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(54) [Name of the invention] Cleaner for pachinko machine boards

[Detailed explanation of the invention]

(57) Scope of patent claims

[0001]

[Claim 1] A cleaner for a pachinko machine board characterized in that a pachinko table board cleaner with a brush at the end of a tubular section that forms an air channel inside is equipped with a vibrator that vibrates the brush, and wherein the exposed width of the bristles in the brush is longer than the protruding width of the nails and other devices on the board surface, wherein the aforementioned tubular section is formed in the shape of a straight pipe, and a fan to discharge air from the tip of the said tubular section and the aforementioned vibrator are arranged inside the aforementioned tubular section, with the rear tip of said tubular section designed to take in air, and a grip for holding by hand the aforementioned tubular section installed in a protruding manner from the outer surface of said tubular section, and the overall shape being approximately the same shape as a pistol.

[Industrial applications] This invention relates to a cleaner used for cleaning a pachinko machine board.

[0002]

[Prior art] Nicotine and tar resulting from cigarette smoke, as well as dust, etc. from the venue can directly infiltrate and stick to pachinko machine boards via the pachinko balls, and the oil film from these pachinko balls can accumulate in a sticky fashion. As this kind of dirt on boards gives an impression of a lack of hygiene and aging with respect to said pachinko boards, it can lead to a depletion of interest. For this reason, it is necessary to constantly clean them.

[0003] Previously, in order to clean pachinko machine boards, for example, cotton swabs were dipped in a solvent such as alcohol, and rubbed against the board to remove the dirt.

[Claim 2] The cleaner for a pachinko machine board described in claim 1 is characterized in that flexible fabric balls are placed at the tips of the bristles for the brush.

(2)

[0004]

[Issues that the invention aims to resolve] However, as nails and other devices are densely located on pachinko machine boards, cleaning using cotton swabs as described above, requires many hours, and it is not possible to increase work efficiency. In addition, the cotton swabs may not reach into the corners, and areas that are not sufficiently wiped may remain, leading to a poor cleaning result.

[0005]

[Means of resolving the issues] In order to resolve the aforementioned issue, the pachinko machine board cleaning in this invention has a brush at the end of a tubular section that forms an air channel inside, is equipped with a vibrator that vibrates said brush, and wherein the exposed width of the bristles in the brush is longer than the protruding width of the nails and other devices on the board surface, wherein the aforementioned tubular section is formed in the shape of a straight pipe, and a fan to discharge air from the tip of the said tubular section and the aforementioned vibrator is arranged inside the aforementioned tubular section, with the rear tip of said tubular section designed to take in air, and a grip for holding by hand the aforementioned tubular section installed in a protruding manner from the outer surface of said tubular section, and the overall shape being approximately the same shape as a pistol.

[0006]

[Means of resolving these issues] In order to resolve the issues described above, the cleaner of pachinko machine boards in this invention has an air channel with a fan installed, a tubular section with a handheld grip, and equipped with a brush attached to a protruding opening to the air channel that is opened at the tip of the tubular section, and a vibrator to cause this brush to vibrate, with the exposed width of the bristles in the aforementioned brush formed to be longer than the protruding width of the nails and other devices installed on the pachinko machine board.

[0007]

In this case, there is a pattern in which flexible fabric balls are placed at the tips of the bristles of the brush.

[0008]

[Action] When using the pachinko machine board cleaner in this invention, the user holds onto the grip, and lifting the tubular section by hand, scrubs while moving the tips of the bristles of the brush against the pachinko machine board, with the vibrator and fan in operated state. At this time, it is desirable to apply detergent onto the surface of the pachinko machine board.

[00009] Therefore, as the vibrator is being used to vibrate the brush, when scrubbing the board surface, it is not necessary to move one's hand in small increments, and as the bristles can freely move into the small spaces between the nails with the brush tips spread out on the surface through the vibration, it is possible to automatically scrub the board surface merely by putting the tips of the brush bristles against the board surface.

[0010] Additionally, due to the air sent by the fan, air is blown in the direction of the board surface from the protruding opening of the air channel. As the air being blown causes any dust that has been retained on the board surface to lift off, it is easy to move dust lurking in corners.

Further, by scrubbing these corners with the brush, it is possible to clean the corners carefully as well. As the brush is installed in the protruding opening, the dust lifted up by the brush attaches to the brush along with the dirt, thus preventing the scattering of the dust.

[0011] In this way, as the board is being scrubbed while the brush is vibrated using the vibrator and blowing air onto the board surface using the fan, it is possible to clean corners efficiently in a short period of time.

[0012] Further, on the board, nails and other devices are sticking out, so when cleaning, it is unacceptable for any of the nails or other devices to be bent or damaged. To deal with this, the exposed width of the bristles is formed to be longer than the protrusion width of the nails and other devices placed on the board surface.

[0013] Therefore, when moving while scrubbing the board with a brush, only the bristles of the brush touch the nails and other devices, and as the tubular section is over the nails and other devices, it is possible to prevent bending and damage due to collisions between the tubular section and the nails and devices.

[0014] As dirt and dust stick to the brush as the cleaning of the board progresses, it becomes necessary to clean the dirty brush. At this time, if the dirty brush is soaked in a bucket of water, etc. while vibrating the brush using a vibrator, the dirt and dust can be simply removed using the vibration, and the wet brush can be speedily dried using the air blown from the fan. For this reason, it is possible to continuously clean multiple pachinko machines with a clean brush.

[0015] If fabric balls are placed at the tip of the bristles of the brush, the board surface will not scratch and there will be good adhesivity of dirt and dust.

[0016]

[Working example] Below, a working example of this invention is explained in detail with reference to the drawings. First, we shall explain the configuration of this working example.

[0017] In the drawing, 1 is the tubular section, and near the center of its outer surface, there is a hand-held grip 11 that is facing down. Additionally, an air channel 10 is formed in the inside of this tubular section 1, an air intake cover 12 is mounted at the rear edge and a rubber cover 13 with a protruding opening 10a formed at the tip.

[0018] A fan is installed in a position toward the rear of the aforementioned air channel, and a vibrator is also installed in a position near the tip of the air channel 10.

[0019] The aforementioned fan 2 is attached to a motor 20 constructed the inside of tubular section 1, and it rotates as a result of being driven by this motor 20, blowing air from the rear side of the fan 10 to the tip side. The motor 20 is also air-cooled by the sent air.

(3)

[0020] The aforementioned vibrator 3 is comprised of a vibration motor 30 constructed inside the tubular section 3 and an adapter 31 mounted on the tip section of the motor 30, with a brush 4 attached to the tip of this adapter 31, in a way in which it can be attached and removed.

32 is a rectification cover, and it is attached in a way that it covers the rear side of the aforementioned motor 30, and is formed in a streamlined way so that it can prevent turbulence caused by the air stream hitting the motor. Additionally, there is a rectification surface 33 in the adapter 31.

[0021] The aforementioned brush 4 is implanted with synthetic resin (nylon in the working example) bristles on the surface of board 40 in a circular fashion and mounting on the vibrator 3 is carried out by screwing the screws 42 protruding from the back surface of board 40 into the screw holes formed on the tip surface of the aforementioned adapter 31.

[0022] Then in the state in which the aforementioned brush 4 is attached to the vibrator 3, it is formed in a way that the exposure width L from the air outlet 10a of the bristles 41 is longer than the protrusion width of the nails and other devices installed on the pachinko machine boards.

[0023] In Figure 5, the switch is installed in a way that it protrudes from the grip 11, and it is possible to activate both the motors 20 and 30 of the fan 2 and vibrator 3 respectively, either singly or together, using the button operation. 6 is a high voltage transformer and it is used to supply rated voltage to the aforementioned motors 20 and 30. It is possible to install two dedicated switches individually for the motor 20 and motor 30, respectively.

[0024] Next, we shall explain the action of the working example. When using the board cleaner in this working example, the grip 11 is gripped and this is used to hold the tubular section 1, and switch 5 is used to operate vibrator 3 and fan 2. Then the tips of the bristles 41 of brush 4 make contact with the board, and in this state, the user scrubs the pachinko machine board while moving. At this time, liquid detergent is applied as a cleaning agent. The cleaning agent in this case may be a spray-based detergent, but to prevent liquid leaking, use of a mousse-based cleaning agent is desirable.

[0025] If you use a board cleaner in this way, as the brush 4 vibrates due to the vibrator 3, it is not necessary to move your hand in small increments when cleaning the board surface, and the tips of the brush 4 spread out over the surface due to the vibration, and so simply by attaching the tips of the bristles 41 to the board, it is possible to automatically scrub board. Additionally, highly adhesive dirt can be simply removed by the cleaning ability of the detergent in addition to the friction force of the brush.

[0026] Additionally, due to the air stream from the fan 2, air is blown in the direction of the board from the protruding opening 10a of the air channel 10. As a result of this air, dirt and dust that remain on the board surface are lifted up and dust that remains in the corners can be simply removed. Further, by scrubbing the corners using the brush 4, it is possible to clean carefully in the corners carefully.

As the brush 4 is installed in the air outlet 10a, the dust blown up by the air sticks to the brush 4 along with the dirt, and so is not scattered. In particular, in the working example, synthetic resin is used for the bristles on the brush 4, and as static electricity can easily occur, the adhesivity of the dust is improved. Further, the board surface, as cleaning progresses, is assisted in drying by the air produced by the fan.

[0027] In this way, while air is being blown to the board surface by fan 2, the brush scrubs the board surface by vibrating brush 4 with the vibrator, so this is efficient in a short period of time and is able to clean carefully even in the corners.

[0028] Additionally, on the board there are nails and other devices sticking out, so when cleaning, it is unacceptable for any of the nails or other devices to be bent or damaged. To deal with this, the exposed width of the bristles 41 is formed to be longer than the protrusion width of the nails and other devices placed on the board surface.

[0029] Therefore, when moving while scrubbing the board with a brush 4, only the bristles 41 of the brush 4 touch the nails and other devices, and as the tubular section is over the nails and other devices, it is possible to prevent bending and damage due to collisions between the tubular section and the nails and devices.

[0030] Additionally, in the working example, there is a rubber cover installed that forms an air outlet 10a at the top of the tubular section 1, so even when the tip of the tubular section 1 touches the pachinko machine (including not only the nails and devices but also the glass surfaces) at the bottom part, the collision is absorbed and damage to the pachinko machine can be prevented.

[0031] Additionally, as described above, ss dirt and dust stick to the brush as the cleaning of the board progresses, so it becomes necessary to clean the dirty brush. At this time, if the dirty brush is soaked in a bucket of water, etc. while vibrating the brush using a vibrator, the dirt and dust can be simply removed using the vibration, and the wet brush can be speedily dried using the air blown from the fan. For this reason, it is possible to continuously clean multiple pachinko machines with a clean brush.

[0032] Next, Figure 2 is an expanded cross-section view showing another example of bristles. In the bristles 41 in Figure 2, fabric balls 41a are installed at the tips. These fabric balls 41a can be used like a flexible mop, and the tips of the bristles 41 form a hole with synthetic fabric, and these are attached by inserting the base section of the fabric balls 41a into the holes 43.

[0033] Additionally, Figure 3 is an expanded cross-section view showing another example of brush bristles. Fabric balls 41b are also installed in at the tips of the bristles 41 shown in Figure 3. These fabric balls 41b use a flexible yarn 44, and they are placed through a synthetic resin tube 45 that uses them as fabric balls, and the tip of this protrudes from the tip of the bristles 41b as fabric balls 41b. The proximal end of the yarn 44 extends to the back of the board 40, and when the fabric balls 41b are rubbed down, this yarn can be extracted and used.

(4)

[0034] Therefore, as described above, if fabric balls 41a, and 41b are placed at the tip of the bristles 41 of the brush, the board surface will not scratch and there will be good adhesivity of dirt and dust.

[0035] This concludes the explanation of the working example of this invention using the drawings, but the specific configuration is not limited to this working example. For example, in the working example, the grip is placed facing downwards in the center of the tubular section, and the entirety of it is formed in a pistol shape; however, the tubular section may bend from the center position, and this bent section may be formed as the grip.

[0036] The shape of the brush is arbitrary and it may be a sphere or a disintermediated cylindrical shape. Additionally, the air may be blown from inside the brush, and the board 40 may be exposed, or flexible cushions installed around the base 40.

[37]

[Benefits of the invention] As explained above, with the board cleaner in this invention, the brush, while having air blow onto the board surface with the fan, the brush is vibrated using a vibrator, and the board is scrubbed, so not only is this very time-efficient, but also enables the corners to be cleaned carefully.

[0038] Additionally, as the exposed width of the bristles is formed longer than the protruding width of the nails and devices installed in the board when scrubbing the board with a brush and moving, only the bristles of the brush touch the board, and this prevents bending and damage due to collision of the tubular section with the nails and other devices.

[0039] Further, the dirt and dust attached to the brush can be simply washed off, and the wet brush can be swiftly dried using the air current from the fan.

[0040] Further, if fabric balls are placed on the tip of the bristles on the brush, the board surface will not scratch and there will be good adhesivity of dirt and dust.

[Simple explanation of the drawings]

[Figure 1] Cross-section diagram showing the board cleaner in the working example.

[Figure 2] Expanded cross-section showing another example of the brush bristles.

[Figure 3] Expanded cross-section showing yet another example of the brush bristles.

[Explanation of the symbols]

1. Tubular section

10 Air channel

10a Airt outlet

11 Grip

2 Fan

3 Vibrator

4 Brush

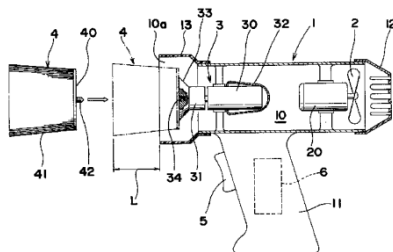
41 Bristles

41a Fabric balls

41b Fabric balls

L Exposed width

[Figure 1]



[Figure 2]

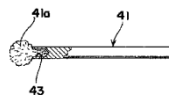
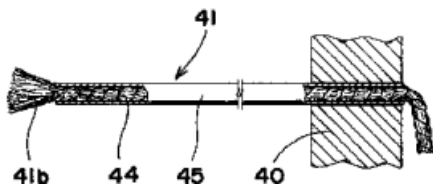


Figure 3



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Registered model utility design 3013388 (JP-U)

Examined 44-26620(1969) (JP, Y1)

TRANSLATION CERTIFICATION

Date: November 30, 2023

To whom it may concern:

This is to certify that the attached translation is an accurate representation of the documents received by this office. The translation was completed from:

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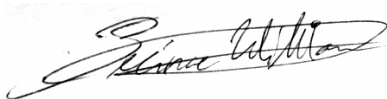
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Prince Williams, Project Manager in this company, attests to the following:

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