April 7, 1931. C. O. SWANSON 1,799,833

ELECTRIC CLEANER FOR DUST MOPS

Filed Sept. 30, 1929 3 Sheets-Sheet 1

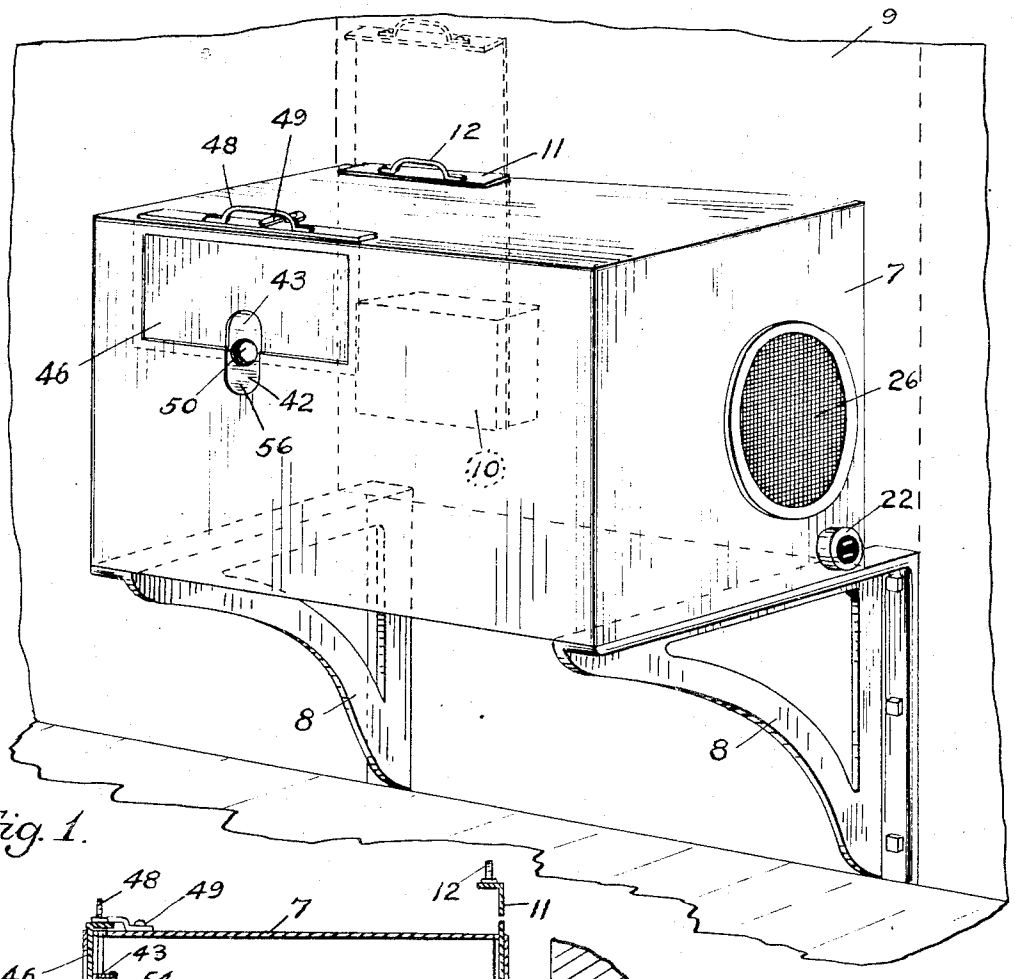


Fig. 1.

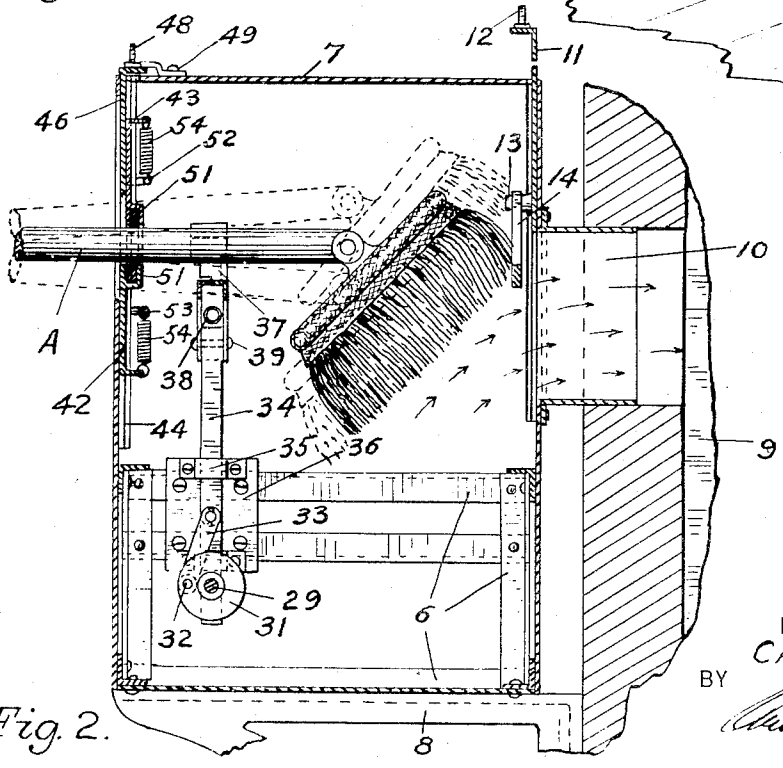


Fig. 2.

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ELECTRIC CLEANER FOR DUST MOPS

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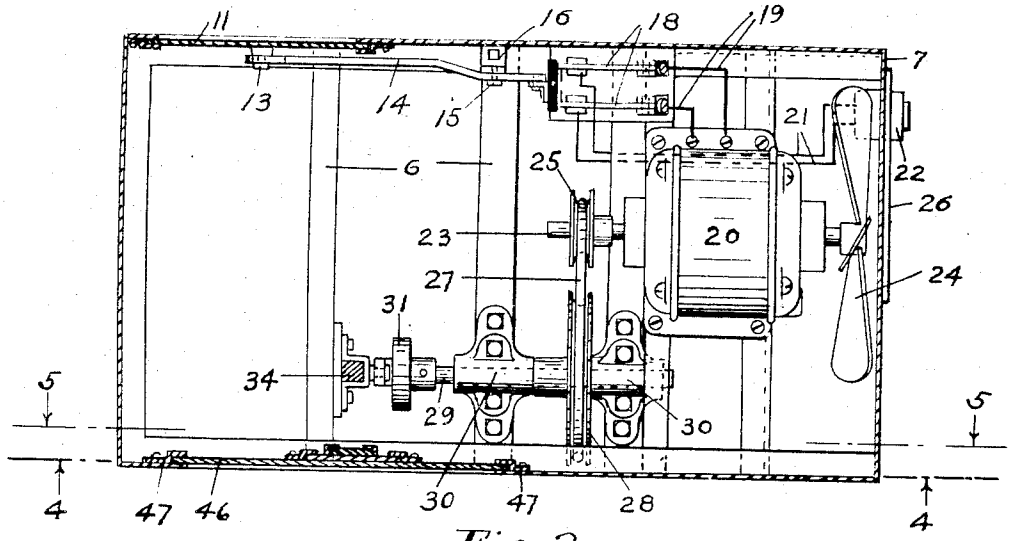


Fig. 3.

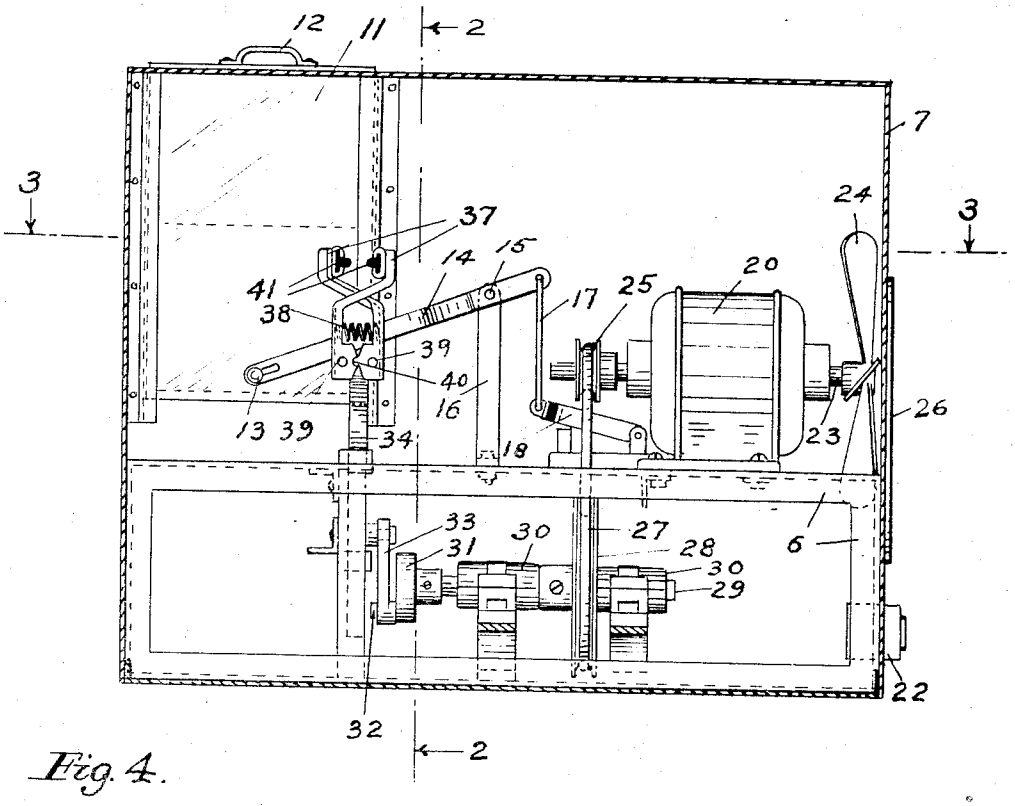


Fig. 4.

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ELECTRIC CLEANER FOR DUST MOPS

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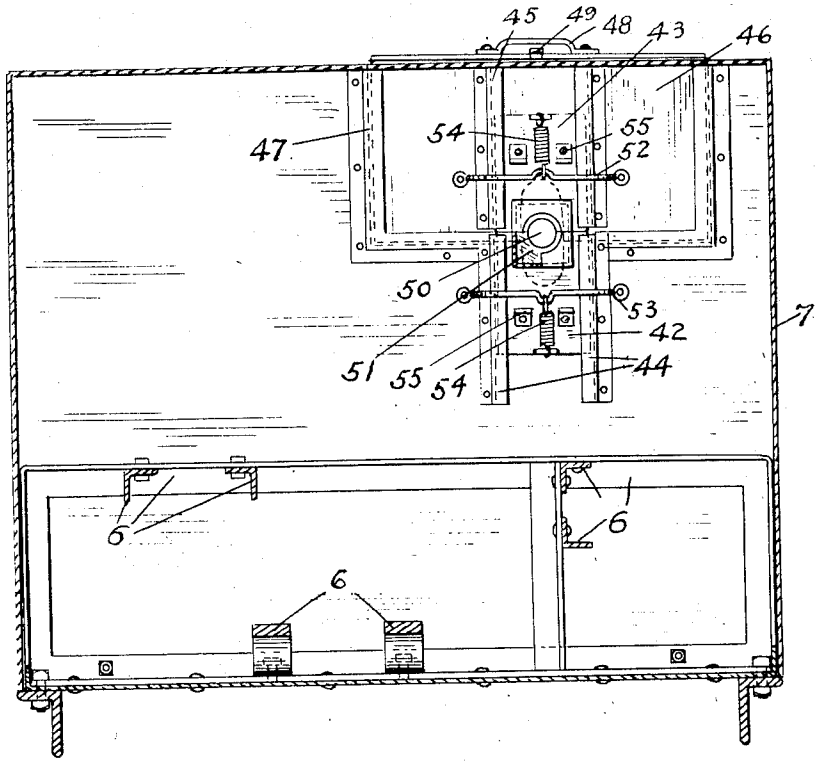


Fig. 5.

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UNITED STATES PATENT OFFICE

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ELECTRIC CLEANER FOR DUST MOPS

Application filed September 30, 1929. Serial No. 396,219.

This invention relates to means for cleaning dust mops and the primary object is to provide an efficient, practical and highly novel mechanism including a housing to receive the mop head, and means within the housing to rapidly vibrate or shake the mop head, to free it from dust, together with simple and effective means for disposing of the dust and dirt that is removed from the head. The utility of the device is best illustrated and appreciated in connection with modern apartment buildings where the problem of mop cleaning is a serious one because the most logical place for a tenant to clean a mop is by shaking it out of a window, but this is objectionable as the dust is either blown back into the room or is liberated to scatter about in the air to pollute the same and be blown into the windows of adjacent apartments. In any event no method of cleaning dust mops that has come to my attention is either sanitary or effective, and it is to overcome these objections that I have designed and perfected the present machine.

The general purpose of the device, as above noted, together with other and more specific objects, will be more fully set forth in the course of the following specification, reference being had to the accompanying drawings, wherein:

Fig. 1 is a perspective view of the machine showing it as applied to a dust receiving chute or flue, which, for purpose of illustration may be an ordinary incinerator chute, with which apartment buildings are ordinarily equipped and which furnish convenient means for dust disposal.

Fig. 2 is a sectional elevation through the machine as seen in Fig. 1, but on the line 2—2 in Fig. 4.

Fig. 3 is a sectional plan view as on the line 3—3 in Fig. 4.

Fig. 4 is a longitudinal sectional elevation as on the line 4—4 in Fig. 3.

Fig. 5 is a sectional elevation as on the line 5—5 in Fig. 3.

Referring to the drawings more particularly and by reference characters, 6 designates a framework over which is arranged a housing 7. The frame and housing are preferably carried on bracket supports 8 in such a manner that the device may be conveniently mounted adjacent to an incinerator chute 9, which chute is connected with the housing 7 by a short flue 10.

The opening formed by the flue 10 is normally closed when the device is not in use by a sliding door or gate 11, the upper end of which projects through a slot in the top of the housing 7, and is provided with a handle 12 by which it is opened and closed. The gate 11 is provided on its inner side with a pin 13 which engages the slotted end of a lever 14 which is fulcrumed, as at 15, to a standard 16 secured on the frame 6. The opposite or short end of the lever 14 is connected by a link 17 to a knife switch 18, also supported on the frame 6. The switch 18 is connected by circuit wires 19 to a motor 20, which motor is rigidly secured to suitable cross bar members of the frame 6. From this construction it will be noted that when the gate 11 is closed or in a downward position the switch 18 is open, and no current will flow to the motor 20, but when the gate 11 is raised to the position shown in Fig. 2, the switch 18 will be closed by the lever 14 and link 17, to energize the motor. It may here also be noted that the switch 18 is connected by suitable wires 21 to an outlet plug 22, to which ordinary house current wires may be conveniently connected.

The shaft 23 of the motor is provided at one end with a blower fan 24, and is provided at its other end with a pulley 25. Adjacent to the fan 24 the housing 7 is provided with a screened opening 26, through which air may pass into the housing under the action of the fan 24. Thus it will be seen that the fan 24 is operative to create a current through the housing 7 from the opening 26 to the flue 10.

The pulley 25 operates through a belt 27 to drive a larger pulley 28, mounted on a shaft 29. The shaft 29 is journaled in suitable bearings 30 carried by the frame 6, and is provided at one end with a crank or disk 31 having an eccentric pin 32 which drives the pitman 33 of a vertically reciprocating bar 34. The bar 34 is mounted to operate in

suitable guides 35 carried by a plate or block 36 of the frame 6. At its upper end the bar 34 is provided with a pair of crossed clamping members 37, the gripping portions of which are held toward each other by a spring 38. The members 37 are pivotally secured to the bar 34 by individual pivot pins 39, and between these pivot pins the lower ends of the clamping members 37 are provided with an interlocking tooth and slot 40, the purpose of which is to cause the members 37 to act simultaneously, and to prevent any sidewise motion of the clamping arms with respect to the vertical axis of the bar 34. Thus it will be seen that when either of the arms 37 is moved either inwardly or outwardly then the other arm will be correspondingly operated. The gripping members 37 are provided at their upper ends with lugs 41 (see Fig. 4), between and under which the mop stick can be pushed and yieldingly held.

As shown in Fig. 2, the mop head is disposed within the housing 7, with the inner end of the mop stick A secured between the clamping arms 37. The handle or mop stick A then passes out through the housing 7, but the opening through which it passes is sealed by a pair of slides 42 and 43, the first of which is carried by guides 44 on the inner front wall of the housing 7, and the latter of which is carried in similar guides 45 secured upon the inner face of the gate member 46. This gate member is slidably carried in guides 47 on the front wall of the housing, and is provided with a handle 48 by which it may be raised and lowered. The gate 46 is releasably held in its downward or closed position by any convenient form of latch device 49. The adjacent ends of the slide members 42 and 43 are provided with semi-circular notches which supplement each other to form a round hole 50 through which the mop stick A passes, and the edges of this hole are preferably provided with resilient gaskets 51, for direct contact with the mop stick.

A cross bar 52 secured to the gate 46, and a similar cross bar 53 secured to the front plate of the housing 7 extend across the slides 42 and 43 and are connected thereto by a pair of springs 54, which springs are so arranged that they will tend to hold the slides 42 and 43 in abutting engagement with each other. The slides 42 and 43 are also provided with lugs 55 for stopping engagement with the bars 52 and 53.

It will be noted, with particular reference to Fig. 1, that the front wall of the housing 7 is provided with an elongated vertical slot 56 adjacent to the hole 50, which slot accommodates the mop stick A when the same is vertically reciprocated together with the slides 42 and 43.

The operation of the device may be briefly described as follows: When a mop is to be cleaned the gate 46 is lifted up, or if necessary is entirely removed, to permit the entrance of a mop head into the housing 7. The gate is then replaced, and if necessary held down by the latch 49, in which position the mop stick or handle projects from the housing through the hole 50 formed by the slides 42 and 43. No dust can now escape from the housing. The operator then grasps the handle 12 and lifts the gate 11, which act opens the housing to the incinerator flue 9, and also operates through the lever 14 and link 17 to close the switch 18, thus starting up the motor 20. As the motor becomes energized it operates through the pulleys 25 and 28 to rapidly revolve the shaft 29, which in turn drives the pitman 33 of the bar 34. The mop stick, which has first been pressed down between the lugs 41 of the clamping members 37, is violently agitated vertically, together with the bar 34, and as this agitation takes place the mop head is rapidly agitated or shaken to free it from dust. This dust is taken up by the air current caused by the rotation of the circulating fan 24 which drives the air through the screened opening 26 and forces it down through the incinerator flue. When the operation is completed the operator closes the gate 11, which in turn shuts off the motor and permits the gate 46 to be opened and the cleaned mop released.

It is understood that suitable modifications may be made in the structure as disclosed, provided such modifications come within the spirit and scope of the appended claims.

Having now therefore fully illustrated and described my invention, what I claim to be new and desire to protect by Letters Patent is:

1. A dust mop cleaner comprising a housing having inlet and outlet openings for the passage of air current therethrough, means for creating said air current, and means within the housing for gripping and shaking a mop head.

2. A dust mop cleaner comprising a housing having inlet and outlet openings for the passage of air current therethrough, means for creating said air current, a gate for the outlet opening, means within the housing to shake a mop, and means, rendered operative upon opening of the gate, to set the draft creating means in action.

3. A dust mop cleaner comprising a housing having inlet and outlet openings for the passage of air current therethrough, means for creating said air current, a gate for the outlet opening, means within the housing to shake a mop, and means, rendered operative upon opening of the gate, to set the mop shaking means in action.

4. A dust mop cleaner comprising a housing, means within the housing to shake a mop

head, and means to cause a circulation of air within the housing.

5. A dust mop cleaner comprising a housing, means within the housing to shake a mop head, means for effecting a circulation of air past the mop head, and a motor for simultaneously driving the shaking and circulating means.

6. A dust mop cleaner comprising a housing having an opening for the escape of dust, a vibrator within the housing for gripping and shaking a dust mop, a motor for actuating the vibrator, a door for said opening, and means rendered operative by opening the door for closing a circuit to the motor.

7. A dust mop cleaner comprising a frame, a vibrator and a motor mounted on the frame, means carried by the vibrator for releasably securing a mop head thereto, and a housing disposed about the frame, motor, and vibrator.

8. A dust mop cleaner comprising a housing adapted to receive the head of the mop and with the handle of the mop projecting out through one wall of the housing, means within the housing for vibrating the mop head, and a reciprocable device slidably secured to said housing wall to form a seal about the projecting mop handle.

9. A dust mop cleaner comprising a housing adapted to receive the head of the mop and with the handle of the mop projecting out through one wall of the housing, means within the housing for vibrating the mop head, and a reciprocable device slidably secured to said housing wall to form a seal about the projecting mop handle, said device including a pair of abutting slides yieldably held toward each other.

Signed at Minneapolis, Minnesota, this 26th day of September, 1929.

CARL O. SWANSON.