

United States Patent

Paton

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[54] COMBINED SPONGE, SCOURING PILE MATERIAL AND SQUEEGEE CLEANING IMPLEMENT

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[51] Int. Cl.....A47I 13/12

[58] Field of Search.....15/114, 115, 116 A, 118, 121, 15/223, 244 B, 244 C; 401/22, 24, 27; 161/62, 63, 159

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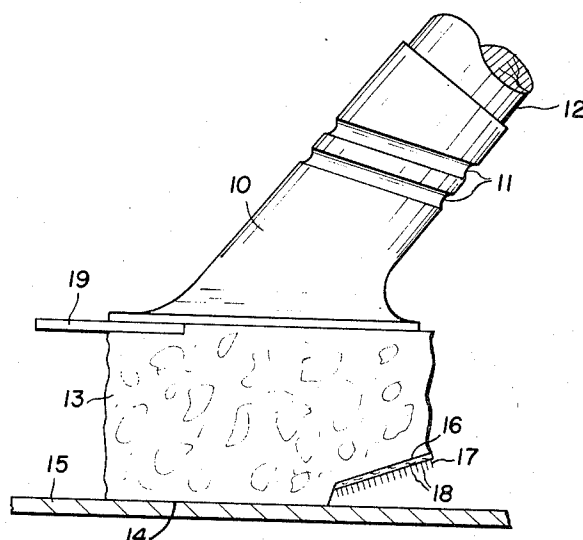
Primary Examiner—Daniel Blum

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[57] ABSTRACT

A cleaning tool uses a block of foamed resin material having a scrubbing face and a recessed, stiff pile material arranged adjacent the scrubbing face so that when the block is pressed lightly, only the soft scrubbing face engages the surface to be cleaned, and when the block is pressed harder, the foam material is compressed, and the pile material is brought into scouring contact with the surface to be cleaned.

4 Claims, 7 Drawing Figures



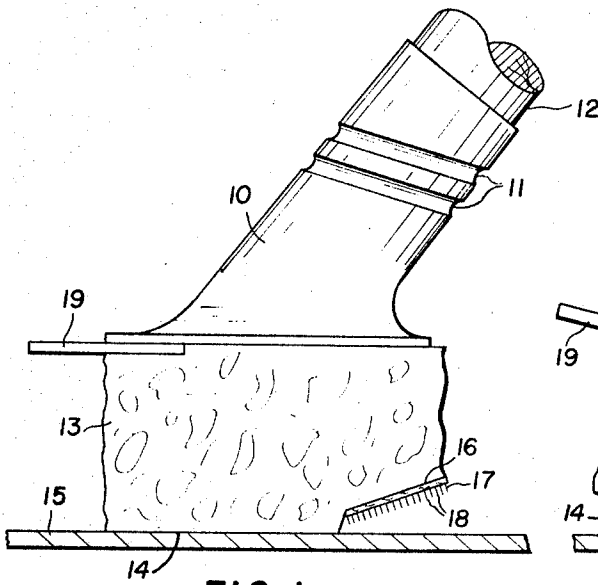


FIG. 1

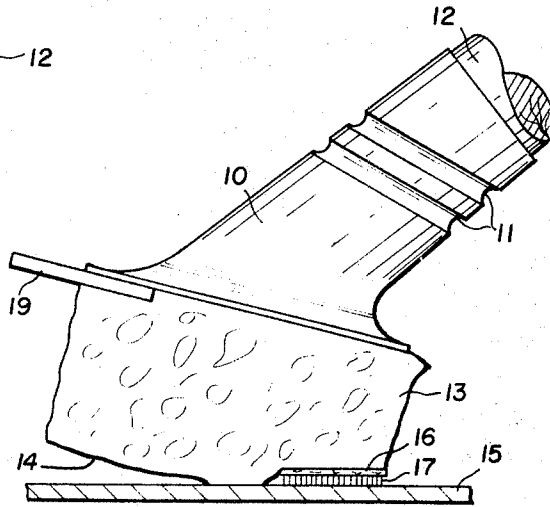


FIG. 2

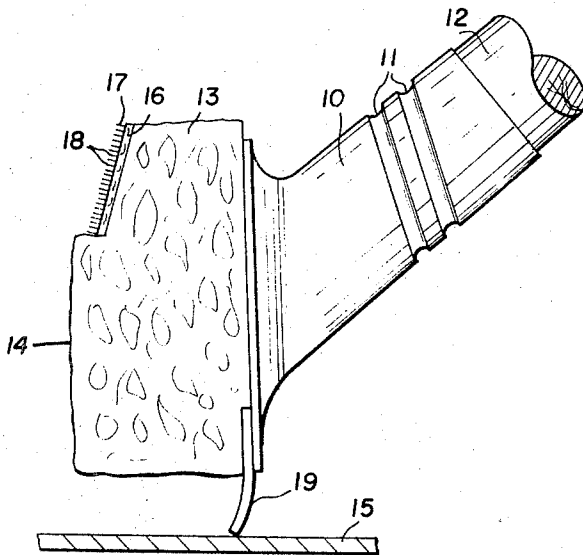


FIG. 3

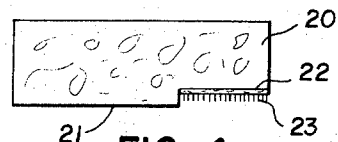


FIG. 4

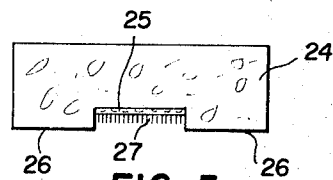


FIG. 5

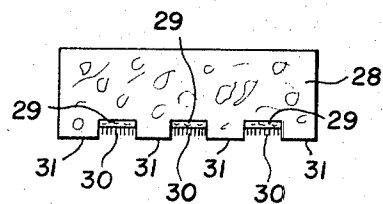


FIG. 6

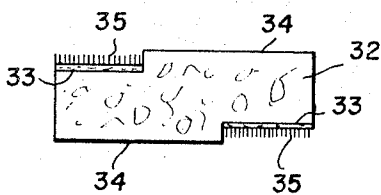


FIG. 7

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COMBINED SPONGE, SCOURING PILE MATERIAL AND SQUEEGEE CLEANING IMPLEMENT

THE INVENTIVE IMPROVEMENT

Cleaning tools are a well-developed art, and tools for both scrubbing and scouring have been suggested. The invention improves on these suggestions, however, in a cleaning tool that is simpler, more efficient, and more convenient than previous suggestions. The invention involves the recognition of a way to combine a scrubbing and scouring surface in the same tool so that a mere change in the pressure with which the tool is applied converts the tool from scrubbing to scouring. The invention also aims at simplicity, economy, ruggedness, durability, and effectiveness in a versatile cleaning tool.

SUMMARY OF THE INVENTION

The inventive cleaning tool is formed of a block of foamed resin material having a generally plane scrubbing face and a recessed scouring region adjacent the scrubbing face. A generally plane piece of coarse and stiff pile material is secured to the scouring region so that the tips of the pile elements are recessed relative to the scrubbing face allowing the tool to be used with relatively light pressure to move only the scrubbing face over the surface to be cleaned and to be used with relatively heavy pressure to compress the resin material and bring the pile material into scouring contact with the surface to be cleaned.

DRAWINGS

FIGS. 1 - 3 are end elevational views of a preferred embodiment of the inventive cleaning tool arranged as a mophead and shown in three modes of operation; and

FIGS. 4 - 7 are end elevational views of alternative embodiments of the inventive cleaning tool.

DETAILED DESCRIPTION

FIGS. 1 - 3 show a preferred embodiment of the inventive cleaning tool arranged as a mophead. A detachable headpiece 10 is provided with threads 11 so that a mop handle 12 can be screwed into and out of headpiece 10 for changing mopheads. Headpiece 10 carries a block of foamed resin material 13 of a generally sponge-like nature formed in a generally rectangular shape. The bottom surface 14 of block 13 is generally plane and disposed for scrubbing movement over a floor or other surface 15 to be cleaned.

A generally plane scouring region 16 adjacent scrubbing face surface 14 is recessed relative to surface 14 as illustrated. The plane of scouring region 16 is disposed at an acute angle to the plane of scrubbing surface 14. Pile material 17 of the same size and shape as scouring region 16, is secured over scouring region 16 by adhesive or other convenient securing means. Pile material 17 is preferably formed of coarse and stiff pile elements sparsely scattered over a woven fabric backing such as described in Canadian Pat. No. 736,642. The tips 18 of the pile elements of pile material 17 are recessed relative to scrubbing face surface 14.

In light use, the inventive tool is disposed as shown in FIG. 1 with scrubbing face surface 14 engaging surface 15, and the tool is moved back and forth in a generally known scrubbing action. For a heavier and more vigorous scouring action the tool is pressed down harder and preferably tilted downward as shown in FIG. 2 to bring pile material 17 into forceful scouring

engagement with surface 15.

A squeegee 19 is arranged on headpiece 10 adjacent block 13 and spaced from scrubbing face surface 14 as illustrated. To operate squeegee 19, the tool is inverted as shown in FIG. 3 so that squeegee 19 can be moved over surface 15.

The alternative embodiment of FIG. 4 shows a block of foamed resin 20 having a scrubbing surface 21. A recessed scouring region 22 carries a recessed pile material 23 on a plane parallel with the plane of scrubbing face 21. The foamed block 24 of FIG. 3 has a recessed scouring region 25 arranged between a pair of scrubbing face surfaces 26 so that heavier pressure on block 24 brings pile material 27 into contact with the surface being cleaned. Foam block 28 of the embodiment of FIG. 6 has three recessed scouring regions 29 each carrying pile material 30 adjacent scrubbing surfaces 31. Heavier pressure on block 28 brings alternative strips of pile 30 and scrubbing face 31 into contact with the surface being cleaned. Foam block 32 of FIG. 7 is similar to block 20 of FIG. 4 except that it has a pair of scouring regions 33 respectively recessed from opposite scrubbing faces 34. Pile material 35 is arranged in each of the scouring regions 33, and the block 32 can be used with either scrubbing face 34 downward with heavier pressure bringing pile material into contact with the surface being cleaned.

Persons wishing to practice the invention should remember that other embodiments and variations can be adapted to particular circumstances. Even though one point of view is necessarily chosen in describing and defining the invention, this should not inhibit broader or related embodiments going beyond the semantic orientation of this application but falling within the spirit of the invention. For example, those skilled in the art will appreciate that the inventive cleaning tool can be formed of a variety of materials, given many shapes and sizes, and made compatible with many existing devices.

I claim:

1. A cleaning tool comprising:
 - a. a block of foamed resin material;
 - b. said block having a generally plane scrubbing face region disposed for scrubbing movement over a surface to be cleaned;
 - c. said block having a generally plane scouring region adjacent said scrubbing face;
 - d. said scouring region being recessed relative to said scrubbing face so that said scouring region lies in a different plane from that of said scrubbing face;
 - e. said plane of said scouring region being disposed at an acute angle to said plane of said scrubbing face;
 - f. a generally plane piece of coarse and stiff pile material having the size and shape of said scouring region; and
 - g. means for securing said pile material to said scouring region so the tips of the pile elements of said material are recessed relative to said scrubbing face allowing said tool to be used with relatively light pressure to move only said scrubbing face over said surface to be cleaned and to be used with relatively heavy pressure to compress said resin material and bring said pile material into scouring contact with said surface.
2. The tool of claim 9 including a squeegee extending along said block in a region spaced from said scrubbing face.
3. The tool of claim 1 wherein said scouring region is arranged along one edge of said block, and said block is mounted on a detachable mophead.
4. The tool of claim 2 including a squeegee extending along said block in a region spaced from said scrubbing face.

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