(No Model.)

# W. G. ARCHER.

## MOP WRINGER.

No. 551,355. Patented Dec. 17, 1895.

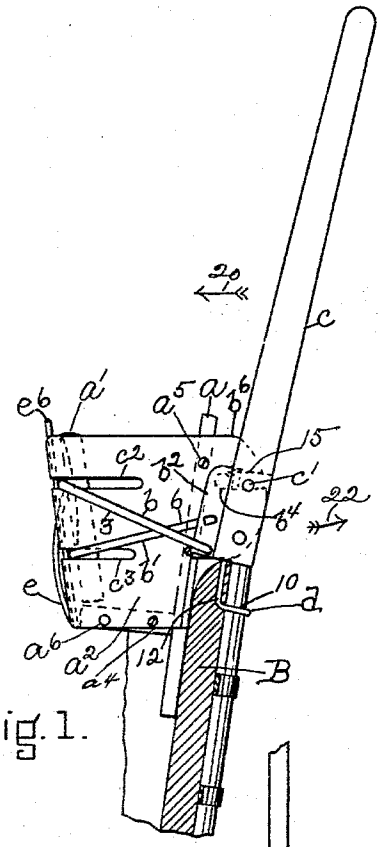

Fig. 1.

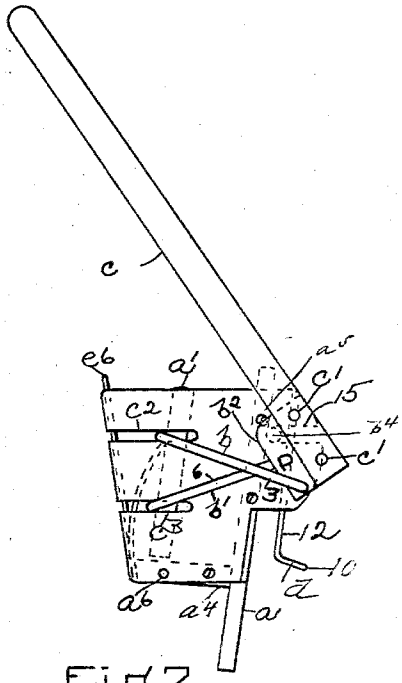

Fig. 2.

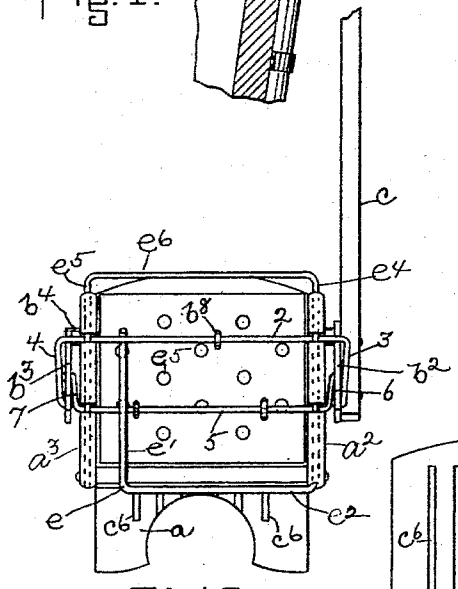

Fig. 3.

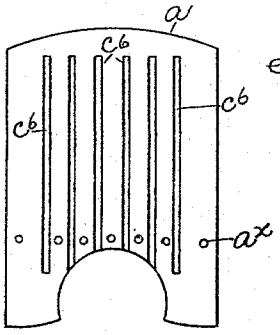

Fig. 5.

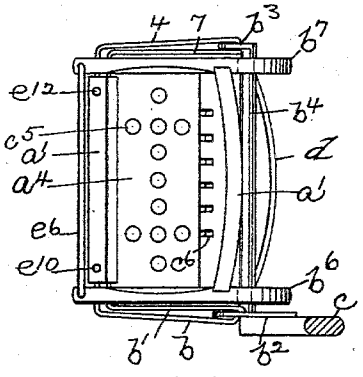

Fig. 4.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

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## MOP-WRINGER.

SPECIFICATION forming part of Letters Patent No. 551,355, dated December 17, 1895.

Application filed May 27, 1895. Serial No. 550,733. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM G. ARCHER, a citizen of the United States, residing in Burlington, in the county of Chittenden and State of Vermont, have invented an Improvement in Mop-Wringers, of which the following description, in connection with the accompanying drawings, is a specification, like letters and numerals on the drawings representing like parts.

This invention relates to apparatus of that class commonly called "mop-wringers," in which the mop is squeezed between two substantially flat surfaces; and this invention has for its object to provide a simple, inexpensive, and efficient apparatus or wringer of the class referred to, as will be described.

One feature of this invention consists in a novel construction of operating parts, whereby the top or upper portion of the mop is squeezed or subjected to pressure in advance of the lower portion, so that the water expressed from the top of the mop has a free downward passage into the pail or other receptacle to which the wringer is attached, thereby avoiding the forcing of water over the top of the wringer onto the floor.

Another feature of this invention consists in a novel construction, as will be described, whereby increased pressure upon the mop may be obtained with a minimum expenditure of power by the operator.

My invention further consists in a novel construction of the co-operating parts, as will be described, whereby a stronger and lighter machine may be obtained at minimum cost.

These and other features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 represents in elevation and section a mop-wringer embodying this invention applied to the rim of a pail, which latter is shown in section, the mop-wringer being shown in what may be termed its "normal" or "open" position. Fig. 2 is a side elevation of the mop-wringer shown in Fig. 1 detached from the pail with the movable presser board or wall shown as partially moved toward the stationary wall or board. Fig. 3 is a front elevation of the mop-wringer shown in Figs. 1 and 2 looking toward the right; Fig. 4, a plan view of the mop-wringer herein shown in Figs. 1 and 2, and Fig. 5 a detail of the stationary board or back wall to be referred to.

In accordance with this invention the mop-wringer comprises essentially a stationary back wall or board $a$, a movable front board or presser-wall $a'$, side boards or walls $a^2$ $a^3$, and a bottom $a^4$.

The side walls $a^2$ $a^3$ are secured to the edges or sides of the stationary wall or board $a$ in any suitable manner—as, for instance, by suitable screws $a^5$—and the bottom board $a^4$ is secured to the lower edges of the side walls $a^2$ $a^3$, as by screws $a^6$, and to the stationary board $a$ by screws, (not shown,) which are inserted through holes $a^\times$ in the board $a$. (Shown in Fig. 5.)

The front wall or board $a'$ is movable bodily toward and away from the rear or stationary board or wall $a$, and this bodily movement of the presser-wall $a'$ is effected, as herein shown, by means of draft rods or arms $b$ $b'$, located at opposite sides of the apparatus and connected to cranks or arms $b^2$ $b^3$ of a rock-shaft $b^4$, having bearings in slotted extensions $b^6$ $b^7$ of the side boards $a^2$ $a^3$.

The draft-rods $b$ $b'$ are each preferably made in a single piece, preferably of wire and substantially U-shaped, the draft-rod $b$ consisting of the portion 2 extended across the front of the machine, and the arms 3 4 extend substantially at right angles to the cross-piece 2, which latter is firmly secured to the movable presser-board $a'$ in any suitable manner—as, for instance, by one or more staples $b^8$.

The arms 3 4 of the draft-rod $b$ are, in accordance with this invention, secured to the cranks or arms $b^2$ $b^3$ at a point remote from the rock-shaft $b^4$. The draft-rod $b'$ is made in a similar manner and consists of the cross portion 5 and the arms 6 7, which are connected at their ends to the cranks $b^2$ $b^3$ between the point of connection of the arms 3 4 with the cranks $b^2$ $b^3$ and the rock-shaft $b^4$, whereby the side arms of the draft-rods $b$ $b'$ cross each other, as clearly shown in Figs. 1 and 2. The rock-shaft $b^4$ has connected to it an operating-handle $c$, which, in the present instance, is shown as fastened by the rivets $c'$ to the crank $b^2$, which latter is preferably made substantially wide, so that the lever $c$ may be fastened to the crank $b^2$ out of line with or at one side of the rock-shaft $b^4$, and

the latter at the points of connection of the arms 3 6 of the draft-rods $b$ $b'$ are preferably in line with the rock-shaft $b^4$, for a purpose as will be described. The cross portions 2 5 of the draft-rods extend through slots $c^2$ $c^3$ in the sides $a^2$ $a^3$ of the wringer, and the walls of the said slots constitute guides in which the draft-rods move when the operating-handle $c$ is turned. The side pieces $a^2$ $a^3$ are substantially frustum-shaped, so that in the normal position of the movable presser-board $a'$ the receptacle for the mop is substantially frustum-shaped, with the base or wider portion of the frustum at the upper end of the apparatus, as clearly represented in Fig. 1.

The bottom piece $a^4$ of the apparatus may and preferably will be provided with suitable perforations or water-outlets $c^5$, (see Fig. 4,) and the stationary back board $a$ will preferably be provided with longitudinal grooves $c^6$ made on its inner face, but which preferably do not extend through the said board, the said longitudinal grooves, in practice, extending below the bottom $a^4$ of the apparatus, as clearly shown in Fig. 3. The stationary board $a$ projects beyond the bottom $a^4$ and is designed, in practice, to engage the inner side or circumference of the pail B, the said apparatus being retained on the pail by means of a retaining-wire $d$, consisting of the horizontal portion 10 and the vertical arms 12, the said horizontal portion being rounded or bow-shaped to conform to the circular shape of the outside circumference of the pail, and the vertical arms 12 being extended up through the extensions $b^6$ $b^7$ of the side walls $a^2$ $a^3$ and preferably across the slots 15 in the side walls, in which slots the rock-shaft $b^4$ is journaled.

The retaining-wire $d$ is very efficient in practice, as it serves to strengthen the apparatus, permits of quick and sure attachment of the apparatus to the pail without delays, and enables the apparatus to be used on poor wooden pails, tin or paper pails without fear of breaking the rim, and the arms 12 of the said wire prevent the side extensions $b^6$ $b^7$ from warping or splitting, and serve to retain the rock-shaft in its bearings.

In practice the mop-wringer is applied to the pail B after the manner shown in Fig. 1, and the movable presser-wall or board $a'$ occupies the dotted-line position shown in Fig. 1.

In operation the mop is supposed to be inserted into the receptacle formed by the side walls $a^2$ $a^3$, stationary wall $a$ and the movable wall $a'$, and when properly inserted the operator moves the handle $c$ in the direction indicated by arrow 20, Fig. 1, so as to bring the movable presser-wall or board $a'$ toward the stationary wall or board $a$. As the handle $c$ is turned in the direction indicated by arrow 20, the rock-shaft $b^4$ is turned, and the crank-arms $b^2$ $b^3$ are moved in the direction indicated by arrow 20, Fig. 1, which movement of the cranks produces a bodily movement of the draft-rods, and, owing to the fact that the side bars 3 4 of the draft-rod $b$ are connected to the cranks $b^2$ $b^3$ farther away from the rock-shaft $b^4$ than the arms 6 7 of the draft-rod $b'$, the upper portion of the movable presser-wall or board $a'$ is first caused to move a greater distance than the lower portion of the said movable presser-wall, and, as a result, the upper portion of the movable wall is brought into contact with what may be termed the "top" or "upper" portion of the mop before the lower portion of the mop has been subjected to contact with the lower portion of the movable presser-wall $a'$. As a result, the upper portion of the mop, and by the term "mop" I desire to be understood as referring to the cloth or other material containing the water or other liquid, is subjected to pressure—that is, it is squeezed between the upper portion of the movable wall $a'$ and the upper portion of the stationary wall $a$, and consequently the water contained in the upper portion of the mop is forced out from the cloth and is permitted to flow freely down to the bottom of the mop-containing chamber or receptacle, and is not obstructed in its flow by the lower portion of the presser-wall $a'$. The water expressed from the upper portion of the mop is not forced or thrown over the top of the apparatus and over the pail onto the floor, but finds its way freely down through the perforated bottom $a^4$, and also through the longitudinal grooves $c^6$ in the back wall $a$, and also through suitable perforations $e^{50}$ in the presser-wall $a'$. When the upper portion of the movable presser-wall $a'$ has subjected the upper portion of the mop to pressure, a further movement of the handle $c$ in the direction indicated by the arrow 20 produces a uniform bodily movement of the presser-wall $a'$—that is, on the movement of the handle $c$ in the direction indicated by arrow 20, the presser-wall $a'$ is first tipped, as it were, so as to bring its upper portion into contact with the mop and subject the same to pressure, and after the upper portion of the movable presser-wall has been moved into contact with the mop a further movement of the handle causes the movable wall $a'$ to move bodily, and, as a result, the entire surface of the movable presser-wall $a'$ is brought in contact with the mop, the handle $c$ being turned until the cross portions 2 5 of the draft-bars bring up against the inner ends of the slots $c^2$ $c^3$ in the side walls $a^2$ $a^3$, at which time the points of connection of the side arms of the draft-bars $b$ $b'$ are substantially in line with the end of the cross portion 2 of the draft-bar $b$. By this means, increased pressure upon the mop may be obtained with a minimum expenditure of power by the operator. After the mop has been squeezed or subjected to pressure as described, the movable presser-wall may be restored to its normal position, either by positively turning the handle $c$ in a direction opposite to that indicated by arrow 20, or it may be automatically returned by means of a spring, herein shown as a substantially right-angled wire rod $e$ having its vertical

arm $e'$ inserted between the cross portion 2 of the draft-rod $b$ and the movable presser-wall $a'$, while its horizontal portion $e^2$ is fastened to one of the side bars. The cross portions 2 5 of the draft-bars are retained in the slots $c^2$ $c^3$ of the side boards, preferably by means of vertical arms $e^4$ $e^5$ of a U-shaped tie-bar $e^6$ connecting the side bars $a^2$ $a^3$ at their front ends, the vertical members or arms $e^4$ $e^5$ of the tie-bar $e^6$ being inserted down through suitable holes in the ends of the side boards $a^2$ $a^3$ after the manner shown in Fig. 3.

To prevent warping of the movable presser-wall $a'$, which in practice may and preferably will be made of wood, I prefer to provide the same at its ends with metal rods or pins $e^{10}$ $e^{12}$ (see Fig. 4) inserted down through suitable holes in the said presser-wall.

From the above description, it will readily be seen with the construction herein shown that when the mop is subjected to pressure to express the water therefrom the latter is afforded a free outlet into the pail, and no opportunity is afforded for spilling or throwing the water out onto the floor.

The apparatus herein shown is simple, cheap and highly efficient for the purpose intended. For sake of simplicity, I prefer to make the draft-rods as herein shown and described—namely, in one piece substantially U-shaped; but I do not desire to limit my invention in this respect, as it is evident that the cross-bars 2 5 of the draft-rods may be severed, and a central portion thereof omitted so as to make each draft-rod in two parts, the horizontal portion of which extends but partially across the movable presser-wall $a'$. I may prefer to use the spring $e$, but the same is not absolutely essential, as the apparatus can be positively opened and closed by means of the operating-handle.

I have herein described the apparatus as a mop-wringer, but I do not desire to limit my invention to the particular use specified, as it may be used for other purposes—such, for instance, as a press for expressing the juices of fruits, pressing Dutch cheese, &c.

I claim—

1. In a mop wringer, the combination of the following instrumentalities, viz:—a stationary wall or board adapted to be attached to and removed from a pail, side walls secured to the stationary wall and provided with slots, a presser wall movable within the side walls, a rock shaft, and means extended through the slots in the side walls for connecting the movable presser wall with the rock-shaft, substantially as and for the purpose specified.

2. In a mop wringer, the combination of the following instrumentalities, viz:—a stationary wall or board adapted to be attached to and removed from a pail, side walls secured thereto and projecting within the pail when the wringer is applied thereto, the said side walls being provided with slots, a presser wall movable bodily toward the said stationary wall within the said side walls, a rock shaft, and draft rods attached to the movable presser wall and extended through the slots in the side walls and connected to the rock-shaft to operate, substantially as described.

3. The combination with a pail, of a mop wringer consisting of a stationary back wall or board adapted to be inserted into the pail to engage the inner wall thereof, side walls secured to the said stationary wall and provided with arms extending over the rim of the pail, a rock shaft having bearings in said arms, a presser wall movable within the said side walls from the center of the pail toward the stationary wall, means to connect the said movable presser wall to the said rock shaft, and means secured to the arms of the side walls for engaging the outside of the pail and co-operating with the stationary back wall, which engages the inner side of the pail, to secure a firm attachment and brace for the wringer, substantially as described.

4. In a mop wringer, the combination of the following instrumentalities, viz:—a stationary wall, and a movable presser wall, a rock-shaft provided with cranks or arms, and draft rods secured to the said presser wall and to the cranks of the rock-shaft so as to effect a crossing of the said draft rods, for the purpose specified.

5. In a mop wringer, the combination of the following instrumentalities, viz:—a stationary wall $a$, side walls $a^2$ $a^3$ provided with the slots $c^2$ $c^3$, and having the extensions $b^6$ $b^7$, a presser wall $a'$ movable bodily toward the stationary wall $a$, a rock shaft journaled in the extensions $b^6$ $b^7$, cranks or arms attached to said rock shaft, crossing draft rods secured to the presser wall $a'$ and to the said cranks or arms, and a retaining rod $d$ having the curved portion to embrace the circumference of the pail, substantially as described.

6. In a mop wringer, the combination of the following instrumentalities, viz:—a substantially vertical stationary wall, a substantially vertical presser wall normally having its upper end farther from the stationary wall than its lower end and free to move bodily toward and from the said stationary wall, and means to effect the bodily movement of the said presser wall so as to cause the upper end of the presser wall in the bodily movement of the latter to move toward the stationary wall faster than its lower end, for a portion of the movement of the said presser wall, whereby the top or upper portion of the bodily movable presser wall is engaged with the top or upper portion of the mop while the lower portion of the bodily presser wall is not engaged therewith, for the purpose specified.

7. The combination with a pail, of a mop wringer provided with a stationary back wall adapted to be inserted within the pail, and having side walls located within the pail and provided with extensions projecting outward beyond the rim of the said pail, and a spring acting retaining rod comprising a bow-shaped horizontal portion curved to conform to the

outside circumference of the pail and vertical arms secured to the extensions of the side walls, whereby the said retaining rod co-operates with the stationary back wall to form an automatic adjustable fastening for the mop wringer by which it is secured to the pail, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM G. ARCHER.

Witnesses:
ORMAN P. RAY,
W. L. BURNAP.