Feb. 21, 1939. W. H. ABBOTT 2,147,782

MOP, AND WASHING AND WRINGING APPARATUS THEREFOR

Filed Dec. 6, 1935

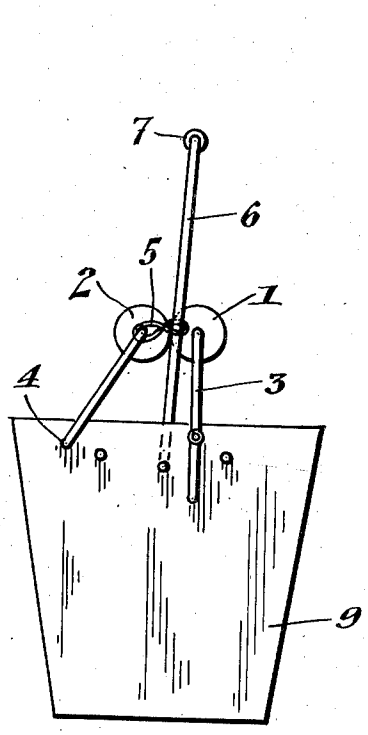


Fig. 1.

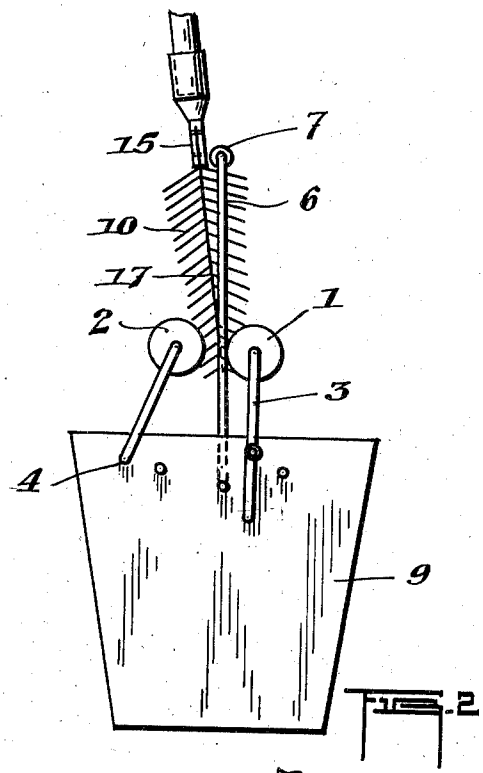


Fig. 2.

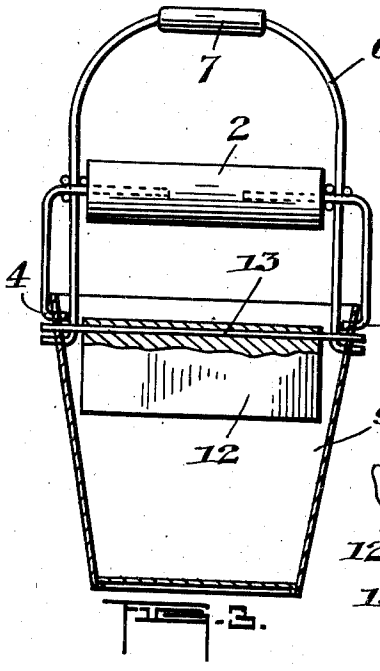


Fig. 3.

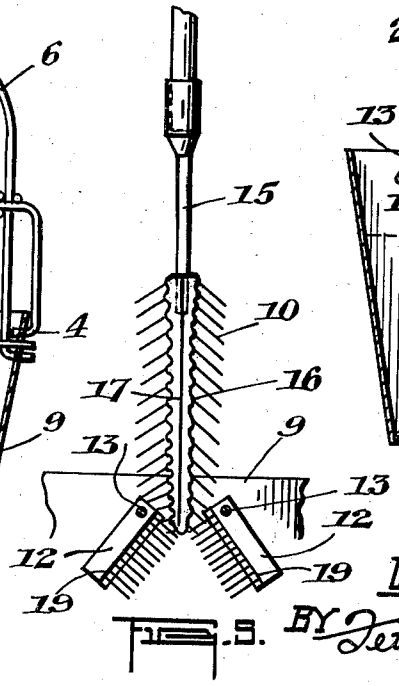


Fig. 5.

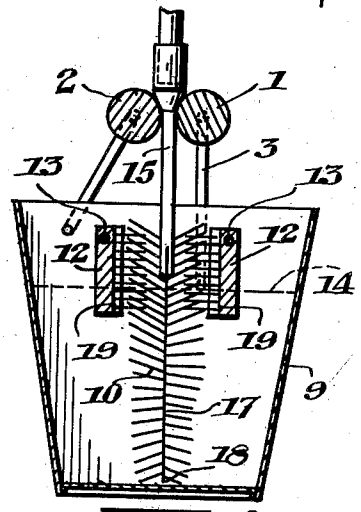


Fig. 4.

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MOP, AND WASHING AND WRINGING APPARATUS THEREFOR

Walter H. Abbott, Cleveland Heights, Ohio

Application December 6, 1935, Serial No. 53,222

5 Claims. (Cl. 15—105)

This invention relates to mop washing devices and particularly to a form of device in which the washing mechanism and the wringing mechanism must be designed as a unit, the one to fit the other.

The objects of my improvement are, first, to provide a scrubbing and wringing mechanism which is easily operated and cleans a mop completely; second, to provide such a mechanism with few parts which can be made at a low cost.

The device according to the invention is particularly adapted to a mop in which the mop frame is designed so as to be thin and stiff in one dimension and wide, and flexible in the dimension at right angles to the first dimension and so that the length of the mop mitten bears a fixed relation to the location of the washing and wringing members and the depth of the receptacle so that the full surface of the mop shall be washed and wrung.

A further particular object of the invention is that the members be so arranged that all the effort exerted shall be in actual washing and wringing of the surface of the mop and very little in operating the mechanism itself so that the device can be operated easily by women.

A still further object is to so arrange the washing and wringing parts that the dirt brought on the mop to the receptacle shall be transferred completely to the water in the receptacle and the mop freed of its excess of water.

A still further object is that the force exerted in washing and wringing the mop shall be central with a wide diameter of the receptacle and directly toward the base on entering and directly away from the points of anchoring on drawing out the mop so that upsetting of the receptacle is avoided. This also reduces tendency to splash or spill mop drainage.

A still further object is a great reduction in the number of parts by supporting the mechanism on the pail or receptacle.

A still further particular object is the preventing of warping of the brushes when made of wood by inserting at right angles with their length metal stiffeners across the warping plane. This is particularly necessary when using wooden brushes partly immersed in a liquid.

These and other objects I attain by the construction shown in the accompanying drawing wherein for the purpose of illustration I have shown a preferred embodiment of my invention and wherein:

Figure 1 is a side elevation of the mop cleaning device constructed in accordance with my invention and showing the connection between the movable roller and the bail of the receptacle.

Figure 2 is a view similar to Figure 1 but including a diagrammatic sketch of the mop entering between the rollers.

Figure 3 is a transverse sectional view showing the mounting of the rollers, bail and brushes.

Figure 4 is a sectional view similar to Figure 3 and including a diagrammatic sketch of the mop disposed between the rollers and brushes, and

Figure 5 is an enlarged fragmentary view of the brushes showing the manner in which they swing apart as the mop is introduced between them.

Referring now more particularly to the drawing, 2 and 1 are the rollers arranged to engage through their whole length. 6 is a lever which also acts as a bail for the bucket 9. The rod 3 is the fixed axis for the roller 1. The rod pivoted at 4, is the axis for the movable roller 2. The link 5 in Fig. 1 enables roller 2 to be controlled by lever 6. Lever 6 can be easily thrown by the mop to move roller 2 to or from roller 1 and cause the pressure which wrings the mop.

Fig. 2 shows how the especially constructed mop on being pushed down between the rollers causes roller 2 to move away from roller 1 and permits the mop to enter and take the position shown in Fig. 4 relative to the rollers and the brushes 12. The mop is made up essentially of a stiff but bendable flat frame 17 and a mitten placed thereover and secured at the top which has strands 10, extending from a backing 16. On pulling the mop upward the mop handle and mop can at the same time be pushed against the roller 7, which turns on the bail as an axis, drawing roller 2 tightly against roller 1 and wringing enough of the water out of it to be suitable for mopping work. To do this it is not necessary that the mop vary much from the vertical either on the entering or the return stroke. Nor is it necessary that more than excess water be removed from the mop.

In Fig. 5 the brushes 12 are shown in relation to the rollers and the mop 10. The brushes are pivoted on axes 13 so that they turn outward and offer very little resistance to the entrance of the especially built mop 10. On the return stroke the engagement of the upper bristles with the mop 10 causes the brushes to turn on the axes 13 and assume the position as shown in Fig. 4, thus the whole surface of the brushes engage and scrub the mop. Cleaning is done most effectively if the water level is about halfway of the brushes as shown at 14 in Fig. 4. If moisture absorbent material such as wood is

used for brushes the backs must be prevented from warping out of shape. One way of doing this is by inserting steel wires through the wood as shown at 19 Fig. 4.

The relation of the dimensions of the mop and the location of the rollers and brushes is most important, else the whole surface of the mop cannot be washed. The haft of the mop 15 must be of such length and thickness that it may enter between the rollers far enough to allow the top of the mop to be scrubbed by the brushes and the length of the mop must be such as to allow the brushes to engage the top of the mop when the tip of the mop blade 17 is prevented from entering the receptacle further at point 18. The blade of the mop 17, Fig. 5 must be of such material that it will not bend too easily when pushing apart the rollers 1 and 2 and turning the brushes 12 on their axes 13. The blade 17 must also be of such material and thickness that it will bend readily and conform to the floor when the mop is in use. It is particularly important that the mop when used on edge shall be very stiff so that it may present its edges to the angles formed by a floor with the mop-boards and shall enter these angles to their apexes as these are the difficult locations to clean with ordinary mops. The mitten of the mop 16, Fig. 5 shall be formed by a foundation fabric to which yarn is attached in such a manner that it will have a maximum of fluffiness when applied to the floor and a minimum of fluffiness when drawn through the brushes and rollers. It must be of uniform thickness so that the brushes and rollers will engage the whole surface and the water tend to be scraped out of it by the brushes as well as wrung out of it by the rollers.

Since the structures as hereinbefore described are obviously capable of a considerable range of change and modification without in any manner departing from the spirit of my invention, I do not wish to be understood as limiting myself to the specific arrangement illustrated except as hereinafter claimed.

I claim:

1. A mop cleaning device for mounting on a receptacle comprising rollers adapted to cooperate to wring a mop, one at least of said rollers being movable and a pair of brushes positioned below the rollers and adapted to scrub the mop.

2. A mop cleaning device as defined in claim 1 in which the pair of brushes is positioned substantially vertically below the rollers.

3. A mop cleaning device for stiff mops and adapted to be mounted on a receptacle comprising a fixed roller, a movable roller adapted to cooperate with the fixed roller to wring a mop, and a pair of pivoted brushes positioned below the rollers.

4. A mop cleaning device for stiff mops adapted to be mounted on a receptacle comprising a fixed and a movable roller adapted to cooperate to wring a mop, a pair of pivoted brushes positioned below the rollers, a bail pivotally mounted on the receptacle and connected to the movable roller, said bail operating to bring the movable roller into action against the fixed roller when a force having a horizontal component is applied to the surface of the bail which faces the movable roller.

5. A mop cleaning device as defined in claim 4 in which the bail comprises a roller adapted to turn about the bail as an axis and to one surface of which the force is applied.

WALTER H. ABBOTT.