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HIGH-EFFICIENCY MECHANICAL AUTOMATION WORKBENCH.

- 57 The present invention relates to a high-efficiency mechanical automation workbench including a fixed base, a lifting valve, a movable column, a table, an electric control box, a switch, control rods, control knobs, a start button, a digital display screen, line pipes, a base, a workbench, a fixing groove, a sliding groove, a movable frame, a connecting frame, a printing pressure head, an instrument panel, a bracket, a hydraulic column and a hydraulic cylinder, where the electric control box is disposed on the upper side of the left end of the table, the two control rods are evenly distributed on the middle portion of the horizontal upper side of the front end of the electric control box, the two control knobs and the start button are disposed at the lower end of the inclined upper side of the middle portion of the electric control box, the base is disposed on the upper side of the right end of the table, the workbench is disposed on the middle portion of the upper side of the base, the lower end of the fixing groove is nested in the upper end of the workbench, the printing pressure head is nested with the rear end of the connecting frame, and the upper end of the hydraulic column is nested in the lower end of the hydraulic cylinder. The high-efficiency mechanical automation workbench is simple in structure, runs stably, is high in mechanical automation, and greatly improves the work efficiency.

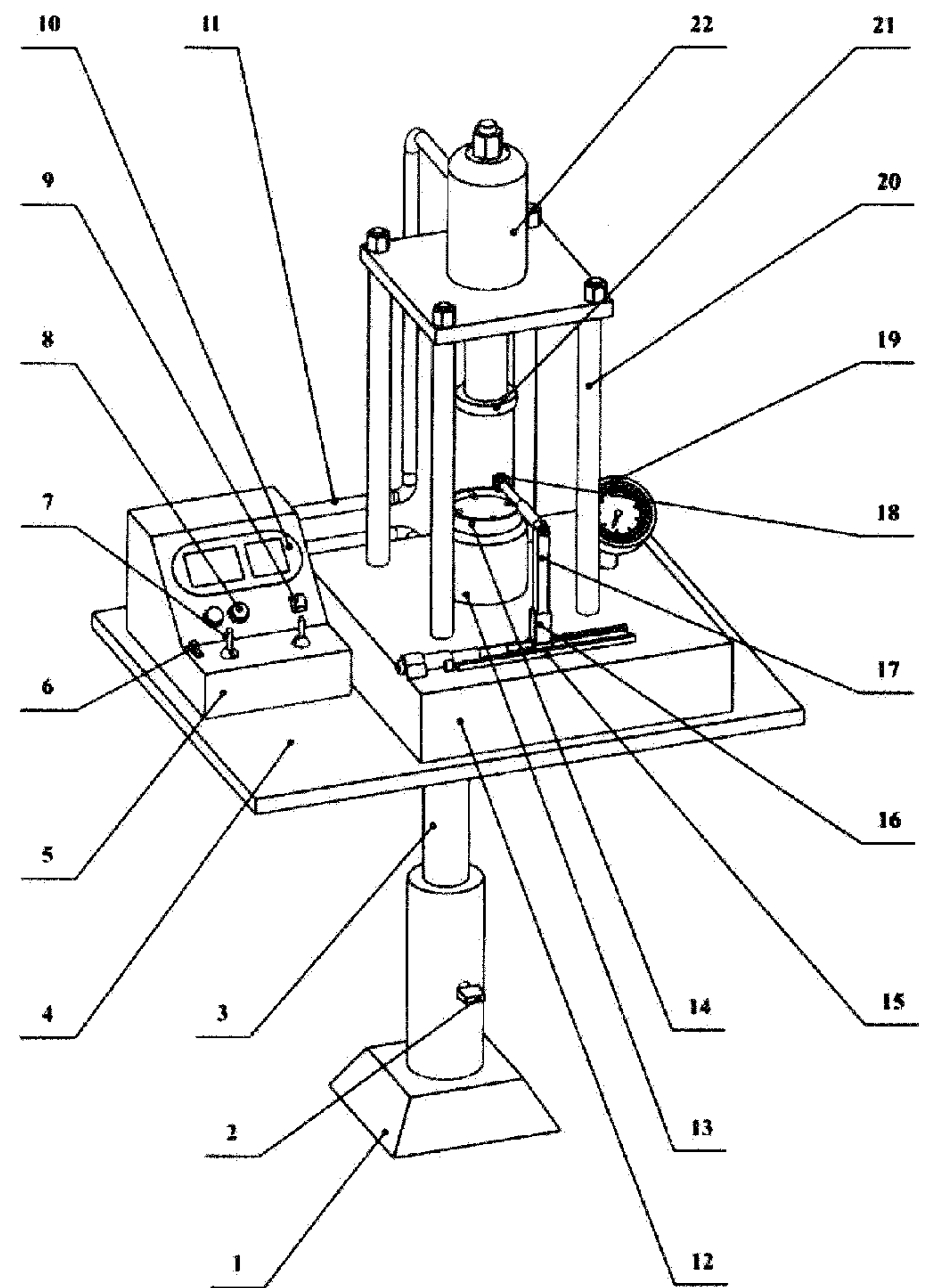


FIG. 1

BACKGROUND

5 **Technical Field**

The present invention relates to the technical field of mechanical automation equipment, and in particular to a high-efficiency mechanical automation workbench.

Related Art

10 With the development of society, industrial technology has been rapidly improved, the degree of mechanical automation has been continuously improved, and the mechanical automation of a workbench has been increasingly applied. The efficiency of a mechanical automation workbench in die casting needs to be further improved.

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Summary

Against the aforementioned shortcomings in the prior art, an objective of the present invention is to provide a high-efficiency mechanical automation workbench.

20 In order to achieve the aforementioned objective, the following technical solution is adopted according to the present invention:

A high-efficiency mechanical automation workbench, including a fixed base, a lifting valve, a movable column, a table, an electric control box, a switch, control rods, control knobs, a start button, a digital display screen, line pipes, a base, a workbench, a fixing groove, a sliding groove, a movable frame, a connecting frame, 25 a printing pressure head, an instrument panel, a bracket, a hydraulic column and a hydraulic cylinder, where the lifting valve is disposed at the front end of the middle portion of the fixed base, the lower end of the movable column is nested in the upper end of the fixed base, the lower side of the table is connected with the upper end of the movable column, the electric control box is disposed on the upper side of 30 the left end of the table, the switch is disposed at the left end of the horizontal upper

side of the front end of the electric control box, the two control rods are evenly distributed on the middle portion of the horizontal upper side of the front end of the electric control box, the two control knobs and the start button are disposed at the lower end of the inclined upper side of the middle portion of the electric control box, the digital display screen is disposed at the upper end of the inclined upper side of the middle portion of the electric control box, one end of each of the two line pipes is connected with the rear end of the electric control box, the other end thereof is respectively connected with the base and the rear end of the hydraulic cylinder, the base is disposed on the upper side of the right end of the table, the workbench is disposed on the middle portion of the upper side of the base, the lower end of the fixing groove is nested in the upper end of the workbench, the sliding groove is disposed at the front end of the upper side of the base; the left end of the movable frame is fixed on the upper side of the left end of the workbench, the right end of the movable frame is nested in the inner side of the sliding groove; the lower end of the connecting frame is nested in the upper end of the movable frame, the printing pressure head is nested with the rear end of the connecting frame, the instrument panel is disposed at the right end of the upper side of the base, the bracket is disposed on the middle portion of the upper side of the base, the upper end of the hydraulic column is nested in the lower end of the hydraulic cylinder, and the lower end of the hydraulic cylinder is nested in the top of the bracket.

Preferably, there are two control rods, and the two control rods control the front-rear movement and the left-right movement of the fixing groove respectively.

Preferably, the use position of the printing pressure head is controlled by adjusting the movable frame and the connecting frame, different printing pressure heads can be replaced at the rear end of the connecting frame according to requirements, and different sides of the printing pressure head have different printing, which can be rotated and replaced.

Due to the adoption of the aforementioned solution, the high-efficiency mechanical automation workbench is simple in structure, runs stably, is high in mechanical automation, greatly improves the work efficiency and has strong

practical value.

Brief Description of Drawings

FIG. 1 is a schematic view of an overall structure of a high-efficiency mechanical automation workbench according to the present invention;

FIG. 2 is a schematic structural view of a control portion of the high-efficiency mechanical automation workbench according to the present invention;

FIG. 3 is a schematic structural view of a pressurization portion of the high-efficiency mechanical automation workbench according to the present invention; and

FIG. 4 is a schematic structural view of a printing pressure head portion of the high-efficiency mechanical automation workbench according to the present invention.

Description of Embodiments

The embodiments of the present invention are described in detail below with reference to the accompanying drawings. However, the present invention can be implemented in various different ways as defined and covered by the claims.

As shown in FIGs. 1-4, a high-efficiency mechanical automation workbench provided the present invention includes a fixed base 1, a lifting valve 2, a movable column 3, a table 4, an electric control box 5, a switch 6, control rods 7, control knobs 8, a start button 9, a digital display screen 10, line pipes 11, a base 12, a workbench 13, a fixing groove 14, a sliding groove 15, a movable frame 16, a connecting frame 17, a printing pressure head 18, an instrument panel 19, a bracket 20, a hydraulic column 21 and a hydraulic cylinder 22, where the lifting valve 2 is disposed at the front end of the middle portion of the fixed base 1, the lower end of the movable column 3 is nested in the upper end of the fixed base 1, the lower side of the table 4 is connected with the upper end of the movable column 3, the electric control box 5 is disposed on the upper side of the left end of the table 4, the switch 6 is disposed at the left end of the horizontal upper side of the front

end of the electric control box 5, the two control rods 7 are evenly distributed on the middle portion of the horizontal upper side of the front end of the electric control box 5, the two control knobs 8 and the start button 9 are disposed at the lower end of the inclined upper side of the middle portion of the electric control box 5, the digital display screen 10 is disposed at the upper end of the inclined upper side of the middle portion of the electric control box 5, one end of each of the two line pipes 11 is connected with the rear end of the electric control box 5, the other end thereof is respectively connected with the base 12 and the rear end of the hydraulic cylinder 22, the base 12 is disposed on the upper side of the right end of the table 4, the workbench 13 is disposed on the middle portion of the upper side of the base 12, the lower end of the fixing groove 14 is nested in the upper end of the workbench 13, the sliding groove 15 is disposed at the front end of the upper side of the base 12; the left end of the movable frame 16 is fixed on the upper side of the left end of the workbench 13, the right end of the movable frame is nested in the inner side of the sliding groove 15; the lower end of the connecting frame 17 is nested in the upper end of the movable frame 16, the printing pressure head 18 is nested with the rear end of the connecting frame 17, the instrument panel 19 is disposed at the right end of the upper side of the base 12, the bracket 20 is disposed on the middle portion of the upper side of the base 12, the upper end of the hydraulic column 21 is nested in the lower end of the hydraulic cylinder 22, and the lower end of the hydraulic cylinder 22 is nested in the top of the bracket 20.

The movable column 3 is lifted or descended at the upper end of the fixed base 1 by adjusting the lifting valve 2, so that the height of the table 4 is adjusted.

There are two control rods 7, and the two control rods 7 control the front-rear movement and the left-right movement of the fixing groove 14 respectively.

The control knobs 8 control the movement of the hydraulic column 21, and the two control knobs 8 are used for coarse adjustment and fine adjustment respectively.

The digital display screen 10 displays the change in pressurization and the working time, and automatic pressure compensation and the countdown of the

pressurizing time are performed by pressing the start button 9. When the time is up, the pressurization is ended and the hydraulic column 21 is raised to the original position.

The use position of the printing pressure head 18 is controlled by adjusting the movable frame 16 and the connecting frame 17, different printing pressure heads 18 can be replaced at the rear end of the connecting frame 17 according to requirements, and different sides of the printing pressure head 18 have different printing, which can be rotated and replaced.

When the present invention is in operation: before operation of the high-efficiency mechanical automation workbench according to the present invention, the lifting valve 2 is adjusted to make the movable column 3 lift or descend at the upper end of the fixed base 1, so that the height of the table 4 reaches a use height; a to-be-treated object is placed in the fixing groove 14 and fixed well, and the printing pressure head 18 is rotated, so that the lower side is the use surface; the movable frame 16 and the connecting frame 17 are adjusted to make the printing pressure head 18 located under the hydraulic column 21, the switch 6 is turned on, the control rods 7 are used, so that the position where the to-be-treated object needs to be embossed is located under the printing pressure head 18, and the two control knobs 8 are used for coarse adjustment and fine adjustment respectively; first coarse adjustment is performed to control the movement of the hydraulic column 21 to press the printing pressure head 18 on the upper surface of the to-be-treated object; then fine adjustment is performed, a pointer on the instrument panel 19 until the pointer points to a value corresponding to the working pressure, the working time is set well, the start button 9 is pressed to perform automatic pressure compensation and the countdown of the pressurizing time; when the time is up, the pressurization is ended and the hydraulic column 21 is raised to the original position; the printing pressure head 18 is moved away, and the to-be-treated object is taken out, the work is completed, and the switch 6 is turned off.

The above are only the preferred embodiments of the present invention, and

are not intended to limit the patent scope of the present invention, and the equivalent structure or equivalent process transformations made by using the content of the specification and the accompanying drawings of the present invention may be directly or indirectly applied to other related technical fields, and
5 shall be included in a similar way in the patent protection scope of the present invention.

CLAIMS

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1. A high-efficiency mechanical automation workbench, comprising a fixed base, a lifting valve, a movable column, a table, an electric control box, a switch, control rods, control knobs, a start button, a digital display screen, line pipes, a base, a workbench, a fixing groove, a sliding groove, a movable frame, a connecting frame, a printing pressure head, an instrument panel, a bracket, a hydraulic column and a hydraulic cylinder, wherein the lifting valve is disposed at the front end of the middle portion of the fixed base, the lower end of the movable column is nested in the upper end of the fixed base, the lower side of the table is connected with the upper end of the movable column, the electric control box is disposed on the upper side of the left end of the table, the switch is disposed at the left end of the horizontal upper side of the front end of the electric control box, the two control rods are evenly distributed on the middle portion of the horizontal upper side of the front end of the electric control box, the two control knobs and the start button are disposed at the lower end of the inclined upper side of the middle portion of the electric control box, the digital display screen is disposed at the upper end of the inclined upper side of the middle portion of the electric control box, one end of each of the two line pipes is connected with the rear end of the electric control box, the other end thereof is respectively connected with the base and the rear end of the hydraulic cylinder, the base is disposed on the upper side of the right end of the table, the workbench is disposed on the middle portion of the upper side of the base, the lower end of the fixing groove is nested in the upper end of the workbench, the sliding groove is disposed at the front end of the upper side of the base; the left end of the movable frame is fixed on the upper side of the left end of the workbench, the right end of the movable frame is nested in the inner side of the sliding groove; the lower end of the connecting frame is nested in the upper end of the movable frame, the printing pressure head is nested with the rear end of the connecting frame, the instrument panel is disposed at the right end of the upper side of the base, the bracket is disposed on the middle portion of the upper side of the base, the upper

end of the hydraulic column is nested in the lower end of the hydraulic cylinder, and the lower end of the hydraulic cylinder is nested in the top of the bracket.

2. The high-efficiency mechanical automation workbench according to claim 1, wherein there are two control rods, and the two control rods control the front-rear movement and the left-right movement of the fixing groove respectively.

3. The high-efficiency mechanical automation workbench according to claim 1, wherein the use position of the printing pressure head is controlled by adjusting the movable frame and the connecting frame, different printing pressure heads can be replaced at the rear end of the connecting frame according to requirements, and different sides of the printing pressure head have different printing, which can be rotated and replaced.

REVENDICATIONS

1. Etabli d'automatisation mécanique à haut rendement, comprenant une base
5 fixe, une soupape de levage, une colonne mobile, une table, un boîtier de
commande électrique, un interrupteur, des barres de commande, des boutons de
commande, un bouton de démarrage, un écran numérique, des conduites, une
base, un établi, une rainure de fixation, une rainure coulissante, un cadre mobile,
10 un cadre de raccordement, une tête de pression d'impression, un tableau de bord,
un support, une colonne hydraulique et un cylindre hydraulique, dans laquelle la
soupape de levage est disposée à l'extrémité avant de la partie centrale de la base
fixe, l'extrémité inférieure de la colonne mobile est emboîtée dans l'extrémité
supérieure de la base fixe, le côté inférieur de la table est relié à l'extrémité
supérieure de la colonne mobile, le boîtier de commande électrique est disposé sur
15 le côté supérieur de l'extrémité gauche de la table, le commutateur est disposé sur
l'extrémité gauche du côté supérieur horizontal de l'extrémité avant de la boîte
électrique, les deux tiges de commande sont réparties uniformément sur la partie
centrale du côté supérieur horizontal de l'extrémité avant du boîtier de commande
électrique, les deux boutons de commande et le bouton de démarrage sont
20 disposés à l'extrémité inférieure du côté supérieur incliné de la partie centrale du
boîtier de commande électrique, l'écran d'affichage numérique est disposé à
l'extrémité supérieure du côté supérieur incliné de la partie centrale du boîtier de
commande électrique, une extrémité de chacun des deux tubes de conduite est
reliée à l'extrémité arrière du boîtier de commande électrique, l'autre extrémité est
25 reliée respectivement à la base et à l'extrémité arrière du vérin hydraulique, la base
est disposée sur le côté supérieur de l'extrémité droite de la table, l'établi est
disposé sur la partie centrale du côté supérieur de la base, l'extrémité inférieure de
la rainure de fixation est emboîtée dans l'extrémité supérieure de l'établi, la rainure
de glissement est disposée sur le côté avant supérieur de la base ; l'extrémité
30 gauche du châssis mobile est fixée sur le côté supérieur de l'extrémité gauche de

l'établi, l'extrémité droite du châssis mobile est emboîtée dans le côté intérieur de la rainure coulissante ; l'extrémité inférieure du cadre de raccordement est imbriquée dans l'extrémité supérieure du cadre mobile, la tête de pression d'impression est imbriquée avec l'extrémité arrière du cadre de raccordement, le tableau de bord est
5 disposé à l'extrémité droite du côté supérieur de la base, le support est disposé sur la partie centrale du côté supérieur de la base, l'extrémité supérieure de la colonne hydraulique est emboîtée dans l'extrémité inférieure du cylindre hydraulique et l'extrémité inférieure du cylindre hydraulique est emboîtée dans le sommet du support.

10 2. Etabli d'automatisation mécanique à haut rendement selon la revendication 1, dans lequel il y a deux barres de commande et les deux barres de commande commandent respectivement le mouvement avant/arrière et le mouvement gauche/droit de la rainure de fixation.

3. Etabli d'automatisation mécanique à haut rendement selon la revendication
15 1, dans lequel la position d'utilisation de la tête de pression d'impression est commandée par le réglage du cadre mobile et du cadre de raccordement, différentes têtes de pression d'impression peuvent être remplacées à l'arrière du cadre de raccordement selon les exigences et différents côtés de la tête de pression d'impression présentent différentes impressions, qui peuvent tourner et
20 être changées.

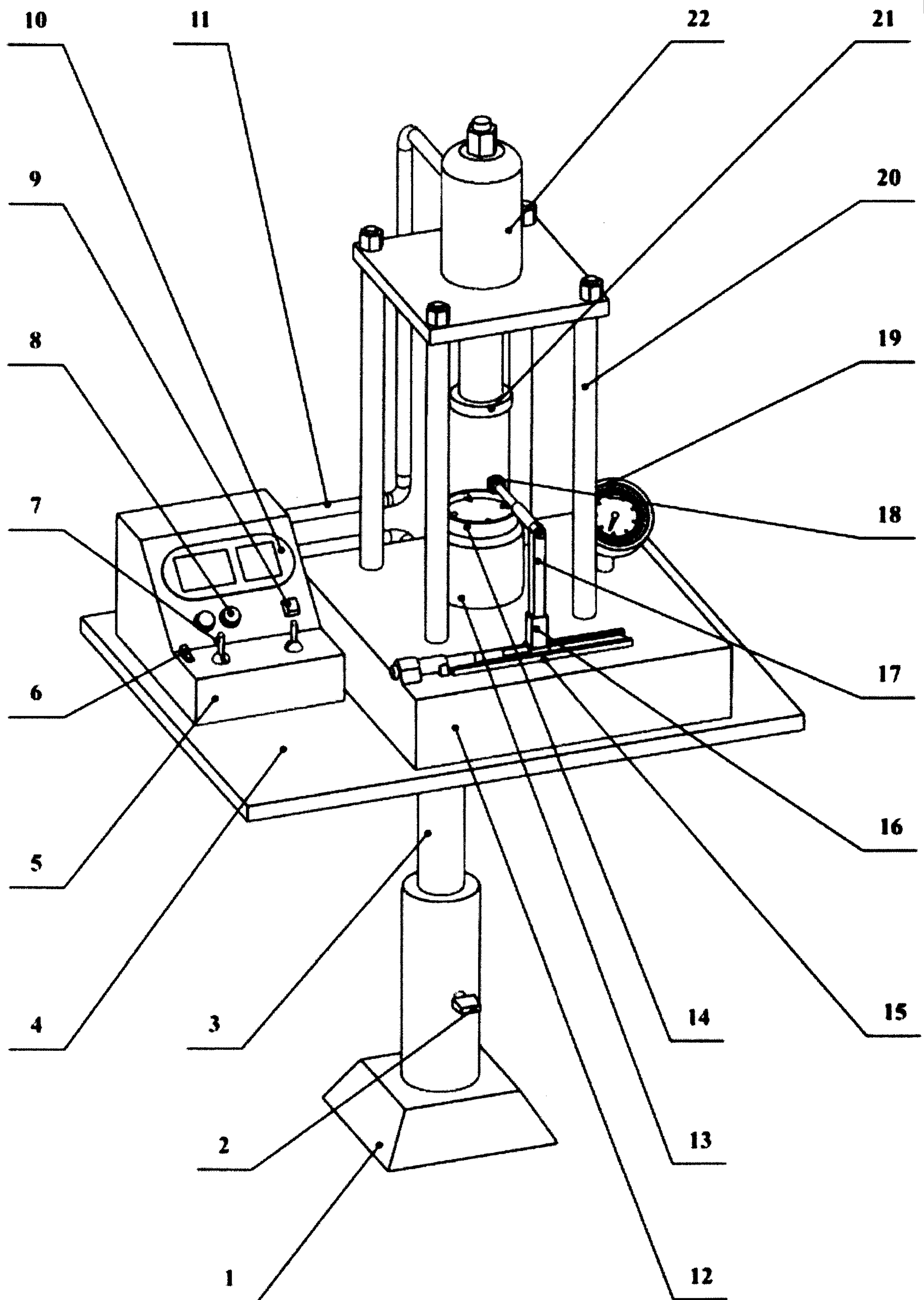


FIG. 1

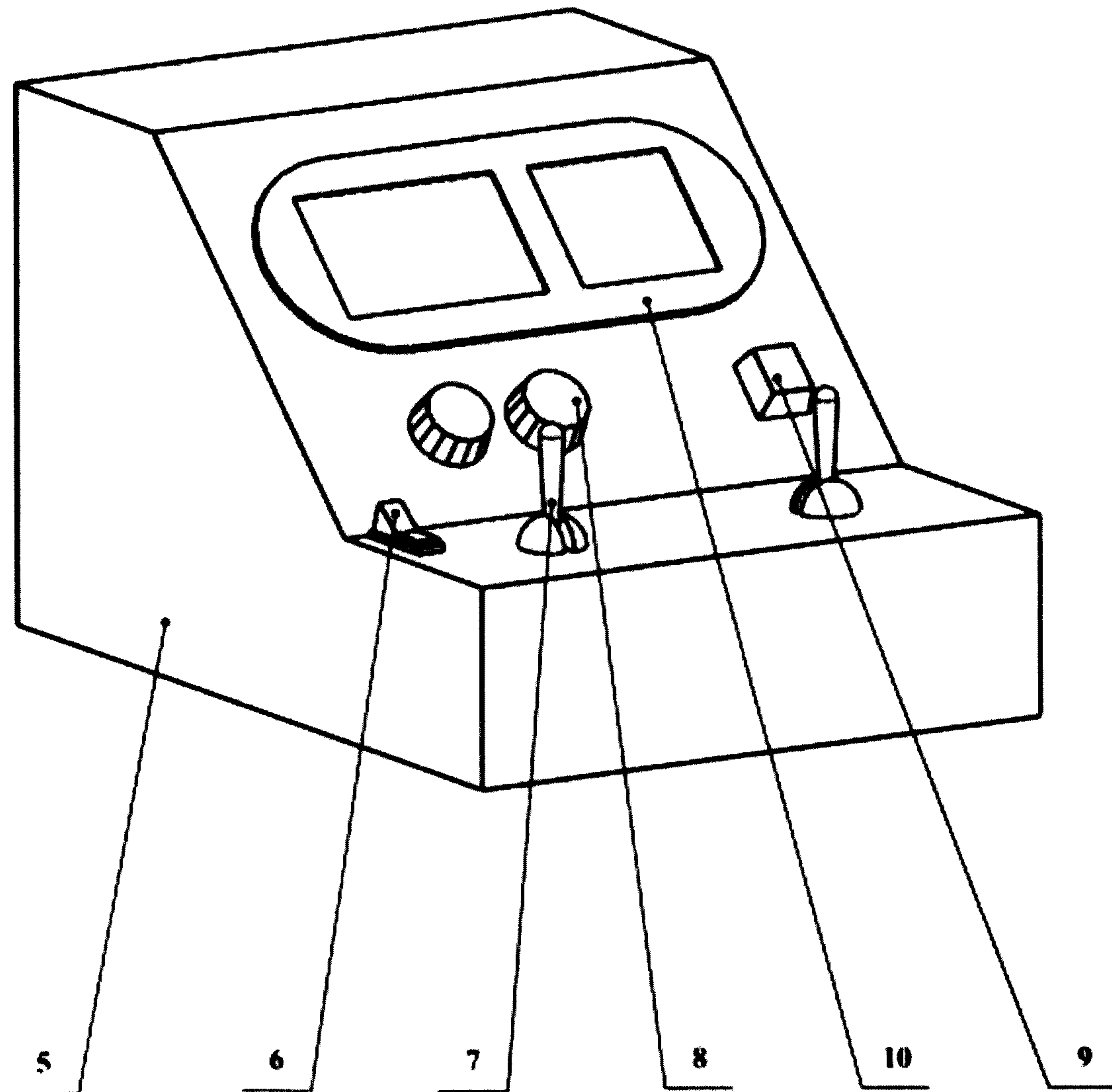


FIG. 2

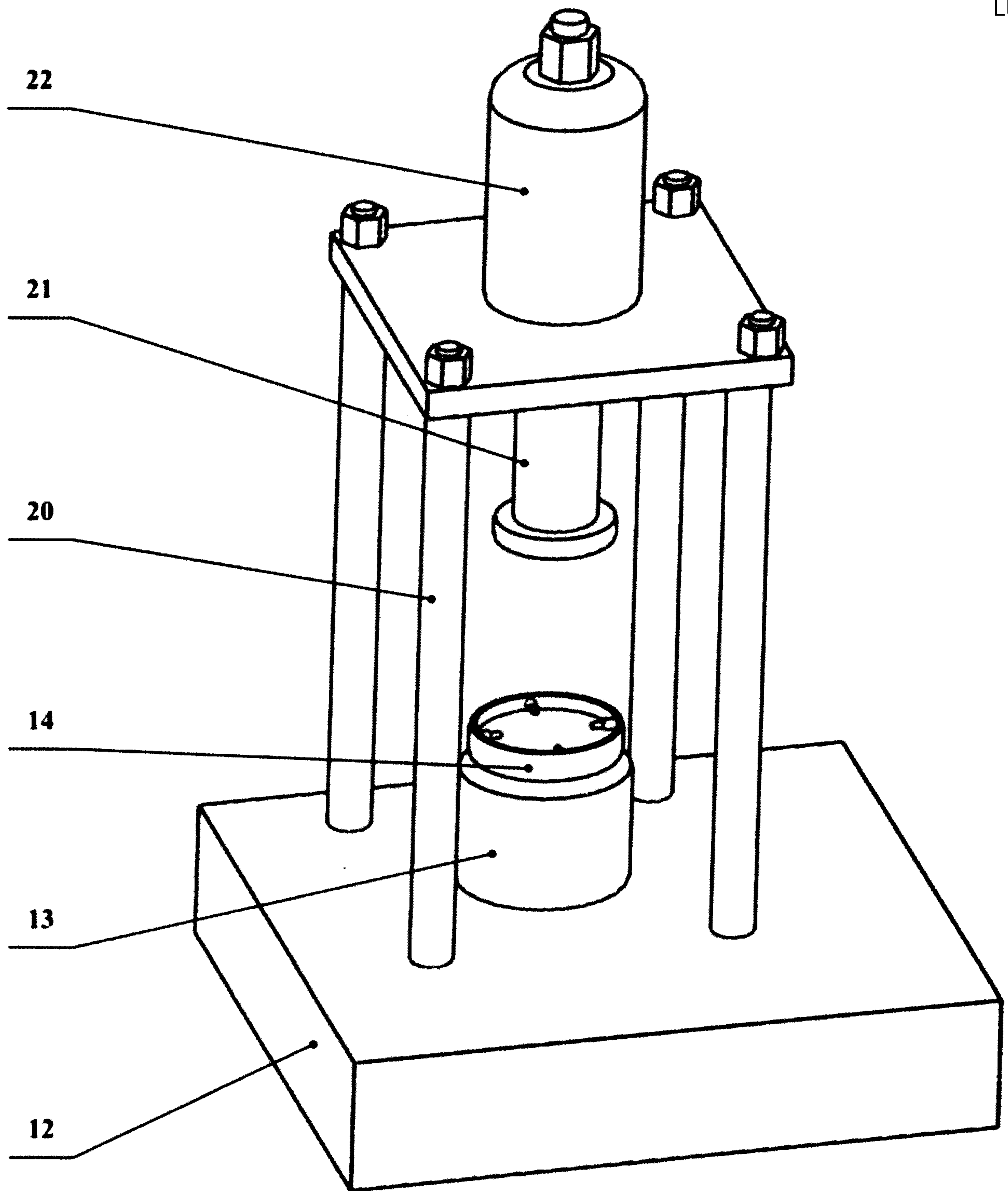


FIG. 3

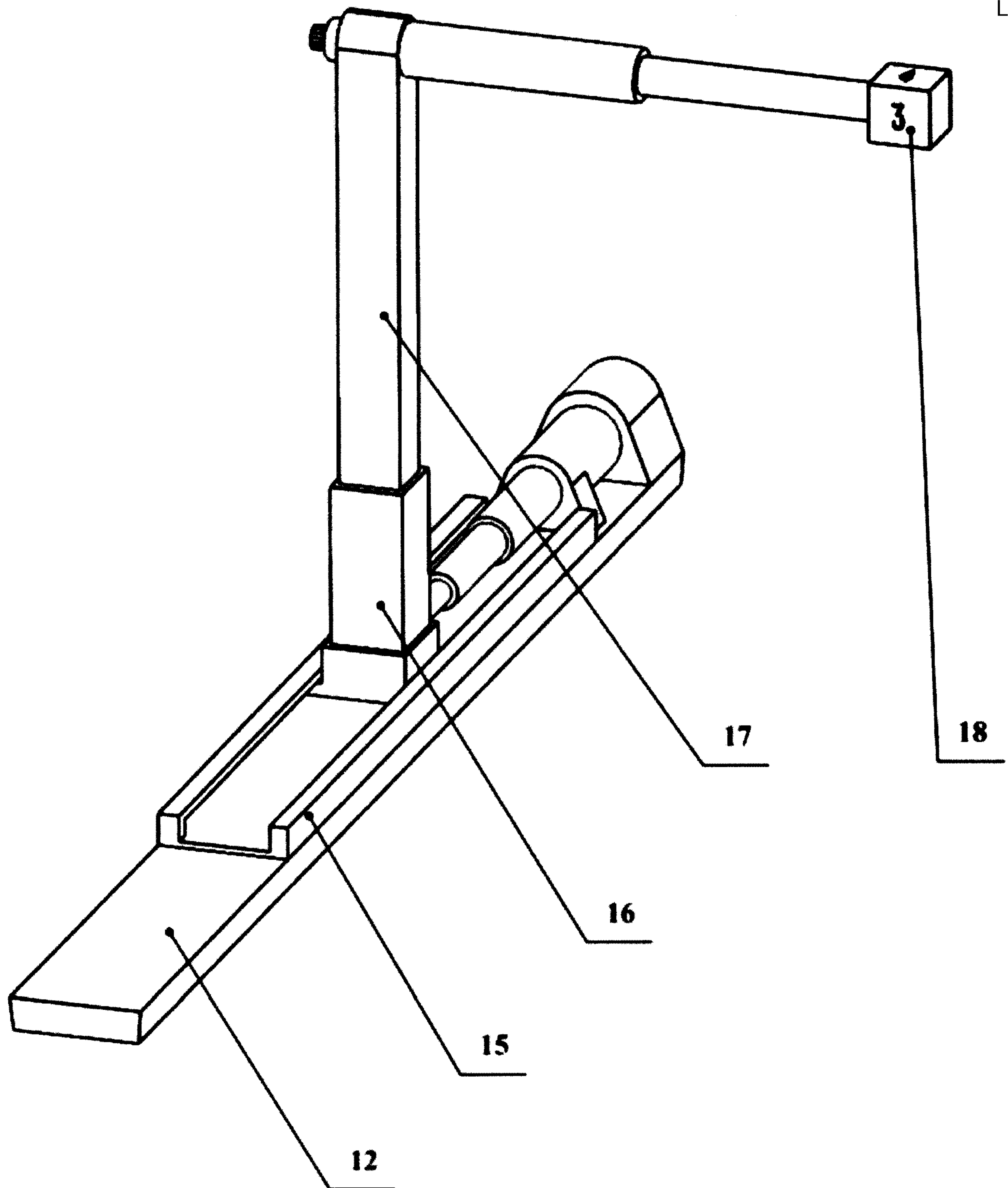


FIG. 4