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ROTARY BRUSH FOR CLEANING VENETIAN BLINDS

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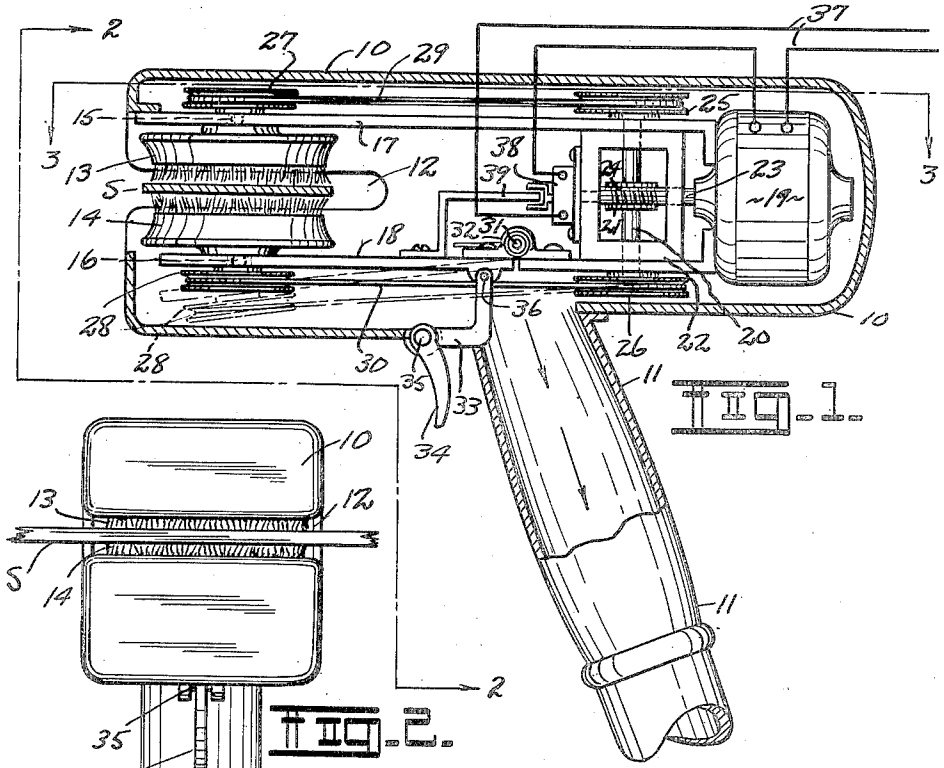


FIG. 1.

FIG. 2.

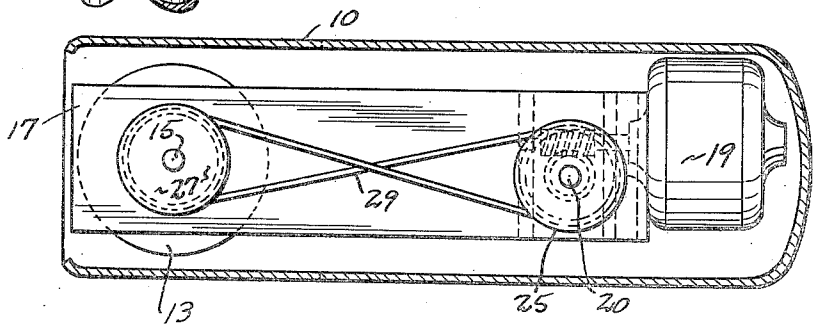


FIG. 3.

INVENTOR.
John P. Morell.

BY W. B. Harpman

ATTORNEY.

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ROTARY BRUSH FOR CLEANING VENETIAN BLINDS

John P. Morell, Struthers, Ohio

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3 Claims. (Cl. 15—372)

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This invention relates to cleaning devices and more particularly to a device for cleaning Venetian blinds.

The principal object of the invention is the provision of a motor driven device for cleaning Venetian blind slats.

A further object of the invention is the provision of a device for cleaning Venetian blind slats and collecting dust removed therefrom.

A still further object of the invention is the provision of an automatically adjustable device for cleaning various sizes and shapes of Venetian blind slats.

A still further object of the invention is the provision of a Venetian blind slat cleaning device having opposed rotary slat engaging members adjustably positioned with respect to one another.

The Venetian blind cleaning device disclosed herein incorporates a simple and efficient opposed, rotary cleaning means adjustably engageable with a Venetian blind slat and capable of cleaning and polishing the same and accommodating various sizes and thicknesses of slats as well as those of various contours. The device is so arranged that it will not attempt to travel with respect to the slat being cleaned and may therefore be easily directed along the Venetian blind slat.

The device is intended primarily as an attachment for a vacuum cleaner so that the dust particles loosened and removed from a Venetian blind may be collected by the device and eventually drawn into the vacuum cleaner. The device is of simple construction, capable of economic formation and is efficient in operation.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawing, wherein:

Figure 1 is a vertical cross section of the device for cleaning Venetian blinds with parts broken away.

Figure 2 is an end elevation taken on line 2—2 of Figure 1.

Figure 3 is a horizontal cross section taken on line 3—3 of Figure 1.

By referring to the drawings and Figures 1 and 2 in particular it will be seen that a housing 10 is mounted on an inclined tubular handle member 11 so that it may be conveniently held thereby and that a slot-like opening 12 is formed in one end thereof. The slot-like opening 12 is of a width and depth sufficient to receive a

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Venetian blind slat of any thickness and contour.

A pair of cleaning and polishing members 13 and 14 are positioned in opposed relationship partially in the area of the slot-like opening 12 so that they will engage the upper and lower surfaces, respectively, of a Venetian blind slat positioned in the said opening. The polishing and cleaning members 13 and 14 are preferably of similar construction and may comprise brushes or lamb's wool polishing heads. Each of the polishing and cleaning members 13 and 14 is affixed to stub shafts 15 and 16 which are journaled in suitable bearings in spaced frame members 17 and 18, respectively. The frame members 17 and 18 are mounted within the housing 10 and extend longitudinally thereof and support an electric motor 19 at their innermost ends.

A shaft 20 is positioned transversely of the spaced frame members 17 and 18 and is provided with a gear 21 midway between its ends.

A secondary frame 22 is positioned between the spaced frame members 17 and 18, and, in addition to holding the same in spaced relation, serves to position a longitudinally extending shaft 23. A worm gear 24 is positioned on the shaft 23 and in engagement with the gear 21 on the transversely positioned shaft 20 and the shaft 23 is connected with the electric motor 19. Thus, revolving action imparted to the longitudinally positioned shaft 23 is transmitted by the worm gear 24 to the gear 21 and hence to the transversely positioned shaft 20. The outermost ends of the transversely positioned shaft 20 extend beyond the spaced frame members 17 and 18 and each end is provided with a pulley 25 and 26, respectively.

By referring to Figures 1 and 3 of the drawings it will be seen that each of the stub shafts 15 and 16 is provided with secondary pulleys 27 and 28, respectively, and the pulley 25 and pulley 27 are connected by a crossed resilient belt 29 and the pulleys 26 and 28 are connected by a resilient belt 30 so that the rotary motion of the transverse shaft 20 and the pulleys 25 and 26 thereon will be conveyed by the belts 29 and 30 to the pulleys 27 and 28, respectively, and hence the cleaning members 13 and 14, respectively. It will be seen that the cleaning members 13 and 14 will rotate in opposite directions by reason of the arrangement of the resilient belts 29 and 30.

By referring to Figure 1 of the drawings in particular, it will be observed that the frame member 18 is hinged inwardly from its outermost end by a hinge 31 and that a spring 32 is positioned about the hinge 31 to normally urge the frame member 18 away from the frame member 17. It will be seen that such action lowers the outermost end of the frame member 18 and hence the cleaning and polishing member 14 and thereby, in effect, opens the cleaning

portions of the device so that they may be more readily engaged upon a venetian blind slat to be cleaned.

Means is provided for moving the hinged frame member 18 and the cleaning and polishing member 14 back into closed relation with respect to the cleaning and polishing device 13 and comprises a lever 33, a portion 34 of which extends downwardly in the form of a trigger for manual engagement. It will be seen that when the lever 33 is moved upwardly by moving the trigger portion 34 thereof backwardly causing it to pivot on a pivot 35, the uppermost end of the lever 33, which is pivoted to the frame member 18 by a pivot 36, will raise the frame member 18 and hence the cleaning member 14, thereby bringing it into engagement with a Venetian blind slat to be cleaned. In Figures 1 and 2 of the drawings a Venetian blind slat is shown in cleaning position and is indicated by the letter S.

It will be seen that the arrangement for moving the one cleaning member 14 with respect to the other cleaning member 13 makes possible the adaptation of the device to clean Venetian blind slats of varying thicknesses and transverse contour. The arrangement permits selective frictional engagement with the slat being cleaned.

In order that the device may be automatically actuated, the electric motor 19 is connected to a power source by means of a pair of conductors 37, one of which is controlled by an electrical switch 38. The electrical switch 38 is adapted to be actuated by an arm 39 affixed to the frame member 18 so that at such time as the frame member 18 is elevated to bring the cleaning portions of the device into engagement with the Venetian blind slat, the switch 38 is closed and the electric motor 19 is thereby energized.

It will thus be seen that a simple and efficient Venetian blind cleaning device has been disclosed which is easy to operate and is capable of effectively and rapidly cleaning a Venetian blind slat regardless of its thickness or shape. It will further be seen that in operation the device will, in effect, ride upon the cleaning member 13 and that the variable tension of the device with respect to the slat being cleaned occurs by reason of elevating the cleaning device 14 with respect thereto. This enables a uniformly even, side-to-side cleaning action to be had on a Venetian blind slat as it is not necessary to raise and lower the entire device in adjusting the same to the slat being cleaned as only the frame member 18 is moved.

It will be obvious to those skilled in the art that when the tubular handle member 11 is connected to a vacuum cleaner by means of a housing (not shown), the dust particles removed from the Venetian blind slat being cleaned will be collected in the housing 10 of the device and drawn outwardly therefrom (as indicated by the arrows in Figure 1) and disposed of in the vacuum cleaner.

Having thus described my invention, what I claim is:

1. In a Venetian blind cleaning device including a housing having a horizontally slotted inlet opening and a tubular outlet opening, a pair of longitudinally extending, vertically spaced frame members mounted within said housing and positioned one above and one below said slotted opening, one of said frame members being hinged to said housing at its opposite end with respect to said slotted opening and spring means normally urging the said hinged frame member away from the other of the said frame members, horizontally positioned flat rotary brushes positioned one on each of said frame members in oppositely disposed relation and partially within the said slotted inlet opening, a motor mounted within said housing and means operatively connecting said motor with said brushes, a lever pivoted on said housing engaging said hinged frame member for moving the said hinged frame member and the brush thereon with respect to the other of the said brushes whereby a Venetian blind slat positioned in the slotted inlet opening will be simultaneously engaged on its opposite sides by the said brushes, the said tubular outlet opening providing means for attachment of the device to a vacuum cleaner.

2. The Venetian blind cleaning device set forth in claim 1 and further characterized by the mounting of the said rotary brushes on vertically positioned stub axles journaled in the said longitudinally extending frame members and wherein the means for operatively connecting the motor with the said brushes includes pulleys positioned on said stub axles and motor driven belts engaging the said pulleys.

3. In a Venetian blind cleaning device including a housing having a horizontally slotted inlet opening and a tubular outlet opening, a pair of longitudinally extending, vertically spaced frame members mounted within said housing and positioned one above and one below said horizontally slotted inlet opening, one of said frame members being hinged to said housing at a point remote from said slotted opening, horizontally positioned flat rotary brushes positioned one on each of said frame members in oppositely disposed relation and partially within the said slotted inlet opening, a motor mounted within said housing and means operatively connecting said motor with said brushes, a lever pivoted on said housing engaging said hinged frame member for moving the said movable frame member and the brush thereon with respect to the other of the said brushes whereby a Venetian blind slat positioned in the slotted inlet opening will be simultaneously engaged on its opposite sides by the said brushes, the said tubular outlet opening providing means for attachment of the device to a vacuum cleaner.

JOHN P. MORELL.

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