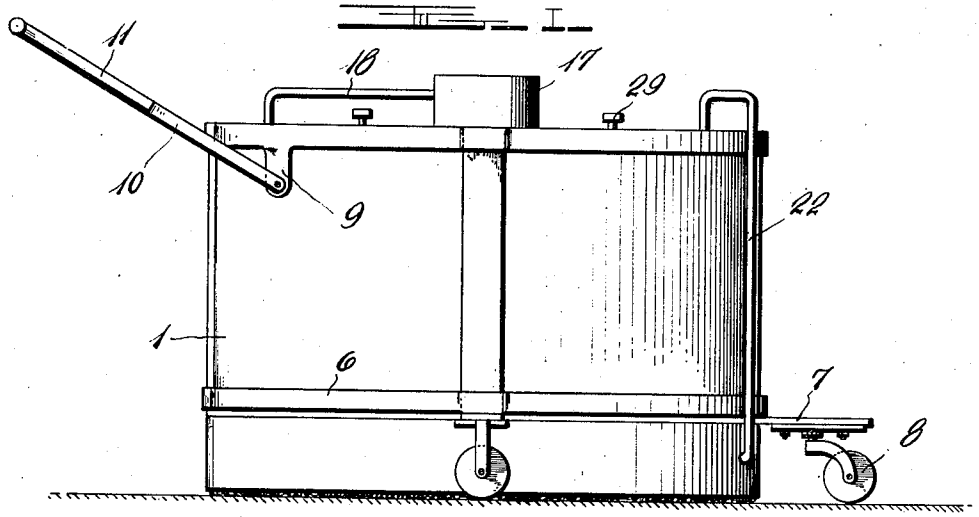
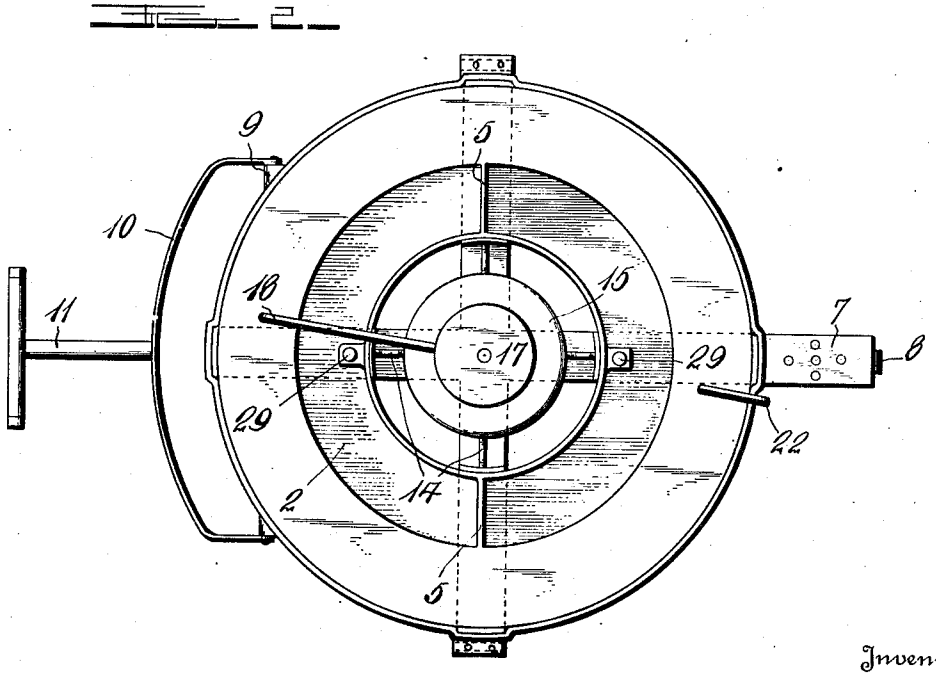
Jan. 15, 1924. 1,480,662

A. M. CAINE

FOUNTAIN SCRUBBING MACHINE

Filed Sept. 11, 1922 2 Sheets-Sheet 1





Inventor

A. M. Caine

By William C. Linton.

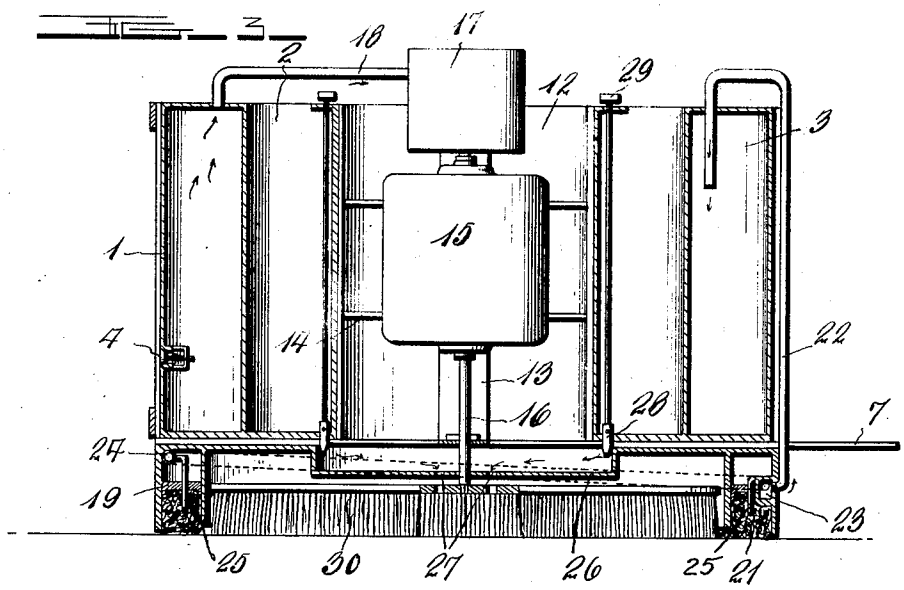
Attorney

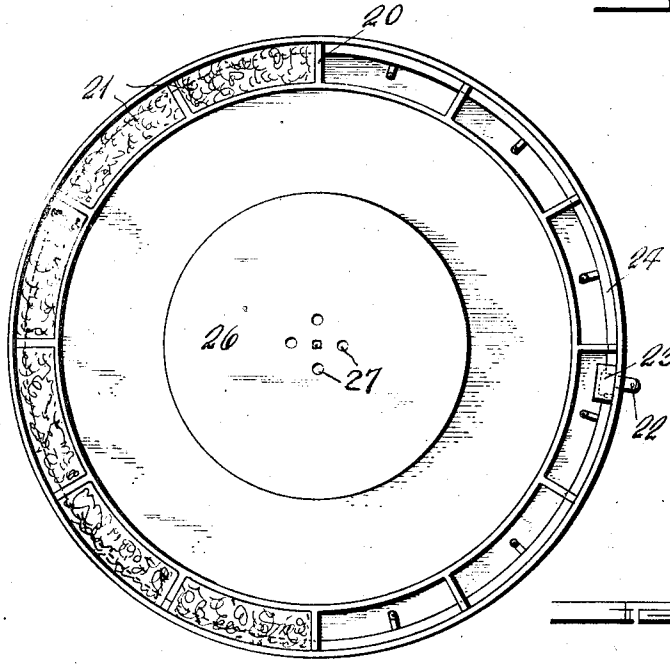
Jan. 15, 1924. 1,480,662

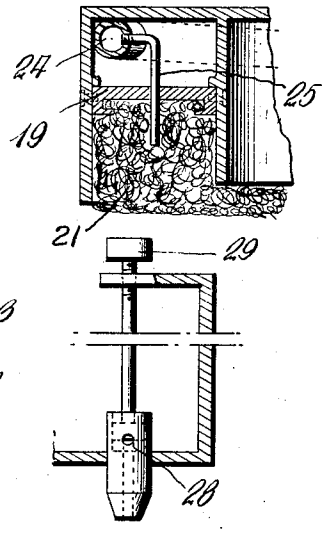
A. M. CAINE

FOUNTAIN SCRUBBING MACHINE

Filed Sept. 11, 1922 2 Sheets-Sheet 2







Inventor

A. M. Caine

By William C. Linton

Attorney

Patented Jan. 15, 1924. 1,480,662

UNITED STATES PATENT OFFICE.

ANSEL M. CAINE, OF NEW ORLEANS, LOUISIANA.

FOUNTAIN SCRUBBING MACHINE.

Application filed September 11, 1922. Serial No. 587,517.

To all whom it may concern:

Be it known that I, ANSEL M. CAINE, a citizen of the United States of America, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Fountain Scrubbing Machines; and I do hereby declare that the following is a full, clear, concise, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in fountain scrubbing machines, having for an object to provide a scrubbing machine employing a rotatable form of scrubbing means adapted to contact with and cleanse a surface over which the machine is moved, water containing a cleansing solution being first supplied to the brushing means for facilitating the cleansing operation and being removed from the surface being cleaned during such operation by automatic means, whereupon a second or cleansing water is supplied to the scrubbing means for removing the first water and thoroughly cleansing said surface, after which the same is withdrawn from the surface by the heretofore mentioned automatic means, leaving the surface both clean and dry.

It is also an object of the invention to provide the machine with a novel form of head having a plurality of compartments therein adapted to receive water absorbing material and being connected to suction conveying means for relieving the absorbing means of such water as may be absorbed thereby during operation of the device and returning it to a suitable reservoir provided within the same.

Other objects will be in part obvious and in part pointed out hereinafter.

In order that the invention and its mode of operation may be readily understood by persons skilled in the art, I have in the accompanying illustrative drawings and in the detailed following description based thereon, set out one possible embodiment of the same.

In these drawings:

Figure 1 is a side elevation of the improved scrubbing machine;

Figure 2 is a top plan view of the same;

Figure 3 is a vertical section therethrough;

Figure 4 is a bottom plan view of the machine showing certain of the water absorbing means removed from the compartments in the head;

Figure 5 is an enlarged fragmentary detail in section showing the arrangement of the water absorbing means in one of such compartments together with the suction conveying pipe employed in connection therewith; and,

Figure 6 is a fragmentary detail, partly in section, showing the arrangement of one of the water control valves in the tank of the scrubbing machine.

Having more particular reference to the drawings, in connection with which like characters of reference will designate corresponding parts throughout, the improved machine may be stated to comprise a circular tank indicated in its entirety by the numeral 1, comprising concentrically arranged compartments 2 and 3 respectively, the compartment 3 being closed and if desired, provided with a form of spring check valve, such as indicated at 4, whereby the vacuum created therein through means hereinafter more fully described, may be regulated at the will of an operator. The innermost of the concentric compartments designated by the numeral 2, has the top thereof open and is diametrically divided by partitions 5, thus providing separate pockets within the same, one of which is adapted to contain water supplied with a cleansing compound or solution, while the other of the same is adapted to receive clear cleansing water.

The tank 1 is preferably mounted in a circular band like frame 6, having arms 7 extending laterally therefrom and provided with suitable wheels generally indicated by the numeral 8 for an obvious purpose. This circular frame 6 has dependent apertured ears 9 formed upon the upper portion thereof adapted to receive the bifurcated portion 10 of a suitable handle 11, whereby movement of the machine over a surface to be scrubbed or cleansed will be facilitated.

A circular compartment 12 is formed within the compartment 2 and receives therein a supporting frame 13 having arms 14 thereon supporting an electrical motor 15 whose armature shaft is vertically disposed and connected by means of an extension 16 to the form of scrubbing means, hereinafter more fully described. Connected to the upper or remaining end of the armature shaft of the motor 15 is the rotatable

piston of a pump, not shown, housed within a casing 17 supported in the upper extremity of the frame 13 directly above the motor 15. A pipe 18 is extended from the inlet or suction port of the pump casing 17 and communicates at its remaining end with the upper portion of the closed compartment 3, in the manner clearly shown in the Figure 3. Thus, it will be understood that with rotation of the motor 15, the brushing means heretofore mentioned will be caused to operate and simultaneously, the rotating piston housed within the pump casing 17 will be caused to rotate, thereby creating a suction in the same and likewise, in the compartment 3.

Arranged below and directly adjacent the bottom of the tank 1 is a circular head designated in its entirety by the numeral 19, said head comprising parallel inner and outer walls which are divided by radially disposed partition walls 20 into a plurality of compartments. Each of these compartments is adapted to receive suitable absorbent material 21, such as sponge or the like in order that the same when contacting with the surface being cleansed or scrubbed by the machine will function to absorb all water contacting therewith.

To remove water absorbed by the material 21 in the pockets of the head 19 from the same, an angular pipe 22 is extended into the upper portion of the compartment 3, while the opposite or lower end thereof is extended into engagement with a small compartment 23 arranged on an adjacent portion of the outer wall of said head 19, in the manner shown in Figure 3. A circularly shaped pipe 24 is arranged in the upper portion of the head 19 directly above the compartment formed therein and communicates with the compartment 23 to which the pipe 22 is connected. Right angularly formed branch pipes or nozzles 25 are connected in equi-distant relation about the circular pipe 24 and extend downwardly through the head 19 into engagement with the absorbing material 21 arranged in its various pockets. Thus, it will be understood that with the creation of suction in the pipe 22, the same will be applied to the circularly shaped pipe 24 and the branch pipes 25 and in consequence, that any water absorbed by the material 21 in the compartments of the head 19 will be removed therefrom by way of said pipes 25 and 24 to the pipe 22 and the compartment 3 under influence of the rotatable suction pump herein designated by the numeral 17.

The upper portion of the machine head 19 is formed with a circular depression or pocket 26 having a plurality of openings 27 formed concentrically thereof, while openings are formed in adjacent portions of the bottom of the several pockets of the compartment 2 and are adapted to be closed by manually operable valves 28 carrying on the upper ends of their elongated stems, suitable handles 29 for an obvious purpose.

A rotatable scrubbing brush consisting of right angularly disposed portions and generally indicated by the numeral 30 is arranged within the circular compartment formed by the inner wall of the circular head 19. The lower end of the armature shaft 16 of the motor 15 is extended and formed with a screw threaded end adapted to be engaged in a concentrically located socket in the head of the rotatable brush 30. Thus, with rotation of the armature shaft 16 of the motor, the brush 30 will be likewise rotated at a corresponding speed.

In operation of the improved scrubbing machine, water containing a cleansing compound or solution is placed in one of the pockets of the compartment 2, while clear water is placed in the other. At this time, that particular valve 28 establishing communication between the pockets containing the cleansing solution water and the circular depression 26 in the head 19 is opened and the means governing the motor 15 is operated, thus energizing the motor and causing it to rotate with the brush 30. The machine is now pushed over a surface to be cleansed by the handle 11 and a flow of cleansing solution and water will flow through the openings 27 in the bottom of the depression 26 onto the perforated head of the rotating scrubbing brush 30, thus permitting the same to thoroughly scrub and cleanse the surface. As the cleansing solution containing water is thrown outwardly by the rotating brush 30, it will contact with the absorbent material 21 in the various compartments of the machine head 19, and upon being absorbed thereby, will be gathered up by the suction branch pipe 25 and delivered to the circularly shaped pipe 24 from whence it will be delivered by way of the pipe 22 to the suction compartment 3 connected to the rotary suction pump through the medium of the pipe 18. When the scrubbing operation has been completed, it is desirable that the surface scrubbed be cleansed of the now soiled cleansing solution containing water and to effect this, the first mentioned valve 28 is closed, whereupon the second valve 28 is opened thus establishing communication between the clear water containing pocket of the compartment 22 and the circular depression 26 in the machine head 19. This clear water will flow through the ports 27 into engagement with the rotating brush 30 and will thoroughly cleanse the surface. The water upon being thrown outwardly by the centrifugal action of the rotating brush 30 will be absorbed by the material 21 and conveyed therefrom through the branch pipe 25 and the circularly shaped pipe 24 through

the pipe 22 to the suction compartment 3. The surface will be now comparatively dry and clean.

Manifestly, the construction shown is capable of considerable modification and such modification as is within the scope of my claims, I consider within the spirit of my invention.

I claim:

1. A scrubbing machine comprising a frame, a tank thereon having concentrically arranged compartments, one of which is closed and another divided into pockets, a circular head arranged adjacent and beneath the tank and divided into a plurality of compartments, absorbent material in each of said compartments, suction creating means supported upon the tank and communicating with one of said compartments and a circular pipe arranged in proximity to said head having branch pipes extending into engagement with said absorbent material, said pipe communicating with that compartment connected to the suction creating means, a rotatable brush received in the head and a common means for driving said brush and suction creating means.

2. A scrubbing machine comprising a wheeled frame, a circular tank supported thereon having concentrically arranged compartments, one of which is closed and another divided into a pair of pockets, a circular head arranged adjacent to and directly beneath said tank and divided into a plurality of compartments and having a circular depression formed in the upper portion thereof, absorbent means in each of the compartments of said head, valve means for selectively establishing communication between the pockets of said compartment and said circular depression in the head, a circular pipe received by said head having branch pipes extending into said absorbent material, suction creating means communicating with said first compartment, said pipe communicating with said first mentioned compartment, a rotatable brush received in the circular head, and a common means for driving said brush and suction creating means.

3. A scrubbing machine comprising a circular frame, a tank received therein consisting of a plurality of concentrically arranged compartments, one of said compartments being closed and another divided into a plurality of pockets, a circular head arranged adjacent to and directly beneath the tank and divided into a plurality of compartments and having a circular depression formed in the upper portion thereof, a rotatable brush received in said head, valve means arranged in ports in the divided pockets of said last mentioned compartment for selectively establishing communication between the same and said circular depression in the circular head, said circular depression having a plurality of outlet ports therein, absorbent material in each of the compartments of the circular head, a pipe received in the circular head having branch pipes extending therefrom into engagement with said absorbent material, said pipe communicating with the first mentioned of the compartments, an electrical motor supported within the innermost concentric compartment of said tank having the lower end of its armature shaft fixedly connected to the rotatable brush, suction creating means supported within said mentioned compartment and connected to the upper extremity of the motor armature shaft, and means for establishing communication between said suction creating means and the closed compartment.

In witness whereof I have hereunto set my hand.

ANSEL M. CAINE.