This system and invention enables a commercial painter to comb-clean and to wash a paintbrush with the same apparatus; and also to clean roller paintbrushes; and then to use that apparatus to clean itself; and to provide convenient ways for the painter to carry and to store this tool.
HOSE-ATTACHED PAINTBRUSH-CLEANING COMB AND PAINT-ROLLER SCRAPER

PRIORITY


FIELD AND BACKGROUND

[0002] This pertains to the field of commercial and residential painting.

[0003] In commercial and residential painting the paintbrush, after use, must be cleaned properly. Currently this requires multiple tools and tasks:

[0004] 1. The painter uses a high-pressure hose to spray water over the brush, knocking off paint remaining on the paintbrush.
[0005] 2. The painter uses a stiff-bristled brush to scrub out paint that remains stuck on the paintbrush after the high-pressure hose.
[0006] 3. The painter uses a concave edge of some kind through which he runs roller brushes to force the paint out of them.
[0007] 4. After the paintbrush is clean the painter must then separately clean out the stiff-bristled brush with the hose.

[0008] This is a repetitive process; the painter has to use the hose, then the brush, then the hose again, then the brush again, and so on. This is inefficient use of the painter’s time, in difficult conditions, for example if the painter is painting the outside of a high-rise building or the second story of a residential house. Also, the painter must turn the cleaning fluid flow on and off, which may be difficult if he is on for instance the third floor of a building and the fluid delivery hose attaches to a nozzle on the ground.

PRIOR ART

[0009] The following prior art seems pertinent:

<table>
<thead>
<tr>
<th>US Patent</th>
<th>Issue Date</th>
<th>Patentee</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,483,721</td>
<td>Dec. 26, 1994</td>
<td>Caldwell</td>
</tr>
<tr>
<td>6,408,475</td>
<td>Sep. 13, 2000</td>
<td>Morrison</td>
</tr>
<tr>
<td>11/516,770 (Application)</td>
<td>Oct. 16, 2006</td>
<td>Ruiz</td>
</tr>
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</table>


[0010] The first two of these patents refer to brushes where liquid comes through the handle of the brush, in order to clean itself.

[0011] U.S. patent application Ser. No. 11/516,770 describes a wire brush for cleaning paintbrushes. This is similar in intended use to the present invention. However, it is a fatally flawed design because it relies on a series of grommets to transmit water. In an environment full of paint droplets, such grommets will quickly become clogged and useless.

SUMMARY

[0012] In an embodiment a multi-functional comb provides several different mechanisms for cleaning paintbrushes and paint rollers. The device attaches to a hose that supplies cleaning fluid under pressure through the handle of the device and out an aperture parallel to the teeth of the comb, such that some of the cleaning fluid washes the comb, thus cleaning it; and additionally the cleaning fluid sprays out over the painting or coating device one wishes to clean, or anything else at which one aims the comb. Normally the comb is designed to be held in the right hand. A switch one operates with the right thumb turns the cleaning fluid on or off. When held in the left hand, the switch can be operated with the left index or middle fingers.

BRIEF DESCRIPTION OF DRAWINGS

[0013] FIG. 1A illustrates an exemplar of the embodiment as seen from the left side, slightly from above.
[0014] FIG. 1B illustrates an exemplar of the embodiment as seen from the right side, slightly from below.
[0015] FIG. 1C illustrates an exemplar of the embodiment as seen from the left.
[0016] FIG. 1D illustrates an exemplar of the embodiment as seen from the back.
[0017] FIG. 1E illustrates an exemplar of the embodiment as seen from the right.

DETAILED DESCRIPTION OF THE EMBODIMENTS

First Embodiment

[0018] One embodiment is shown in FIGS. 1A, 1B, 1C, 1D and 1E. It is a comb with a hollow handle (101). The base of the comb (102) screws into an industrial hose which supplies cleaning fluid through the body of the hose, the body of the comb and out the aperture (103). The base of the comb rotates independently of the rest of the comb (101), thus allowing the hose to rotate independently of the body of the comb while remaining tightly screwed into the base of the comb. The user turns the cleaning fluid on and off with the switch (106). The switch is one of the following types:

[0019] 1. In some embodiments the switch is fluid pressure-OFF intermittent.
[0020] 2. In some other embodiments the switch is separate spring pressure-OFF intermittent.
[0021] 3. In some other embodiments the switch is self-pressure-OFF from resistance of body material.
[0022] 4. In some other embodiments the switch is ON-OFF continuous flow switch without spring or pressure-OFF.
[0023] 5. In some other embodiments the switch is of some other types.

[0024] The cleaning fluid sprays out over the teeth of the comb (105). Also, on the other side of the comb from the teeth is an axed scraper (104) that the user can scrape over paint rollers to strip them of paint.

Operation of the First Embodiment

[0025] One screws the comb onto a hose, puts the switch in the OFF position, and turns on the hose. To use the comb one
holds the comb in one's right hand, where the hose attachment (102) is at the base of the fist, the comb teeth (103) are parallel to the thumb, and the fingers grasp above the scraper (104).

[0026] To comb out a paintbrush without water one runs the comb over the paintbrush, doing nothing else. To comb out a paintbrush while simultaneously washing it one turns the switch on; this causes the comb to spray water. One can then comb out the paintbrush while simultaneously washing it. One can also use the comb to wash by spraying water without combing.

[0027] To clean a paint roller one runs the scraper (104) over the paint roller, thus squeezing the paint out from it. One can intersperse this with washing the paint roller by activating the switch, then washing the roller, and then deactivating the switch again.

Alternatives to the First Embodiment

[0028] In some embodiments the comb is designed to be held in the right hand, so the switch is on the left side of the comb's body where the right thumb can easily reach it to turn it on and off. In other embodiments the comb is designed to be held in the left hand; in this case the switch is on the right side of the comb's body, so the left thumb can easily reach it to turn it on and off.

[0029] In some embodiments the switch is a simple on-off switch. In other embodiments the switch also controls the volume of cleaning fluid flow. In still other embodiments there is a dial to control the flow rate of the cleaning fluid. In still other embodiments there is a switch to turn the water on and off, and a dial to control the flow rate.

[0030] In some embodiments the switch is intermittent, shutting off the flow of cleaning fluid when the switch is not depressed, while in other embodiments the switch requires on-actuation and off-actuation.

[0031] In some embodiments the arc'd roller scraper is mounted on the side of the comb. In other embodiments the scraper is mounted at the front of the comb. In other embodiments there is no arc'd roller scraper.

[0032] In some embodiments the arc'd scraper is made of metal. In other embodiments it is made of plastic. In other embodiments it is made of some other material.

[0033] In some embodiments the comb has one row of teeth. In other embodiments the comb has multiple rows of teeth.

[0034] In some embodiments the teeth are all of equal length. In other embodiments the teeth are of differing lengths in a regular pattern.

[0035] In some embodiments the comb's body is made of plastic. In other embodiments it is made of metal. In other embodiments it is made of rubber. In other embodiments it is made of some other material.

[0036] In some embodiments the comb's teeth are made of the same material as the comb. In other embodiments the teeth are made of some other material, including metal, plastic, or rubber.

[0037] In some embodiments the comb is manufactured as a single piece. In other embodiments it is manufactured as different pieces which may be assembled or disassembled; in some such embodiments the different pieces are of the same material, while in other such embodiments those pieces are of different materials.

[0038] In some embodiments the comb has a ring by which to hang it from a tool belt or some other work site gear. In other embodiments it does not.

[0039] In some embodiments there is one aperture for the cleaning fluid to exit the device. In other embodiments there is more than one aperture for the cleaning fluid to exit the device.

[0040] In some embodiments the cleaning fluid is water. In other embodiments the cleaning fluid is some other cleanser, such as turpentine or acetone. In other embodiments the cleaning fluid may be one of a plurality of choices.

[0041] In some embodiments the cleaning fluid comes through a hose connected to a faucet outlet of a plumbing system. In other embodiments the cleaning fluid comes through a hose from a reservoir of cleaning fluid.

[0042] In some embodiments the cleaning fluid is captured with a recirculating system that traps the effluent cleaning fluid for reuse or disposal. In some such embodiments the recirculating system filters the cleaning fluid.

Advantages and Ramifications

[0043] Using this comb to clean paintbrushes is advantageous over what painters currently do in a number of different ways.

[0044] First, it allows the user to simultaneously comb out and wash a brush, instead of having to switch between a wire brush or separate comb, and a hose. Similarly when a painter cleans a paint roller he can use the scraper to scrape paint from the roller and then wash that paint away with the cleaning fluid stream.

[0045] Also, using this water comb is ecologically sound, in that it allows the painter to use only as much water as he needs to clean the paint from his brushes and rollers, and no more. This both conserves water, and allows the painter to collect all his waste water into a bucket, thereby enabling him to dispose of it properly. In contrast painters currently normally allow the hose to free-run because of the difficulties presented by the multiplicity-implent limitations of prior brush cleaning methods. The high volumes of water thus used overwhelm containers, leading to spillage and resulting lack of control of the fluid and solid waste.

[0046] It is noted that Ruiz also attempted to address some of these issues. However, our solution is different from, and better than, the one Ruiz presents, for the following reasons:

[0047] 1. Our device presents a comb, with stiff teeth, rather than a brush. When pushing through heavy paint impregnating a paintbrush in order to clean that paintbrush a comb with stiff teeth works better than doing so with a brush with bristles because bristles may bend, which reduces the efficiency of the device and ultimately ruins the device.

[0048] 2. One holds our device alongside the teeth of the device while using it. One holds the Ruiz embodiment with a handle alongside the teeth of the device. Consequently our embodiment reduces torque on the hand holding the device. Thus when repeatedly pushing our device through a paint laden paintbrush will not result in as much fatigue of the hand and wrist holding our device.

[0049] 3. The Ruiz device does not have a switch to control fluid flow. Thus to control the fluid flow one must put down either the device, or the item being cleaned, in order to change the fluid flow. With our device one may control the fluid flow with the same hand that holds the device.

We claim:

1. An apparatus that serves simultaneously as a hand-held comb and also as the head of a hose, so that the same mecha-
nism can be used to wash and to scour something that needs to be cleaned, either separately or concurrently, where:

(a) the base of the comb screws into a hose, attaching firmly to it;
(b) the comb has a plurality of rows of teeth; each of which rows has a plurality of teeth;
(c) the teeth of the comb are of potentially varying lengths in a regular pattern;
(d) the handle of the comb lies alongside the teeth of the comb along the body of the comb, rather than adjacent to the body of the comb;
(e) the comb has a switch on its side that allows the user to turn fluid flow through the comb on and off with a thumb press or a forefinger press, where the switch is of one of the following kinds: (i) fluid pressure-off intermittent, (ii) separate spring pressure-off intermittent, (iii) self-spring-off from resistance of body material, or (iv) on-off continuous flow switch without spring or pressure-off; and

(f) the fluid exits the comb through a plurality of apertures, where some of the fluid hits the teeth of the comb, and some does not.

2. The method of controlling the device of claim 1 simultaneously as a comb and as the head of a hose, by holding the device such that the teeth lie along the hand holding the device, while controlling the flow of fluid through the hose with a switch operated with the thumb or the forefinger.

3. The apparatus of claim 1 having mounted on it an arc-shaped scraper which may be used to scrape off a paint roller.

4. The apparatus of claim 1 having its comb teeth mounted on a detachable piece, which may be replaced independently of the rest of the apparatus.

5. The apparatus of claim 2's crescent tool being detachable, so that it may be replaced independent of the rest of the apparatus.

6. The base of the comb of claim 1 which swiveling independently of the body of the comb, thus allowing the body of the comb to rotate freely of the hose while attached to the hose.

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