DEVICE FOR CLEANING VENETIAN BLINDS


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3 Claims. (Cl. 15—7)

This invention relates to a device for cleaning Venetian blinds and more particularly to a suction device for this purpose which also includes rotary brushes engaging the opposite sides of the louvers of the blind, the combined action of the brushes and the air serving to remove the dirt from the louvers and the dust laden air being drawn into the inlet line of any type of vacuum cleaner. Since the louvers of Venetian blinds are generally horizontally disposed they tend to collect a great deal of dirt, especially in localities where the air is dust laden. Various devices have been employed for cleaning the louvers of Venetian blinds but these are subject to the objection that a considerable amount of effort is required to operate them and that also they raise dust and hence are objectionable.

It is the principal object of this invention to provide a device which is used in conjunction with a hose connected to the inlet of any type of vacuum cleaner, the device being mounted on the free end of this hose and including a pair of rotary brushes which are operated by the movement of the air through the tube and arranged to engage the opposite sides of the louvers of the Venetian blind, the rotation of these brushes thereby serving to remove dust and dirt from the louvers and the dust so being removed being drawn into the vacuum line of the vacuum cleaner.

Another object of this invention is to house the brushes that dirt raised by the brushes cannot escape but is drawn into the vacuum line, thereby avoiding the raising of dust in cleaning the Venetian blind.

Another object of the invention is to provide such a device which can be readily used in conjunction with Venetian blinds; which will rapidly remove the dirt from the louvers and leave them in a clean and sanitary condition; which is light in weight and easy to manipulate; which is free from the danger of injuring the operator; and which is simple and inexpensive in construction, thereby permitting the device to be made and sold at low cost.

In the accompanying drawing:

Fig. 1 is a fragmentary perspective view of a Venetian blind showing the manner in which my vacuum cleaning device is employed to clean the louvers thereof.

Fig. 2 is a vertical longitudinal section through the cleaning device.

Figs. 3 and 4 are vertical transverse sections taken on the correspondingly numbered lines on Fig. 2.

Fig. 5 is a horizontal section, looking upwardly, the same being taken on line 5—5 of Fig. 2.

Fig. 6 is a fragmentary vertical section, taken on line 6—6, Fig. 4.

The device forming the subject of my invention is adapted for use in the cleaning of Venetian blinds, such blinds consisting of a plurality of relatively thin and broad louvers 10 carried by cross straps 11, these cross straps being secured at their ends to vertical straps 12 and 13. The adjustment of the angularity of the louvers 10 is effected by adjusting the relative vertical positions of the side straps 12 and 13, this being effected by any means (not shown).

The vacuum cleaner forming the subject of my invention is shown as comprising a metal elbow 15, one arm 16 of which is tapered to fit into the vacuum line 17 of a domestic vacuum cleaner (not shown) and the other arm 18 of which provides a circular opening into which a circular plug 19 is securely fitted. This plug is formed to provide a plurality of openings 20 through which air is drawn into the elbow 15 and vacuum line 17 of the vacuum cleaner. The plug 19 is formed to provide a reduced portion over which is fitted a tube 25. The opposite walls of this tube 25 are provided with alining slots 26 which extend inwardly from the free end of the tube to a point adjacent the plug 19, these slots being of sufficient width to permit the insertion of a louver 10 of the Venetian blind, as best illustrated in Fig. 3. The extremity of each bifurcation of the tube 25 is closed by a semi-circular member 27, these being secured to the tube 25 in any suitable manner as by screws 28. Each of the semi-circular members 27 carries a bearing 29 in which one end of a rotary brush 30 is journaled, these brushes being made of a twisted wire core 31 into which bristles 32 are woven so as to extend radially outward therefrom. The outer end of the core 31 of each of the brushes is preferably inserted in a small cap 34 which forms a journal received in the corresponding bearing 29. The other end of the core 31 of the upper brush 30 is connected in any suitable manner to a shaft 35 which is suitably journaled in the plug 19 and extends into the elbow 15, a gear 36 being fast to this shaft. The inner end of the core 31 of the lower brush 30 is similarly secured to a shaft 37 which is journaled in the plug 19 and is driven by a gear 38 meshing with the gear 36. It will therefore be seen that as the shaft 36 is turned the shaft 37 will be turned in the opposite direction and hence as the brushes are moved along a louver
of the Venetian blind the dirt will be removed from the louver mechanically by the brushes and this dirt drawn through the openings 20 of the plug 19 into the elbow 18 and thence into the vacuum line 17 of the vacuum cleaner.

The means for so rotating the brushes 30 include an impeller 40 arranged in the elbow 18 and across the path of the air passing there-through so that the movement of the air will rotate the impeller. This impeller is fast to a shaft 41 which is journaled in a U-shaped bracket 42, this U-shaped bracket being carried by a post 43 mounted on the plug 19 and also including an arm 44 which extends around and forms a bearing 45 for the end of the shaft 35. The shaft 41 drives a worm 46 which is arranged between the legs of the U-shaped bracket 42 and this worm drives a worm wheel 47 fast to the shaft 35. In order to provide an adequate air movement for operating the impeller 40 one side of the elbow 18 is preferably provided with an opening 48 which admits air above the impeller in addition to the dust laden air drawn through the openings 20 of the plug 19.

In operation, when the device is attached to the vacuum line 17 of a vacuum cleaner, the air drawn in through the openings 20 in the plug 19 and through the opening 48 in the elbow 18 rotates the impeller 40 and thereby rotates the worm 46, worm wheel 47 and shaft 35. This shaft, through the gears 36 and 38, rotates the other shaft 37 so that the brushes 30 housed within the jaws of the bifurcated tube 25 are caused to rotate in opposite directions. The louvers 10 of the Venetian blind are then moved between these jaws and as the device is moved along the louver the rotating brushes mechanically clean the louver so as to remove all dust and dirt. The dust raised by the rotating brushes is drawn with the air stream through the openings 20 in the plug 19 and thence into the vacuum line 17 of the vacuum cleaner.

From the foregoing it will be apparent that the present invention provides a very simple and efficient device for cleaning the louvers of Venetian blinds in a manner in which the louvers are thoroughly cleaned and at the same time the dust raised by the cleaning is drawn into a vacuum cleaner. It will also be appreciated that no motor is required for the operation of the brushes, the movement of the air as induced by the vacuum cleaner being employed for this purpose. The device forming the subject of the Invention is also inexpensive in construction and can be produced at low cost.

I claim as my invention:

A portable device for cleaning the louvers of Venetian blinds, comprising a hollow head having an inlet and an outlet end, means for connecting said outlet end to an exhaust line, a plug embraced by said inlet end, a pair of closely spaced jaws embracing said plug and extending outwardly therefrom, a rotary brush shaft journaled in the extremity of each of said jaws and at its opposite end in said plug, a cylindrical brush carried by each of said brush shafts and adapted to engage the opposite sides of the louver to be cleaned, intermeshing gears fast to said brush shafts and compelling them to rotate in unison, said plug being provided with an opening for conducting the dust laden air from between said jaws into said head and through said exhaust line and means housed entirely within said head for rotating said brushes.

2. A portable device for cleaning the louvers of Venetian blinds, comprising a hollow head having an inlet and an outlet end, means for connecting said outlet end to an exhaust line, a plug embraced by said inlet end, a pair of closely spaced jaws embracing said plug and extending outwardly therefrom, a rotary brush shaft journaled in the extremity of each of said jaws and at its opposite end in said plug, a cylindrical brush carried by each of said brush shafts and adapted to engage the opposite sides of the louver to be cleaned, intermeshing gears arranged within said head adjacent the inner side of said plug and fast to said brush shafts to compel them to rotate in unison, a drive shaft in said head and rotatably supported by said plug, drive means for driving one of said brush shafts through motion derived from said impeller shaft.

3. A portable device for cleaning the louvers of Venetian blinds, comprising a hollow head having an inlet and an outlet end, means for connecting said outlet end to an exhaust line, a plug embraced by said inlet end, a pair of closely spaced jaws embracing said plug and extending outwardly therefrom, a rotary brush shaft journaled in the extremity of each of said jaws and at its opposite end in said plug, a cylindrical brush carried by each of said brush shafts and adapted to engage the opposite sides of the louver to be cleaned, a brush shaft journaled at one end in the extremity of each jaw and at its opposite end in said plug, a rotary brush shaft carried by each brush shaft and adapted to engage the opposite sides of said louver, said plug being provided with an opening for drawing in the dust laden air from between said jaws, intermeshing gears arranged within said head and fast to said brush shafts to compel them to rotate in unison, an impeller in said head and rotated through motion derived from the passing air and means for rotating one of said brush shafts through motion derived from said impeller, comprising a bracket within said head and anchored to said plug, an impeller shaft journaled in said bracket and fast to said impeller, a worm fast to said impeller shaft and a worm wheel fast to one of said brush shafts and meshing with said worm.

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