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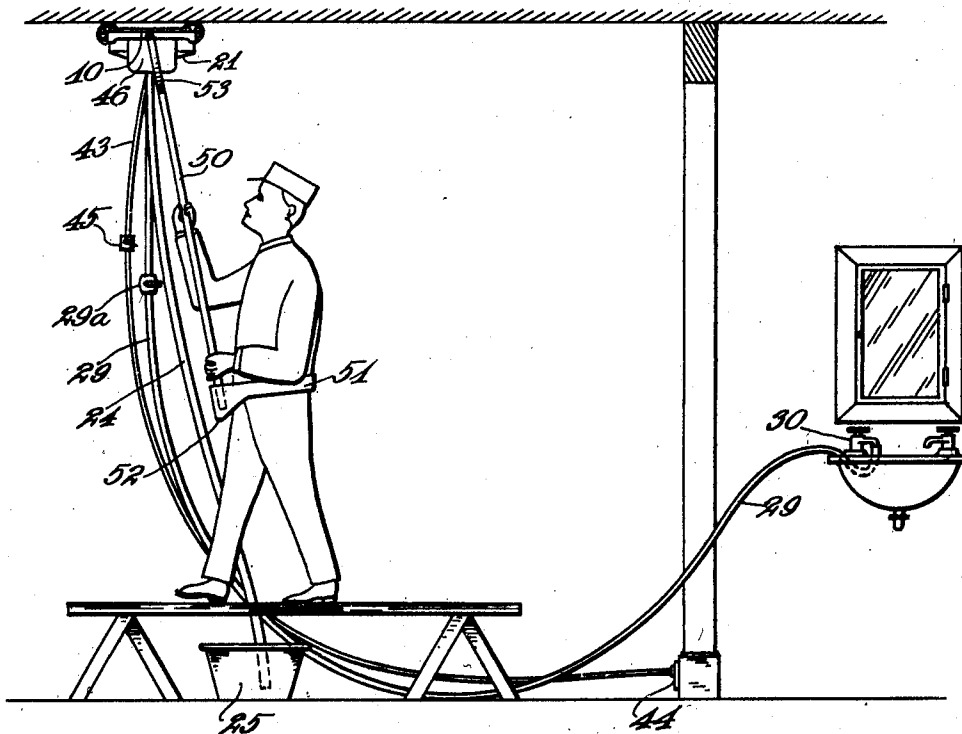
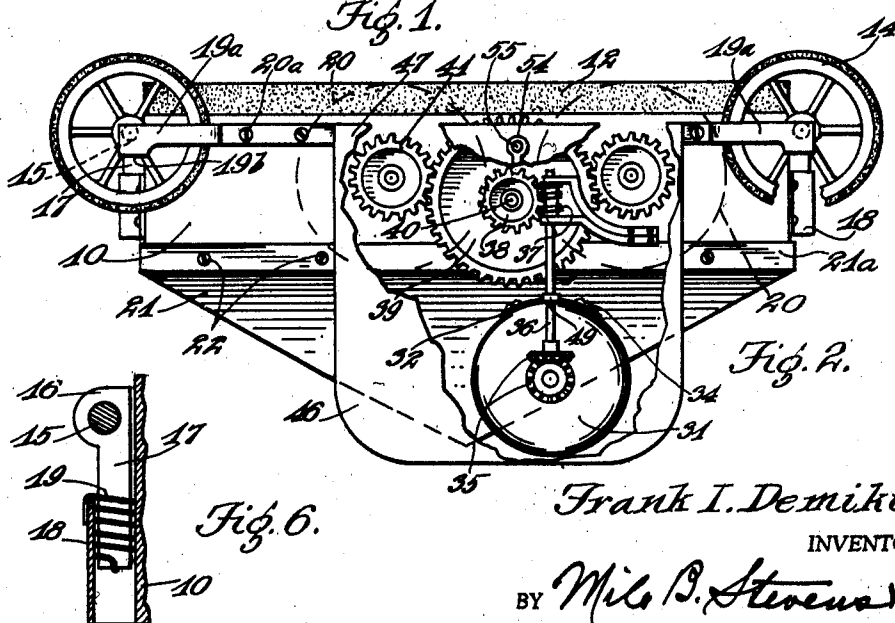
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2,335,491

CALCIMINE WASHING MACHINE

Filed May 21, 1942

2 Sheets-Sheet 1



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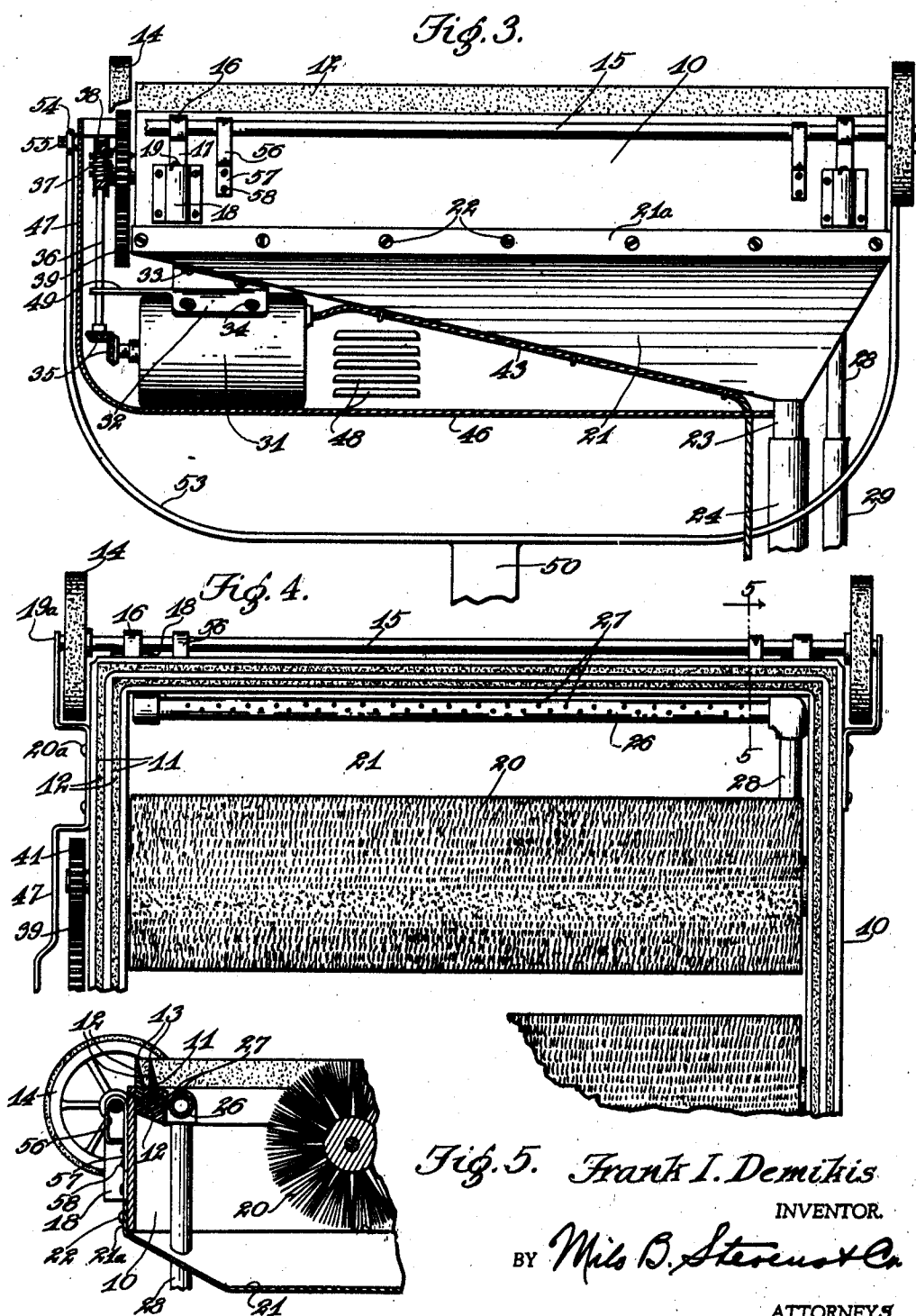
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UNITED STATES PATENT OFFICE

2,335,491

CALCIMINE WASHING MACHINE

Frank I. Demikis, Chicago, Ill.

Application May 21, 1942, Serial No. 443,963

1 Claim. (Cl. 15—50)

This invention relates to appliances for cleaning ceilings, walls and other surfaces, and is particularly designed to perform a service which is universally done by hand. This service deals with the washing of the old calcimine before a new coat thereof is applied. Ordinarily, the washing process requires only usual effort in respect to walls, but imposes considerable fatigue in the treatment of ceilings. It is therefore one object of the present invention to provide a machine which will perform the washing operation in respect to ceilings and eliminate the greatest difficulty from the work of washing calcimine.

A further object of the invention is to provide a machine of the above character which may be easily trained by any person to travel along desired paths across the ceiling and to perform the washing operation over practically the entire area thereof.

A still further object of the invention is to provide a machine which is so light that it may be carried by the average person with the aid of a suitable body support and manipulated or moved in any direction.

Another object of the invention is to design a machine of the above character which receives water from a pressure conduit for the washing operation, contains a conduit to drain the products of the washing operation, and has a power lead to operate a washing mechanism.

An important object of the invention is to construct the novel machine along lines of simplicity and durability.

With the above objects in view and any others which may suggest themselves from the description to follow, a better understanding of the invention may be had by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of the novel machine, showing its application;

Fig. 2 is a replica of the greater portion of the machine as seen in Figure 1 and on a magnified scale, portions of the view being broken away;

Fig. 3 is a rear view of the main portion of the machine, or as seen from the righthand side of Fig. 2;

Fig. 4 is a top plan view of Fig. 3, partly broken away;

Fig. 5 is a section on the line 5—5 of Fig. 4; and

Fig. 6 is a section of a detail.

As mentioned, the washing of old calcimine from walls may be considered an ordinary operation, but in the case of ceilings, the work is not

only tiresome because the arms are in unnatural positions, but the posture requiring the head to be thrown back induces strain and pain, making the work strenuous and fatiguing. By providing the present machine, it is possible to do a washing job along the entire course of the ceiling except for a narrow strip adjacent to the walls, where little effort is required to do the finishing by hand when the walls are being done, so that discomfort and difficulty are eliminated.

In accordance with the foregoing, the novel machine is primarily built with an oblong frame 10 of aluminum or other light metal, such frame being open at the top and bottom. The upper edge of the frame is formed with a pair of longitudinal grooves 11 all around to permit the seating of a pair of rubber bands 12, these tapering to fairly sharp edges at their upper ends, as indicated at 13. Since the washing operation involves the use of water under agitation, it is the purpose of the bands to create a seal between the frame 10 and the ceiling when the machine is held up to the latter and so prevent the splashing or escape of water from the zone of contact with the ceiling.

Ordinarily, the frame is held in spaced relation to the ceiling by a set of rubber-tired wheels 14 carried by the frame 10. Fig. 2 shows one of the sides of the machine, while Fig. 3 shows the rear end thereof, and it is therefore apparent that the machine is much wider than it is long, this being for a purpose to appear in a later section.

The wheels 14 are disposed opposite the sides of the frame and are carried in pairs by long spindles 15. The ends of these are hung in bearings 16 formed with shanks 17 depending into sheaths 18. As indicated in Fig. 6, the shanks 17 are boosted by springs 19 to maintain the wheels 14 a short distance above the sealing bands 12. The wheels only are thus in contact with the ceiling when the machine is placed up against the latter, so that the machine may be wheeled wherever wanted along the ceiling without imposing the friction of the bands 12 upon the same. However, when a place or spot has once been located, the machine can be raised to engage the bands with the particular surface preliminary to washing the same, the wheels yielding to this movement.

In order that the wheels 14 and their bearings may be easily removable for adjustment, repair or other attention, they are made with separate end guards 19a attached by screws 20a to the sides of the frame, such end guards occurring opposite the extremes of the spindles 15 and being

of sufficient added width, as indicated at 19b, to allow for the rise and fall of the spindles while retaining them in alignment with the frame.

Inside the frame two cylindrical brushes are spacedly journaled, extending crosswise of the frame. The latter being elongated in the corresponding direction, the brushes 20 can be made fairly long, while the frame is relatively short from front to rear. It is intended that the brushes 20 rotate against the ceiling as the machine makes forward progress, whereby to dislodge and remove the old calcimine. This is done with the aid of streams of water sprinkled against the ceiling ahead of the brushes, and a pan 21 is therefore provided at the bottom of the frame to catch any water and other products of the washing operation. The pan is made with a top flange 21a which over-laps the bottom of the frame externally and is secured thereto by a series of screws 22. As the pan 21 is intended only for draining purposes, its connection with the frame need not be hermetical or by means of a gasket or packing. As noted in Fig. 3, the pan deepens gradually toward the right-hand side of the machine—according to the position of the operator in Figure 1—so that the drain pipe 23 and discharge conduit 24 depending from the draining pan 21 may be to one side of the operator and out of his way. Such conduit may lead to a convenient receptacle 25 for discharge.

Inside the front of the frame 10 is located a transverse pipe 26 formed with a plurality of perforations 27. One end of the pipe 26 is formed with a downward extension 28 leading into a conduit 29. As shown in Fig. 3, this conduit is also along the right-hand side of the machine and descends alongside the conduit 24 to be led to a suitable water faucet 30. Thus, water under pressure enters the pipe 26 and is sprinkled against the ceiling along a course a short distance ahead of the brushes 20, so that the calcimine may soften and loosen before the brushes negotiate its removal. A suitable shut-off valve 29a is provided in the conduit 29 at a point handy to the operator, in order that he may control the water feed at will.

The brushes 20 are operated from an electric motor 31 supported by a suitable bracket 32 secured by screws 33 and 34 to the draining pan 21 and the motor, respectively. The drive is taken along the left-hand side of the machine, consisting of a bevelled gear transfer 35 to a vertical shaft 36, and from a worm 37 carried by the latter to a pinion 38 alongside the frame and integral with a gear 39 journaled on a frame trunnion 40. The gear 39 meshes with pinions 41 on opposite sides, these being carried by the spindles 42 of the brushes 20. The cord 43 for supplying electric current to the motor 31 is led to the right under the draining pan, as indicated in Fig. 3, and then down alongside the conduit 24 to a handy current outlet 44. The cord 43 carries a control switch 45 at a point handy to the operator.

A typical enclosure for the motor and gearing is indicated at 46, being a sheet metal housing under the draining pan 21 and having an upward extension 47 to enclose the gears and continue in the form of the guards 19a on the left-hand side of the frame. The housing 46 is preferably formed with sets of louvers 48 wherever desirable to afford ventilation for the motor 31; also, the bracket 32 for the latter is utilized in the extended form 49 to serve as a bearing for the upright shaft 36.

As indicated in Figure 1, the machine is designed to be carried over-head by means of a stick or pole 50. In order that the weight of the machine may not be borne by the operator's arms while it is not in use for the actual washing operations, it is preferable that the operator be provided with a belt 51 with a frontal pouch 52 for the support of the lower end of the stick 50. The latter is extended with a fork 53 at the top, the upper ends of the fork being formed as eyes 54 to receive trunnions 55 from the sides of the machine and rockably suspend the machine in the fork. The points of suspension being in the upper part of the machine, there will be little tendency for the same to rock, especially when the straightening pull of the conduits 24 and 29 is considered. While it is the tendency of the wheels 14 to be boosted at all times by their spring suspensions, limits for this action are provided in the form of vertical loops 56 on the back and front of the frame 10. The spindles 15 pass through these loops and are limited from rising above the same, the loops being extended downwardly in the form of straps 57 to be secured by screws 58 to the frame.

It will be evident from the above description that I have provided a machine which, despite its small size and easy portability, performs an operation which would usually require larger equipment and various complications. The present machine is designed in a manner to receive its supply of water and electricity by means of light conduits, and to drain the products of the washing operations by means of a similar conduit, all such conduits being not only out of the way of the operator, but flexible to permit him to cover considerable ground. Figure 1 shows that the operator employs a bench or stand in the same manner as for hand washing, but it is obvious that in most cases the length of the stick 50 will enable the operator to dispense with a bench or stand. In addition, the novel machine makes the operation clean because it seals the boundaries of the zone in which the washing is being done so that no splashing will reach the exterior or strike the side walls. Further, while the left-hand side of the machine is built out by the presence of the gearing, so as to render the brushes 20 more or less distant from a side wall along which the machine is operated, the right-hand side of the machine is more compact in this respect, so that the brushes are nearer to a wall along which the machine may be used on the corresponding side of the room. Thus, it is expedient that the right-hand side of the machine be the one to be used adjacent to any wall, in order to make the unwashed ceiling strip along the same as narrow as possible. When the washing operation has been completed over the ceiling, the unwashed border may be easily treated by hand when the washing of the walls is started from the top. Finally, the novel machine is made of such parts as are strictly necessary for its efficient operation, has no complications, is easy to manipulate, and may be operated with facility by the average person after a slight amount of practice.

While I have described the improved machine along specific lines, it is apparent that minor changes or refinements may be made therein without departing from its principle, and I desire to consider such changes and refinements as coming within the scope and spirit of the appended claim.

I claim:

A calcimine washing machine comprising a receptacle, means to support the same in an elevated position for application to a ceiling, washing implements engageable with the latter when the receptacle is applied, and a power-driven mechanism to operate the said implements, the receptacle including a frame with front and side walls and a drain pan inclined from the bottom

of one side wall, said washing implements comprising rotary brushes extending transversely in the frame, and said mechanism comprising a motor supported from the high portion of the drain pan inwardly of said side wall and a drive gearing for said brushes leading from the motor along the outside of said side wall.

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