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2,311,670

METHOD OF CLEANING BUILDINGS OR THE LIKE

Filed Nov. 7, 1938

2 Sheets-Sheet 1

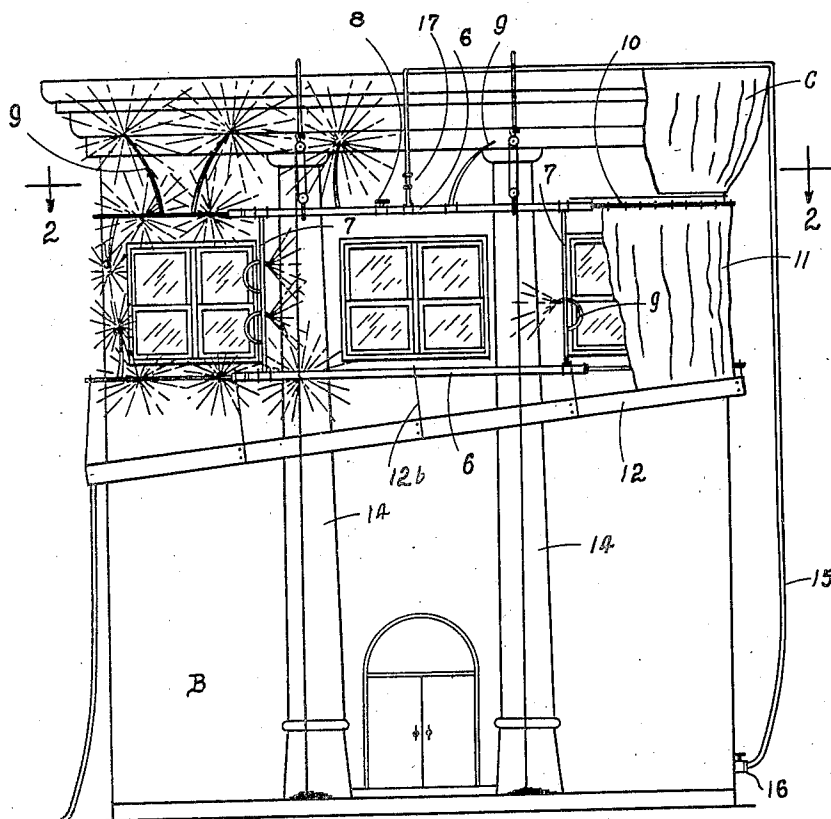


Fig. 1.

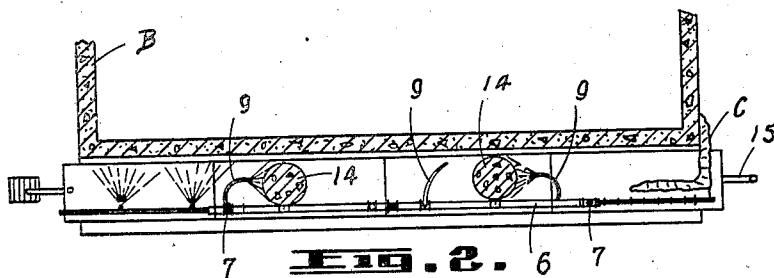


Fig. 2.

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FIG. 3.

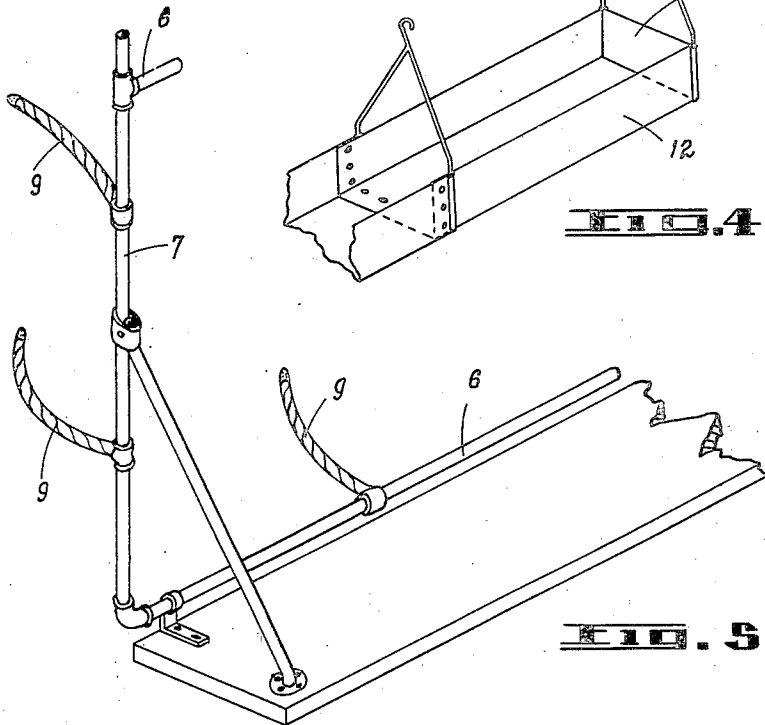
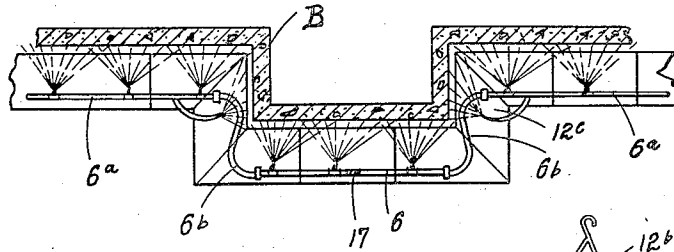


FIG. 5.

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UNITED STATES PATENT OFFICE

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METHOD OF CLEANING BUILDINGS OR
THE LIKE

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1 Claim. (Cl. 15—269)

This invention relates to a method for cleaning buildings or the like. In cleaning the walls of buildings, I appreciate that there have been many different methods and compounds used. The use of certain methods and of most compounds often causes an undesirable discolouration, caused by chemical reaction, which often has a damaging effect to the material itself as well as causing such discolouration.

I have found that the walls of buildings can be cleaned by applying cold water thereto in a fine penetrating spray and preferably causing an enclosed blanketing of the moisture-fog (caused by atomization) to remain over the portion of the building surface being treated for various lengths of time depending on the condition of the walls and the chemical make-up of the material forming such wall.

The method is preferably carried out by an apparatus for providing such penetrating spray and fog, comprising a detachable fluid conduction frame having a plurality of various lengths of flexible hoses supported therefrom and adapted to be bent at various angles so as to give a complete spray coverage to that portion of the building then being treated.

The method is carried out by an apparatus including a means for enclosing the spray in direct contact with the portion of the building being treated and further providing a means of carrying the spent fluid upon condensation thereof.

A further object of my invention is to provide a method for cleaning a building or the like, consisting of subjecting such wall to a penetrating spray-and-fog treatment to soften the dirt and foreign matter, scrubbing over the surface to dislodge the same and allowing water to flow over the exterior during the scrubbing to carry off such dirt and foreign matter.

A construction designed for carrying out the method of this invention is shown in the accompanying drawings, in which—

Fig. 1 is a front elevation of a building, illustrating the preferred embodiment of my invention as being used thereon.

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1, the cover for the conduction frame being omitted.

Fig. 3 is a detail sectional view of a modified form of my invention.

Fig. 4 is a detail perspective view of a portion of the drain trough.

Fig. 5 is a perspective view of a modified form of spray frame.

Like numerals of reference designate corresponding parts throughout the different views.

I have found that buildings whether of stone, brick or composition material can be cleaned effectively by using a fine penetrating spray of cold water, enclosing the moisture fog thus created by atomization during spraying and striking contact with the building surface. I draw attention to three distinct advantageous features:

(1) I provide a plurality of penetrating sprays arranged to substantially cover the entire surface then being treated whether flat, cornice, pillars, ornamental fixtures or anything else relative to the building or other article being cleaned.

(2) I permit the spray flow to continue sufficiently to thoroughly moisten not only the surface of the building material but to penetrate thoroughly into the pores where dirt is often obstinately retained and not removed by surface washing.

(3) I provide an enclosure for retaining the spray-created moisture fog adjacent to the wall surface, thus providing a continuous moisture fog covering in direct contact with the surface to be treated.

Thus, I provide a means for constantly retaining dirt or other foreign matter in the building wall in a moistened condition by the enclosed moisture fog and in such moistened condition subjecting the dirt or foreign matter to the penetrating sprays.

As illustrated, I provide a fluid conduction frame comprising a plurality of transverse pipes 6. In Fig. 1, I have shown two transverse pipes but I do not wish to be limited to only two of these, as sufficient may be supplied to cover the entire front of the building or any portion thereof according to the desire of the operator. 7 are intermediate connections, two of which are shown but which may be of any desired number or shape according to the size and shape of the fluid conduction frame required for the particular building being treated. At various points throughout the length of the pipes 6 and 7, I provide connections which may be closed by means of a cap 8 when not in use. When the operator desires to effect a spray to any particular point, the adjacent cap 8 may be removed and one end of a flexible hose 9 connected thereto, the hose being bent or twisted to any desired angle so as to spray directly on the face of the building, cornice, pillar or ornamental fixtures. I do not wish to be limited to the type of flexible hose connection which may be used nor to the particular nozzle, as these may vary from time to time in accord-

ance with the requirements and improved constructions may be used to obtain a penetrating atomization of the water. By having flexible hose connections (preferably the metallic style), the respective nozzles may be directed so as to give a complete coverage to the portion of the wall or fixtures being treated.

Preferably the operator will have a sufficient supply of different lengths of transverse pipes 6, intermediate upright pipes 7 and flexible hose connections so that he may, after due calculation assemble a fluid conduction frame sufficient to cover the portion of the building to be treated, with pipes being arranged above, below and intermediate the windows or other openings. Thus, various shapes, lengths and heights of fluid conduction frames will be assembled for various shapes and sizes of buildings and by having a knock-down fluid conduction frame assembly, the various requirements can be easily calculated and assembled either at the building or at the operator's plant.

The conduction frame may be provided with front and side wall hangers 10 and a cover 11 which may be made out of canvas or like material, to provide an enclosure for retaining the moisture fog in direct contact with the portion of the building being treated. Where my apparatus is being used as illustrated in Fig. 1, a further covering C would be required from the roof so as to enclose the cornice at the upper portion of the building.

Supported preferably from the lowermost pipes 6, I provide a discharge trough 12. This discharge trough 12 may be made of a plurality of units as more fully illustrated in Fig. 4. The end unit is closed at one end as at 12a and may be provided with a supporting member 12b. The end of the adjacent member is designed to fit over the end of the next unit as illustrated in Fig. 4 and the sides and bottom are preferably coupled together by fasteners so that various lengths of trough may be assembled according to the shape and length of fluid conduction frame being used. Around pillars 14, as shown in Fig. 2, the bottom portion of the trough sections 12 may be split across and arranged around with the sides and bottom overlapped and suitably fastened so as to provide a snug fit around these pillars or uprights. Where the fluid conduction frame fits around an outwardly protruding portion, as illustrated in Fig. 3, the trough will be provided with a right angularly formed portion 12c.

The fluid conduction frame may be raised and lowered by any rope and tackle means as commonly used for this purpose, the same being slung from the top of the building or any other suitable contact point. A hose connection 15 extends from the source of water supply 16 to the fluid conduction frame and is provided at any intermediate point with a valve 17 to regulate the flow of water. If desired a booster apparatus may be connected into the hose line to increase the force of the spray. The nozzles on the flexible hoses may be of adjustable type so that when scrubbing a greater flow of water may be obtained than what is necessary for the penetration spraying.

Where it is desirous of constructing a fluid

conduction frame around a protruding or irregular portion of a wall surface, I provide a central pipe 6, side pipes 6a and intermediate flexible connections 6b. Thus it will be appreciated that my fluid conduction frame may be of rigid formation throughout, as illustrated in Fig. 1, or variously assembled sections may be flexibly connected to provide fluid communication therebetween.

Referring to Fig. 5, I have illustrated the fitting of my fluid conduction frame to the side of a supporting frame, commonly referred to in the building trade as staging, used for supporting workmen and material when working on the walls of buildings or the like. Under certain circumstances, it may be found advantageous to combine the fluid conduction frame with the staging to accommodate men while scrubbing the wall material after it has been enveloped in a moisture fog and subjected to a plurality of fine penetrating sprays for the desired time.

After the wall has been penetration-and-fog treated for the desired time, from 1 hour to 24 hours, the workmen scrub or brush the surface with the spray operating above the surface being scrubbed so that there will be a surface flow of water over the portion being scrubbed, which flow of water will carry off the undesirable dirt and foreign matter loosened during the penetration-and-fog treatment. I have found that the surfaces of buildings can be successfully treated with proper application of cold water and by the treatment as hereinbefore referred to I can eliminate the necessity of chemicals which in many cases cause stain to the surface of the material of the building. At the same time, I eliminate a considerable cost in the workmen's time required for scrubbing in view of the fact that I provide a penetration-and-fog treatment preferably over an extended period of time, the advantageous results of which treatment cannot be obtained by ordinary scrubbing or hosing of the surface.

In certain cases, such as a flat wall surface, it will not be necessary to provide flexible connections between the respective nozzles and the fluid conduction frame. The nozzle may be fitted direct to the frame.

The foregoing specification and annexed drawings disclose the preferred embodiment of my invention, but it is to be understood that minor changes may be resorted to in the commercial adaptation of my invention without departing from the scope of the invention as hereinafter claimed.

What I claim as new is:

A method of cleaning a building, consisting in subjecting portions of the outer surface of the building to a penetrating spray of cold water, developing an atomized condition of the spray by force-contact with the surface, enclosing the sprayed portion to maintain the fog developed in such definite contact with the surface of the building for such a period of time as to cause the fog to penetrate the pores of the material, flowing water over the surface following a pre-determined penetration of the fog, and mechanically scrubbing the surface.

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