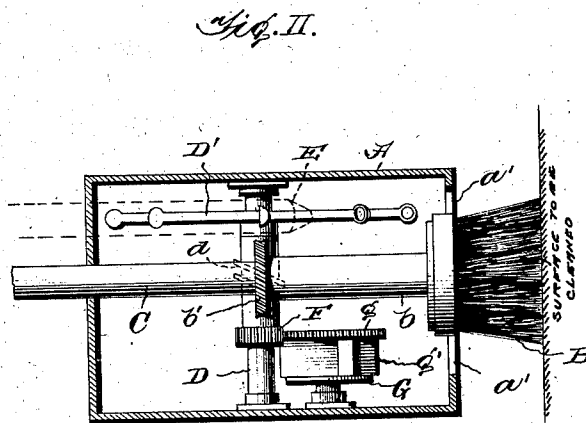
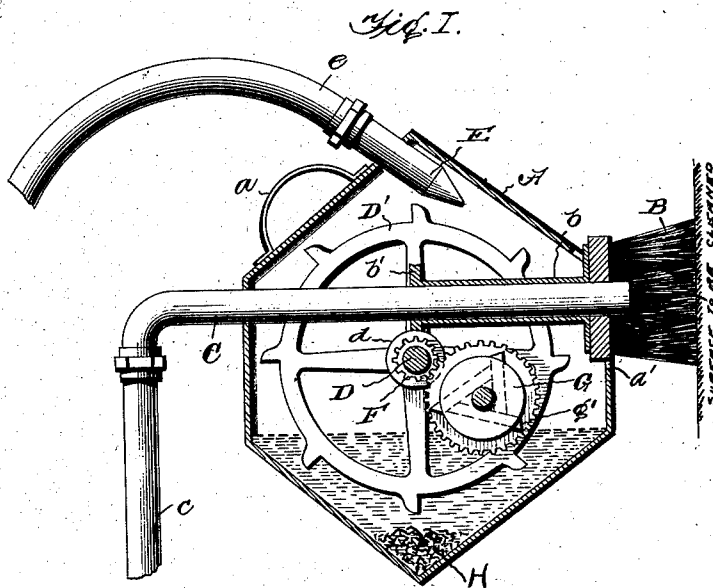


No. 729,624.

PATENTED JUNE 2, 1903.

C. C. MASON.
METHOD OF CLEANING SURFACES.
APPLICATION FILED SEPT. 8, 1900.

NO MODEL.



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METHOD OF CLEANING SURFACES.

SPECIFICATION forming part of Letters Patent No. 729,624, dated June 2, 1903.

Application filed September 8, 1900. Serial No. 29,452. (No specimens.)

To all whom it may concern:

Be it known that I, CHARLES C. MASON, a citizen of the United States, and a resident of London, England, (whose post-office address is 222 to 225 Strand W. C., London, England,) have invented a new and useful Improvement in Methods of Cleansing Surfaces, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle so as to distinguish it from other inventions.

My invention relates to methods of cleaning surfaces, particularly walls, ceilings, floors, and pavements. The object of such invention is to effect such cleaning in an economical and efficacious manner; and it consists of a method hereinafter fully described, and particularly set forth in the claims.

The annexed drawings and the following description set forth in detail one method of carrying out the invention, such disclosed means constituting but one of various ways in which the principle of the invention may be used.

In said annexed drawings, Figure I represents a vertical sectional view of an apparatus used in carrying out my process, showing parts connected therewith in elevation; and Fig. II represents a horizontal sectional view of said apparatus.

In carrying out my invention I first put upon the surface to be cleaned a liquid which has previously been impregnated with a cleansing substance. Such substance may be any one of the well-known alkalies, acids, salts, or other substances having such cleansing property. I then raise the temperature of this liquid while on such surface by means of the projection of a heated gas upon such liquid-covered surface. By "heated gas" I mean any gaseous body which may or may not have a chemical action, irrespective of its heat, upon the substances to be removed.

It has been found that it is often advantageous to impart to the gas used such properties as will effect a chemical action irrespective of its heat. One method of accomplishing this is to mix with the steam a vaporized mineral oil or other substance having properties similarly affecting the substances to be

removed. The physical characteristics of a gas are such as to be most advantageous in applying the heat or effecting a chemical action in addition to that of the cleansing material. These characteristics have been found to be such as to cause every part of an irregular surface, even one having intricate and numerous interstices, to be subjected to the cleansing action and effectually deprived of all extraneous matter which it is desired to remove.

After or during the above-described operation the surface is preferably submitted to frictional contact of a brush or similar device for producing friction, whereby particles of matter which may not have been fully affected by the heat, liquid, or chemical action, and have hence not been carried away by the water, are effectively loosened and are then subject to ready removal. The liquid which I have found to be most preferable is water, and the gas which I have found to be most preferable is superheated steam, and I have also found that in some cases it is very advantageous to mix with the steam the vapor of a petroleum product.

A device for carrying out my above-described process is illustrated in the drawings.

A casing A is provided with a handle *a*, whereby it may be carried about. In the front of this casing is an aperture *a'*, through which projects a rotatable brush B, mounted upon a hollow spindle *b*, which is mounted upon a steam-pipe C, passing out of the rear of the casing and connected with any suitable source of superheated steam by means of a flexible connection *c*. A transverse spindle D is mounted in the casing and has mounted upon it a water-wheel D'. This water-wheel is rotated by means of a stream of water issuing from a nozzle E, mounted in the casing and connected by means of a flexible connection *e* with a suitable water-supply. The nozzle is so arranged that a part of the water will strike and rotate the wheel and a part will pass through the aperture *a'* and at one side of the brush, as will be understood from Fig. II. The said spindle D is further provided with a worm *d*, which engages a worm-wheel *b'*, mounted upon the hollow spindle *b*, whereby it is seen the brush

is rotated simultaneously with the rotation of the water-wheel D'. A pinion F is also secured upon the spindle D and engages a wheel G, provided with gear-teeth *g* and radiating paddles *g'*. The wheel projects downwardly some distance below and opposite the aperture *a'*, as shown in the drawings, and is arranged so that it will carry and throw liquid into which it may dip out through the aperture *a'*. It will therefore be seen that the brush and wheel G may be simultaneously rotated by the wheel D'.

Cleansing material H, preferably in solid form, is placed in the bottom of the casing, steam is projected through the pipe C and water is projected upon the water-wheel D'. Enough water soon accumulates in the bottom of the casing to cause the wheel G to become partly immersed therein. This water, impregnated with the cleansing material, which it absorbs, is projected upon the surface to be cleaned by the wheel G. By now moving the casing over a short distance steam is projected upon this liquid-covered surface, which is heated thereby and simultaneously subjected to the action of the brush. The heat, frictional, and chemical actions combined effectually loosen extraneous material. This material is partially carried away by the condensed steam and the cleansing liquid which flow off the surface. The device is now moved over, so as to cause the stream of water from nozzle E to strike the surface just operated upon, thereby effectually rinsing such surface and removing all the loosened extraneous matter not previously removed. In order to prevent the water-wheel from dipping into the impregnated liquid, the apparatus may be tilted so

as to cause the surface of such liquid to fall below the bottom of such wheel.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the process herein disclosed, provided the steps stated by any one of the following claims or the equivalent of such stated steps be employed.

I therefore particularly point out and distinctly claim as my invention—

1. That improvement in the method of cleansing a surface, which consists in putting upon such surface a liquid impregnated with a cleansing substance, then raising the temperature of such impregnated liquid by projecting a heated gas upon such liquid-covered surface.

2. The method of cleansing a surface, which consists in putting upon such surface a liquid impregnated with a cleansing substance, raising the temperature of such impregnated liquid by projecting a heated gas upon such liquid-covered surface, and subjecting such surface to a frictional operation.

3. The method of cleansing a surface, which consists in putting upon such surface a liquid impregnated with a cleansing substance, raising the temperature of such impregnated liquid by projecting a heated gas upon such liquid and simultaneously subjecting such surface to a frictional operation.

Signed by me this 5th day of September, 1900.

CHARLES C. MASON.

Attest:

D. T. DAVIES,
A. E. MERKEL.