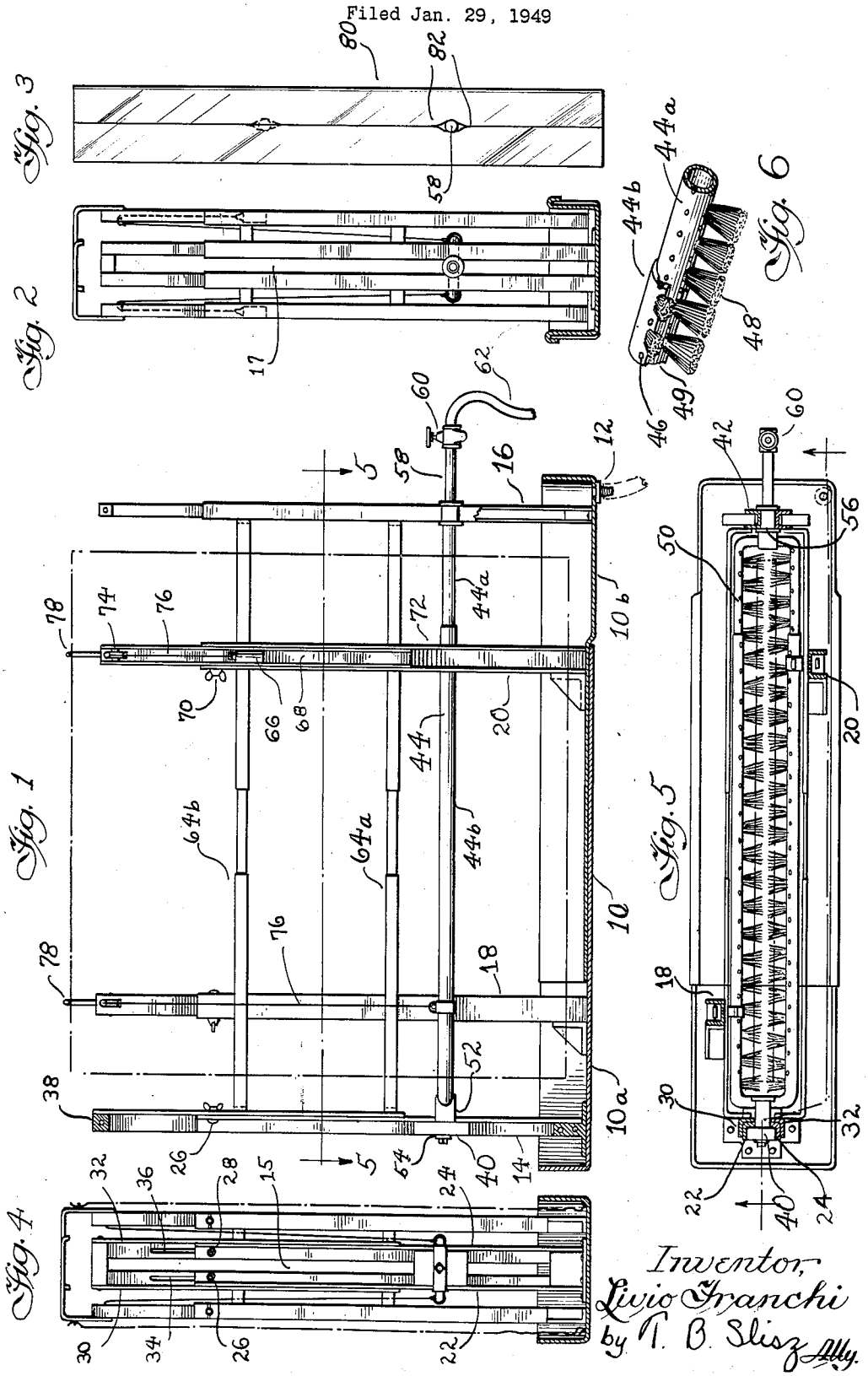
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VENETIAN BLIND CLEANING DEVICE

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VENETIAN BLIND CLEANING DEVICE

Livio Franchi, Cicero, Ill., assignor to Gene J. Franchi, Lawrenceville, Ill., as trustee

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6 Claims. (Cl. 15—77)

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This invention pertains to a new and improved type of a cleaning apparatus suitable for washing and cleaning removable screens, blinds, glass panes and the like. It is more specifically directed to an instrumentality for cleaning Venetian blinds.

Smooth surfaced blinds, glass partitions and panes of the removable type, Venetian blinds, storm windows, window screens and the like when in use become soiled with atmospheric grime and dirt. Tiny particles of dust, soot, vaporized oils and fats settle out from the atmosphere, or are deposited upon such surfaces by droplets of rain or condensate such as fog or perhaps as a "smog" to form thereon a very adherent and difficult to remove film of dirt. This accumulation of atmospheric grime in many cases is accentuated when metal is used as a part of the blind, as in the widely used types of Venetian blinds commonly used in stores, offices and homes. Obviously, in course of time, the blinds must be cleaned. This to the best of my knowledge is done laboriously by hand and requires considerable effort as well as time.

It therefore is an object of my invention to provide a device that will cleanse blinds and the like.

It is a further object of my invention to provide a device for cleansing Venetian blinds which is adapted for a variety of widths.

It is a still further object of my invention to provide a Venetian blind cleaning apparatus that is further adjustable as to height so that a wide variety of lengths of blinds can be washed in my improved device.

These and other objects, variations, adaptations, modifications and extensions can be readily adapted by one skilled in this art, particularly in view of the clear, accurate and concise description given hereinbelow of the fundamentals underlying my invention and as further illustrated in the attached drawings forming a part hereof.

In the drawings the reference characters as used therein refer to like characters herein to define more specifically the various elements underlying the principles of my invention.

Figure 1 is a vertical elevation partly broken away to show more clearly the elements.

Figure 2 is an end view without the protective spray cover while Figure 3 is the same end view with the protective cover in place.

Figure 4 is a view of the other end.

Figure 5 is a top view section taken along line 5—5 of Figure 1.

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Figure 6 is an enlarged section of the spray and brush tube.

Essentially my invention comprises a trough 10 which consists of two sections 10*a* and 10*b*. The sections 10*a* and 10*b* are in telescopic or slidable engagement with each other so that the trough or pan 10 can be expanded to retain within its ends most of the widths of ordinary Venetian blinds. The pan 10 is so constructed that it has a slight slope so that any water or liquid in the pan 10 will flow off through the opening 12 to a suitable receptacle or drain (not shown).

Each section, 10*a* and 10*b*, has bearing supporting uprights 14 and 16 and weight supporting uprights 18 and 20 respectively. The uprights are fastened by suitable means such as solder or a weld to the bottom of the pan 10 sections though it is obvious that the position of these uprights or their mode of attaching can be varied widely without departing from the spirit of my invention. It should be noted for purely illustrative purposes and not by way of any implied limitation of the principles underlying this invention, that the bearing supporting uprights 14 and 16 can be mounted about or even on the ends of their respective pan sections 10*a* and 10*b*. Likewise, the weight supporting uprights 18 and 20 can also be attached either to the bottoms of the respective pan sections 10*a* and 10*b* or even to the sides thereof. In case of the weight supporting uprights 18 and 20 (as well as any others that may be used) it is preferable that they be located inwardly and preferably equidistantly from the bearing supporting uprights 14 and 16 so that they will not interfere with the telescopic slidable engagement of the pan sections 10*a* and 10*b*.

The bearing supporting upright 14 comprises two upstanding L shaped angle sections 22 and 24. At the upper end of said angle sections are wing nut screws 26 and 28. Mounted on the back of said angle sections 22 and 24 are L shaped angle iron extensions 30 and 32. Slots 34 and 36 are formed in the respective webs of the angle sections 30 and 32 through which extend the shanks of the wing nut screws 26 and 28 to maintain the extensions at any desired height within their range. A bridging member 38 fastened with screws or other means retains the tops of said extensions 30 and 32 in parallel juxtaposition and in alignment with the lower sections 22 and 24 so that the bearing block 40 can slidably engage the webs of said supports 22 and 24 and their respective extensions 30 and 32. In a somewhat similar manner, I construct

the bearing block support 16, except that a sliding sleeve block 42 is employed through which the pipe 44 enters. There are many variations of mounting this pipe 44 and though only one way is illustrated and described herein, it is obvious that one skilled in mechanical art can readily construct these and still be within the spirit of my invention.

The pipe 44 comprises two or more sections 44a, 44b and etc. The sections are telescopically mounted within each other so that they can be extended. Perforations 46 or other means of egress for water and other fluids are provided in each section so that they spray upon the Venetian blind that is to be cleaned. Brushes 48 are also provided and fitted within the pipe 44 sections. The brushes 48 are so mounted that they can contact the Venetian blind. Brushes 48 mounted on the sections 44b, etc. are so mounted that they overlie those mounted on the inner section 44a. A slot 49 in the outer section 44b allows this section to clear the brushes mounted on the inner section 44a. The outer tube 44b with its narrow slot 49 slidingly embraces the inner tube section 44a. The line of brush bristles 48 on inner tube 44a fit into this slot 49 when the two sections 44a and 44b are pushed together. The outer tube 44b also has a line of brushes 48 adjacent and parallel to the slot 49. A series of holes 46 are placed in the same line between the tufts of bristles 46 so that water or cleaning fluids can be sprayed therefrom. The inner tube 44a is not only similarly perforated with openings between its set of bristles but also along the line in juxtaposition with the openings in the outer tube 44b. Likewise, the inner tube 44a has an open end within the outer tube 44b so that fluid can be forced thru the perforations 46 in the outer tube to spray the Venetian blind. The bristles 48 are of such length that they contact the slats of the blind while the spray holes are so arranged to permit the fluid to fall on the slats of the blind. In this manner, I am able to provide a combined spray and bristle arrangement that is not only expansible longitudinally but also functions as a cleansing and scrubbing device.

The pipes 44 are arranged in such manner by use of proper fittings to form an elongated rectangular frame 50 with the sprays 46 and bristles 48 directed towards each other. Suitable T fittings at each end of the said frame 50 provide a means to mount a shaft 52 which is mounted in the slide block 40 and retained in fixed position by the threads and nut 54. The other end 56 terminates into a nipple pipe 58 upon which is mounted a shutoff valve 60 controlling the supply of fluid furnished by the flexible hose 62.

It is apparent that the entire frame 50 assembly rides vertically within the slide slots 15 and 17 formed by the angle sections forming the supports 14 and 16 respectively. To maintain the said uprights 14 and 16 in a rigid position a series of transverse expansible members 64a, 64b, etc., are provided. These transverse members are attached to the outside of the supports so that the rectangular brush and spray frame 50 can slide up and down free and clear of any obstructions.

To assist the free and easy vertical movement of the frame 50 within the slide supports 14 and 16, I provide on each side a counterweight 66. This counterweight 66 rides within a U shaped channel extension 68 which is vertically adjustable as to height by means of a wing nut screw 70 arrangement that holds the extension 68 within the U shaped support 72. In the upper part of the extension 68, I provide a pulley 74 over which rides the cord 76. These weight supporting uprights 18 and 20 are likewise held rigidly by means of the transverse reenforcing members 64a, 64b, etc. so that the entire structure is quite rigid and strong though light in weight, especially if made from aluminum or magnesium alloys.

To the top of the weight supporting uprights, I attach a hook-like member 78. These members are used to attach the entire assembly to the board in which the Venetian blind tilting devices are suspended or held.

In operating my device, I use a curtain 80 which completely encompasses the entire assembly. This curtain is made of some transparent plastic sheeting material like polymerized vinyl chloride, ethyl cellulose, or the like. On one end of this plastic waterproof envelope is a slide fastener 82 that is so arranged that the pipe 58 protrudes through an opening therein. As the washing frame 50 and its supply pipe 58 move vertically, the envelope remains closed at all times. However, when it is desired to remove the cleansed Venetian blind from my improved cleaning device, the sliding fastener is opened and the assembly taken down.

To use my improved device, I first raise the Venetian blind to the top or uppermost position. The front or facia board is then removed. The entire cleaning device is placed on the window sill, the pan extended the width of the sill with the drain outlet and hose attached thereto placed into a container to receive the wash water; the vertical rods extended upwardly and adjusted for the width and height of the Venetian blind. If desired the swinging hooks 78 at top of rods are placed over the board supporting the tilting and raising devices of the Venetian blind or the device can be wedged in position by means of the uprights 38 in contact with the inside top framing of the window or Venetian blind window attaching plates. I next suspend the shower curtain 80 either from the hook shaped supports 78 or from some other convenient support and fasten the sliding zipper about the inlet pipe 60. The blind slats are then allowed to drop into the space between the brushes and tilted first in one direction and then in the other direction as the brush carrier is moved up and down. In the course of this movement the surfaces of the slats are contacted by the brushes and cleaned. Through the inlet pipe 62, I supply a blast of compressed air from a suitable source as the frame 50 is moved vertically over the Venetian blind as it is tilted backward and forward several times so that all of the surfaces of the Venetian blind slats can be exposed to the air blast.

After the initial dusting action by means of the blast of air. I deliver to the supply pipe 62 a suitable fluid containing the necessary detergents such as sulphonated long carbon chain aliphatics and aromatics sold under various trade names as well as any other suitable materials that I may need to accomplish a thorough cleansing of the Venetian blind slat surfaces and ribbons. It should be noted that each time the frame 50 is moved vertically, that the brushes 48 also act on the surface of the Venetian blind. After the solution with the detergents, I next use clear water, preferably hot so that a thorough rinsing

of the blind's surfaces is accomplished. Hot rinsing water has a tendency to preheat the metal or the material of which the slats are made. After a thorough rinsing, I next supply either heated compressed air to the supply pipe **62** or even superheated steam to accelerate the rate of drying of any moisture that may still remain on the slats. It should be noted that during the entire cleansing operation, the waste materials are exhausted by means of the outlet **12** to a suitable receptacle (not shown). On completion of the drying cycle, I remove the shower curtain **80** and then the swinging hooks **78**, and the equipment is collapsed to a suitable size for transportation to other areas.

Though the above description refers specifically to the preferred embodiment of my invention, it is not my intention to limit the principles underlying my invention to precisely the preferred embodiment as described above or illustrated in the drawings for obviously the same can be varied widely and still be within the purview of the appended claims which define the ambit of my improved and unique invention.

I claim:

1. A Venetian blind cleaning device comprising a horizontally extensible pan, upright extensible supports attached to said pan, slidable bearing members on each of said supports, extensible, continuous spray pipes adapted to encircle a Venetian blind supported by said slidable members, inwardly directed fluid openings on said spray pipes and a flexible hose attached to said spray pipes to supply fluid to said inwardly directed openings whereby the Venetian blind when suspended between the said encircling spray pipes can be subjected to the action of the device.

2. In the device of claim 1, wherein the said upright supports comprise inner and outer members, the said members being in telescopic juxtaposition, and a means to fix the position of said members at the desired height.

3. In the device of claim 1 wherein the said encircling, extensible spray pipes comprise inner and outer telescopically slidable tubes, the outer

tubes of said telescopically slidable spray pipes having therein a horizontal slit to provide an entry port for brushes mounted on the corresponding inner telescopic tubes of said spray pipes.

4. In combination with the device of claim 1, a hook shaped member attached to the upper part of said device, whereby the said device can be suspended from the board supporting the operating mechanism of the Venetian blind.

5. In combination with the device of claim 1, a shower curtain to contain therebetween the cleaning mechanism.

6. In combination with the device of claim 1, upright extensible supports mounted near the central portions of said adjustable pan, a pulley mounted on the upper ends of said uprights, a cord riding in said pulley, a weight attached to one end of said cord, and the other end attached to said extensible continuous spray pipes to provide a counterweight arrangement.

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