Feb. 19, 1952 W. S. DE HART 2,586,620

APPARATUS FOR SUPPORTING AND WASHING VENETIAN BLINDS

Filed Jan. 23, 1948 2 SHEETS--SHEET 1

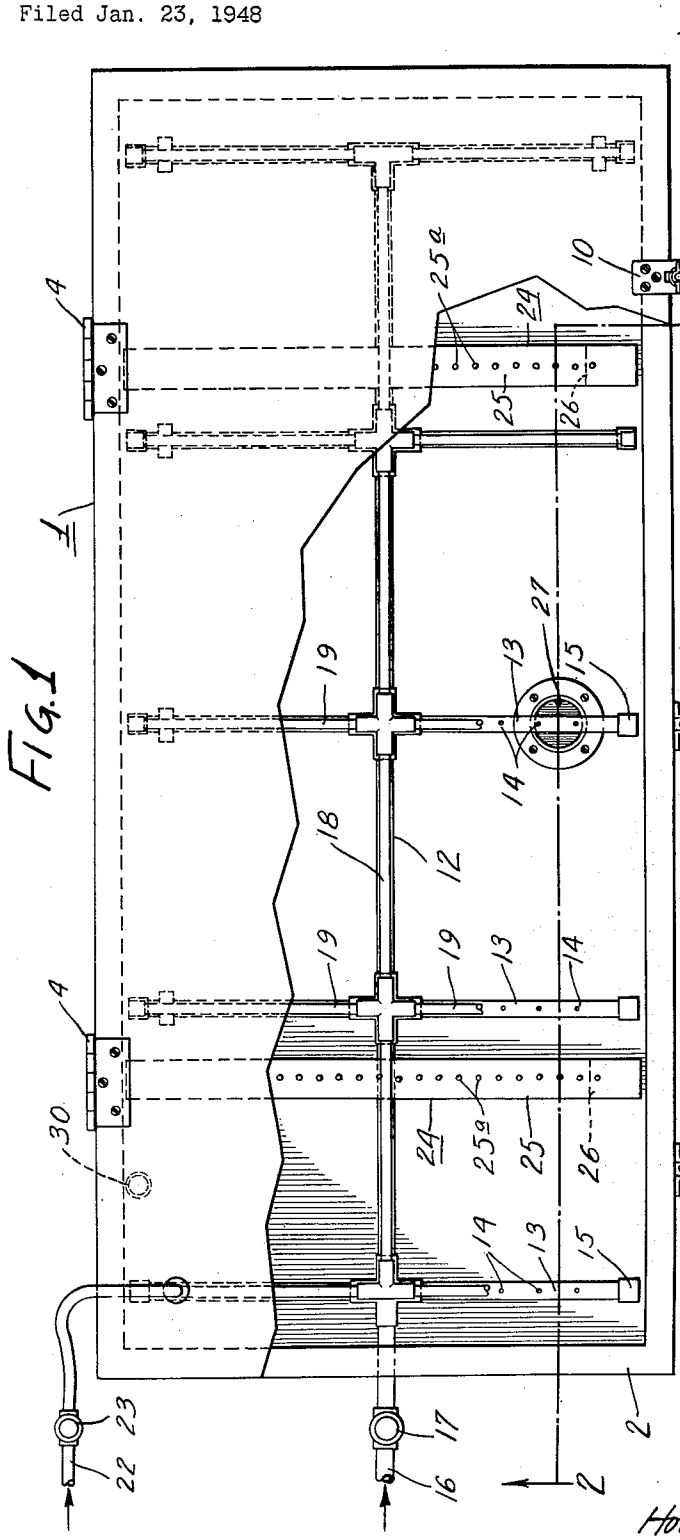


FIG. 1

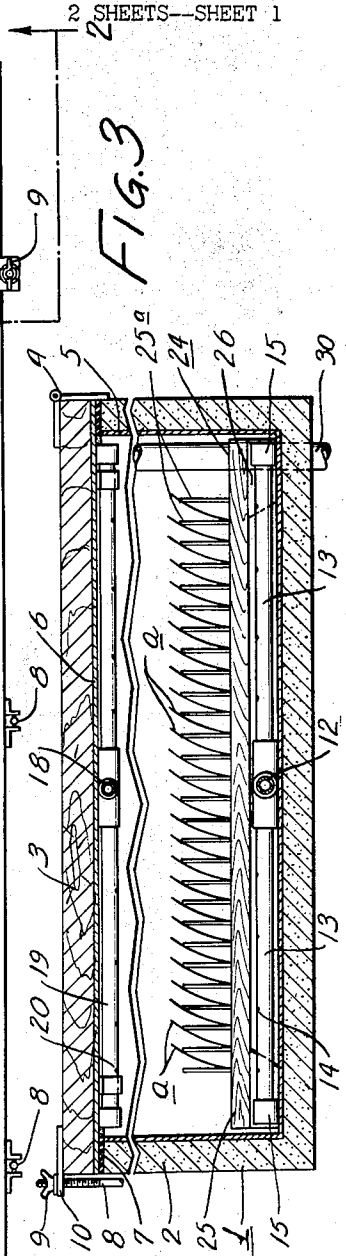


FIG. 3

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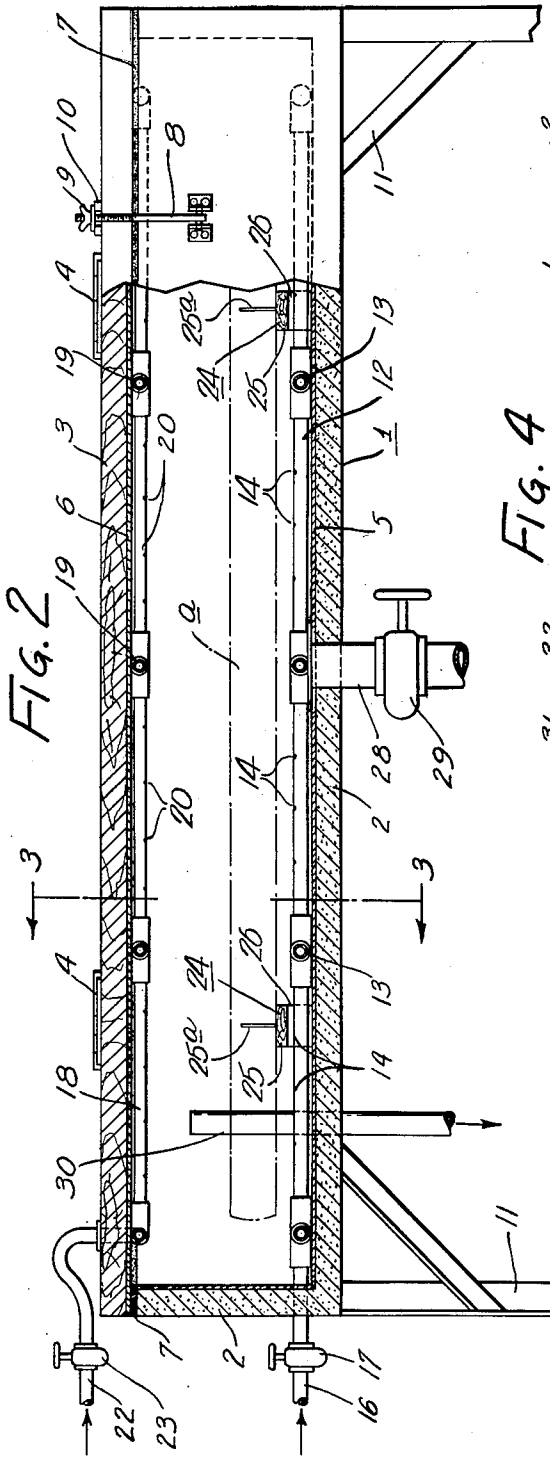


FIG. 2

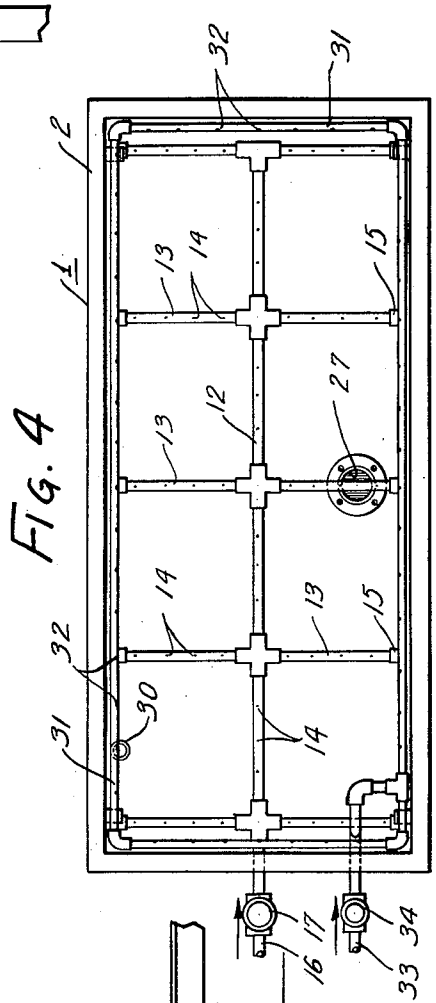


FIG. 4

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APPARATUS FOR SUPPORTING AND WASHING VENETIAN BLINDS

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3 Claims. (Cl. 134—99)

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This invention relates to new and useful improvements in washing and cleaning apparatus, and more particularly relates to apparatus especially adapted for the washing and cleaning of Venetian blinds and analogous articles.

The cleaning of Venetian blinds has for many years presented a substantial problem and been an onerous burden both to housewives in the home and to persons responsible for the cleaning and maintenance of large office buildings, and the like where such blinds are employed. Prior to the present invention the cleaning of Venetian blinds necessarily has been done manually, cleaning each individual slat one at a time by means of a cloth, brush or other hand implement. To properly clean a Venetian blind of average size in this manner requires about one and one-half hour's time and several days work often is required to clean the Venetian blinds of an average size house. On the other hand, in the case of large office and like buildings where the Venetian blinds can be cleaned only at night when the offices are unoccupied, the time required to clean each blind by customary manual procedures has made the task almost prohibitive, economically, and substantially impossible of completion.

With the foregoing in mind, the present invention has for its principal object the provision of novel apparatus for washing and cleaning Venetian blinds which is operable to thoroughly wash and clean a Venetian blind in a period of time that is but a fraction of the time previously required for the manual cleaning of such blinds.

Another object of the invention is to provide a novel apparatus for washing and cleaning Venetian blinds which eliminates all manual cleaning operations.

Another object of the present invention is to provide novel washing and cleaning apparatus for Venetian blinds which performs a substantially superior cleaning operation upon the blinds than it is possible to do by manually cleaning the blinds in accordance with conventional practices.

A further object of the invention is to provide washing and cleaning apparatus having the features and advantages set forth which is of relatively inexpensive and simplified construction, and which is both economical and efficient in operation and use.

These and other objects of the invention, and the various features and details of the construction and operation thereof, are hereinafter set forth and described with reference to the accompanying drawings, in which:

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Fig. 1 is a view in plan of washing and cleaning apparatus made in accordance with the present invention of which a portion of the top or cover member has been cut away to better illustrate certain structural details of the apparatus;

Fig. 2 is a sectional view taken on line 2—2, Fig. 1;

Fig. 3 is an enlarged sectional view on line 3—3, Fig. 2; and

Fig. 4 is a view in plan of the apparatus with the cover removed therefrom showing an alternative arrangement of certain of the piping in the device.

Referring now more particularly to the drawings, washing and cleaning apparatus made according to the present invention may comprise a rectangular casing 1 including a container portion 2 having a top cover member 3 which is hinged thereto as indicated at 4, and arranged to overlie the upper edges of the front, rear and end walls of said container portion 2 as shown. In the illustrated embodiment of the invention, the container portion 2 and cover 3 of the casing 1 are shown as fabricated of wood and provided internally thereof with water and corrosion-resistant linings 5 and 6, respectively, of sheet metal or other suitable material, although it is understood that the casing 1 can be constructed entirely of metal or other suitable material such as, for example, stainless steel or the like.

A suitable gasket or the like 7 preferably is interposed between the cover 3 and container portion 2 of the casing 1 in order to provide a fluid-tight seal therebetween when the cover is closed, and the cover 3 may be secured in closed position upon the container portion 2, for example, by means of swivel bolts 8 and wing nuts 9 on said cover which cooperatively engage suitable slotted plates 10 affixed to the top of the cover member 3. The casing 1 preferably is supported in a waist-high working position by means of a structural framework 11.

According to the present invention there is arranged internally of the casing 1 on the bottom of the container portion 2 thereof, a system of air discharge pipes comprising a central pipe 12 which extends longitudinally of the casing 1 and a plurality of laterally extending branch sections 13 arranged at selected intervals along the pipe 12. The central pipe 12 and the lateral branches 13 of the air discharge system are each provided in their upper portions with an aligned series of small air discharge ports or openings 14 which are arranged at suitably spaced intervals lengthwise of the pipe and sections. The

lateral pipe sections 13 are closed at their outer ends by suitable caps or the like 15 and air is admitted to the pipe 12 and its lateral branches 13 from a compressed air supply line 16 under the control of a valve 17.

In addition to the described air discharge system provided at the bottom of the casing interior, there is arranged at the underside of the casing cover member 3 a discharge system for a cleaning and washing liquid, for example, water, which comprises a longitudinally extending pipe 18 having laterally extending branch sections 19 arranged at intervals lengthwise of the casing as shown. This central pipe 18 and the branch sections 19 of the liquid system may be arranged so that they directly overlie the pipe 3 and sections 13 of the air discharge system in the relation shown in Figs. 1, 2 and 3 of the drawings. The central pipe 18 and lateral branches 19 of the liquid discharge system are provided in their undersides with discharge ports or openings 20 arranged at suitably spaced intervals longitudinally of the pipe and sections. The outer ends of the branch sections 19 are closed by caps or the like 21 and, as shown in Fig. 1, liquid is introduced into the pipe 18 and its branches 19 through an end one of said branches from a liquid supply line 22 under control of a valve 23.

While the device may be used for the washing and cleansing of articles generally, it is especially designed for the washing and cleaning of Venetian blinds. To this end, and for supporting the individual slats of a Venetian blind in slightly spaced relation within the casing 1 to insure the passage and circulation of wash liquid between adjacent slats, there is provided in the casing a plurality of racks 24 which are placed crosswise or transversely of the casing in overlying relation to the air discharge system in the bottom thereof. As shown more particularly in Fig. 3 of the drawings, these racks 24 each comprise a base member 25 having feet 26 at its opposite ends for supporting the rack above the air discharge pipe 12, and secured in the upper surface of the base member 25 is a plurality of vertically extending pins 25a which are arranged in alignment at predetermined equally spaced intervals longitudinally of the base 25.

With respect to Figs. 1 and 2 of the drawings, there is provided in the bottom of the casing 1 a drain opening 27 to a drain pipe 28 which is provided with a control valve 29, and a liquid overflow and air pressure relief pipe 30 extends vertically upward within the casing 1 to a predetermined height therein as shown.

As illustrative of the operation of the apparatus for washing and cleaning a Venetian blind assembly, a complete blind assembly, including head rail, tilt bar and slats is dismounted from the window and taken to the basement of the building or other place where the described apparatus is installed. The blind is placed in the container portion 2 of the casing with the elements of the blind extending longitudinally therein and each individual slat a of the blind is disposed between an adjacent pair of the pins 25a on the racks 24, in the manner shown in Fig. 3 of the drawing, so that the slats a of the Venetian blind are supported in slightly spaced relation with respect to one another to thereby insure the passage and circulation of the washing liquid through and between adjacent slats of the blind.

With a Venetian blind positioned as described, a suitable detergent is placed in the casing 1 and the cover 3 is closed and tightly sealed upon the container portion 2 of the casing 1 by engaging the swivel bolts 8 with the plates 10 and tightening the wing nuts 9 thereon. The valve 23 may now be opened and water introduced into the pipe 18 and its branches 19 for discharge through the ports or openings 20 therein downwardly onto the Venetian blind. When the introduction of water has continued until the casing 1 is filled to a depth which completely submerges the pipe 12 and branches 13 of the air discharge system, air under pressure is introduced into the pipe 12 and its branches 13 and discharged upwardly from the ports or openings and through the water thus creating a violent agitation and disturbance of the water and detergent whereby they are thoroughly mixed together and thrown repeatedly against the underside of the cover 3 and caused to cascade downwardly between the slats a of the Venetian blind which are supported on the racks 24 as previously described.

After this operation has continued for several minutes the valve 17 is closed, shutting off the air supply, and the valve 29 is opened so that the wash water is drained from the casing 1. During draining of the wash water from the casing, clear water is continued to be introduced into the casing from the pipe 18 and its branches 19 to rinse the blind. When this has been done, the valve 23 is closed, shutting off the water supply, and the cover 3 may be opened and the washed and cleaned blind removed. The clean blind is hung in suspended relation from suitable racks for several hours to dry.

A modified arrangement of the water or liquid discharge system is shown in Fig. 4 of the drawings wherein, in lieu of the arrangement of discharge pipes longitudinally and transversely of the underside of the cover 3 as previously described, there may be extended continuously around the upper perimeter of the portion 2 of the casing 1, adjacent to the upper edge thereof, a water pipe 31 which is provided at suitably spaced intervals throughout its length with inwardly directed ports or openings 32 for discharging water or other liquid horizontally and inwardly of the casing 1, the liquid being supplied to the pipe 31 from a suitable supply pipe 33 under the control of a valve 34.

From the foregoing description it will be apparent that the present invention provides a novel apparatus for washing and cleaning Venetian blinds which eliminates all manual cleaning operations. The invention further provides a novel washing and cleaning apparatus for Venetian blinds which performs a substantially superior cleaning operation upon the blinds than it is possible to do by manually cleaning the blinds in accordance with conventional practices. In addition, the present invention provides a washing and cleaning apparatus having the features and advantages set forth which is of relatively inexpensive and simplified construction, and which is both economical and efficient in operation and use.

While a particular embodiment of the invention has been illustrated and described herein, it is not intended to limit the invention to such disclosure, and changes and modifications may be made therein and thereto within the scope of the following claims.

I claim:

1. Apparatus for washing and cleaning Venetian blinds comprising a casing, a system for introducing a liquid into said casing comprising pipe means in the upper portion of the casing provided with downwardly directed spaced apart discharge ports, an air discharge system in said casing in the lower portion thereof arranged to discharge air under pressure upwardly through said liquid from a plurality of points arranged over the area of the casing, a drain line having a valve therein connected into the bottom of the casing for drawing wash liquid therefrom, a continuously open liquid overflow and air pressure relief disposed interiorly of the casing at a predetermined height therein, and means for supporting Venetian blind slats in spaced relation in said casing above the air discharge system therein comprising rack members disposed transversely in the casing and having means arranged for interposition between adjacent slats.

2. Apparatus for washing and cleaning Venetian blinds comprising a casing including a container and a fluid tight closure therefor, a system for introducing a liquid into said casing secured to the inside of said cover and comprising a longitudinally extending pipe and a plurality of laterally extending branches provided therein with downwardly directed spaced apart discharge ports, an air discharge system in said casing in the lower portion thereof comprising a longitudinally extending pipe and a plurality of laterally extending branches provided with upwardly directed air discharge ports, a drain line having a valve therein connected into the bottom of the casing for drawing wash liquid therefrom, a continuously open liquid overflow and air pressure relief disposed interiorly of the casing at a predetermined height therein, and means for supporting Venetian blind slats in spaced relation in said casing above the air discharge system therein comprising rack members disposed transversely in the casing and having means arranged for interposition between adjacent slats.

3. Apparatus for washing and cleaning Venetian blinds comprising a casing, a system for introducing a liquid into said casing comprising piping in the upper portion thereof provided with downwardly directed spaced apart discharge ports, an air discharge system in said casing in the lower portion thereof comprising piping arranged over the area of the casing and provided with upwardly directed air discharge ports, a liquid overflow and air pressure relief disposed interiorly of the casing at a predetermined height therein, and means for supporting Venetian blind slats in spaced relation in said casing above the air discharge system therein comprising rack members disposed transversely in the casing and having means projecting upwardly therefrom and arranged for interposition between adjacent slats.

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