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MOP WRINGER

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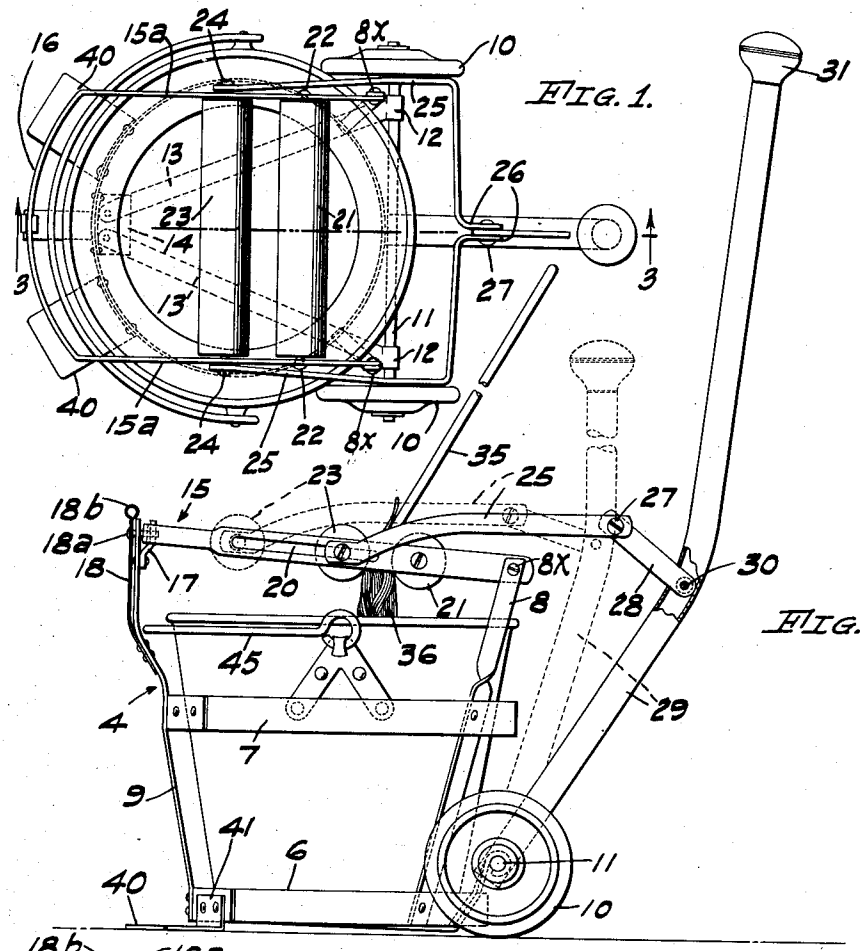


FIG. 1.

FIG. 2.

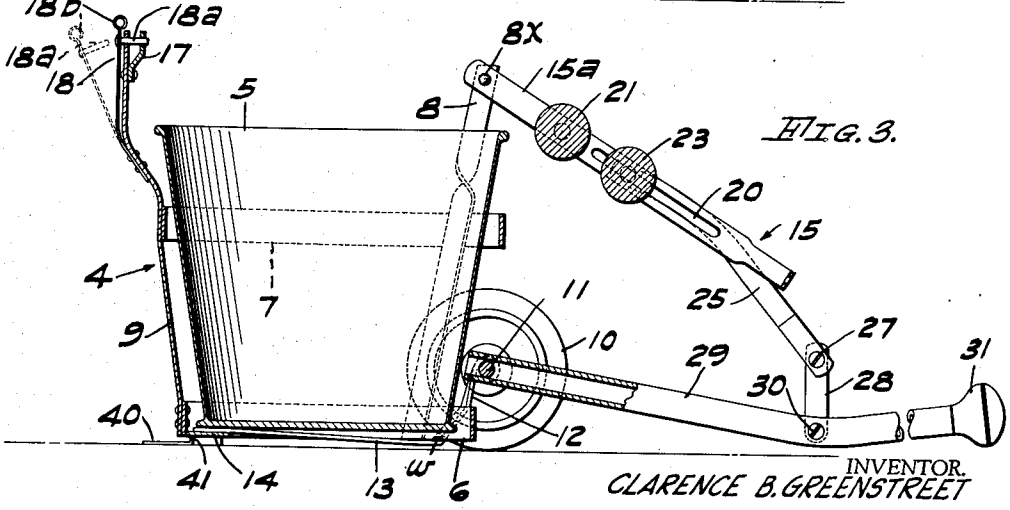


FIG. 3.

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MOP WRINGER

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2 Claims. (Cl. 15—262)

This invention relates to an improved mop wringing device wherein an erect standing position may be maintained by the user of the device at all times.

An object of the invention is to provide a mop wringing device wherein a conveniently operable upstanding lever is utilized in the performance of a number of operations which it has hitherto been necessary to perform by less convenient means. By the use of said lever the user is permitted at all times to stand at either side of the device with both feet on the floor, and is thus safeguarded against slipping and possibly losing balance.

Other valuable features of the invention reside in providing for either right or left handed operation; and in efficient four point supporting of the mop pail, the supporting means therefor forming a part of means for conveniently moving the device across the floor.

Still another object is to provide a mop-wringing lever which is also utilizable to tilt the mop pail to empty it, the device being furnished with floor engaging elements to cooperate with said lever for the purpose of directing the movement of the pail while being emptied.

Other objects, advantages and features of the invention will hereinafter appear.

Referring to the accompanying drawing, which illustrates what is at present deemed to be a preferred embodiment of the invention,

Fig. 1 is a plan view of the device in which the mop rollers are shown slightly spaced from their normal contacting position.

Fig. 2 is a side elevation of the device wherein the parts are shown in the mop wringing position in full lines, the wringer rollers being shown in the open position in dotted lines. In this view some parts are shown in section to disclose mechanical details more clearly.

Fig. 3 is a section taken on line 3—3 of Fig. 1. In this view the mop wringing parts are shown in the pail releasing position.

Referring in detail to the drawing, the pail 5 is shown removably supported within a skeletal frame 4 which includes a basal hoop 6, upper hoop 7, the two upstanding rear connecting strips or rods 8, and an upstanding front connecting member 9. By preference and as shown, these parts 6, 7, 8 and 9 are all made of strap metal, thus facilitating riveting them together in such a manner as to form a substantial frame.

A pair of floor wheels 10 are provided as part of the means for rendering the device conveniently transportable across a floor. Said wheels are rotatably mounted upon axle 11, the mounting means for said axle being shown as the front, upwardly directed portions 12 of two strap metal members 13. Said members 13 are riveted at their front ends to a backwardly deflected foot portion 14 of the front upright member 9. From this point said members 13 diverge rearwardly from each other, each of them having its upwardly directed portion 12 rigidly connected to the wheel axle 11. At the points of their deflection said parts 12 are shown welded at *w* to the rear portion of the bottom hoop 6.

Upon the pail supporting frame 4 is pivotally supported a yoke shaped wringer carriage 15. Each arm 15*a* of said carriage has its rear end pivotally connected with the upper portion of the member 8 at that side of the device. The closed end portion 16 of this wringer supporting frame or carriage rests upon a latch element 17 which is carried by the upper end portion of the front connecting member or rod 9. Said latch member 17, in cooperation with the upper portion of said rod 9 forms a saddle to support the wringer carrying frame when in its normal position shown in Fig. 2. An upwardly directed leaf spring 18 carries near its top end a latch pin 18*a* to prevent accidental upward displacement of the wringer carriage from said saddle. Said spring 18 is also furnished at its upper end with a curl 18*b* which forms a finger hold to aid in releasing the latch pin 18*a*.

Each arm of the yoke shaped carriage 15 is provided with a longitudinal slot 20. The wringer is provided with two rollers, a stationed roller 21 having at each end a trunnion 22 whereby it is journalled upon and between the carriage arms 15*a*, and a bodily movably roller 23 located forwardly of said roller 21 and having at each end a trunnion or stub shaft 24 which rotatably engages the slotted portion 20 through which it extends. Each of said trunnions 24 projects outwardly beyond the slot through which it passes, and to the projecting portion of each of these trunnions is secured an angular arm 25, the wringer roller 23 being bodily movable by these arms toward and from the stationed roller 21. At its rear end each arm 25, is provided with a forwardly directed ear 26. Said ears, by means of a pivot 27, are connected with a link 28 and this link is, in turn, pivoted to an upstanding manually swingable lever 29 by means of a pin 30.

Said lever 29 is shown as being of a tubular character and is furnished at its upper end with a knob 31 to add to the convenience of its manual operation. It is somewhat bent at the point

where it is pivoted to the link 28 in order that its upper portion may be deflected somewhat toward the front end of the device. At its lower end said lever 29 is pivoted to the wheel axle 11.

In Fig. 2 a mop 35 is shown having a fabric portion 36 which is adapted for use in mopping and which is drawn upwardly between the wringer rollers by means of its handled portion to wring the moisture therefrom to the desired extent. When the fabric portion of the mop is drawn upwardly between the rollers of the wringer the operator will at the same time apply pressure to the upper end portion of the lever 29 to press the roller 23 against the fabric portion of the mop as it is being drawn upwardly between the rollers. This pressure upon said lever would tend to tilt the whole device toward the right as viewed in Fig. 2. In order to offset this tendency the front side portion of the basal hoop 6 has secured to it the two foot members 40 each of said members having an upwardly directed flange portion 41 which is riveted or otherwise secured to said hoop. These foot members 40 are stationed on opposite sides of the vertical plane in which the lever 29 swings. The operator will place one foot upon the foot member 40 nearest to her at the time she swings the lever 29 in the manner stated, thus offsetting the tendency of the operation of said lever to overturn the device.

When it is desired to remove the mop pail from the device, the operator will flex the spring 18 outwardly thereby sufficiently withdrawing the latch pin 18*a* to release the wringer carriage, whereby said carriage, together with the wringer rollers mounted thereon, may be swung rearwardly to the position shown in Fig. 3 to permit removal of the mop pail.

Referring to further details of construction, the pail 5 is furnished with a bail 45 which swings to a position to leave the top of the pail unobstructed when the pail is in use, said bail serving as a means for removing the pail when the wringer supporting carriage 15 is swung to the position shown in Fig. 3 in order to clear the way for the removal of the pail from the means whereon it is supported during use.

In the operation of the device, when it is desired to apply the rollers of the wringer to the fabric of the mop, the user will stand close beside the device with one foot engaging the floor piece at the side of the frame nearest to her and bracing her body by placing her other foot adjacent to the opposite side of the device she will, while thus standing in an upright position, grasp the mop handle with one hand and the lever with the other hand. By the latter hand she will bring the fabric portion of the mop up to the proper position between the wringer roller to begin the wringing operation, and then while she applies sufficient force to said lever to cause the rollers to engage the mop with the desired amount of pressure she will at the same time apply upward traction to the mop handle, thus causing said rollers wring the water out of the mop as it is drawn upwardly between them.

When it is desired to move the device along the floor the user will need only to grasp the handle thereof, and by means of said handle tilt the device together with the mop pail rearwardly to a sufficient extent to withdraw the feet from the floor and cause the whole structure to be supported solely by the wheels. Then said handle may be used to draw the device across the floor to any other desired position. While the device is thus being moved, the mop handle will be sufficiently gripped between the rollers of the wringer in an upstanding position to insure that it will not fall over to one side and form any impediment to the movement of the device.

If it is desired to empty the pail without removing it from the frame in which it is mounted, the lever 29 may be used to tilt the device as a whole forwardly thus utilizing the foot portions as an aid to discharging the contents of the pail into any suitable container; or in some instances the device may be wheeled to some remote place for dumping.

It has been stated that when the lever 29 is swung toward the rear of the device it brings the movable roller 23 towards the stationed roller 21 of the wringer. This operation takes place during the initial portion of the movement of the said lever in the direction stated, but the said lever is capable of moving far enough in this direction to bring it to the substantially horizontal position shown in Fig. 3. This further movement of the lever, however, can only be performed after the latch pin 18*a* has been released, thus freeing the forward end of the swingable wringer carriage 15, in order that the final portion of the swing of the lever 29 which is linked to said carriage may swing said carriage to the position shown in Fig. 3, thus clearing the way for the removal of the pail 5. Or the wringer carriage 15 may be manually swung rearwardly about its pivots 8*x*.

The slots 20 of the wringer carriage are each of them inclined to the same extent and in a direction which tends to cause the bodily movable roller 23 to gravitate towards the stationed roller 21. This construction causes the rollers to normally remain in the mop wringing position, without the use of any spring to tend to maintain them in such a position.

The upstanding manually operable lever 29 is shown deflected at the point where it is operatively connected with the bodily movable roller of the wringer. This deflection causes the portion of the lever above the point of its deflection to be directed forwardly to a sufficient extent to enable the operator to apply to it the maximum amount of force with a minimum muscular exertion.

It should be understood that the present disclosure is for the purpose of illustration only and that this invention includes all modifications and equivalents which fall within the scope of the subject matter claimed.

What is claimed is:

1. In a device of the kind described, a skeletal frame for removably supporting a mop pail, said frame comprising a basal hoop, and a second hoop, a front upstanding member, and two upstanding rear members supporting said second hoop in an upwardly spaced relation to said basal hoop, a floor engaging member fastened to said basal hoop adjacent said front member and radially projecting therefrom, pail supporting means connected to said basal hoop adjacent said front member and directed rearwardly therefrom at an angle to points where they fasten to and upturn from the rear portion of said basal hoop adjacent to said two upstanding rear members, a shaft mounted on the upturned extremity portions of said means, wheels mounted on opposite ends of said shaft, an upstanding handle pivotally mounted on said shaft, a mop wringing frame pivotally mounted on the upper ends of said two upstanding rear members to swing from an op-

erative position wherein the front portion of said wringing frame is detachably attached to said front upstanding member by latch means, to a rearward inoperative position wherein said mop pail may be removed from said skeletal frame, said mop wringing frame being yoke shaped, there being slots in the sides of the yoke, a rotatable laterally restrained wringer roller mounted in said yoke shaped frame with the ends thereof journalled in the sides of said yoke at points adjacent said slots, a wringer roller mounted in said slots movable to and from an operative relation with said laterally restrained roller, and means connected to the ends of said movable roller operatively connecting it with said handle.

2. In a device of the kind described, a skeletal frame including a peripheral basal hoop, said frame being adapted to support a mop pail in a position wherein its lower portion is encircled by said hoop, foot members secured to the lower portion of said hoop to support it in a spaced relation to the floor and located at spaced points in the periphery of said basal hoop, supporting means fastened to said basal hoop at other spaced points in its periphery, a shaft mounted in said supporting means, a handle having one end swingably mounted on said shaft midway between its supports, wheels mounted on the ends of said shaft for freely transporting the device over the floor when a tilting movement of said handle raises said foot members, a mop wringer frame supported by said skeletal frame in a superposed relation to said mop pail, said frame including rollers one of which is bodily movable in relation to the other, and means operatively connecting said movable roller and said handle, said means comprising angular arms, one limb each of which is fastened to the extremity of said movable roller, the other limb of each arm having an offset ear which is directed from the mid-length of said rollers in a direction toward said handle, and a link having one end pivotally fastened between said ears and the other end pivotally fastened to said handle, said handle being deflected toward the vertical at the point where it is connected to said link to enable the operator to maintain an erect standing posture of the body with one foot on one of said foot members and the other foot free to engage the floor to brace the body in applying force to said handle by one hand while the remaining hand is utilized to pull the mop proper upwardly between said rollers.

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