

CLEANING BOARD

Field of the Invention

This invention relates to a cleaning board, and more particularly to, a cleaning board which may automatically wash a write-on surface of a board by a cleaning means, be kept clean without the erased trace, protect an user's health since chalk dust does not blow.

Description of the Prior Art

In general, when an user erases letters written on conventional blackboards, stuffed erasers made of fabrics are usually used.

In case of erasing letters on the board by using such the eraser, there is a disadvantage that the user and the user's surroundings may be threatened to their respiratory system as chalk dust blows.

There are another disadvantages that the chalk dust adheres to the user's sleeves, and the user must shake the chalk dust from the eraser after erasing operation.

There is further another disadvantage that since a surface of the blackboard has a prescribed roughness to prevent sliding of the chalk, when the user writes letters on the blackboard, chalk particles are inserted in minute concave parts of the surface of the board, so that with the eraser made of fabrics, the letters on the surface of the board can not be erased clean and erased traces are left blurrily.

Summary of the Invention

It is, therefore, an object of the present invention to provide a cleaning board which has a cleaning means for washing a surface of a

board member with washing liquid provided from an washing liquid supply means, so that the chalk dust does not blow in the air at all.

Another object of the present invention is to provide a cleaning board which has an use side and a reserve side integrally in the board member so that the reserve side washed by the cleaning means is always standing by ready to use by an user's switching operation.

Further another object of the present invention is to provide a cleaning board which since the cleaning means is detachably mounted to the board member, may contact an eraser of the cleaning means to the board member only in case of an washing operation, and in case of none use, may separate the cleaning means from the board member, thus preventing chalk dust sticking the eraser from sticking to the board member, and keeping well and conventionally changing components of the cleaning means. Still further another object of the present invention is a cleaning board which has a filtering means in an washing liquid supply means for providing washing liquid to the eraser, so that the used washing liquid can be filtered to can be continuously reused as clean washing liquid in cycle, and does not need additional water supply/discharge system.

Brief Description of the Drawings

The present invention will become apparent upon reading to following detailed description of exemplary embodiments and upon reference to the accompanying drawings, in which:

Fig. 1 to Fig. 14 are views showing a first embodiment of the present invention,

Fig. 1 is a front view showing a tank mounted at outside of a board frame;

Fig. 2 is a planar sectional view showing a principal operation of a board assembly according to the present invention;

Fig. 3 is a view showing essential parts of a board member to have an endless type;

Figs. 4a and 4b are schematical views showing a first operation part of the board assembly according to the present invention;

Fig. 5 is a planar sectional view showing an inner construction of the present invention;

Fig. 6 is a front view showing essential parts of an operation part of Fig. 4;

Fig. 7 is a front sectional view showing essential parts of a cleaning means according to an embodiment omitting an ascent and descent means in Fig. 6;

Fig. 8 is a front view showing essential parts of another operation part of Fig. 4;

Fig. 9 is a perspective view showing an eraser of the cleaning means of the present invention;

Fig. 10 is a distribution view of an washing liquid supply means of the present invention;

Fig. 11a to 11c are front sectional views showing various type of filtering means of the washing liquid supply means of the present invention;

Fig. 12 is a front view showing a built-in tank within a lower frame of the board frame;

Fig. 13 is a front view, with portions broken away for clarity, of the cleaning means including a compressing means according to another embodiment of the present invention;

Fig. 14 is a schematical view showing a plan state of Fig. 13;

Fig. 15a to Fig. 16 are views showing a second embodiment of the present invention,

Fig. 15a is a planar sectional view of the operation part in which a board frame is divided two part to can open and shut;

Fig. 15b is a plan view showing an open state of the board frame according to Fig. 13a; and

Fig. 16 is a front sectional view according to Fig. 15a.

Detailed Description of the Invention

Fig. 1 is a front view showing a schematic external appearance of a cleaning board according to the present invention.

In Fig. 1, the cleaning board shows a board frame 10 having an opening 11 through which a board is exposed, a switch 5 for shorting electric signals of a controller 70 (which will be described later). The switch 5 is located at a lower part of the board frame 10. The board frame 10 has shield plates 12 detachably mounted on both sides of the frame 10. The shield plates 12 is provided for preserving and protecting a cleaning means 100, a washing liquid supply means 200, and the controller 70 which are arranged at rear parts of the shield plates 12.

The cleaning board may be fixed to a wall in buildings as shown in Fig. 1 or may be made as a movable board.

The unexplained reference number 7 is a drawer.

Fig. 2 shows a construction and an operation principal of the board assembly 20 located in the board frame 10. The board assembly 20 includes a first roller 22 rotatably mounted at one side in the board frame 10, an operation motor 24 providing power necessary to rotate the first roller 22, a second roller 23 rotatably mounted at the other side in the board frame 10

at prescribed interval from the first roller 22 and having the same size in diameter as the first roller 22, and an endless-shaped board member 21 wrapping tight around outsides of the first and the second rollers 22 and 23 and rotatably driven in long oval shape.

The reference number 27 is a board supporting member. The board supporting member 27 can prevent the board member 21 of a thin steel plate from shaking or being pushed backward, during rotation of the board member 21 or when an user writes letters on a surface of the board member 21. The supporting member 27 may be made of only one boards or a plurality of find idle rollers being rotated together with the board member 21. The interval between the first roller 22 and the second roller 23 can be regulated by a tension means 25 mounted on the second roller 23 to restrict the second roller 23. According to the quality of the material of the board member 21, the board member 21 may be a long oval endless shape without connection parts or having one or two connection parts. That is, for example, in case that the board member 21 is a white sheet made of synthetic resin material, the board member 21 may be the long oval endless shape without connection parts owing to being made into a flexible tube type, but as shown in Fig. 3, in case that the board member 21 is a sheet made of thin steel material, the board member 21 need to have connection parts to be made into the long oval endless shape.

Fig. 3 is an extended view showing a connection means of the connection parts of the board member 21.

Referring to Fig. 3, the connection means of the connection parts has a plurality of concave holes 21c located along side of an end of a board, and a plurality of protrusions 21d located along side of an end of other board at corresponding position of the concave holes 21c and having coordinate shape

of the concave holes 21c, such that the concave holes 21c and the protrusions 21d are coupled each other by way of a buckle.

If the board member 21 is made of one sheet material, the board member 21 has only one connection part, but if the board member 21 is made of two different sheet materials, for example, one is white board and the other is blackboard according to its use, the board member 21 has two connection parts as shown in Fig. 3.

The board member 21 has an use side 21a which is exposed through the opening 11 of the board frame 10 and is used by an user, and a reserve side 21b which is integrated with the use side 21a and is temporarily standing by ready to use at the back of the use side 21a.

If the user handles the switch 5 located at the lower part of the board frame 10, the use side 21a and the reserve side 21b can interchange their mutual locations. The use side 21a used by the user is washed by a cleaning means 100 which will be described later, and is moved toward a location of the reserve side 21b to become a reserve side, and the temporarily waiting reserve side 21b is moved toward a location of the use side 21a to become an use side. Therefore, the use side 21a and the reserve side 21b change parts each other.

Referring back to Fig. 2, the cleaning board according to the present invention selects a position sensing means 30, so that the use side and the reserve side of the board member 21 can exactly take their positions. The position sensing means 30 includes a sensor 31 located at a lower end part of the inside of the board frame 10, and two sensed members 32 mounted at two positions halving the board member 21 and locating at corresponding height of the sensor 31, and thus the sensor 31 produces electric signals when one of the sensed members 32 meets with the sensor 31. During

movement of the board member 21, the sensor 31 of the board frame 10 does not produce the electric signals due to sensing only plane of the board member 21 in which the sensed members 32 are not mounted, but when sensing one of the sensed members 32 of the board member 21, provides the electric signals into the controller 70 to temporarily halt the movement of the board member 21.

When the user turns on the switch 5 of the controller 70 after writing letters on the use side 21a of the board member 21, the first motor 24 is operated. The first motor 24 is continuously operated until the position sensing means 30 is operated. When the position sensing means 30 is operated, the position sensing means 30 provides the electric signals to the controller 70, and control signals are provided from the controller 70 to the first motor 24 in order to intercept the power of the first motor 24.

Therefore, the operation of the board assembly 20 is stopped, the use side 21a used by the user is washed by the cleaning means 100 and then moved toward the position of the reserve side. When the use side 21a takes the exact position of the reserve side, the movement of the board member 21 is stopped. The position sensing means 30 may adopt a light sensor, a microswitch, a limit switch and the likes besides the proximity sensor of an embodiment according to the present invention.

Fig. 4a and 4b show a position guiding means 40 of the board member 21.

The position guiding means 40 allows the board member 21 to be regularly rotated at proper positions on the first and second rollers 22 and 23 without leaning toward one direction. The position guiding means 40 includes two sprockets 41 fixed on upper parts of the first roller 22 and the second roller 23 respectively, and engaging members 42 for engaging with

the sprockets 41 at a corresponding location of the sprockets 41 and mounted on the board member 21.

The engaging members 42 may either form directly guiding grooves on the board member 21 as shown in Fig. 4a, or have a composition that a bracket as an intermediate is mounted on the board member 21 and a roller chain assembly mounted on the bracket.

If the board member 21 is made of steel material, it is possible that synthetic rubber or rubber magnet sheet is covered on the outer surface of the first roller 22, so that the board member 21 does not be slipped, is close to the first roller 22 and rotates by magnetic force.

Fig. 4, Fig. 5 and Fig. 7 show an ascent and descent means 80 for adjusting the height of the board body. The ascent and descent means 80 includes a casing 81 fixed to an wall in buildings, a motor 84 for producing power necessary for ascending and descending the board body, a worm 87 and a worm gear 88 for transmitting the power provided from the motor 84 to a lateral shaft 89, a rack gear shaft 85 being vertically mounted in the frame 10, and a pinion gear 86 engaging with the rack gear shaft 85 and being mounted in integration with the lateral shaft 89. When the power produced from the motor 84 is provided through the worm gear 88 and the worm 87 to the pinion gear 86, the lateral shaft 89 and the pinion gear 86 are rotated to drag up and down the rack gear shaft 85 fixed to the board frame 10, so that the board body may be moved up and down.

In this embodiment of the present invention, to prevent the motor 84 from interfering with the peripheral units in the board frame 10 and to minimize a thickness of the board frame 10, the motor 84 is located vertically and the power transmission is changed from vertical direction to horizontal direction by adopting the worm gear 88 and the worm 87.

However, it is also possible to mount the motor 84 horizontally and omit the worm gear 88 and the worm 87.

By the ascent and descent means according to the present invention, the height of the board body may be freely adjusted to fit with the user's height, and also students which are away from the board body can easily see the letters written on the board by means of raising the board body.

Fig. 6 to Fig. 9 are extended views of an operation parts of the cleaning means 100. The cleaning means 100 is simultaneously operated with the board assembly 20. The cleaning means 100 includes an eraser operating means 150, an eraser assembly 110 operated by the eraser operating means 150, and a movement means 160 for separating/approaching the eraser assembly 110 from/to a rounding part of the board member 21 circumscribed the first roller 22.

The eraser operating means 150 includes an eraser operating motor 151, a speed reducer 152 connected to the eraser operating motor 151, a gear 153 mounted on an identical axis with the speed reducer 151, and a pinion gear 114 engaging with the gear 153.

In Fig. 7, the eraser assembly 110 includes an eraser 111 and a supporting bar 112 for supporting the eraser 111 and having an inner pipe 112a and an outer pipe 112b. An upper eccentric shaft 113 of an upper end part of the eraser assembly 110 on which a bearing B3 is interposed is connected with the pinion gear 114, and the pinion gear 114 is integrated with the outer pipe 112b to restrict the outer pipe 112b. However, the pinion gear 114 is not absolutely affected by an eccentric part of the eccentric shaft 113. At a lower eccentric shaft 115 of a lower end part of the eraser assembly 110, a bearing B1 is interposed to restrict the inner pipe 112a without interfering with the outer pipe 112b. The pinion gear 116 is

integrated with an eccentric part of the lower eccentric shaft 115.

When the eraser operating motor 151 is operated, the power is provided through the gear 153 and the pinion gear 114 to the outer pipe 112b and the eraser 111 which is closely mounted on the outer surface of the outer pipe 112b is operated in correspondence with the outer pipe 112b together. At this time, the power is not provided to the lower eccentric axis 115 because of being separated from the outer pipe 112b so that the movement means 160 is not operated during the operation of the eraser assembly 110. The eraser operating means 150 including the eraser operating motor 151, the speed reducer 152 and the gear 153 is fixed to a supporting bracket 154. The supporting bracket 154 is moved together with the eraser 111 which is moved toward the left side or the right side by the movement means 160 which will be described later.

As shown in Fig. 5, in order to guide a pin 154a formed integrally on the supporting bracket 154, guide hole 154b is formed at a prescribed part of the upper plate 170 of the board frame 10. Therefore, when the eraser 111 is moved toward right and left by operation of the movement means 160, the supporting bracket 154 may be also moved the corresponding range of the movement of the eraser 111 toward the same direction of the eraser 111.

The movement means 160 of the cleaning means 100 includes a movement motor 161, a speed reducer 162 connected to the movement motor 161, a gear 163 mounted on the identical axis of the speed reducer 162, and a pinion gear 116 engaging with the gear 163 mounted axially at the lower part of the lower eccentric shaft 115 formed integrally with the inner pipe 112a of the eraser assembly 110.

The lower part of the eraser assembly 110 is supported by the lower eccentric shaft 115. When the power from the motor 161 is provided

through the gear 163 and the pinion gear 116 to the lower eccentric shaft 115 after finishing the erasing operation by the eraser assembly 110, the lower eccentric shaft 115 retreats toward left of the Fig. 7 to a prescribed distance, since the pinion gear 116 is fixed at the eccentric part of the lower eccentric shaft 115. As the upper part of the inner pipe 112a is engaged to the upper eccentric shaft 113 in a coaxial line with the lower eccentric shaft 115, the eraser operating means 150 coupled with the upper eccentric axis 113 also retreats from the board member 21 to the prescribed distance along the guide hole 154b.

Contrary to the above, when the eraser assembly 110 performs the erasing operation with the eraser assembly 110 close to the board member 21, the movement motor 161 reverses as much as the retreated distance so as to move toward the board member 21 and to be close to the board member 21. Namely, when the eraser assembly 110 performs the erasing operation by the movement means 160 which allows the eraser assembly 110 to move left and right, the eraser assembly 110 is close to the board member 21 and when not performing the erasing operation, the eraser assembly 110 is separated from the board member 21, and thus it may prevent the wet chalk powders from sticking and being dried on the surface of the board, and lengthen life of the board. Also, in case of changing the worn eraser into a new eraser, the movement means 160 allows the eraser 111 to leave a prescribed space from the board member 21, whereby the worn eraser 111 can be easily separated.

Indifferent to the embodiment according to the present invention, it is also possible that the movement means 160 has electro magnets and permanent magnets correspondingly located on the eraser assembly 110 and the board member 21 respectively, and a reed switch inducing turn at their

contact point. It is preferable that the eraser assembly 110 is rotated to clockwise direction and the board member 21 is rotated to counterclockwise direction, thus increasing the erasing effect.

Fig. 9 shows a brush of the eraser assembly 110 according to an embodiment of this invention. The eraser of the eraser assembly 110 is of a brush type. The eraser 111 is rolled up the supporting bar 112, and both end parts of the eraser 111 are fixed on the supporting bar 112. The eraser 111 may be made of textiles made of nature fiber or synthetic fiber, or sponge made of synthetic resin besides a brush made of synthetic resin.

For reference, in the embodiment according to the present invention, the number of rotation of the first roller 22 is about 8 r.p.m. and that of the eraser assembly 110 is about 107 r.p.m. As the number of rotation of the eraser assembly 110 is more than that of the first roller 22, an erasing effect is maximized and the polluted washing liquid in the eraser 111 can be automatically dehydrated by the centrifugal force of the eraser assembly 110.

In Fig. 5, the reference number 120 is an wiper member for removing the water remaining on the surface of the board member 21 finally, and in Fig. 7, the reference numbers B2 and B4 are bearings for supporting an eccentric shaft of the eraser assembly 110. The wiper member 120 is in double rows to improve the removal effect of the polluted washing liquid. In normal environmental condition, even alone the wiper member 120 can dry the board member 21 well, but in case that the drying can not be performed normally due to humidity too high or temperature too low, a drying means 130 shown in Fig. 2 may be optionally operated by the user in order to dry the washed board member 21 rapidly.

The washing liquid supply means 100 according to the present invention is explained in more detail as follows.

Fig. 10 shows a distribution view of the washing liquid supply means 200. The washing liquid supply means 200 includes a washing liquid feed pump 203, a suction pipe 202 being connected to a suction part of a lower part of the feed pump 203, a discharge pipe 204 connected to a discharge part of an upper part of the feed pump 203 in order to pump up washing liquid, a sprinkling pipe 205 connected to an end part of the discharge pipe 204, located parallel with the eraser assembly 110 in an axial direction of the eraser assembly 110, and having a diameter which is smaller than that of the discharge pipe 204, and a tank 201 for holding washing liquid and mounted at one side of the lower part of the board frame 10.

The unexplained reference number 230 is a strainer mounted at an end of the suction pipe 202. The sprinkling pipe 205 has a plurality of holes 205a facing the eraser 111 at prescribed intervals.

According to the law of $Q(\text{Quantity of flow}) = A(\text{Area}) \times V(\text{Velocity})$, if the area of the sprinkling pipe 205 is reduced, the sprinkling velocity of the washing liquid sprinkled through the holes 205a becomes quicker to decrease quantity of liquid which flows off through the end of the sprinkling pipe 205 and to regularly providing the washing liquid to the eraser 111.

The tank 201 has a filtering means 210 for gathering and filtering the washing liquid discharged from the sprinkling pipe 205 and the washing liquid fallen from the eraser 111. The filtering means is detachably mounted in the tank 201.

The filtering means 210 has a wiremesh 211 which traverses in the tank 201, and a filter 212 which is put on the wiremesh 211.

Therefore, the washing liquid flowed off through the sprinkling pipe 205 and the used washing liquid fallen down from the eraser 111 pass through the filter 212 to filter, so that only clean washing liquid is held in

the tank 201. The filter 212 can be conveniently clean to can be reused, as being detachably mounted in the tank 200. It is not necessary to install an additional water supply/drain system, as the washing liquid can be continuously in cycle many times.

According to the present invention, the washing liquid can be used for a long time by replenishing only as much as the deficit amount from loss, and the filter 212 can be conveniently changed new one or cleaned with clean water to may be reused. The washing liquid may be of tap water, distilled water, surface active water, or the likes.

Fig. 11a to Fig. 11c show various types of the filtering means 210.

Fig. 11a shows a construction that a cylindrical type of filter 212 having a hollow part is connected to a collecting pipe 206 containing the suction pipe 202 and the sprinkling pipe 205. The opening of the suction pipe 202 in the tank 201 is exposed through the filter 212 in order to suck the clean washing liquid 159. The sprinkling pipe 205 is ended in the hollow part in the filter 212 so that the washing liquid which remains after being provided to the eraser 111 is collected in the hollow part of the filter 212 and filtered through the filter 212, and the used washing liquid is collected in the hollow part of the filter 212 through the collecting pipe 206 to can be filtered.

Fig. 11b show a filtering means in which a filter 212 is detachably mounted across the tank 201, the collection pipe 206 for inflow of the used washing liquid is put under the filter 212 in the tank 201, and the suction pipe 202 for sucking the clean washing liquid 220 is put on the upper part of the filter 212.

By means of dividing the tank 201 by the filter 212, pollutant in the used washing liquid which is collected in the lower part of the tank 201 by

the collecting pipe 206 is deposited at the bottom of the tank 201 due to its weight and only clean washing liquid which is filtered by the filter 212 and passes through the filter 212 can be provided to the eraser 111 through the suction pipe 202.

Fig. 11c shows a filtering means in the tank 201 having a vertical division bar 231 for dividing the tank 201 into two parts. One part of the tank 201 has a construction as Fig. 11B and the clean washing liquid filtered by the filter 212 flows into the other part of the tank 201 through a hole 232 which forms in the vertical division bar 231. The suction pipe 202 is put in the tank 201 holding the clean washing liquid.

In the embodiment according to the present invention, the tank 201 is detachably mounted at the lower part of the board frame 10 as shown in Fig. 1. However, it is preferable that a lower frame of the board frame 10 in itself may be a built-in tank having a lateral hollow part. For the built-in tank, washing liquid supplying/discharging parts need to pass through the lower frame of the board frame 10. Because the built-in tank has more big capacity, whereby, it can effectively dispose of bubble occurred by collision with the high speed rotating brush.

Fig. 13 and Fig. 14 show the cleaning means 100 having a compressing means 40. If the eraser 111 is of brush as the present invention, it is not necessary to install the compressing means 90 because the brush does not contain the washing liquid well. However, if spongy materials are used as the eraser 111, the compressing means 90 is needed due to its absorptive property. As shown in Fig. 13, the compressing means 90 includes a compressing plates 91 mounted in close to both sides of the eraser 111 made of sponge, a link 92 coupled with the compressing plates 91, and a solenoid 93 connected with an end part of the link 92. If

the controller 70 provides operation signals to the solenoid 93, the solenoid 93 is worked to draw the link 92, so that the compressing plates 91 press both sides of the eraser 111 to remove the polluted liquid from the eraser 111.

Fig. 15a to Fig. 16 show a second embodiment according to the present invention. In the first embodiment, the shield plates 12 are detachably mounted at front part of the board frame 10, but in the second embodiment, the protecting frame 10 is divided into a side frame 18 and a main frame 14 in order to may be opened and shut, turning on an axis 28. Also, in the second embodiment, the power from the motor 24 is consecutively provided through the pinion gear 22a, a middle gear 28a, and the pinion gear 114 mounted integrally with the eraser assembly 110 without interruption, so that the first roller 22 and the eraser assembly 110 can be simultaneously operated by only the motor 20. The middle gear 28a is located between the pinion gear 22a mounted integrally with the first roller 22 and the pinion gear 114 mounted integrally with the eraser assembly 110. Therefore, as shown in Fig. 15a, the pinion gears 22a and 114 are rotated in the identical direction, and the board member 21 and the eraser 111 are crossed each other at a contact surface thereof, thus improving erasing effect.

The middle gear 28a has a bracket 29 which is fixed at the upper part of the main frame 14. The bracket 29 can pivot on the axis 23a of the middle gear 28a. The pinion gear 114 mounted to the upper part of the eraser assembly 110 is pivotally mounted on the side frame 18, and pivots in engagement with the middle gear 28a when the side frame 18 is opened or shut. Therefore, the engagement of the pinion gear 114 and the middle gear 28a is not removed even though the side frame 18 is opened.

In this embodiment, the movement means 160 of the first embodiment is omitted, because the washing operation can be performed by only the eraser assembly 110 and the eraser operating means 150.

In this embodiment, when the side frame 18 is shut, the eraser 111 of the eraser assembly 110 has to have its exact central position to contact with the board member 21 on the first roller 22 appropriately. As described in the first embodiment, the number of tooth of the gears is adjusted well, so that the rotation speed of the board member 21 is slow and that of the eraser assembly 110 is fast in order to improve the erasing effect, and to can have a centrifugal dehydration function of the eraser.

Also, in this embodiment, when the side frame 18 is opened, components of the board assembly 20 and the cleaning means 100 can be easily repaired and changed, keeping the engagement state of each gear.

Those skilled in the art will readily recognize that these and various other modifications and changes may be made to the present invention without strictly following the exemplary application illustrated and described herein and without departing from the true spirit and scope of the present invention, which is set forth in the following claims.



What is claimed is:

1. A cleaning board comprising:

a board assembly having a board frame having an opening, and a board member exposed through the opening; and

a cleaning means having an eraser operating means, an eraser assembly operated by the eraser operating means, and a movement means for separating/approaching the eraser assembly from/to the board member,

the eraser operating means having an eraser operating motor, a speed reducer connected to the eraser operating motor, a gear mounted on an identical axis with the speed reducer, and a pinion gear engaging with the gear,

the eraser assembly having an eraser for erasing letters written on the board member 21 and a supporting bar for supporting the eraser and having an inner pipe and an outer pipe, the eraser contacting closely to the board member, and being slidably crossed with the board member to perform an erasing operation on a surface of the board member, and

the movement means having a movement motor, a speed reducer connected to the movement motor, a gear mounted on the identical axis of the speed reducer, and a pinion gear engaging with the gear,

wherein the cleaning board further comprises an washing liquid supply means for providing washing liquid to the eraser of the eraser assembly to erase letters and chalk particles on a surface of the board member, the washing liquid supply means having an washing liquid feed pump 106, a suction pipe connected to a suction part of a lower part of the feed pump, a discharge pipe connected to a discharge part of an upper part of the feed pump, a sprinkling pipe connected to an end part of the discharge pipe, the



sprinkling pipe being located parallel with the eraser assembly in an axial direction of the eraser assembly and having a diameter which is smaller than that of the discharge pipe, and a tank for holding washing liquid and mounted at one side of the lower part of the board frame,

2. A cleaning board according to claim 1, wherein the board assembly further includes a first roller rotatably mounted at one side in the board frame, an operation motor providing power necessary to rotate the first roller, a second roller rotatably mounted at the other side in the board frame in prescribed interval from the first roller and having the same size in diameter as the first roller, and the board member of the board assembly is shaped into an endless type and wraps tight around outsides of the first and the second rollers.

3. A cleaning board according to claim 1, wherein an wiper member is vertically fixed at rear part of the eraser to wipe the remaining washing liquid on the surface of the board member.

4. A cleaning board according to claim 1, wherein the eraser is of brush.

5. A cleaning board according to claim 1, wherein the tank is a built-in tank being laterally formed in a lower frame of the board frame, and the lower frame of the board frame has a lateral hollow part.

6. A cleaning board according to claim 1, wherein the tank is detachably mounted at outside of the board frame.



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7. A cleaning board according to claim 1, wherein the eraser is of sponge.

8. A cleaning board according to claim 1, wherein a compressing means for compressing the eraser is mounted at both sides of the eraser.