METHOD FOR ERADICATING HYDROCARBON STAINS FROM CONCRETE SURFACES

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Fig 2

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ABSTRACT OF THE DISCLOSURE

A method for eradicating oil and grease stains from concrete surfaces comprising the use of a concrete weight including a flat bottom surface and defining a bore extending vertically therethrough, a container mounted on the weight and communicating with the bore, and a valve member for controlling the flow of the eradicating substance through the container by means of movement of the weight, the bore of the container being in proximity to the stained surface, and a decolorizing agent, surplus of the material may be swept or washed from the surface to leave the surface free from stain, and without danger of adversely affecting the adjacent lawn, shrubbery, gardens or the like.

Moreover, the present invention presents no sharp edges that may injure objects upon the accidental bumping thereof, during operation of the invention as well as presenting no edges of the invention itself that might chip or crack away during the accidental contacting of other objects.

These and other features and advantages of the present invention will be more clearly understood from consideration of the following specification in conjunction with the accompanying drawings in which like characters of reference designate corresponding parts throughout and in which:

FIG. 1 is a perspective view of one preferred embodiment of the present invention.

FIG. 2 is a vertical cross-sectional view taken along the line 2—2 of FIG. 1.

These drawings and the following detailed description disclose one specific embodiment of the present invention but the invention is not limited to the details disclosed herein, since the invention may be embodied in other specific forms.

In the apparatus of the present invention herein shown by way of example there is provided a relatively heavy elliptical shaped base member 10, having a flat under surface 11 and may be conveniently formed of molded concrete or some similar weighty material. The under surface 11 of the base member 10 is purposely left unpainted to provide a rough texture of abrasive character, and, in the movement of the base member 10 over a rough stained surface, this lower surface 11 frictionally contacts a stained surface due to the weight of the base member 10. Thus a grinding, burning and abrasion action may take place between the under surface 11 and the stained surface to dislodge the stain producing particles from the stained surface. Movement of the base member 10 along its minor axis presents a wide area of contact perpendicular to the axis of movement while a minimum of material used in the manufacturing of the base member 10. Moreover, the elliptical shape of the base member 10 presents no sharp vertical edges as shown in FIG. 1 to damage objects during the movement of the base member 10.

A decolorizing agent deposited between the under surface 11 and a stained surface is distributed over a width of the stained surface equal to the major axis of the base member 10 upon movement of the base member 10 along its minor axis. However, the fuller's earth or some similar decolorizing agent acts not only as a decolorizing agent, but may also act as the buffing compound or lubricant serving to ameliorate this grinding, burning and abrasive action while being forced into the interstices of the stained surface where it contacts the stain for decolorization.

of the block over the rough stained surface effectively forces the fuller's earth into the interstices of the stained surface. Frictional action between the rough under surface of the block and the stained surface provides a helpful abrasive action. After the application of the decolorizing agent, surplus of the material may be swept or washed from the surface to leave the surface free from stain, and without danger of adversely affecting the adjacent lawn, shrubbery, gardens or the like.

Herefore the eradicating of oil and grease decoloration has usually been attempted by the use of strong cleaning reagents such as lye, mineral spirits, detergents and soaps of various types. In many instances such chemicals were compounded with abrasive materials and applied in accompaniment to scrubbing actions frictionally abrading a surface to eradi cate the stain or spots thereof. In other instances absorbent material such as sawdust or like has been applied to absorb the oil or grease and thereby diminish the extent of the decoloration.

By the method of the present invention, a decolorizing agent is applied to eradi cate the stain. Further, the preferred agent of the present invention has, in combination with decolorizing properties, absorbent qualities by which oil or grease deposits may be lifted out of the surface.

Specifically, the method of the present invention resides in the application to the oil and grease stains of rough surfaces such as driveways, garage floors and the like of a decolorizing and absorbing agent, as for instance a clay of the kaolinite family and particularly fuller's earth. The eradicating of the stains is achieved by the distribution thereon of the fuller's earth and the application of pressure to completely pulverize the fuller's earth and force the particles thereof into the interstices of the surface thereby producing pressurized contact with the stains. Therewith a surplusage of the fuller's earth tends to absorb oil or grease which may thereafter be swept away, leaving a clean surface.

It is further to be noted that under pressure the fuller's earth may act as an abrasive to scuffify the surface and expose occluded stains for decoloring action.

As distinguished from soaps, detergents and chemical reagents and hydrocarbons which are brushed or washed from the surface to be cleaned, thus impregnating surrounding earth, lawns, garden plots and the like destroying the surrounding vegetation; fuller's earth is substantially inert and produces no deleterious effect on such vegetation.

The apparatus employed in the method of the present invention is simple in design and construction, effective and efficient in operation and well designed to meet the demands of economic manufacture. The particular embodiment herein set forth may be broadly defined as including a cast block of concrete or similar heavy material provided with means for dispensing a controlled surcharge of fuller's earth or equivalent decolorizing agent to the under surface. A manipulating means extending within easy reach of the operator is provided to move the block over the stained surface. In operation, movement
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3. The base member 10 defines a bore 12, terminating at an open pocket 13 in the under face 11. Within the bore 12, there is snugly mounted a cylindrical tube 14 for directing the fuller's earth, or a like decolorizing agent, to the pocket 13 to be distributed by the under surface 11. The pocket 13 allows the decolorizing agent to flow through the cylindrical tube 14, to accumulate therein, rather than in the tube 14 and presents a large area of the stained surface to the decolorizing agent to facilitate the injection of the decolorizing agent between the under surface 11 and the stained surface.

For providing a continuous supply of the fuller's earth for use over sustained periods of operation a cylindrical container 15 is provided, which is a conventional polyethylene bottle of the type used in the packaging of detergents, bleaches, and the like. Moreover, the container 15 is flexible to prevent injury to accidentally bumped objects during movement of the base member 10. As indicated in FIGS. 1 and 2, the container 15 has a reduced portion 16 flattened on one side to accommodate a curved handle 18, and the container 15 is secured in the inverted discharging position shown by a vertical rod 19, imbedded in base member 10, together with an attaching clip 20.

To facilitate the filling of the container 15, an aperture 30 is provided in the top thereof as viewed in FIGS. 1 and 2. To prevent inadvertent spilling of the decolorizing agent from the container 15 through the aperture 30, there is provided a cap 31 fixedly yet removably positioned in the aperture 30. Thus, the present invention may be easily loaded while sitting on the stained surface to be cleaned without removing the container 15 from the vertical rod 19, and may be used without the possibility of inadvertent tipping causing spillage of the decolorizing agent within the container 15. The terminal portion of the cylindrical neck 17 integral with the reduced portion 16 engages the upwardly projecting end of the tube 14.

For controlling the flow of the decolorizing agent from the container 15 through the neck 17 thereof and the tube 14 to the under surface 11, there is slidably inserted through slots 35 in the reduced portion 11 of the container 15 immediately above the neck 17, a flat apertured valve plate 21. The valve plate 21 has a limiting lip 33 at each end thereof that serves to limit the movement of the valve plate 21 from that position whereby the aperture 34 in the valve plate 21 is registering with the neck 17 to that position whereby no flow of decolorizing agent through the neck 17 is permitted.

To preclude deterioration of the edges of the base member 10 by inadvertent contact with the objects whereby the base member 10 might be chipped, a metallic band 23 is provided and secured to the base member 10 around the periphery thereof, by screws 24 engageable through the band 23 with nuts 25 imbedded within the base member 10. A bumper strip 26 of rubber or the like material is positioned behind the band 23 which terminates at the upper edge of the base member 10. A bead 27 of the strip 26 extends peripherally around the upper edge of the base member 10 beyond the band 23 thereby precluding damage to objects with which the side of the base member 10 may come in contact, and an inwardly extending lip 37 extends over the base member 10 to preclude downward movement of the strip 26 to expose the edge of the base member 10 and injure objects during operation.

For manual manipulation of the device, spaced handle mounting ears 28 imbedded in the base member 10 pivotally secure a tubular handle 29 having a band 36 on the extending end thereof.

In operation, it will be understood that the method comprises the application to common stains on concrete of like surfaces of a decolorizing agent as for instance, fuller's earth, together with the pressure of the base member 10 and the rubbing of such material into the interstices of the stained surface. This pressure by the base member 10 produces a degree of friction, which may act to disengage the stain particles from the surface material and allow these particles to adhere to the surface of the particles of the decolorizing agent. A continuous and controllable supply of decolorizing agent is supplied by the container 15 through the aperture in the stop plate 21 and the cylindrical tube 14 for distribution over the stained surface by movement of the base member 10.

It will be obvious to those skilled in the art that many variations may be made in the embodiment chosen for the purpose of illustrating the present invention without departing from the scope thereof as defined by the appended claims.

What I claim as my invention is:
1. A method of eradicating hydrocarbon stains from a substantially flat horizontal concrete surface comprising: engaging the stain of the surface with the substantially flat concrete face of a heavy object, distributing fuller's earth through the concrete face over the stain of the surface, working the concrete face of the heavy object over the stain to grind the fuller's earth into the interstices of the surface about the stain, and removing the fuller's earth from the surface.
2. The invention as claim 1 wherein the step of distributing fuller's earth comprises continually feeding fuller's earth through the face of the heavy object at a controlled rate.
3. A method for eradicating hydrocarbon stains from concrete surfaces, said method comprising the steps of: distributing fuller's earth over the stains, grinding the fuller's earth with the substantially flat face of a concrete weight into the interstices of the surface by working the weight over the stain, and distributing additional fuller's earth over the stain through the weight as the weight is worked over the stain.

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