

Design and Implementation of a Computer-based Interactive Teaching Equipment

Yonghui Ma, Zhi Kanmai and Ma Wenning

School of Engineering and Technology Xi'an FanYi University

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Abstract. The research of the device is a computer-based interactive teaching equipment, including a button-bar, a shell, a motor, a circular gear one, an upper cover, a fixed block, an inner box, an outer box and a handle. The button-bar is arranged on the upper end of the upper cover. The fastener is fixed to the outer shell, the outer shell is arranged on the upper end surface of the upper cover, the outer shell and the upper cover are connected by a rotating shaft, the motor is arranged on the inner end of the upper cover, and the circular gear is arranged on the upper cover. The circular gear is fixed at the front end of the motor, and the design realizes that the upper cover is automatically opened, and the upper cover after opening is located at the left and right ends of the lower shell, the fixed block is installed at the lower end of the inner box, and the fixed block is arranged at the inner bottom end of the outer box. The handle is fixed at the right end of the outer box, and the design realizes the purpose of setting up a teaching kit box on the lower shell. The utility model is convenient for use, convenient for operation, quick cleaning, and time saving.

Introduction

The existing computer-based interactive teaching equipment is directly removed from the lid, and there will be cases where the lid is lost after teaching, resulting in damage to the teaching AIDS and waste. The existing computer-based interactive teaching equipment does not have a teaching kit box. As a result, staff members need to take back and forth teaching aids before teaching, waste time and manpower, and the existing computer-based interactive teaching equipment can not be dismantled. When cleaning is required, the interior of the device can not be cleaned, resulting in inconvenient cleaning.

Technical Areas

This research involves a kind of interactive teaching equipment based on computer, which belongs to the field of teaching AIDS.

Content of the Study

The purpose of this project is to provide a computer-based interactive teaching equipment to solve the problems raised in the background technology. The utility model is convenient to use, easy to operate, and quick to clean up. Save time and effort.

In order to achieve the above purpose, the utility model is realized by means of a computer-based interactive teaching equipment, including an automatic open cover mechanism, a subject, a teaching equipment box telescopic mechanism, a detachable mechanism, and a lower shell. The automatic opening mechanism is arranged on the upper end of the lower shell, the automatic opening mechanism is assembled on the upper side of the detachable mechanism, the automatic opening mechanism is fixed on the outer side of the main body, the main body is installed on the upper end of the detachable mechanism, and the detachable mechanism is installed on the inner bottom end of the lower shell body. The teaching box telescopic mechanism is arranged inside the lower shell body, and the teaching box telescopic mechanism is arranged on the rear side of the detachable mechanism, and the automatic open cover mechanism comprises a buckle bar, a spring, a shell, a motor, a circular gear one, a circular gear two and an upper cover. The motor, a circular gear one, a

circular gear two and an upper cover are all equipped with two, and the upper cover is mounted on the upper end of the lower shell, the rotation shaft is arranged on the lower end of the upper cover, and the rotation shaft is mounted on the upper end of the lower shell. The buckle rod is arranged on the right end of the spring, the buckle rod is fixed on the outer shell and the spring is arranged on the inner left wall of the outer shell. The motor is arranged at the inner end of the upper cover, the circular gear is fitted on the upper cover and the circular gear is fixed at the front end of the motor. The circular gear one is connected with the motor through the shaft, the circular gear one is arranged at the outer end of the rotating shaft, the circular gear two is arranged at the outer end of the circular gear, and the circular gear two is engaged with the circular gear one. The circular gear two is arranged inside the rotating shaft, and the teaching box telescopic mechanism comprises an electric cylinder, a fixed block, an inner box, an outer box and a handle, the electric cylinder is fixed to the inner left wall of the lower shell body, and the electric cylinder is arranged on the left end of the outer box. The outer box is arranged at the bottom end of the lower shell body, the inner box is arranged on the outer box, the fixed block is arranged at the lower end of the inner box, the fixed block is arranged at the bottom end of the outer box, and the handle is fixed at the right end of the outer box. The detachable mechanism comprises a supporting plate, a clamp rod, a rotating rod and an electric cylinder. The supporting plate is arranged at the lower end of the main body, and the supporting plate is installed at the upper end of the electric cylinder. The clamping rod and the rotating rod are arranged with two. The clamping rods are respectively installed at the left and right ends of the main body. The clamping rod is arranged on a supporting plate, and the clamping rod is arranged on the upper end of the rotating rod, and the clamping rod and the rotating rod are connected through the rotating shaft. The rotating rod is arranged on the inner bottom end of the lower shell body, and the rotating rod is fixed on the electric cylinder two sides respectively. The rotating rod is arranged at the lower side of the support plate, and the electric cylinder is fixed at the bottom end of the lower shell body. The support plate and the clamp rod are arranged inside the lower shell body.

Further, a sliding wheel is arranged at the left and right ends of the supporting plate, and a sliding groove is processed on the inner left wall and the inner right wall of the lower shell body. The supporting plate is connected with the lower shell through a sliding wheel and a sliding groove. Further, the bottom end of the lower shell body is processed with a branch and the branch is arranged at the outer end of the rotating rod, and the rotating rod and the supporting block are connected by a rotating shaft.

Further, the right end of the lower shell is machined with an opening slot, and the outer box is installed on the opening slot.

Further, the shell, spring and fastener are all arranged with two, and the two shells are symmetrically arranged on the upper end of the upper cover.

Further, both upper ends of the upper cover are provided with a handle and both handles are connected to the upper cover by a screw.

Further, the upper end of the upper cover is machined with a buckle groove, and a buckle rod is arranged on the buckle groove.

The utility model realizes the automatic opening of the upper cover by adding a buckle bar, a spring, a shell, a motor, a circular gear one, a circular gear two and an upper cover. The open upper cover is located at the left and right ends of the lower shell, thus realizing the purpose of not losing the upper cover after the end of the teaching, resulting in the teaching aids not being easily damaged and causing waste. The existing computer-based interactive teaching equipment is solved by directly removing the lid, and the lid will be lost after teaching, causing damage to the teaching AIDS and causing waste.

By adding electric cylinder one, fixed block, inner box, outer box and handle, the design realizes the purpose of setting up a teaching kit box on the lower shell, and then realizes that the staff can take away the utility model and other teaching aids before teaching. Savings in time and manpower have solved the problem of some computer-based interactive teaching equipment without teaching

kit boxes, resulting in staff members 'need to retrieve teaching AIDS and waste time and manpower before teaching.

This project has achieved the loosening and clamping of the main body by adding a support board, a clamp bar, a turnbar, and an electric cylinder. The purpose of carefully cleaning the main body can be removed when it is necessary to clean the main body is realized, which facilitates the cleaning of the main body. It solves the problem that the existing computer-based interactive teaching equipment can not be dismantled, and can not clean the interior of the device whenever it needs to be cleaned, resulting in inconvenient cleaning.

Due to the addition of sliding wheels and sliding slots, the design facilitates the sliding of the support plate. Due to the addition of branches, the design realizes the rotation of the turnpin. Due to the addition of an opening slot, the design realizes the function of the outer box entering and exiting the lower shell., The design is convenient to carry the utility model, because of the addition of buckle slots, the design strengthens the fixed strength, and the utility model is convenient for use, convenient for operation, quick cleaning, and time saving.

This project is further described in detail below in conjunction with the drawings and the specific implementation methods.

Description of the Drawings

In order to provide a clearer description of the embodiment of the utility model or the technical solutions in the existing technology, a brief description of the drawings to be used in the embodiment or the description of the existing technology is given below, and it is evident that, The drawings described below are merely embodiments of the utility model. For ordinary technical personnel in the field, other drawings may be obtained based on the drawings provided without creative effort.

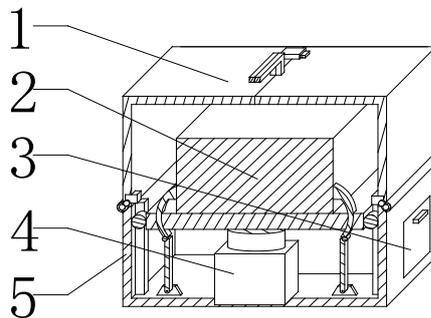


Fig1. Structure diagram of a computer-based interactive teaching device

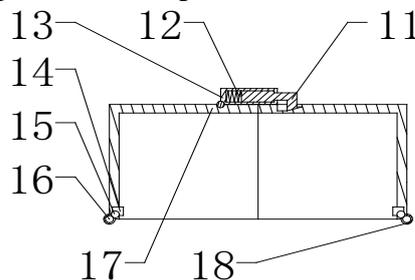


Fig. 2 A schematic diagram of an automatic opening mechanism in computer-based interactive teaching equipment

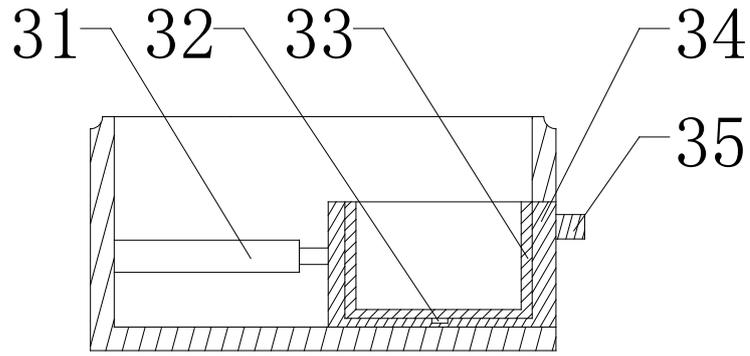


Fig. 3 Positive view of teaching box telescopic mechanism in a computer-based interactive teaching device

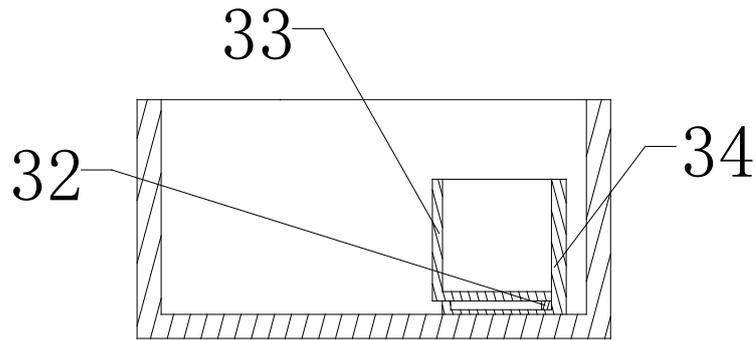


Figure 4 Right view of teaching box telescopic mechanism in a computer-based interactive teaching device

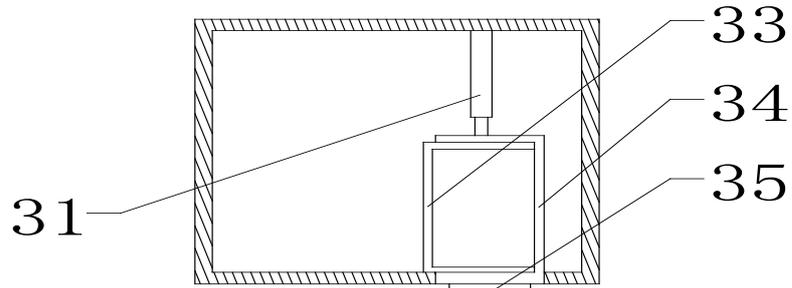


Fig. 5 A top view of the teaching box telescopic mechanism in a computer-based interactive teaching device

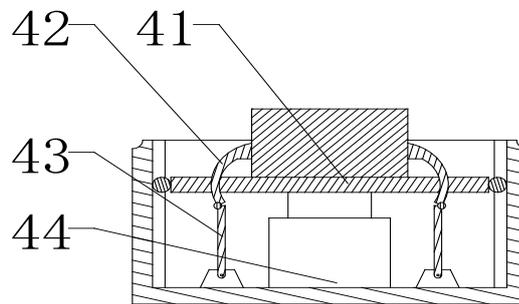


Fig. 6 A schematic diagram of a detachable mechanism in a computer-based interactive teaching device

Graphic indication:

1-Automatic open cover mechanism, 2-main body, 3-teaching box telescopic mechanism, 4-detachable mechanism, 5-lower shell, 11-buckle rod, 12-spring, 13-shell, 14-motor, 15-circular gear 1, 16 -Bevel gear II, 17-upper cover, 31-electric cylinder I, 32-fixed block, 33-inner box, 34-outer box, 35-handle, 41-support plate, 42-clamp, 43-turnbar, 44-electric cylinder Two.

Specific Modalities for Implementation

See Figure 1-6 for a technical solution: a computer-based interactive teaching device consisting of an automatic open cover mechanism 1, a body 2, a teaching device box telescopic mechanism 3, a detachable mechanism 4, and a lower shell 5. The automatic opening mechanism 1 is set on the upper end of the lower shell 5, the automatic opening mechanism 1 is assembled on the upper side of the detachable mechanism 4, the automatic opening mechanism 1 is fixed on the outside of the main body 2, and the main body 2 is installed on the upper end of the detachable mechanism 4. The detachable mechanism 4 is mounted on the inner bottom of the lower shell 5, the teaching box telescopic mechanism 3 is set inside the lower shell 5, and the teaching box telescopic mechanism 3 is assembled on the rear side of the detachable mechanism 4.

The automatic opening mechanism 1 includes a buckle 11, a spring 12, a shell 13, a motor 14, a circular gear 15, a circular gear 216 and an upper cover 17, The motor 14, the circular gear 15, the circular gear 216 and the upper cover 17 are equipped with two, the upper cover 17 is installed on the upper end of the lower shell 5, the rotation shaft 18 is set on the lower end of the upper cover 17, and the rotation shaft 18 is installed on the upper end of the lower shell 5., The upper cover 17 and the lower shell 5 are connected by a rotating shaft, the buckle 11 is set on the upper end of the upper cover 17, the buckle 11 is installed on the right end of the spring 12, the buckle 11 is fixed on the shell 13, and the spring 12 is set on the inner left wall of the shell 13. The shell 13 is mounted on the upper end of the upper cover 17, the shell 13 is connected to the upper cover 17 by a rotating shaft, the motor 14 is set on the inner end of the upper cover 17, and the circular gear 15 is mounted on the upper cover 17, The circular gear is fixed at the front of the motor 14, the circular gear 15 is connected to the motor 14 through the shaft, the circular gear is set at the outer end of the rotating shaft 18, and the circular gear 216 is installed at the outer end of the circular gear 15, The circular gear 216 is meshed with the circular gear 15, and the circular gear 216 is set inside the rotating shaft 18. The design realizes the automatic opening of the upper cover 17, and the open upper cover 17 is located at the lower shell 5 or so ends. In turn, the purpose of covering 17 after the end of teaching is not lost, resulting in teaching aids that are not easily damaged and wasted.

The teaching box telescopic mechanism 3 includes the electric cylinder 31, the fixed block 32, the inner box 33, the outer box 34 and the handle 35, the electric cylinder 31 is fixed on the inner left wall of the lower shell 5, and the electric cylinder 31 is set on the left end of the outer box 34. Outer Box 34 is set to the inner bottom of the lower shell 5, inner Box 33 is assembled on the outer box 34, fixed Block 32 is installed on the lower end of the inner box 33, fixed Block 32 is set on the inner bottom of the outer box 34, and handle 35 is fixed on the right end of the outer box 34, The design realizes the purpose of setting up a teaching kit box on the lower shell 5, and then realizes that the staff can take away the utility model and other teaching aids before teaching, saving time and manpower.

The detachable mechanism 4 includes the support plate 41, the clamp rod 42, the switch rod 43 and the electric cylinder 244. The support plate 41 is set at the main body 2 end, the support plate 41 is installed at the upper end of the electric cylinder 244, and the clip rod 42 and the transfer rod 43 are set. There are two, The clamping rod 42 is installed at the left and right ends of the main body 2, the clamping rod 42 is mounted on the support plate 41, the clamping rod 42 is installed on the upper end of the turnpin 43, the clamping rod 42 is connected to the turnpin 43 through the shaft, and the turnpin 43 is set. The bottom of the shell 5, The turning rod 43 is fixed on the left and right sides of the electric cylinder, the turning rod 43 is set on the lower side of the support plate 41, the electric cylinder 244 is fixed on the inner bottom of the lower shell 5, and the support plate 41 and the clamp rod 42 are set inside the lower shell 5., The design realizes the loosening and clamping of the main body 2, and thus realizes the purpose of removing the main body 2 and carefully cleaning it when it is necessary to clean the main body 2, which facilitates the cleaning of the main body 2. Both ends of the support plate 41 are provided with sliding wheels. The internal left wall of the lower shell 5 and the internal right wall are processed with sliding slots. The support plate 41 is connected to the lower shell 5 through the sliding wheel and sliding groove. The lower shell 5 The internal bottom is processed with a branch. The branch is set at the outer end of the rotating rod 43,

the turning rod 43 is connected to the supporting block through the rotating shaft, the lower shell 5 has an opening slot at the right end, and the outer box 34 is installed on the opening slot. The shell 13, the spring 12 and the buckle rod 11 are all set. There are two, The two casings are symmetrically arranged on the upper end of the upper cover 17, the upper end of the two upper covers 17 are provided with a handle, and the two handles are connected to the upper cover 17 through a screw, and the upper end of the upper cover 17 is machined with a buckle slot. And there is a buckle 11 on the buckle slot.

Specific implementation method: When the staff needs to open the upper cover 17, the staff presses the buckle 11 to the left, the buckle 11 moves the squeeze spring 12 to the left, and the buckle 11 moves the left to separate from the buckle, and then the staff rotates the shell 13. The rotation of the outer shell 13 can be separated from the upper cover 17, and then the staff releases the buckle 11. At the same time, the staff starts the motor 14. The motor 14 works to drive the circular gear 15 turns because the circular gear 15 and the circular gear 216 engage the gear. Therefore, when the circular gear rotates one 15 turns to drive the circular gear two 16 turns, the circular gear 216 turns to drive the rotation axis 18 turns, the rotation axis 18 turns to drive the upper cover 17 turns, and when the upper cover 17 turns to the right position, the staff closes the motor 14., The design realizes the automatic opening of the upper cover 17, and the open upper cover 17 is located at either end of the lower shell 5, which in turn achieves the purpose of not losing the upper cover 17 after the teaching is over, resulting in the teaching aids not easily damaged and causing waste.

When the staff needs to teach, the staff starts the electric cylinder 31, the electric cylinder 31 works to drive the outer box 34 to the right, the outer box 34 moves to the right to drive the inner box 33 to the right, and the inner box 32 moves to the right to drive the fixed block 32 to the right. Move, Then the staff closed the electric cylinder 31, while the staff held the inner box 33, and then the staff moved forward to the inner box 33. The inner box 33 moved forward and drove the fixed speed 32 to move forward. When the inner box 33 moved forward to the right position, The staff released the inner box 33, which realized the purpose of setting up a teaching kit box on the lower shell 5, and then realized that the staff would take away the utility model and other teaching aids before teaching, saving time and manpower.

When the staff needs to clean up the main body 2, the staff starts the electric cylinder 244, the electric cylinder 244 works to drive the support plate 41 to move upwards, the support plate 41 moves upwards to drive the main body 2 to move upwards, and the support plate 41 moves upwards to drive the clip rod 42 to rotate. The 42 rotation of the clip rod can be separated from the main body 2, while the 42 rotation of the clip rod drives the 43 rotation of the switch rod, and then the staff closes the electric cylinder 244 to achieve the release of the main body 2 of the clip rod 42, which facilitates the removal of the main body 2. The design realizes the loosening and clamping of the main body 2, and thus realizes the purpose of removing the main body 2 and carefully cleaning it when it is necessary to clean the main body 2, which facilitates the cleaning of the main body 2. The above shows and describes the basic principles and main features of the utility model and the advantages of the utility model. For technical personnel in the field, it is clear that the utility model is not limited to the details of the above demonstration embodiment. And without deviating from the spirit or basic characteristics of the utility model, the utility model can be realized in other concrete forms. Therefore, from all points of view, the embodiment should be considered to be exemplary and non-restrictive, and the scope of the utility model is limited by the accompanying claim and not by the above description, Therefore, all changes falling within the meaning and scope of the equivalent element of the claim are intended to be included in the utility model. Any pictorial markings in the claim should not be regarded as limiting the claim.

In addition, it should be understood that while this manual is described in terms of implementation, not every implementation method contains only a separate technical solution. This description of the manual is only for the sake of clarity. Technicians in this field should take the manual as a whole. The technical solutions in each embodiment can also be appropriately combined to form other means of implementation that are understandable to technical personnel in the field.

Conclusions

This paper first analyzes the existing computer-based interactive teaching equipment at the present stage, puts forward the disadvantages of computer interactive teaching equipment, and secondly, in order to consolidate the stability of computer interactive teaching equipment. This paper provides a research design and realization solution of computer based interactive teaching equipment device. Through the implementation of the research design and implementation of the device, the security of the disadvantage of computer based interactive teaching equipment is solved.

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