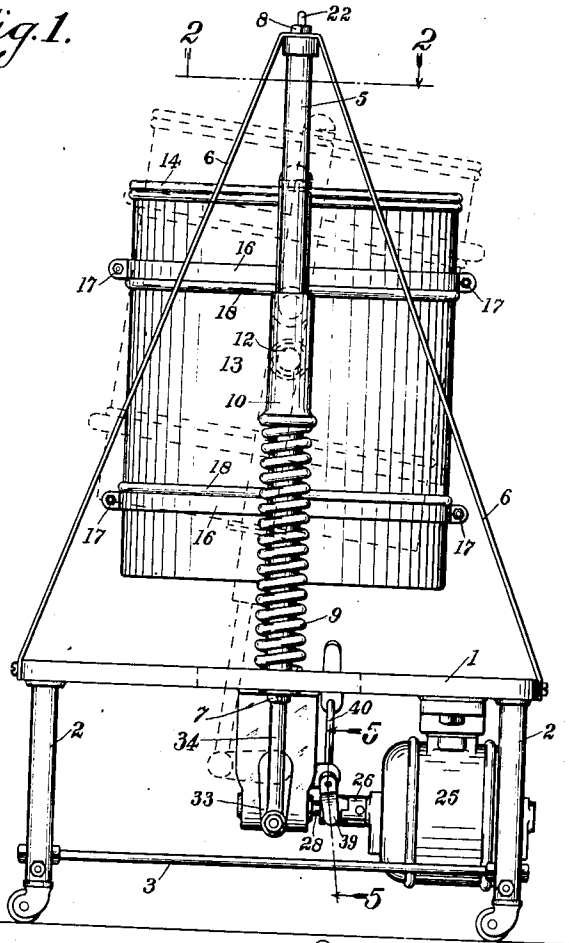
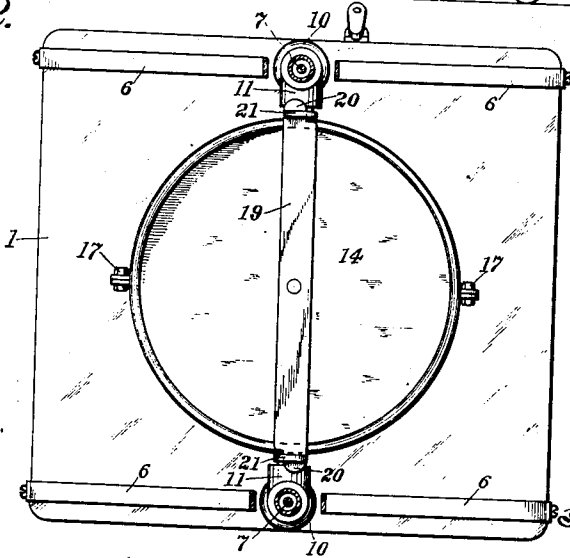


Fig. 2.



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Fig. 3.

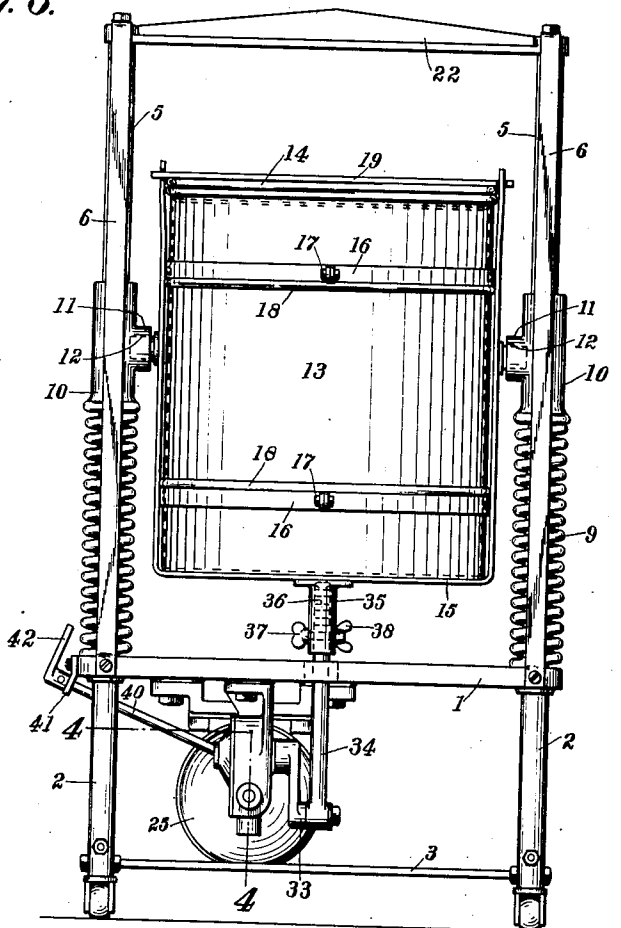


Fig. 4.

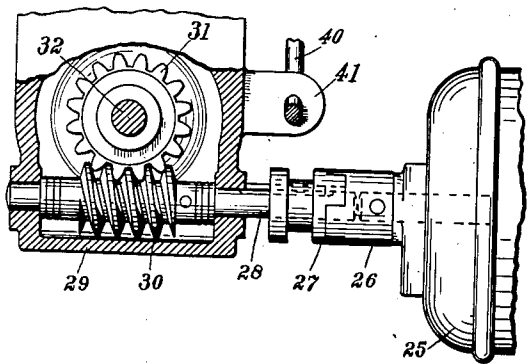
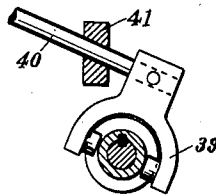


Fig. 5.



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UNITED STATES PATENT OFFICE.

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WASHING-MACHINE.

1,339,818.

Specification of Letters Patent.

Patented May 11, 1920.

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To all whom it may concern:

Be it known that I, MARSHAL D. GIBSON, a citizen of the United States, and residing at Webster Groves, county of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Washing-Machines, of which the following is a specification.

This invention relates to washing machines, and more particularly to machines for washing clothes.

In the process of washing it is simply necessary that the washing fluid come into forcible contact with the material to be washed, so as to clean the material by a flushing and a dissolving action. Rubbing, beating and pounding clothes does not of itself clean the clothes, but the cleaning action is produced solely by the resultant flushing action of the washing fluid. The forcible contact of rubbers, beaters and pounders with the material has, however, a destructive effect, without adding any materially useful cleaning function.

One of the objects of this invention, therefore, is to provide a washing machine in which the cleaning of the material is solely by flushing action as distinguished from the mechanical action, and which is so constructed that the washing fluid will reach every part of the material in the machine.

Another object is to provide a machine which is exceedingly simple in construction and operation, cheap to manufacture and durable.

Further objects will appear from the detailed description taken in connection with the accompanying drawings, in which,

Figure 1 is a side elevation of a washing machine embodying this invention;

Fig. 2 is a section on the line 2—2, Fig. 1, showing the casing and base in plan;

Fig. 3 is a front elevation;

Fig. 4 is an enlarged section on the line 4—4, Fig. 3; and,

Fig. 5 is an enlarged section on the line 5—5, Fig. 1.

Referring to the accompanying drawings, 1 designates a base mounted on legs 2, which are braced as shown at 3, to provide a support. Mounted on this support are a pair

of uprights 5, shown as hollow pipes, while metal straps 6 form braces for firmly bracing the uprights. The uprights are secured in position by means of tie bolts 7 passing through the pipes, base 10 and straps 6, and engaged by nuts 8 clamping the parts together.

Mounted on the uprights 5 are springs 9, and sustained by these springs are a pair of sleeve blocks 10, which have formed thereon bosses 11 providing journals for trunnions 12, these trunnions supporting a casing 13 mounted between the uprights. The casing 13 is preferably a sheet metal structure provided with a cover 14 seating inside of the casing. The casing is supported in a frame work comprising a strap 15 extending underneath and along the sides of the casing, and to which strap the trunnions are attached. Hoops 16 are riveted to the side members of the strap and are connected centrally by bolts or screws 17. The casing is provided with swages or beads 18, one of which is above the lower hoop and the other of which is below the upper hoop. In this way the casing can be firmly seated in the frame consisting of the strap and hoops, and when in position, will be firmly clamped and retained in position. The casing will thus be sustained for oscillation on its trunnions and for reciprocation with the blocks 10 on the guides 5.

The cover 14 has pivoted thereto, a bar 19 whose ends 20 are adapted to enter recesses in the ends 21 of the side members of the strap, so as to firmly clamp and lock the cover in position on the casing. A cross-beam 22 connects the uprights 5 so as to form a brace structure, and this cross-beam also forms a wringer supporting beam.

Mounted on the base 1 is a motor whose shaft is provided with a clutch jaw 26 adapted to be engaged by a clutch jaw 27 on a shaft 28, having a bearing in a housing 29 also mounted on the base 1. The shaft 28 has fixed thereto a worm 30 which meshes with a worm wheel 31 on a shaft 32 having a bearing in the housing 29. The shaft 32 has fixed thereto a crank 33 rigidly connected by a pitman rod 34 with the casing. The cross-member of the strap 15 has

riveted thereto, a hollow base 35 in which the pitman 34 is slidably mounted. This pitman has a number of apertures 36 therein, adapted to align with a bolt 37 provided with a winged nut 38, whereby there is formed a detachable and adjustable connection between the pitman and the casing. The clutch sleeve 27 is engaged by a fork 39 fixed to the lower end of a shaft 40 mounted in bearing lugs 41 on the base 1 and the housing 29, and having a handle 42, whereby it may be shifted to engage and disengage the clutch sleeve 27 with the jaw 26.

By removing the bolt 37 and by slightly raising the casing 13, the casing may be detached from the pitman 34 and then may be tipped to any desired position. The casing is now partially filled with the material to be washed, in addition to hot water and soap in the usual manner, and the cover is then applied and clamped in position. The casing is now connected with the pitman, and the machine is ready for the washing operation. The motor having been started, the clutch is thrown by means of the arm 42, thereby causing a rotation of the crank 33 at greatly reduced speed. The rotation of the crank 33 will cause a reciprocation of the casing with the supporting blocks 10 on the guides 5, and oscillation of the casing on these blocks. The casing will, therefore, execute a compound movement which is a combined oscillation and reciprocation. This movement will cause the washing fluid to pass back and forth vertically as well as laterally through the material, so as to thoroughly flush the same and cleanse the same of all accumulated dirt. After the clothes have been washed, the clutch is thrown, the casing disconnected from the pitman, and this casing can then be tipped to any suitable position to permit the clothes to be withdrawn and passed through the wringer.

The springs sustaining the casing are made of sufficient strength so as to support the casing and its normal weight of material and washing fluid, without undue compression. The adjustable connection between the pitman 34 and the hollow base 35 permits the springs 9 to equalize the weight of the clothes and water in the casing as follows: After the casing has the required amount of clothes and water placed therein, thereby partially compressing the springs 9, the crank 33 is turned to dotted position, Fig. 1, that is, midway of its stroke. The bolt 37 is then inserted to cooperate with the hole 36, which at that time is in alignment with the hole in the piece 35, and the wing nut 38 is applied to secure the parts together. During the rotation of the crank, the springs will, therefore, be compressed a uniform amount irrespective of the weight of the clothes in the casing. The result, therefore, is that the weight being sup-

ported on the springs, the driving gearing is only required to raise with a small force. Moreover, this results in a uniform and smooth operation without undue weight on the bearings.

It will thus be seen that the invention accomplishes its objects. A machine is produced which is not only simple in construction and operation, but exceedingly effective in cleansing the material to be washed. The arrangement of the receptacle supported vertically is such that it may be more readily made water-tight. Moreover, it will be noted that the casing is supported and clamped in a frame work so that rivets do not enter this casing. This is important, since the strains of rivets on the sheet metal casing, which is necessarily made thin, would readily cause these rivets to tear out. This is avoided by using a self-contained casing, that is, a casing complete in itself, together with a frame work supporting the casing and to which frame work is applied the driving gearing.

It is obvious that various changes may be made in the details of construction without departing from the spirit of this invention, and it is, therefore, to be understood that this invention is not to be limited to the specific construction shown and described.

Having thus described the invention, what is claimed is:

1. In a washing machine, a support, guides mounted on said support, a clothes and suds receiving casing, blocks mounted to slide vertically on said guides, trunnions connecting said casing for oscillation on said blocks, springs sustaining said blocks, a crank, and a rod connecting said casing and said crank, whereby the casing is operated for causing the suds to pass vertically and laterally back and forth through the clothes in the casing.

2. In a washing machine, a support, guides mounted on said support, a clothes and suds receiving casing, blocks mounted to slide vertically on said guides, trunnions connecting said casing for oscillation on said blocks, springs sustaining said blocks, a crank, and a rod detachably connecting said casing and said crank.

3. In a washing machine, a support, a casing adapted to receive the material to be washed, means for mounting said casing for movement on said support, means for yieldingly sustaining said casing, mechanism for moving said casing against the action of said sustaining means, and an adjustable connection between said casing and said mechanism.

4. In a washing machine, a support, guides mounted on said support, a casing adapted to receive the material to be washed, means for supporting said casing for movement on said guides, means for

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yieldingly sustaining said casing, mechanism for reciprocating said casing, and an adjustable connection between said casing and said mechanism.

5 5. In a washing machine, a support, guides mounted on said support, a casing adapted to receive the material to be washed, blocks mounted to slide on said guides, trun-

nions connecting said casing and said blocks, springs sustaining said blocks, a crank, and 10 a rod adjustably connecting said casing and said crank.

In testimony whereof I affix my signature this 3rd day of May, 1916.

MARSHAL D. GIBSON.