SPRAY BAR WITH GUIDE WHEELS AND STABILIZING POLES

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ABSTRACT
An elongated spray bar adapted to be suspended from a cable or the like along the side of a building and including a plurality of nozzles for spraying cleaning solution, a plurality of guide wheels for guiding vertical movement of the spray bar and stabilizing poles projecting from each end thereof.

2 Claims, 5 Drawing Figures
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The present invention is generally related to spraying devices and, more particularly, to an improved spray bar cleaning assembly for use in cleaning windows in multi-story buildings.

An object of the present invention is to provide a cable-supported spray bar capable of vertical movement for spraying a mixture of cleaning solution and water onto windows.

Another object of the present invention is to provide a spray bar of rigid construction and provided with longitudinally spaced guide wheels and projecting stabilizing poles on the ends thereof.

A further object of the present invention is to provide a spray bar which is rugged, transportable, and which may be easily operated to efficiently clean windows on almost all building structures, yet, which is relatively simple in over-all construction, utilizes standard commercial components, and is relatively inexpensive to manufacture and maintain.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIG. 1 is a plan view of the spray bar of the present invention.

FIG. 2 is an elevation of the spray bar as shown in FIG. 1.

FIG. 3 is a sectional view taken along sections 3—3 of FIG. 2.

FIG. 4 is a sectional view taken along section 4—4 of FIG. 2.

FIG. 5 is a sectional view taken along section 5—5 of FIG. 2.

Referring now, more particularly, to FIG. 1 of the drawings, the spray bar 12 of the present invention is illustrated as it would be utilized to clean the windows of a typical multi-story building structure (not shown). The elongated spray bar 12 is suspended from a flexible cable or rope 14 for raising and lowering the spray bar by a suitable mechanism (not shown). Water and cleaning solution is supplied to the spray bar in a manner to permit unhindered movement of the spray bar along its path of travel.

A pair of elongated stabilizing poles 32 are mounted at opposite ends of spray bar 12 and are made of relatively rigid, resilient material to effectively cushion undesired movement of the spray bar due to the reaction forces imparted to the spray bar during operation or due to high winds or similar undesirable conditions.

Referring to FIGS. 1—5, the construction of the spray bar of the present invention may be more fully appreciated. A support harness 42 is provided for connecting the spray bar to the cable 14 by way of a shackle 44 or similar fastening means. Preferably, the support cable aligns with the center of gravity of the spray bar in order to maintain it in a substantially horizontal orientation during its operation. An elongated rigid support frame 46 is fastened to harness support member 42 by welding at 48, or similar fastening means. An elongated, hollow tubular member 50 is carried by the support frame and is provided with a plurality of longitudinally spaced spray nozzles 52 having outlet holes communicating with the hollow interior of the tubular member. The tubular member 50 is further provided with an end cap or plug 54 at each end and a centrally located inlet 56 to receive a supply of water and cleaning solution to be dispensed through nozzles 52.

A plurality of longitudinally spaced guide wheels 58 are mounted to the support frame 46 and are adapted to engage the side surfaces of the building structure being cleaned in order to prevent damage to the spray nozzles during operation of the assembly. The position of each guide wheel 58 may be adjusted by an adjustment screw 60 associated with the support frame. The spray bar 12 may be further provided with bumper guards 62 spaced along the length of the spray bar at various points to further prevent damage due to contact with the building surfaces or objects protruding therefrom. Of course, the exact location or number of guide wheels or bumper guards may be varied, as required, dependent upon the particular application.

The stabilizing poles 32 on the spray bar are fastened to the opposite end portions of support frame 46 by way of mounting sleeves 64 welded or otherwise fastened thereto. The effective length of each stabilizing pole 32 may be adjusted somewhat by way of screw fasteners 66 associated with each mounting sleeve. The spray bar may be further provided with a pair of loops or eyelets 68 welded to opposite ends of the support frame and adapted to accommodate guy wires, or similar means, to aid in control of the spray bar when operated under high winds, or the like. The tubular member 50 may be fastened to support frame 46 by way of mounting plates 70 welded to the support frame in a manner which compressibly deforms the tubular member as indicated at 72 in FIG. 5 to firmly hold it in position.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed as new is as follows:

1. As an article of manufacture, a spray bar including an elongated hollow tubular member closed at its opposite ends, a plurality of longitudinally spaced spray nozzles carried by said tubular member, and each having a liquid outlet to direct a spray toward a surface and communicating with the hollow interior of said tubular member, inlet means on said tubular member for supplying liquid material to said spray nozzles, plural guard means structurally associated with said tubular member and sufficiently numerous and close to said spray nozzles to protect them from damage, a plurality of guide wheels, at least two of said guide wheels being immediately adjacent said closed ends of said tubular member to prevent contact of the tubular member with a surface during the spraying thereof, means for attaching stabilizing means to each end of the tubular member and each of said stabilizing means extending in the same plane as said tubular member and each of which
is further extendable to approximately double the effective length of the spray bar, when the attached stabilizing means are extended to their maximum extent, and threaded means for releasably holding the stabilizing means in their various conditions of innermost and outermost extent.

2. The spray bar of claim 1 wherein said attaching means includes sleeve means rigidly secured to, and with the hollow parts of said sleeve means being parallel to, the hollow part of said tubular member, screw fasteners inserted in threaded apertures in said sleeve means to bear against those portions of the stabilizing means within said sleeve means to releasably retain said stabilizing means in their desired longitudinal positions, and eyelets secured adjacent to the remote ends of said tubular member for accommodating guy wires.

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