

Design of multimedia teaching blackboard

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Abstract

In view of the shortcomings of the current traditional teaching methods, in order to realize the traditional combination of traditional blackboard teaching and multimedia teaching. We use stc89c52 single-chip microcomputer to control, use gprs network for remote control, can display indoor temperature, date, time, etc., designed a self-erasing multimedia blackboard control device. Teachers can write directly on the ppt courseware projected onto the blackboard, with automatic erasure. The experiment proves that its low cost, environmental protection and pollution-free, in line with the current development trend of innovative classrooms.

Keywords

Gprs; single chip microcomputer; multimedia; blackboard.

1. Introduction

The design of the multimedia teaching blackboard includes the blackboard. The blackboard is not specifically a black board. In the traditional sense, it is a plane that can be repeatedly written in chalk. The board is hard and used for teaching. It is indispensable in the design of multimedia teaching blackboard. A device, but it still has the following drawbacks in actual use.

In the prior art, when the blackboard is used, it can only be used on one side. If the wear is serious, it can only be directly replaced, the use cost is high, and the production material is wasteful, and the area of the blackboard is often not adjustable, and cannot be performed according to actual needs. 2. In the prior art, the height of the blackboard is often difficult to adjust, and there is a certain disadvantage in use, which is inconvenient for people of different heights to use, has low humanization and low practicability.

To this end, we propose a multimedia teaching blackboard design to address the above drawbacks.

2. Design content

The purpose of this design is to provide a design of a multimedia teaching blackboard to solve the problems raised in the above background art.

In order to achieve the above object, the design provides the following technical solution: a multimedia teaching blackboard design, including a blackboard No. 1, a blackboard No. 2, a support frame and an upper sealing board, and the first blackboard and the second blackboard are arranged in the supporting frame. Internally, the support frame has a concave shape structure, and the upper end of the concave shape of the support frame is sealed with an upper sealing plate, and two ends of the upper sealing plate are respectively fixed at two ends of the upper surface of the support frame by fixing screws, and the support frame is The front end surface of the lower end is fixedly welded with a ash blocking groove, and both ends of the lower surface of the support frame are fixedly welded with a support cylinder, and the support cylinder is connected with a movable support rod by a threaded fit, and the bottom end of the movable support rod is fixedly welded There is a posted floor. The first blackboard is provided with a telescopic slot, and the telescopic slot is slidably provided with a second blackboard. The second blackboard is disposed through the side of the first blackboard, and the second blackboard is fixedly welded on one side of the telescopic slot. There is a supporting

leg, and the front and rear surfaces of the second blackboard passing through the side of the first blackboard are movably fitted with a cotton layer, and the cotton layer is fixed on the cleaning board, and the cleaning board is fixedly welded to the side of the first blackboard. The length of the cleaning board is the same as the width of the second blackboard. The upper and lower surfaces of the first blackboard of the telescopic slot running through the end of the first blackboard are fixedly welded with a rotating support column, and the rotating support column has a cylindrical structure. The rotating support column is movably inserted into the rotating support hole on the support frame, and the rotating support hole is disposed through the upper and lower surfaces of the support frame.

The ash blocking groove has a l-shaped plate-like structure, the upper end of the ash blocking groove is open, and a blackboard eraser is placed in the middle of the ash blocking groove.

The floor is distributed in a circular array with six groups, and the bottom surface of the floor is placed on the ground.

The supporting leg has a l-shaped structure, and one end of the supporting leg away from the second blackboard is connected with a guiding stabilizing wheel, and the guiding stabilizing wheel is movably attached to the inner wall of the telescopic groove.

The bottom surface of the first blackboard is provided with a plurality of sets of equidistantly arranged inlay grooves, and the inlaid grooves are inlaid with supporting balls, and the bottom surface of the supporting balls is movably attached to the upper surface of the bottom end of the supporting frame.

The telescopic slot is provided with a chute through the bottom of the end of the first blackboard, and the chute is inclined downward from the inside of the telescopic slot to the outside of the first blackboard.

The second blackboard is fixed away from the end of the first blackboard with a rubber pad, and the rubber pad is attached to the inner wall of the support frame away from the side of the second blackboard.

3. Specific implementation

Referring to FIG. 1 to FIG. 7, the design provides a technical solution: a multimedia teaching blackboard design, including No. 1 blackboard 1, No. 2 blackboard 2, support frame 3 and upper sealing board 4, No. 1 blackboard 1 and two The blackboard 2 is disposed inside the support frame 3, and the support frame 3 has a concave structure. The upper end of the concave shape of the support frame 3 is sealed with an upper sealing plate 4, and both ends of the upper sealing plate 4 are respectively fixed to the support frame 3 by fixing screws 13. The two ends of the upper surface are convenient for disassembly and assembly, and the front side surface of the lower end of the support frame 3 is fixedly welded with the ash blocking groove 5, and both ends of the lower surface of the support frame 3 are fixedly welded with the support cylinder 6, and the support cylinder 6 is threadedly matched. A movable support rod 7 is attached, and the bottom end of the movable support rod 7 is fixedly welded to the floor 8.

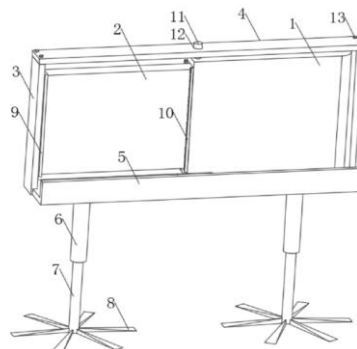


Figure 1 is a schematic view of the design of the present invention

In the figure: No. 1 Blackboard 1, No. 2 Blackboard 2, Support Frame 3, Upper Sealing Plate 4, Ash Stopper 5, Supporting Cartridge 6, Moving Support Rod 7, Folding Floor 8, Rubber Mat 9, Cleaning

Plate 10, Rotating Support The column 11, the rotation support hole 12, the fixing screw 13, the blackboard eraser 14, the cotton layer 15, the expansion groove 16, the guide stabilizing wheel 17, the support ball 18, the inlay groove 19, the support leg 20, and the chute 21.

The inside of the first blackboard 1 is provided with a telescopic slot 16, and the telescopic slot 16 is slidably provided with a second blackboard 2, the second blackboard 2 is disposed through the side of the first blackboard 1, and the second blackboard 2 is on one side of the telescopic slot 16 The support legs 20 are fixedly welded to the ends, and the front and back surfaces of the second blackboard 2 passing through the side of the first blackboard 1 are movably attached with a cotton layer 15 , and the cotton layer 15 is fixed on the cleaning board 10 , and the cleaning board 10 is fixedly welded On the side of the blackboard 1, the length of the cleaning board 10 is the same as the width of the second blackboard 2, and the upper and lower surfaces of the first blackboard 1 of the telescopic slot 16 running through the end of the first blackboard 1 are fixedly welded with the rotating support column 11 and rotated. The support column 11 has a cylindrical structure, and the rotation support column 11 is movably inserted into the rotation support hole 12 of the support frame 3, and the rotation support hole 12 is disposed through the upper and lower surfaces of the support frame 3.

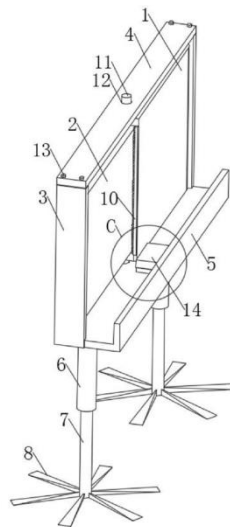


Figure 2 is a schematic view of the structure of the blackboard eraser

The ash blocking groove 5 has a l-shaped plate-like structure, and the upper end of the ash blocking groove 5 is open, and a blackboard eraser 14 is placed in the middle of the ash blocking groove 5. The ash blocking groove 5 has the function of catching chalk ash, which is convenient for cleaning and is cleaned when using the blackboard. High degree.

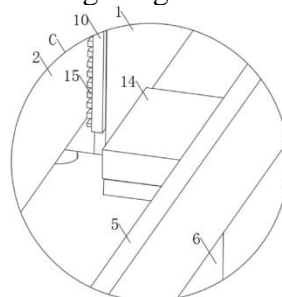


Figure 3 is a schematic view of the structure of Figure 2

The floor 8 is distributed in a circular array with six groups, and the bottom surface of the floor 8 is placed on the ground, and the device can be stably placed on the ground, and the supporting structure is stable.

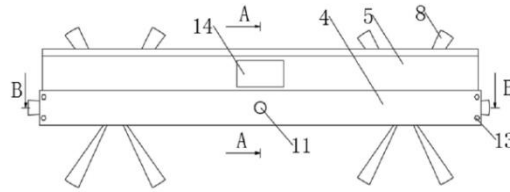


Figure 4 is a plan view of the design

The supporting leg 20 has a l-shaped structure, and one end of the supporting leg 20 away from the second blackboard 2 is movably connected with a guiding stabilizing wheel 17, and the guiding stabilizing wheel 17 is movably fitted on the inner wall of the telescopic groove 16, and the guiding stabilizing wheel 17 is on the second blackboard 2. When the telescopic groove 16 is stretched and contracted, it has a guiding and stabilizing effect, so that the second blackboard 2 is not easy to tilt and shake.

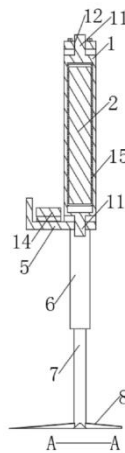


Figure 5 is a cross section of the design of Figure 4

The bottom surface of the first blackboard 1 is provided with a plurality of sets of equidistantly arranged inlaid grooves 19, and the inlaid grooves 19 are inlaid with supporting balls 18, and the bottom surface of the supporting balls 18 is movably fitted to the upper surface of the bottom end of the supporting frame 3, and supports. The ball 18 is inlaid in the setting groove 19, and can support the No. 1 blackboard 1 when rotating the face-changing blackboard, so that the No. 1 blackboard 1 can smoothly rotate the face.

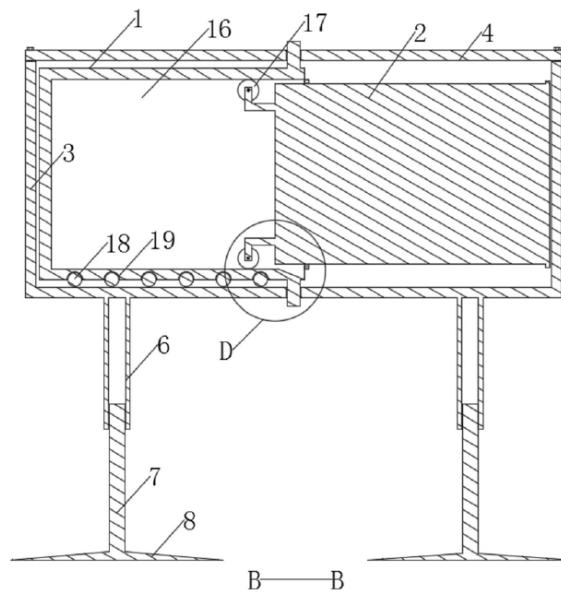


Figure 6 is a cross-sectional view of the design of Figure 4 in Figure 4

The telescopic slot 16 is provided with a chute 21 extending through the bottom of the end of the first blackboard 1. The chute 21 is inclined downward from the inside of the telescopic slot 16 toward the outside of the first blackboard 1. The chute 21 facilitates the cotton layer 15 on the first blackboard 1. When the chalk dust on the second blackboard 2 is erased, the chalk ash is lowered, and it is difficult to accumulate inside the expansion groove 16.

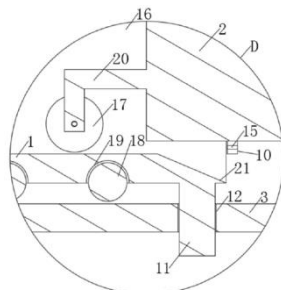


Figure 7 is an enlarged schematic view of the structure of Figure 6 in Figure 6

The second blackboard 2 is fixed away from the one end of the first blackboard 1 with a rubber pad 9. The rubber pad 9 is attached to the inner wall of the support frame 3 away from the side of the second blackboard 2, and the rubber pad 9 avoids the second blackboard 2 in the telescopic. The wear caused by the inner wall of the support frame 3 increases the service life of the device.

Working principle: The design of the multimedia teaching blackboard in this design consists of No. 1 Blackboard 1, No. 2 Blackboard 2, Support Frame 3, Upper Sealing Plate 4, and No. 2 Blackboard 2 can be expanded and contracted in the telescopic slot 16 of the No. 1 Blackboard 1. It is convenient to change the size of the blackboard according to actual needs.

In the design, when the second blackboard 2 is folded in the first blackboard 1, the first blackboard 1 and the second blackboard 2 can be rotated by the rotating support column 11 to facilitate the change of the surface, thereby realizing the purpose of using two sides, and adding. The utilization and service life of the blackboard reduce the cost of use and save.

When the movable support rod 7 is rotated in the design, the movable support rod 7 is lifted and lowered by the thread structure in the support cylinder 6, and the purpose of changing the height of the support frame 3 is achieved, and the purpose of changing the height of the first blackboard No. 1 and the second blackboard 2 is achieved. Easy to use and humanized.

In the design, the second blackboard 2 can be cleaned by the cotton layer 15 on the surface of the cleaning board 10 fixed on the side of the first blackboard 1 when the first blackboard 1 is folded, and the surface of the chalk ash is automatically erased. purpose.

4. Innovation points

Compared with the prior art, the beneficial effects of the design are: the design of the design is reasonable and functional, and has the following advantages:

The design of the multimedia teaching blackboard in this design consists of the first blackboard, the second blackboard, the support frame and the upper sealing board. The second blackboard can be telescoped in the telescopic slot in the first blackboard, which is convenient to change the size of the blackboard according to actual needs. use.

In the design, when the No. 2 blackboard is folded in the No. 1 blackboard, the No. 1 blackboard and the No. 2 blackboard can be rotated by the rotating support column, which facilitates the change of the surface, realizes the purpose of using two sides, and increases the utilization rate of the blackboard. The service life reduces the cost of use and saves.

In the design, when the movable support rod is rotated, the movable support rod will be lifted and lowered by the thread structure in the support cylinder, thereby achieving the purpose of changing the height of the support frame, and achieving the purpose of changing the height of the first blackboard and the second blackboard, which is convenient to use and humanized. high.

In the design, the No. 2 blackboard can be cleaned by the cotton layer on the surface of the cleaning board fixed on the side of the first blackboard when the first blackboard is folded, and the purpose of automatically erasing the chalk ash is achieved.

In the figure: No. 1 Blackboard 1, No. 2 Blackboard 2, Support Frame 3, Upper Sealing Plate 4, Ash Stopper 5, Supporting Cartridge 6, Moving Support Rod 7, Folding Floor 8, Rubber Mat 9, Cleaning Plate 10, Rotating Support The column 11, the rotation support hole 12, the fixing screw 13, the blackboard eraser 14, the cotton layer 15, the expansion groove 16, the guide stabilizing wheel 17, the support ball 18, the inlay groove 19, the support leg 20, and the chute 21.

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