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(54) DEVICE FOR TRAINING BREATH OF VOCAL MUSIC FOR UNIVERSITIES.

(57) The invention belongs to the technical field of vocal music equipment, and in particular relates to a device for training breath of vocal music for universities, comprising a training block, wherein a side wall of the training block is fixedly communicated with an air blowing part, the middle part of the bottom end of the training block is fixedly connected with a holding part, a display screen is arranged on the side of the top end of the training block far away from the air blowing part, and a breath training mechanism is arranged inside the training block; the breath training mechanism comprises a main channel arranged in the training block, one end of the main channel is communicated with the blowing part, and the main channel is communicated with a plurality of training mechanisms for breath intensity smoothness.

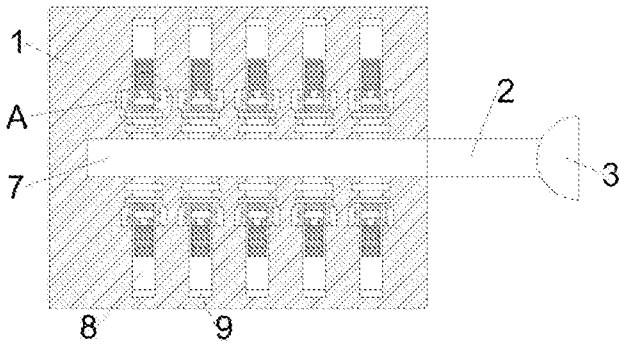

FIG. 3

DESCRIPTION

DEVICE FOR TRAINING BREATH OF VOCAL MUSIC FOR UNIVERSITIES

TECHNICAL FIELD

The invention belongs to the technical field of vocal music equipment, and in particular relates to a device for training breath of vocal music for universities.

BACKGROUND

Breathing is the basis of learning vocal music, and breath is the driving force of playing vocal music; in the prior art, when practicing vocal music breath, the exerciser usually needs to practice without equipment. The existing vocal music breath training equipment in the market has a single function, which can only meet the simple breathing training of the exerciser. For the measurement of breath intensity and the calculation of training times, the existing equipment does not include such functions, which is very unfavorable for the exerciser to summarize and judge the practice effect. Therefore, it is necessary to design a college vocal music breath practice device to solve the above problems.

SUMMARY

The purpose of the present invention is to provide a device for training breath of vocal music for universities, so as to solve the above problems and achieve the purposes of measuring the breath intensity of practitioners in the practice process and calculating the practice times.

In order to achieve the above objectives, the present invention provides the following scheme.

A device for training breath of vocal music for universities comprises a training block, wherein a side wall of the training block is fixedly communicated with an air blowing part, the middle part of the bottom end of the training block is fixedly connected with a holding part, a display screen is arranged on the side of the top end of the training block far away from the air blowing part, and a breath training mechanism is arranged inside the training block;

the breath training mechanism comprises a main channel arranged in the training block, one end of the main channel is communicated with the blowing part, and the main channel is communicated with a plurality of training mechanisms for breath intensity smoothness, the plurality of training mechanisms for breath intensity smoothness are arranged at equal intervals along the axis direction of the main channel, the starting air pressure of the plurality of training mechanisms for breath intensity smoothness increases in turn along the direction of the main channel away from the air blowing part.

Optionally, the training mechanisms for breath intensity smoothness comprises sub-channels symmetrically arranged on both sides of the main channel, one end of each sub-channel close to the main channel is coaxially provided with a slot, a plug is inserted into the slot, and the other end of the sub-channel is fixedly provided with a pressure detection part, the pressure detection part is in signal connection with the display screen; a training part is arranged between the slot and the pressure detection part, and the training part is coaxially arranged with the sub-channel.

Optionally, the training part comprises a first expansion groove and a second expansion groove which are arranged on the side wall of the sub-channel, the first

expansion groove and the second expansion groove are communicated and are coaxially arranged with the sub-channel, the second expansion groove is located at the side of the first expansion groove far from the slot, and the side wall of the second expansion groove far from the first expansion groove is fixedly connected with a sealing part, the sealing part is matched with the first expansion groove, and the side of the sealing part far from the slot is fixedly connected with an inflatable expansion part.

Optionally, the sealing part comprises a plurality of top springs, the ends of the top springs are fixedly connected with the side wall of the second expansion groove and are arranged at equal intervals along the circumferential direction of the second expansion groove, the other ends of the top springs are jointly fixedly connected with sealing blocks, the sealing block is matched with the first expansion groove and slidably arranged in the first expansion groove, and a sealing layer is fixedly connected to one side of the sealing block far away from the top spring, and the sealing layer abuts against the side wall of the first expansion groove.

Optionally, the inflatable expansion part comprises a connecting block, one end of the connecting block is fixedly connected with the sealing block, the other end of the connecting block is fixedly connected with a telescopic sealing pipe, an air inlet channel is arranged in the connecting block, and the telescopic sealing pipe is communicated with the sub-channel through the air inlet channel.

Optionally, the blowing part comprises a connecting pipe, one end of the connecting pipe is fixedly communicated with the main channel, and the other end of the connecting pipe is fixedly communicated with a nose and mouth mask.

Optionally, the pressure detection part comprises a pressure sensor, the pressure sensor is fixedly arranged at the end of the sub-channel, and the pressure sensor is in signal connection with the display screen.

Optionally, the elastic force of the top spring in each pair of sub-channels increases in turn along the direction the main channel far away from the blowing part.

Compared with the prior art, the invention has the following advantages and technical effects.

According to the invention, a user can practice breathing through the arranged training mechanism for breathing intensity smoothness, so that the user can practice breathing intensity and breathing smoothness at the same time; and the arranged blowing part is communicated with the main channel, so that the user's breathing can reach the training mechanism for breathing intensity smoothness through the main channel, and the breathing practice effect is realized. The arranged holding part is convenient for the user to hold the device, the arranged display screen is used for displaying various data in the exercise process, and a plurality of training mechanisms for breath intensity smoothness are set to different starting air pressure intensities, so that the user can practice conveniently according to actual situation.

BRIEF DESCRIPTION OF THE FIGURES

In order to explain the embodiments of the present invention or the technical scheme in the prior art more clearly, the drawings needed in the embodiments will be briefly introduced below. Obviously, the drawings in the following description are only some embodiments of the present invention. For ordinary people in the field, other drawings can be obtained according to these drawings without paying creative labor:

Fig. 1 is a front view of the device of the present invention;

Fig. 2 is a top view of the device of the present invention;

Fig. 3 is a schematic diagram of the internal structure of the device of the present invention;

Fig. 4 is a partial enlarged view of A in fig. 3;

Fig. 5 is a schematic diagram of the cooperation between the plug and the slot of the present invention.

1. training block; 2. connecting pipe; 3. nose and mouth mask; 4. grip; 5. plug; 6. display screen; 7. main channel; 8. sub-channel; 9. pressure sensor; 10. slot; 11. first expansion slot; 12. second expansion slot; 13. sealing layer; 14. sealing block; 15. top spring; 16. connecting block; 17. air inlet channel; 18. telescopic sealing pipe; 19. groove.

DESCRIPTION OF THE INVENTION

In the following, the technical scheme in the embodiment of the invention will be clearly and completely described with reference to the attached drawings. Obviously, the described embodiment is only a part of the embodiment of the invention, but not the whole embodiment. Based on the embodiments in the present invention, all other embodiments obtained by ordinary technicians in the field without creative labor belong to the scope of protection of the present invention.

In order to make the above objects, features and advantages of the present invention more obvious and easy to understand, the present invention will be further described in detail with the attached drawings and specific embodiments.

Referring to figs. 1- 5, the present invention provides a device for training breath of vocal music for universities, comprising a training block 1, wherein a side wall of the training block 1 is fixedly communicated with an air blowing part, the middle part of the bottom end of the training block 1 is fixedly connected with a holding part, a display screen 6 is arranged on the side of the top end of the training block 1 far away from the air blowing part, and a breath training mechanism is arranged inside the training block 1;

the breath training mechanism comprises a main channel 7 arranged in the training block 1, one end of the main channel 7 is communicated with the blowing part, and the main channel 7 is communicated with a plurality of training mechanisms for breath intensity smoothness, the plurality of training mechanisms for breath intensity smoothness are arranged at equal intervals along the axis direction of the main channel 7, the starting air pressure of the plurality of training mechanisms for breath intensity smoothness increases in turn along the direction of the main channel 7 away from the air blowing part.

The arranged training mechanism for breath intensity smoothness can be used for the user to practice breath, and the user can practice breath intensity and breath smoothness at the same time. The arranged blowing part is communicated with the main channel 7, so that the user's breath can reach the training mechanism for breath intensity smoothness through the main channel 7, and the breath training effect can be

realized. The arranged holding part is convenient for the user to hold the device, the arranged display screen 6 is used for displaying various data in the exercise process, and a plurality of training mechanisms for breath intensity smoothness are set to different starting air pressure intensities, so that the user can practice conveniently according to actual situation.

Further, the training mechanisms for breath intensity smoothness comprises sub-channels 8 symmetrically arranged on both sides of the main channel 7, one end of each sub-channel 8 close to the main channel 7 is coaxially provided with a slot 10, a plug 5 is inserted into the slot 10, and the other end of the sub-channel 8 is fixedly provided with a pressure detection part, the pressure detection part is in signal connection with the display screen 6; a training part is arranged between the slot 10 and the pressure detection part, and the training part is coaxially arranged with the sub-channel 8.

Further, the training part comprises a first expansion groove 11 and a second expansion groove 12 which are arranged on the side wall of the sub-channel 8, the first expansion groove 11 and the second expansion groove 12 are communicated and are coaxially arranged with the sub-channel 8, the second expansion groove 12 is located at the side of the first expansion groove 11 far from the slot 10, and the side wall of the second expansion groove 12 far from the first expansion groove 11 is fixedly connected with a sealing part, the sealing part is matched with the first expansion groove 11, and the side of the sealing part far from the slot 10 is fixedly connected with an inflatable expansion part.

Further, the sealing part comprises a plurality of top springs 15, the ends of the top springs 15 are fixedly connected with the side wall of the second expansion groove 12 and are arranged at equal intervals along the circumferential direction of the second expansion groove 12, the other ends of the top springs 15 are jointly fixedly connected with sealing blocks 14, the sealing block 14 is matched with the first expansion groove 11 and slidably arranged in the first expansion groove 11, and a sealing layer 13 is fixedly connected to one side of the sealing block 14 far away from the top spring 15, and the sealing layer 13 abuts against the side wall of the first expansion groove 11.

Further, the inflatable expansion part comprises a connecting block 16, one end of the connecting block 16 is fixedly connected with the sealing block 14, the other end of the connecting block 16 is fixedly connected with a telescopic sealing pipe 18, an air inlet channel 17 is arranged in the connecting block 16, and the telescopic sealing pipe 18 is communicated with the sub-channel 8 through the air inlet channel 17.

Further, the blowing part comprises a connecting pipe 2, one end of the connecting pipe 2 is fixedly communicated with the main channel 7, and the other end of the connecting pipe 2 is fixedly communicated with a nose and mouth mask 3.

Further, the grip part comprises a grip 4, the top end of the grip 4 is fixedly connected with the bottom end of the training block 1, a side of the grip 4 far away from the nose and mouth mask 3 is provided with a plurality of grooves 19, and the grooves 19 are arranged at equal intervals.

Further, the pressure detection part comprises a pressure sensor 9, the pressure sensor 9 is fixedly arranged at the end of the sub-channel 8, and the pressure sensor 9 is in signal connection with the display screen 6.

A signal processing device is arranged between the pressure sensor 9 and the display screen 6, and the signal processing device converts the pressure signal of the pressure sensor 9 into a specific numerical value and transmits it to the display screen 6, which is the prior art and will not be described in detail.

Further, the elastic force of the top spring 15 in each pair of sub-channels 8 increases in turn along the direction the main channel 7 far away from the blowing part.

The working process of the invention is as follows.

When a user exercises, the user first determines which pair of sub-channels 8 to exercise with according to breath intensity, then seals the other sub-channels 8 with the plug 5, and then blows them through the nose and mouth mask 3 to make the gas pressure do work to compress the top spring 15. Then the gas enters the telescopic sealing tube 18 to expand, and finally contacts the pressure sensor 9, and the pressure sensor 9 transmits the pressure change information to the display screen 6, so that the user can judge contact situation according to the data displayed on the display screen 6.

In the description of the present invention, it should be understood that the terms "vertical", "horizontal", "up", "down", "front", "back", "left", "right", "vertical", "horizontal", "top", "bottom", "inside", "outside", and other indications of orientation or positional relationships are based on the orientation or positional relationships shown in the accompanying drawings, solely for the convenience of describing the present invention, Rather than indicating or implying that the device or component referred to must have a specific orientation, be constructed and operated in a specific orientation, therefore it cannot be understood as a limitation of the present invention.

The above-mentioned embodiments only describe the preferred mode of the invention, and do not limit the scope of the invention. Under the premise of not departing from the design spirit of the invention, various modifications and improvements made by ordinary technicians in the field to the technical scheme of the invention shall fall within the protection scope determined by the claims of the invention.

CLAIMS

1. A device for training breath of vocal music for universities, comprising a training block (1), wherein a side wall of the training block (1) is fixedly communicated with an air blowing part, the middle part of the bottom end of the training block (1) is fixedly connected with a holding part, a display screen (6) is arranged on the side of the top end of the training block (1) far away from the air blowing part, and a breath training mechanism is arranged inside the training block (1);

the breath training mechanism comprises a main channel (7) arranged in the training block (1), one end of the main channel (7) is communicated with the air blowing part, the main channel (7) is communicated with a plurality of training mechanisms for breath intensity smoothness, the plurality of training mechanisms for breath intensity smoothness are arranged at equal intervals along the axis direction of the main channel (7); the starting air pressure of the plurality of training mechanisms for breath intensity smoothness increases in turn along the direction of the main channel (7) away from the air blowing part.

2. The device for training breath of vocal music for universities according to claim 1, wherein the training mechanisms for breath intensity smoothness comprises sub-channels (8) symmetrically arranged on both sides of the main channel (7), one end of each sub-channel (8) close to the main channel (7) is coaxially provided with a slot (10), a plug (5) is inserted into the slot (10), the other end of the sub-channel (8) is fixedly provided with a pressure detection part, the pressure detection part is in signal connection with the display screen (6), a training part is arranged between the slot (10) and the pressure detection part, and the training part is coaxially arranged with the sub-channel (8).

3. The device for training breath of vocal music for universities according to claim 2, wherein the training part comprises a first expansion groove (11) and a second expansion groove (12) which are arranged on the side wall of the sub-channel (8), the first expansion groove (11) and the second expansion groove (12) are communicated and are coaxially arranged with the sub-channel (8), the second expansion groove (12) is located at the side of the first expansion groove (11) far from the slot (10), and the side wall of the second expansion groove (12) far from the first expansion groove (11) is fixedly connected with a sealing part, the sealing part is matched with the first expansion groove (11), and the side of the sealing part far from the slot (10) is fixedly connected with an inflatable expansion part.

4. The device for training breath of vocal music for universities according to claim 3, wherein the sealing part comprises a plurality of top springs (15), the ends of the top springs (15) are fixedly connected with the side wall of the second expansion groove (12) and are arranged at equal intervals along the circumferential direction of the second expansion groove (12), the other ends of the top springs (15) are jointly fixedly connected with sealing blocks (14), the sealing block (14) is matched with the first expansion groove (11) and slidably arranged in the first expansion groove (11), and a sealing layer (13) is fixedly connected to one side of the sealing block (14) far away from the top spring (15), and the sealing layer (13) abuts against the side wall of the first expansion groove (11).

5. The device for training breath of vocal music for universities according to claim 4, wherein the inflatable expansion part comprises a connecting block (16), one end of the connecting block (16) is fixedly connected with the sealing block (14), the other end of the connecting block (16) is fixedly connected with a telescopic sealing pipe (18), an air inlet channel (17) is arranged in the connecting block (16), and the telescopic sealing pipe (18) is communicated with the sub-channel (8) through the air inlet channel (17).

6. The device for training breath of vocal music for universities according to claim 1, wherein the air blowing part comprises a connecting pipe (2), one end of the connecting pipe (2) is fixedly communicated with the main channel (7), and the other end of the connecting pipe (2) is fixedly communicated with a nose and mouth mask (3).

7. The device for training breath of vocal music for universities according to claim 6, wherein the grip part comprises a grip (4), the top end of the grip (4) is fixedly connected with the bottom end of the training block (1), a side of the grip (4) far away from the nose and mouth mask (3) is provided with a plurality of grooves (19), and the grooves (19) are arranged at equal intervals.

8. The device for training breath of vocal music for universities according to claim 2, wherein the pressure detection part comprises a pressure sensor (9), the pressure sensor (9) is fixedly arranged at the end of the sub-channel (8), and the pressure sensor (9) is in signal connection with the display screen (6).

9. The device for training breath of vocal music for universities according to claim 4, wherein the elastic force of the top spring (15) in each pair of sub-channels (8) increases in turn along the direction the main channel (7) far away from the air blowing part.

PATENTANSPRÜCHE

1. Eine Vorrichtung zum Trainieren des Atems von Vokalmusik für Universitäten, umfassend einen Trainingsblock (1), wobei eine Seitenwand des Trainingsblocks (1) fest mit einem Luftblasteil verbunden ist, der mittlere Teil des unteren Endes des Trainingsblocks (1) fest mit einem Halteteil verbunden ist, ein Bildschirm (6) auf der Seite des oberen Endes des Trainingsblocks (1) weit entfernt von dem Luftblasteil angeordnet ist und ein Atemtrainingsmechanismus im Inneren des Trainingsblocks (1) angeordnet ist;
der Atemtrainingsmechanismus einen Hauptkanal (7) umfasst, angeordnet in dem Trainingsblock (1), ein Ende des Hauptkanals (7) mit dem Luftblasteil verbunden ist der Hauptkanal (7) mit einer Vielzahl von Trainingsmechanismen für die Glätte der Atemintensität verbunden ist, die Vielzahl von Trainingsmechanismen für die Glätte der Atemintensität in gleichen Abständen entlang der Achsenrichtung des Hauptkanals (7) angeordnet sind; der Ausgangsluftdruck der Vielzahl von Trainingsmechanismen für die Glätte der Atemintensität gleichmäßig entlang der Richtung des Hauptkanals (7) vom Luftblasteil weg der Reihe nach zunimmt.

2. Die Vorrichtung zum Trainieren des Atems von Vokalmusik für Universitäten nach Anspruch 1, wobei die Trainingsmechanismen für die Glätte der Atemintensität Unterkanäle (8) umfassen, angeordnet symmetrisch auf beiden Seiten des Hauptkanals (7), ein Ende jedes Unterkanals (8) nahe dem Hauptkanal (7) koaxial mit einem Schlitz (10) versehen ist, ein Stecker (5) in den Schlitz (10) eingesetzt ist, das andere Ende des Unterkanals (8) fest mit einem Druckerfassungsteil versehen ist, der Druckerfassungsteil in Signalverbindung mit dem Bildschirm (6) steht, ein Trainingsteil zwischen dem Schlitz (10) und dem Druckerfassungsteil angeordnet ist und das Trainingsteil koaxial mit dem Unterkanal (8) angeordnet ist.

3. Die Vorrichtung zum Trainieren des Atems von Vokalmusik für Universitäten nach Anspruch 2, wobei das Trainingsteil eine erste Expansionsrille (11) und eine zweite Expansionsrille (12) umfasst, die an der Seitenwand des Unterkanals (8) angeordnet sind, die erste Expansionsrille (11) und die zweite Expansionsrille (12) in Verbindung stehen und koaxial mit dem Unterkanal (8) angeordnet sind, die zweite Expansionsrille (12) an der Seite der ersten Expansionsrille (11) entfernt von dem Schlitz (10) angeordnet ist, und die Seitenwand der zweiten Expansionsrille (12), entfernt von der ersten Expansionsrille (11), fest mit einem Dichtungsteil verbunden ist, das Dichtungsteil an die erste Expansionsrille (11) angepasst ist und die Seite des Dichtungsteils, entfernt von dem Schlitz (10), fest mit einem aufblasbaren Expansionsteil verbunden ist.

4. Die Vorrichtung zum Trainieren des Atems von Vokalmusik für Universitäten nach Anspruch 3, wobei das Dichtungsteil eine Vielzahl von oberen Federn (15) umfasst, die Enden der oberen Federn (15) fest mit der Seitenwand der zweiten Expansionsrille (12) verbunden sind und in gleichen Abständen entlang der Umfangsrichtung der zweiten Expansionsrille (12) angeordnet sind, die anderen Enden der oberen Federn (15) gemeinsam mit Dichtungsblöcken (14) fest verbunden sind, der Dichtungsblock (14) an die erste Expansionsrille (11) angepasst und in der ersten Expansionsrille (11) verschiebbar angeordnet ist, und eine Dichtungsschicht (13) mit einer von der oberen Feder (15) entfernten Seite des Dichtungsblocks (14) fest verbunden ist, und die Dichtungsschicht (13) an der Seitenwand der ersten Expansionsrille (11) anliegt.

5. Die Vorrichtung zum Trainieren des Atems von Vokalmusik für Universitäten nach Anspruch 4, wobei das aufblasbare Expansionsteil einen Verbindungsblock (16) umfasst, ein Ende des Verbindungsblocks (16) fest mit dem Dichtungsblock (14) verbunden ist, das andere Ende des Verbindungsblocks (16) fest mit einem teleskopischen Dichtungsrohr (18) verbunden ist, ein Lufteinlasskanal (17) in dem Verbindungsblock (16) angeordnet ist und das teleskopische Dichtungsrohr (18) durch den Lufteinlasskanal (17) mit dem Unterkanal (8) verbunden ist.

6. Die Vorrichtung zum Trainieren des Atems von Vokalmusik für Universitäten nach Anspruch 1, wobei das Luftblasteil ein Verbindungsrohr (2) umfasst, ein Ende des Verbindungsrohrs (2) fest mit dem Hauptkanal (7) verbunden ist und das andere Ende des Verbindungsrohrs (2) fest mit einer Nasen- und Mundmaske (3) verbunden ist.

7. Die Vorrichtung zum Trainieren des Atems von Vokalmusik für Universitäten nach Anspruch 6, wobei der Griffteil einen Griff (4) umfasst, das obere Ende des Griffs (4) fest mit dem unteren Ende des Trainingsblocks (1) verbunden ist, eine von der Nasen- und Mundmaske (3) entfernte Seite des Griffs (4) mit einer Vielzahl von Rillen (19) versehen ist und die Rillen (19) in gleichen Abständen angeordnet sind.

8. Die Vorrichtung zum Trainieren des Atems von Vokalmusik für Universitäten nach Anspruch 2, wobei der Druckerfassungsteil einen Drucksensor (9) umfasst, der Drucksensor (9) fest am Ende des Unterkanals (8) angeordnet ist, und der Drucksensor (9) in Signalverbindung mit dem Bildschirm (6) steht.

9. Die Vorrichtung zum Trainieren des Atems von Vokalmusik für Universitäten nach Anspruch 4, wobei die elastische Kraft der oberen Feder (15) in jedem Paar von Unterkanälen (8) abwechselnd entlang der Richtung des Hauptkanals (7) weit weg von dem Luftblasteil zunimmt.

FIGURES

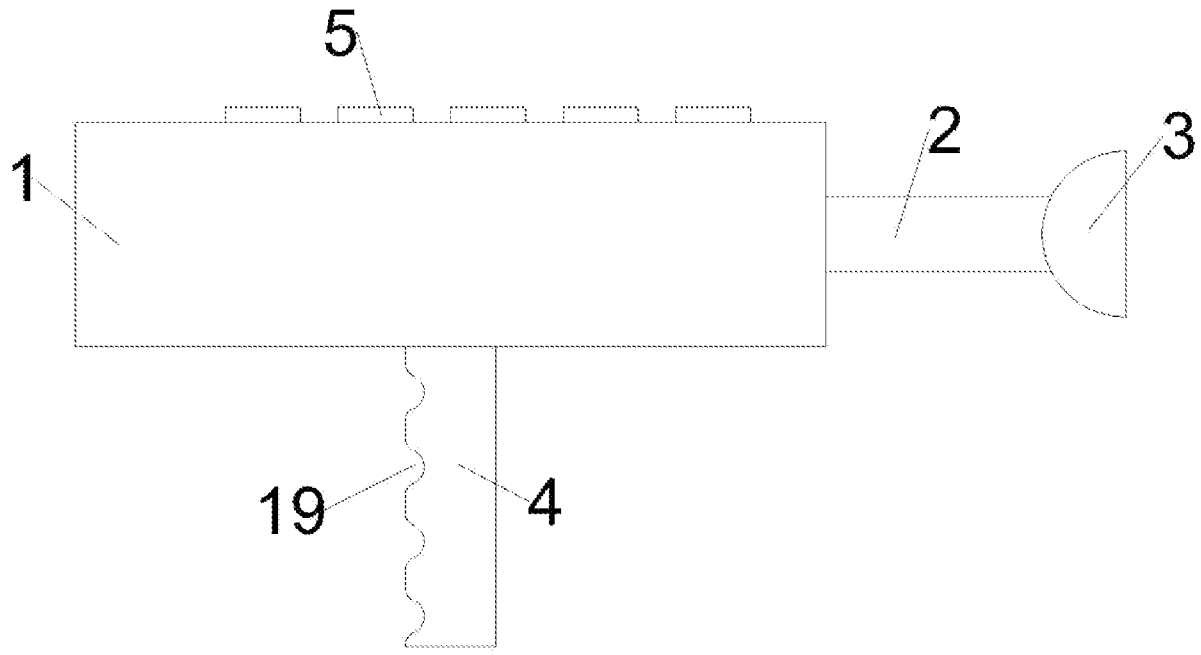

FIG. 1

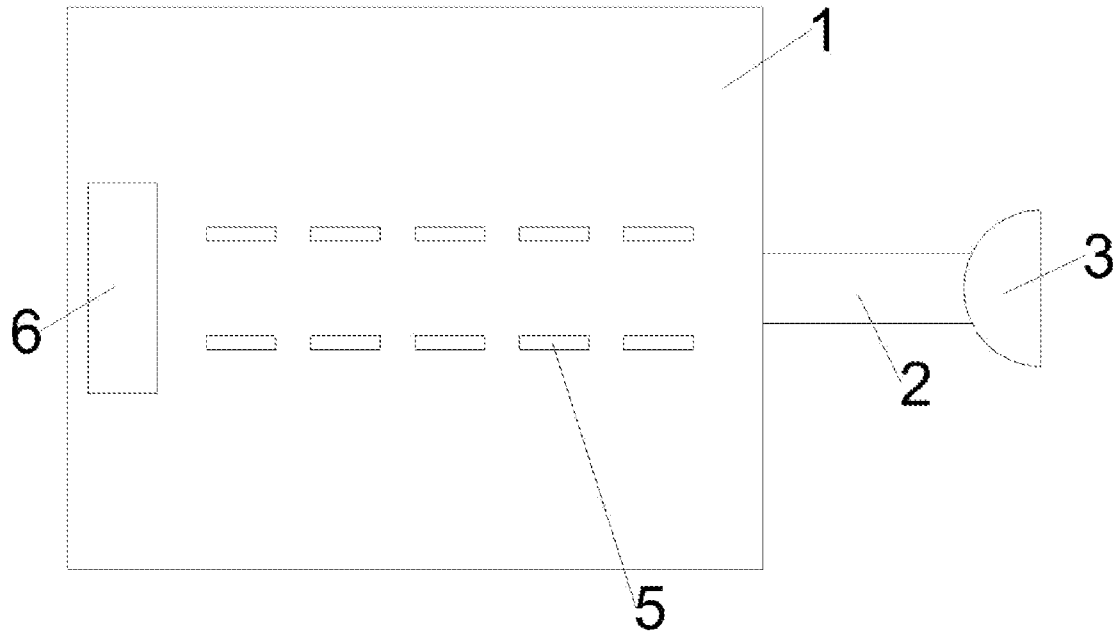

FIG. 2

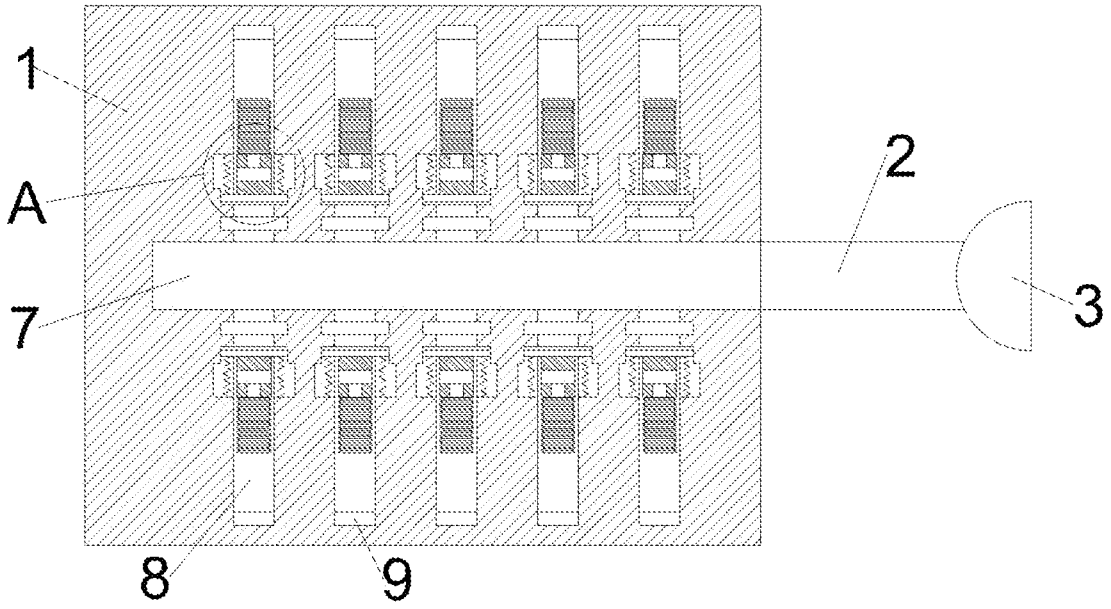

FIG. 3

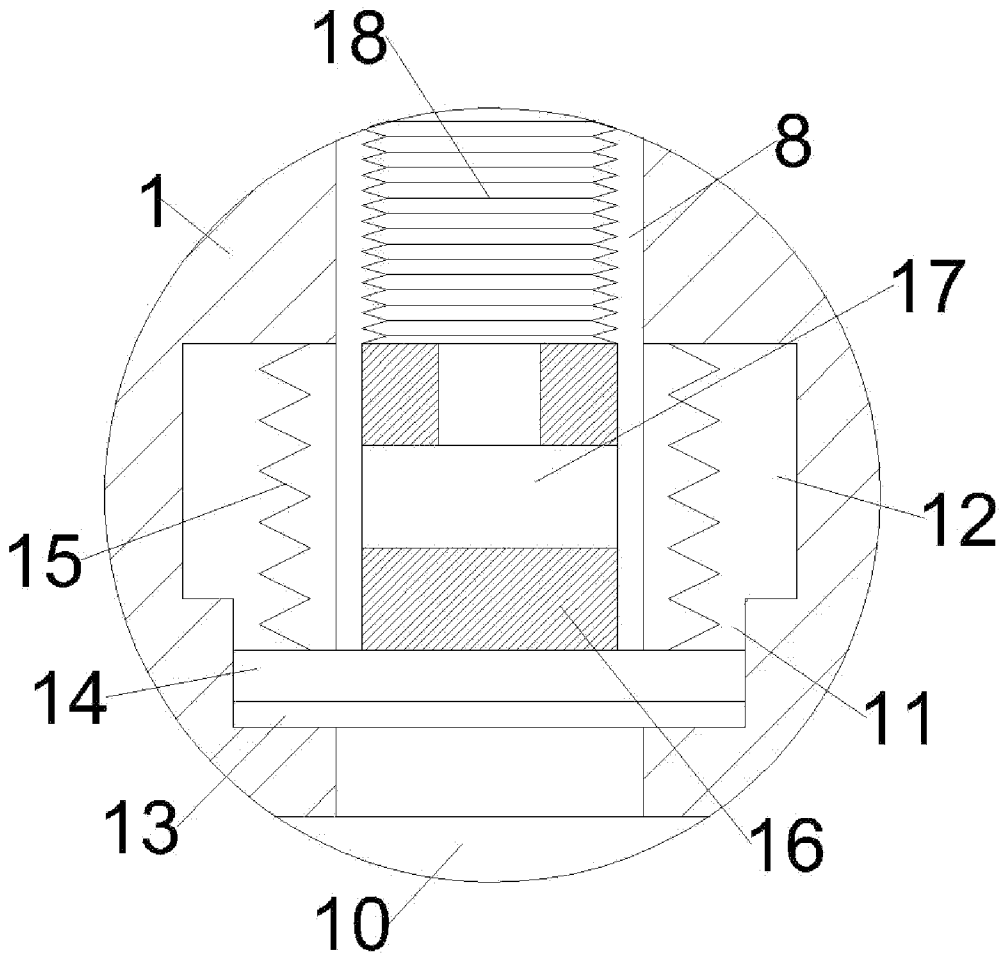

FIG. 4

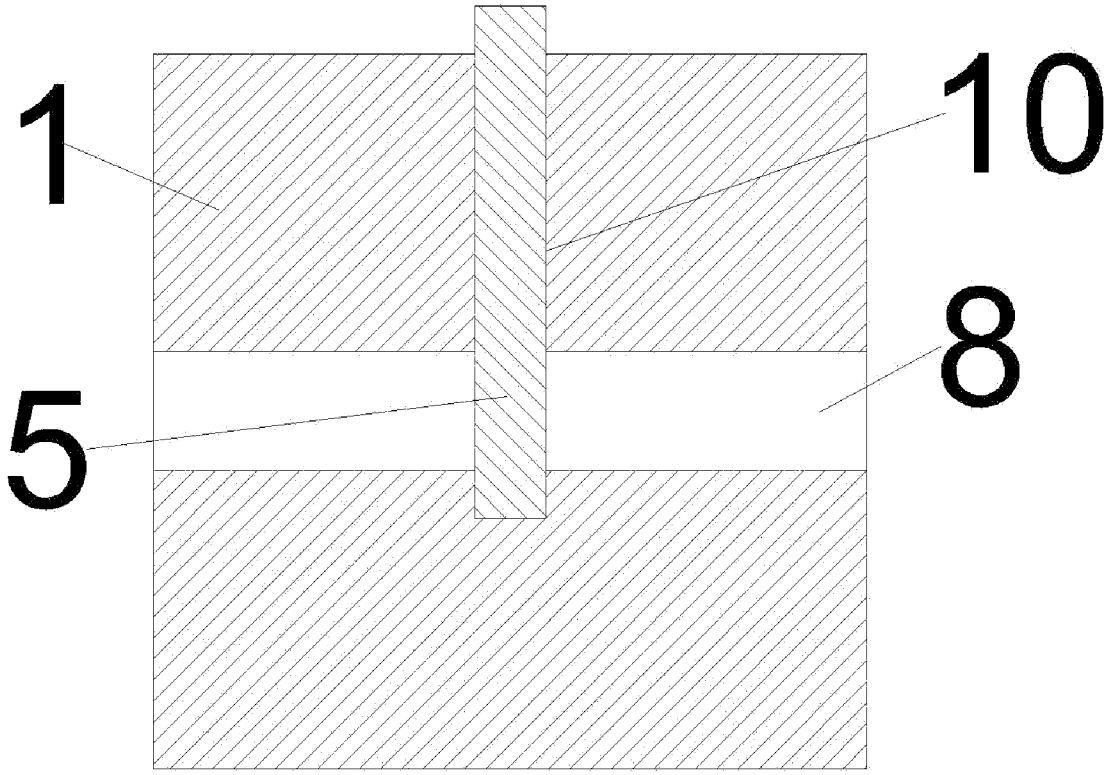

FIG. 5