MOBILE HOME WASHING APPARATUS

Inventor: Clifford E. Barton, Lot 67, Battle Field Trailer Pk., Franklin, Tenn. 37064

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ABSTRACT

A portable, mobile home washing apparatus including a housing supporting a pair of spaced rotary brushes, a liquid cleaner concentrate reservoir disposed along the bottom edge of the housing, an elongated rinse head disposed along the top edge of the housing, a mixing valve and cleaner solution discharge spout directed between the rotary brushes, means for supplying water to the mixing valve and rinse head simultaneously, a motor mounted on the housing for driving the brushes, and a handle for manually moving the housing over a mobile house wall surface.

6 Claims, 3 Drawing Figures
MOBILE HOME WASHING APPARATUS

BACKGROUND OF THE INVENTION

This invention relates to a washing apparatus, and more particularly to an apparatus for washing the exterior of a mobile home.

Portable washing apparatus are well known in the art, particularly for washing windows. Motor driven rotary brushes in washing apparatus are also well known, including rotary brushes furnished with water or a cleaning solution.

However, it is not believed that there is a manually operated portable apparatus particularly adapted for washing and rinsing mobile homes.

SUMMARY OF THE INVENTION

It is therefore an object of this invention to provide a relatively light-weight, manually operated, portable, washing and rinsing apparatus particularly adapted for use in washing the exterior walls of a mobile home.

The washing apparatus made in accordance with this invention includes a housing supporting a pair of counter-rotating rotary brushes driven by a small electric motor mounted on the housing and supplied with power with a long electric extension cord. The housing also supports a small liquid cleaner concentrate tank or reservoir and a rinse head, both of which are connected to a water inlet fixture or coupling, attachable to a long flexible water conduit or hose. The inlet fixture is connected through a branch water conduit to a mixing valve fixed on the reservoir and provided with a discharge nozzle for the mixed cleansing solution. The discharge nozzle is arranged to spray cleansing solution upward between the counter-rotating brushes, while the rinse head discharges rinse water from above the rotary brushes entirely across the housing so that the washing solution is immediately rinsed after washing.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exterior elevation view of the washing apparatus in an elevated operative position for washing the exterior surface of a mobile home wall, shown fragmentarily;

FIG. 2 is a greatly enlarged interior elevational view of the apparatus housing, with the handle shown fragmentarily; and

FIG. 3 is a section taken along the line 3 — 3 of FIG. 2.

DESCRIPTION OF PREFERRED EMBODIMENT

Referring now to the drawings in more detail, the washing apparatus 10 is particularly designed for washing and rinsing exterior wall surfaces of mobile homes, such as the mobile side wall 11 (FIG. 1). The apparatus 10 is portable and sufficiently light-weight to be manipulated by one person or operator 12 (FIG. 1).

The apparatus 10 includes a rectangular housing 14 having a back or exterior face 15 and a recessed interior face 16 surrounded by side walls 17 and top wall 18.

Upon the interior face 16 of the housing 14 are a pair of rotary brushes 20 and 21, mounted for rotation on spindles 22 and 23, respectively. The spindles 22 and 23 are driven through a gear transmission system, concealed within the transmission housing 24, by an electric motor 25 supplied with electric current through the lead or cord 26. As shown by the arrows in FIG. 2, the rotary brushes 20 and 21 are driven in opposite rotary directions.

Fixed to and projecting from the edges of the top wall 18 and the side walls 17 is a flexible or resilient fence 28, preferably made of rubber or similar material.

Forming the bottom wall of the housing 14 is an elongated liquid container or reservoir 30 adapted to receive a liquid cleaner concentrate, such as a concentrated soap solution. A filler plug 31 may be fitted in a corresponding inlet hole at one end of the reservoir 30 for filling and refilling the reservoir 30.

Fixed to, and communicating with, the reservoir 30 is a T-shaped mixing valve 33, to which is attached an upwardly directed discharge outlet or nozzle 34. The nozzle 34 is so located that it directs a stream of diluted liquid cleansing solution into the space formed between the closest portions of the rotating brushes 20 and 21, that is substantially in the middle of the housing 14. A branch water inlet pipe 35 is connected to the T-shaped mixing valve 33 and to a tee 36. Also connected to the lateral outlet of the tee 36 is a rinse water branch pipe 37 which is coupled through elbow 38 to an elongated rinse head 40 having a plurality of water discharge apertures 41. The rinse head 40 extends longitudinally, substantially parallel and adjacent to the top wall 18 and substantially spanning the length of the housing 14 above the rotary brushes 20 and 21. The rinse head 40 may be secured to the top wall 18 by means, such as brackets 42.

Water is supplied to both branch pipes 35 and 37, simultaneously through the tee 36 and water inlet coupling 44 fixed in the side wall 17 and adapted to be coupled to a flexible water conduit, such as a garden hose 45.

The handle member 47 is disclosed in FIGS. 1 and 2 as being substantially U-shaped, having a pair of side arms 48 and 49 connected by an outer transverse handle bar 50 and an intermediate transverse handle bar 51. The inner ends of the side arms 48 and 49 are connected by journal members 53 and 54 into the side or end walls 17 in such a manner that they define a longitudinal pivotal axis for the handle member 47 relative to the housing 14, the axis being parallel to the longitudinal dimension of the housing 14. This journal arrangement of the handle member 47 permits the operator 12 to easily move the housing 14 up and down and maintain the rotary brushes 20 and 21 always flush against the exterior wall surface 11.

In the operation of the invention, the electrical cord 26 is connected to any conventional outlet, and lengthened, where necessary, by electrical extension cords. One end of conventional hose pipe 45 is connected to a convenient water faucet, not shown, and the other end is coupled to the water inlet coupling 44 on the housing 14. Additional lengths of hose may be added when needed. With the water faucet and the electricity turned on, the rotary brushes 20 and 21 are driven in opposite directions, while water is supplied through both branch pipes 35 and 37 to the mixing valve 33 and rinse head 40, respectively. The mixing valve 33 mixes the inlet water with the cleansing concentrate from the reservoir and discharges it through the nozzle 34 between the peripheral surfaces of the rapidly rotating brushes 20 and 21, to establish a scrubbing and washing action upon the exterior surface 11 over which the apparatus 10 moves. Simultaneously, water is discharged through the rinse apertures 41 from the rinse head 40.
to fall over the brushes 20 and 21 and the washed surfaces of the wall 11, in order to immediately rinse the washed areas and remove the spent washing solution downward through the space 55 (FIG. 3) between the wall surface 11 and the reservoir 30.

In FIG. 3, it will be noted that the rubber fence 28 not only projects beyond the periphery of the side wall 17 and the top wall 18, but projects beyond the inner face of the reservoir 30, to provide this lower space or opening 55 for rapidly removing the spent washing and rinsing solutions from housing 14 by gravity. The rubber fence 28 functions as a squeegee, and also to confine the washing and rinsing solution to the area enclosed by housing 14 for cleaning.

Reservoir 30 is preferably located along the bottom edge of the housing, because the weight of the cleaning solution and water, as well as the weight of the reservoir 30, will be disposed along the bottom edge to maintain the housing 14 in the upright attitude disclosed in all figures of the drawing.

The rinse head 40 is purposely located along the top wall 18 so that the rinse water will naturally fall by gravity across the area scrubbed and cleaned by the rotary brushes 20 and 21 and the cleaning solution from the discharge nozzle 34.

Although the rotary brushes 20 and 21 are disclosed rotating in the direction of the arrows, illustrated in FIG. 2, nevertheless, the brushes could rotate in the opposite direction, so long as they rotate in directions opposite to each other. However, when the brushes 20 and 21 rotate in the direction of the arrows disclosed in FIG. 2, it is believed that the cleaning solution has a longer time to clean the surfaces to which the brushes are applied, before being washed away by the rinse water from the rinse head 40.

By virtue of the coupling of the long flexible hose 45 to the water inlet coupling 44, a minimum weight of water is supported by the operator 12, as opposed to an apparatus including its own water reservoir or pumping apparatus. The electric motor 25, as well as the transmission within the housing 24, will be made as small as possible and of material as light in weight as possible in order to minimize the weight of the entire apparatus 10 supported by the single operator 12.

What is claimed is:

1. Apparatus for washing mobile homes comprising:
   a. an elongated housing having an elongated top edge, and elongated bottom edge, an interior face and an exterior face,
   b. a pair of rotary brushes mounted on said interior face for rotation about longitudinally spaced, parallel axes,
   c. a motor mounted on said housing and operatively connected to said rotary brushes for driving said brushes in opposite rotary directions,
   d. a reservoir fixed on said housing for receiving a liquid cleanser,
   e. a mixing valve connected to said reservoir,
   f. a cleaner discharge outlet directed between said rotary brushes and in fluid communication with said mixing valve,
   g. a cleaner water conduit coupled to said mixing valve for introducing water into said mixing valve for mixing with the cleanser and consequent discharge of cleanser over the vertical wall surface of a mobile home,
   h. an elongated rinse head fixed to said interior face and extending substantially the length of said housing adjacent to said top edge,
   i. a water inlet coupling on said housing communicating with said cleaner conduit and said rinse head and adapted to be coupled to a flexible water supply conduit,
   j. means for supplying power to said motor,
   k. an elongated handle connected to said housing for manual movement of said apparatus over the vertical wall surface of a mobile home.

2. The invention according to claim 1 further comprising a rinse branch conduit connecting said rinse head to said water inlet coupling.

3. The invention according to claim 1 in which said handle comprises a bow-shaped piece having a pair of legs journaled to opposite ends of said housing, so that said handle is swingably mounted on said housing along a longitudinal axis.

4. The invention according to claim 1 in which said motor is an electric motor and said means for supplying power to said motor comprises a flexible electrical lead.

5. The invention according to claim 1 in which said reservoir is an elongated liquid container extending substantially the length of said housing along said bottom edge.

6. The invention according to claim 5 in which said housing further comprises opposed end edges, a resilient fence fixed to said housing and projecting uniformly from said top edge and said end edges and terminating in the plane of the rotary brush surfaces operating on a mobile home wall, said plane being spaced from said bottom edge and said reservoir away from said exterior face, to permit discharge of the spent washing solution by gravity when said housing is oriented with its top edge above said bottom edge, in operative position against a mobile home wall.