



(11) **EP 4 506 048 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
12.02.2025 Bulletin 2025/07

(51) International Patent Classification (IPC):
A63H 3/46 ^(2006.01) **A63H 3/04** ^(2006.01)

(21) Application number: **24165803.8**

(52) Cooperative Patent Classification (CPC):
A63H 3/46; A63H 3/04

(22) Date of filing: **25.03.2024**

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL
NO PL PT RO RS SE SI SK SM TR**
Designated Extension States:
BA
Designated Validation States:
GE KH MA MD TN

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(30) Priority: **10.08.2023 CN 202322151629 U**

(54) **A DOLL DEVICE**

(57) This present disclosure discloses a doll device, which includes a self-resetting rope-tightening mechanism. This mechanism facilitates the tightening of the rope during self-resetting, thereby pulling the hand/foot bodies connected to the rope tight against the trunk body, creating a taut pose. Additionally, the self-resetting rope-tightening mechanism includes a button, which, when

pressed, relaxes the rope. As a result, the hand/foot bodies connected to the rope can move away from the trunk body under their own weight or external force, assuming a loose pose. Consequently, by repeatedly pressing the button, the pose of the doll device can be changed, enhancing its play value.

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Description

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to Chinese Patent Application No. 202322151629.3, filed on August 10, 2023, which is hereby incorporated by reference in its entirety.

TECHNICAL FIELD

[0002] The present disclosure relates to a doll device.

BACKGROUND

[0003] In the prior art, existing doll technology connects the doll's trunk to its hands and feet through hinge shafts or joint components. During play, the doll's pose can only be changed by twisting or swinging its hands and feet, limiting the playfulness and market competitiveness. Additionally, some existing technologies connect the doll's trunk to its hands and feet using elastic ropes, but changing the doll's pose is also limited to twisting or swinging its limbs, leading to a lack of playfulness, thus necessitating a solution to this issue.

SUMMARY

[0004] This invention overcomes the deficiencies of the above technologies by providing a novel doll device.

[0005] To achieve the above objectives, this invention adopts the following technical solutions:

[0006] A doll device, comprising a trunk body 1 and a head 2 arranged on it, wherein the trunk body 1 is connected to hand bodies 4 and/or foot bodies 5 through corresponding ropes 3, and the trunk body 1 is equipped with a self-resetting rope-tightening mechanism 6 that tightens the rope 3 during self-resetting. The self-resetting rope-tightening mechanism 6 includes a button 60 that, when pressed, relaxes the rope 3.

[0007] In an embodiment of the present disclosure, the self-resetting rope-tightening mechanism 6 can rotate to retract and release the rope 3.

[0008] In an embodiment of the present disclosure, wherein when the trunk body 1 is connected to a hand body 4 through a corresponding rope 3, the hand body 4 includes several hand body segment monomers 41 for the rope 3 to pass through sequentially; and when the trunk body 1 is connected to a foot body 5 through a corresponding rope 3, the foot body 5 includes foot body segment monomers 51 for the rope 3 to pass through sequentially.

[0009] In an embodiment of the present disclosure, wherein each hand body segment monomer 41 has a first inclined surface 411 for contact with adjacent hand body segment monomers 41, and the first inclined surface 411 is inclined relative to the extension direction of its hand body segment monomer 41; and/or each foot body

segment monomer 51 has a second inclined surface 511 for contact with adjacent foot body segment monomers 51, and the second inclined surface 511 is inclined relative to the extension direction of its foot body segment monomer 51.

[0010] In an embodiment of the present disclosure, the head 2 includes a lower jaw 21 connected to the upper end of the trunk body 1, with the lower jaw 21 rotationally connected to an upper head body 22 capable of swinging up and down through a horizontal axis 20.

[0011] In an embodiment of the present disclosure, wherein the upper end of the lower jaw 21 has a first concave cavity 211 facing the upper head body 22, and/or the lower end of the upper head body 22 has a second concave cavity 221 facing the lower jaw 21.

[0012] In an embodiment of the present disclosure, wherein the trunk body 1 is rotationally connected to the head 2 through a vertical axis 23.

[0013] In an embodiment of the present disclosure, wherein the self-resetting rope-tightening mechanism 6 includes a rotary table 61 set within the trunk body 1 for connecting one end of the rope 3, a torsion spring 62 for driving the rotary table 61 to rotate and reset to tighten the rope 3, and a button 60 that can move axially closer to/away from the rotary table 61. The rotary table 61 facing the button 60 is equipped with a first guiding slope 611, and the button 60 facing the rotary table 61 is equipped with a second guiding slope 601 for gradually pressing the first guiding slope 611 when the button 60 is pressed, thus causing the rotary table 61 to rotate and relax the rope 3.

[0014] In an embodiment of the present disclosure, wherein the front or back of the trunk body 1 is equipped with a guiding limiting through-hole 11, and a part of the button 60 protrudes outward through the guiding limiting through-hole 11.

[0015] Compared with existing technology, the beneficial effects of this invention are:

1. The structure of this case is simple and easy to implement. The setup of the self-resetting rope-retracting mechanism facilitates tightening the rope during self-resetting, thus pulling the hand/foot bodies connected to the rope tightly against the trunk body, creating a taut pose. The button setup of the self-resetting rope-retracting mechanism facilitates relaxation of the rope when the button is pressed. Thus, the hand/foot bodies connected to the rope can move away from the trunk body under their own weight or external force and assume a loose pose. By repeatedly pressing the button, the pose of the doll device can be switched, making it more entertaining and competitive in the market.

[0016] The self-resetting rope-retracting mechanism can rotate to retract and release the rope, which is convenient for retracting longer ropes in limited space and for connecting and retracting several ropes simultaneously

through the same mechanism.

[0017] The setup of several hand body segment monomers in the hand body, and foot body segment monomers in the foot body, makes it easy for them to be in a loose state when the self-resetting rope-retracting mechanism relaxes the rope, adding to the entertainment value.

[0018] The setup of the rotary table, the first guiding slope, the torsion spring, the button, and the second guiding slope in the self-resetting rope-retracting mechanism makes implementation convenient. After releasing the button, the rotary table rotates under the action of the torsion spring to reset and tighten the rope. The rotary table presses against the second guiding slope of the button through the first guiding slope, causing the second guiding slope to move axially away from the rotary table and reset, facilitating the next press, making it highly practical.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019]

FIG. 1 is a first structural diagram of the present disclosure.

FIG. 2 is a second structural diagram of the present disclosure.

FIG. 3 is a third structural diagram of the present disclosure.

FIG. 4 is a fourth structural diagram of the present disclosure.

FIG. 5 is a fifth structural diagram of the present disclosure.

DETAILED DESCRIPTION

[0020] The following is a further detailed description of the features and other related features of the invention through the implementation example, so as to facilitate the understanding of technical personnel in the same industry:

[0021] As shown in FIG.s 1 to 5, A doll device, comprising a trunk body 1 and a head 2 arranged on it, wherein the trunk body 1 is connected to hand bodies 4 and/or foot bodies 5 through corresponding ropes 3, and the trunk body 1 is equipped with a self-resetting rope-tightening mechanism 6 that tightens the rope 3 during self-resetting. The self-resetting rope-tightening mechanism 6 includes a button 60 that, when pressed, relaxes the rope 3.

[0022] As mentioned above, the structure of the case is simple and easy to implement. The self-resetting rope gathering mechanism 6 is arranged to tighten the rope 3 when self-resetting, so that the hand body 4/foot body 5 connected with the rope 3 is tightened to the trunk body 1 and is in a tight shape. The button 60 of the self-resetting rope gathering mechanism 6 is arranged to make the self-resetting rope gathering mechanism 6 relax the rope 3 when pressing the button 60. In this way, the hand body 4/foot body 5 connected with the rope 3 can be far away

from the trunk body 1 under the action of its own gravity or external force and is in a loose shape. In this way, the shape of the doll device can be switched by pressing the button 60 again and again. Its play fun is good, which is conducive to improving the market competitiveness.

[0023] As shown in FIG. 3, the self-resetting rope gathering mechanism 6 can rotate and retractable the rope 3. On the one hand, it is convenient to rotate and retractable a long rope 3 in a limited space. On the other hand, it is convenient to connect and rotate and retractable several ropes 3 through the same self-resetting rope gathering mechanism 6.

[0024] As shown in FIG.2 and FIG. 3, wherein when the trunk body 1 is connected to a hand body 4 through a corresponding rope 3, the hand body 4 includes several hand body segment monomers 41 for the rope 3 to pass through sequentially; and when the trunk body 1 is connected to a foot body 5 through a corresponding rope 3, the foot body 5 includes foot body segment monomers 51 for the rope 3 to pass through sequentially.

[0025] As mentioned above, the setting of a plurality of the hand body segment monomers 41 of the hand body 4 in this case is convenient for the loose state between the hand body segment monomers 41 when the self-resetting rope gathering mechanism 6 relaxes the rope 3, and the setting of a plurality of the foot body segment monomers 51 of the foot body 5 is convenient for the loose state between the foot body segment monomers 51 when the self-resetting rope gathering mechanism 6 relaxes the rope 3, and the play fun is better.

[0026] As shown in FIG. 2, wherein each hand body segment monomer 41 has a first inclined surface 411 for contact with adjacent hand body segment monomers 41, and the first inclined surface 411 is inclined relative to the extension direction of its hand body segment monomer 41, As shown in FIG. 5; As shown in FIG. 2, and/or each foot body segment monomer 51 has a second inclined surface 511 for contact with adjacent foot body segment monomers 51, and the second inclined surface 511 is inclined relative to the extension direction of its foot body segment monomer 51, as shown in FIG. 5, which can facilitate the change of the shape of the foot body 5.

[0027] As shown in FIG. 1, FIG.2 and FIG. 5, wherein the head 2 includes a lower jaw 21 connected to the upper end of the trunk body 1, with the lower jaw 21 rotationally connected to an upper head body 22 capable of swinging up and down through a horizontal axis 20, which is beneficial to increase playfulness.

[0028] As shown in FIG. 5, in the concrete implementation, wherein the upper end of the lower jaw 21 has a first concave cavity 211 facing the upper head body 22, and/or the lower end of the upper head body 22 has a second concave cavity 221 facing the lower jaw 21, which is beneficial to the display of oral morphology.

[0029] As shown in FIG. 3, in the concrete implementation, wherein the trunk body 1 is rotationally connected to the head 2 through a vertical axis 23, so that the orientation of the head 2 can be changed relative to

the trunk body 1 by rotating the head 2, which is beneficial to increase playfulness.

[0030] As shown in FIG. 3 and FIG. 4, in the specific implementation, wherein the self-resetting rope-tightening mechanism 6 includes a rotary table 61 set within the trunk body 1 for connecting one end of the rope 3, a torsion spring 62 for driving the rotary table 61 to rotate and reset to tighten the rope 3, and a button 60 that can move axially closer to/away from the rotary table 61. The rotary table 61 facing the button 60 is equipped with a first guiding slope 611, and the button 60 facing the rotary table 61 is equipped with a second guiding slope 601 for gradually pressing the first guiding slope 611 when the button 60 is pressed, thus causing the rotary table 61 to rotate and relax the rope 3.

[0031] As mentioned above, the self-reset rope collection mechanism 6 is provided with a rotary table 61, a first guide slope 611, a torsion spring 62, a button 60, and a second guide slope 601. The implementation is convenient. After releasing the button 60, under the action of the torsion spring 62, the rotary table 61 rotates to reset and tighten the rope 3, and the rotary table 61 rotates to press the second guide slope 601 of the button 60 through the first guide slope 611, so that the second guide slope 601 is axially away from the rotary table 61 and resets, so as to facilitate the next press, and has good practicability.

[0032] As shown in FIG. 2, when implemented, wherein the front or back of the trunk body 1 is equipped with a guiding limiting through-hole 11, and a part of the button 60 protrudes outward through the guiding limiting through-hole 11, so that the user can press the button 60 when playing.

[0033] As described above, this case protects a novel doll device and puppet. All technical solutions that are the same or similar to this case should be considered to fall within the scope of protection of this case.

Claims

1. A doll device, comprising a trunk body (1) and a head (2) arranged on it, wherein the trunk body (1) is connected to hand bodies (4) and/or foot bodies (5) through corresponding ropes (3), and the trunk body (1) is equipped with a self-resetting rope-tightening mechanism (6) that tightens the rope (3) during self-resetting. The self-resetting rope-tightening mechanism (6) includes a button (60) that, when pressed, relaxes the rope (3).
2. The doll device according to claim 1, wherein the self-resetting rope-tightening mechanism (6) can rotate to retract and release the rope (3).
3. The doll device according to claim 1, wherein when the trunk body (1) is connected to a hand body (4) through a corresponding rope (3), the hand body (4)

includes several hand body segment monomers (41) for the rope (3) to pass through sequentially; and when the trunk body (1) is connected to a foot body (5) through a corresponding rope (3), the foot body (5) includes foot body segment monomers (51) for the rope (3) to pass through sequentially.

4. The doll device according to claim 3, wherein each hand body segment monomer (41) has a first inclined surface (411) for contact with adjacent hand body segment monomers (41), and the first inclined surface (411) is inclined relative to the extension direction of its hand body segment monomer (41); and/or each foot body segment monomer (51) has a second inclined surface (511) for contact with adjacent foot body segment monomers (51), and the second inclined surface (511) is inclined relative to the extension direction of its foot body segment monomer (51).
5. The doll device according to claim 1, wherein the head (2) includes a lower jaw (21) connected to the upper end of the trunk body (1), with the lower jaw (21) rotationally connected to an upper head body (22) capable of swinging up and down through a horizontal axis (20).
6. The doll device according to claim 5, wherein the upper end of the lower jaw (21) has a first concave cavity (211) facing the upper head body (22), and/or the lower end of the upper head body (22) has a second concave cavity (221) facing the lower jaw (21).
7. The doll device according to claim 1, wherein the trunk body (1) is rotationally connected to the head (2) through a vertical axis (23).
8. The doll device according to claims 7, wherein the self-resetting rope-tightening mechanism (6) includes a rotary table (61) set within the trunk body (1) for connecting one end of the rope (3), a torsion spring (62) for driving the rotary table (61) to rotate and reset to tighten the rope (3), and a button (60) that can move axially closer to/away from the rotary table (61). The rotary table (61) facing the button (60) is equipped with a first guiding slope (611), and the button (60) facing the rotary table (61) is equipped with a second guiding slope (601) for gradually pressing the first guiding slope (611) when the button (60) is pressed, thus causing the rotary table (61) to rotate and relax the rope (3).
9. The doll device according to claim 8, wherein the front or back of the trunk body (1) is equipped with a guiding limiting through-hole (11), and a part of the button (60) protrudes outward through the guiding limiting through-hole (11).

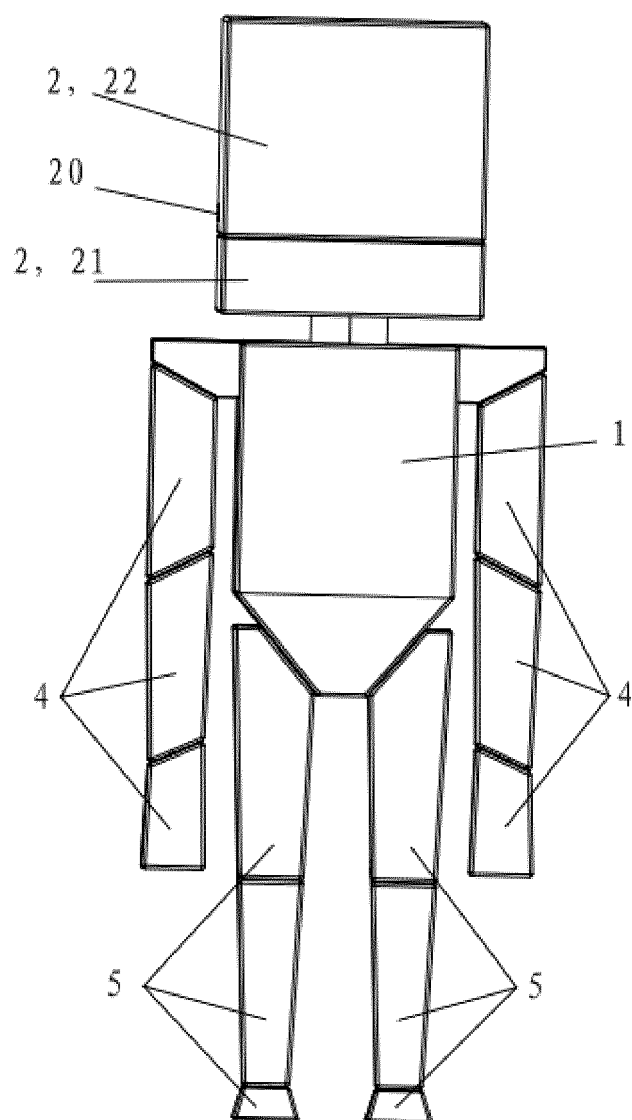


FIG. 1

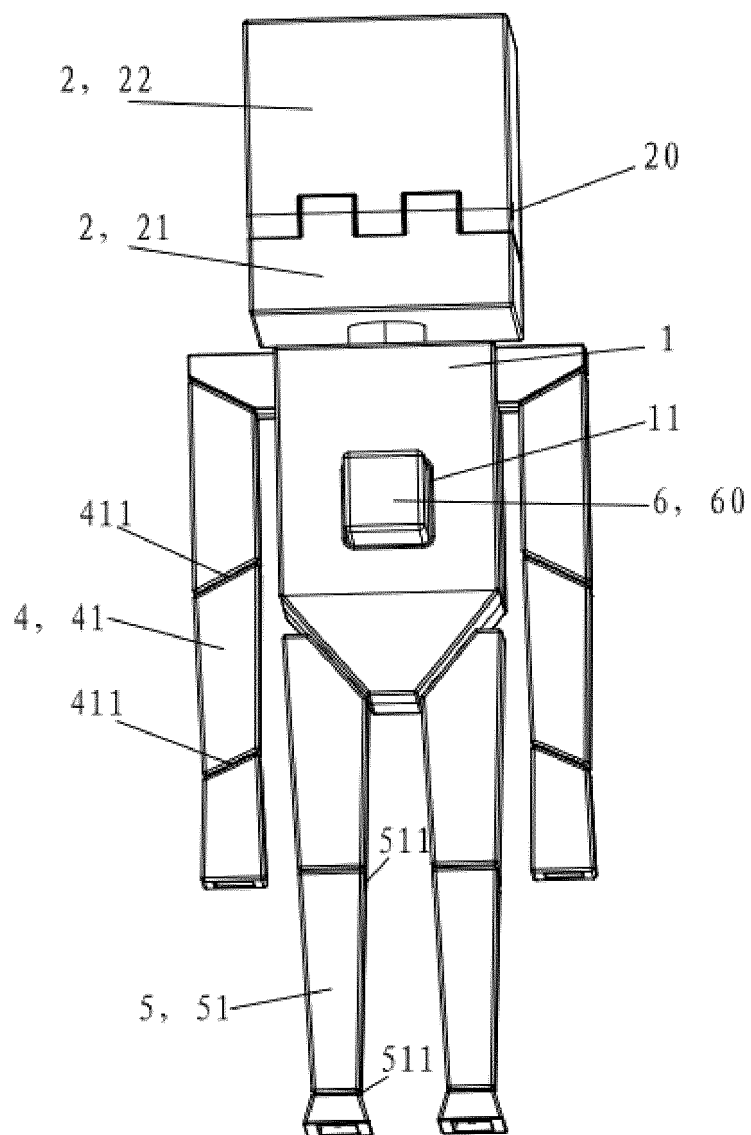


FIG. 2

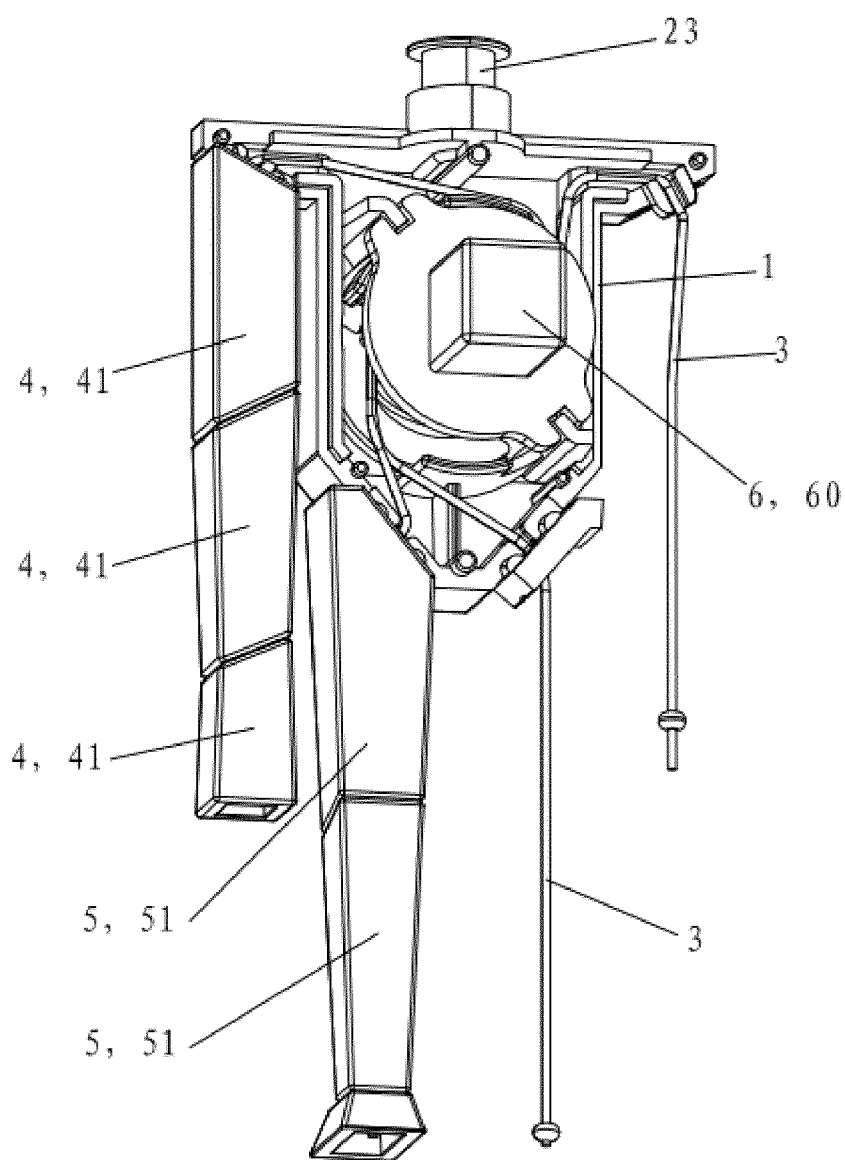


FIG. 3

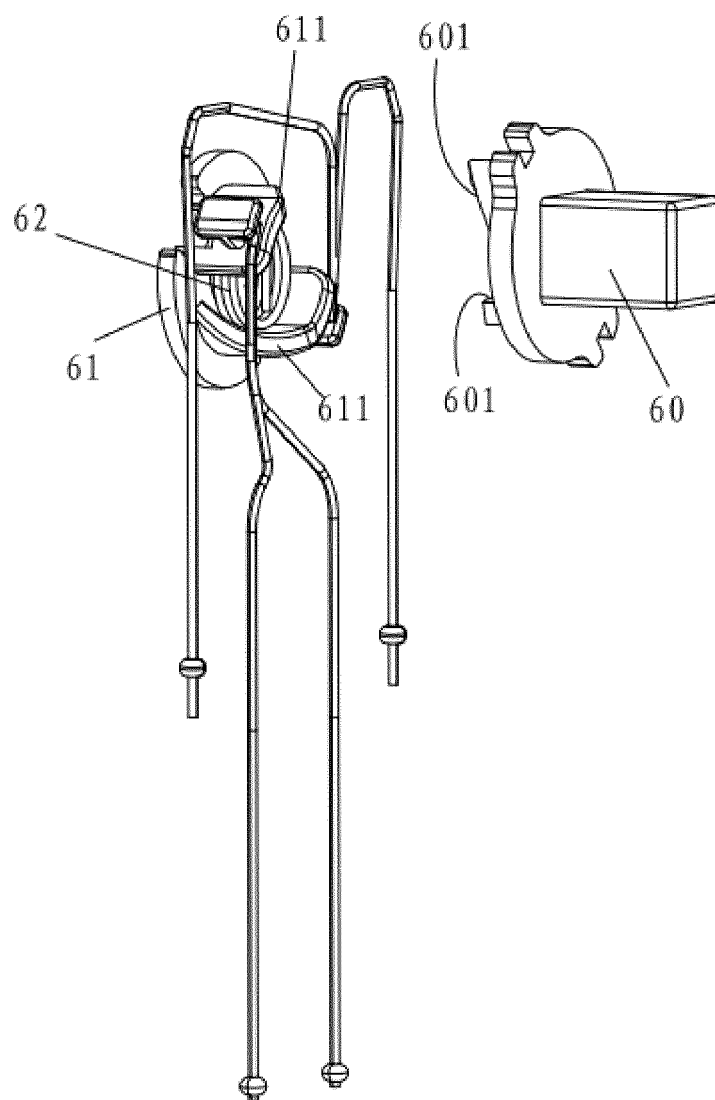


FIG. 4

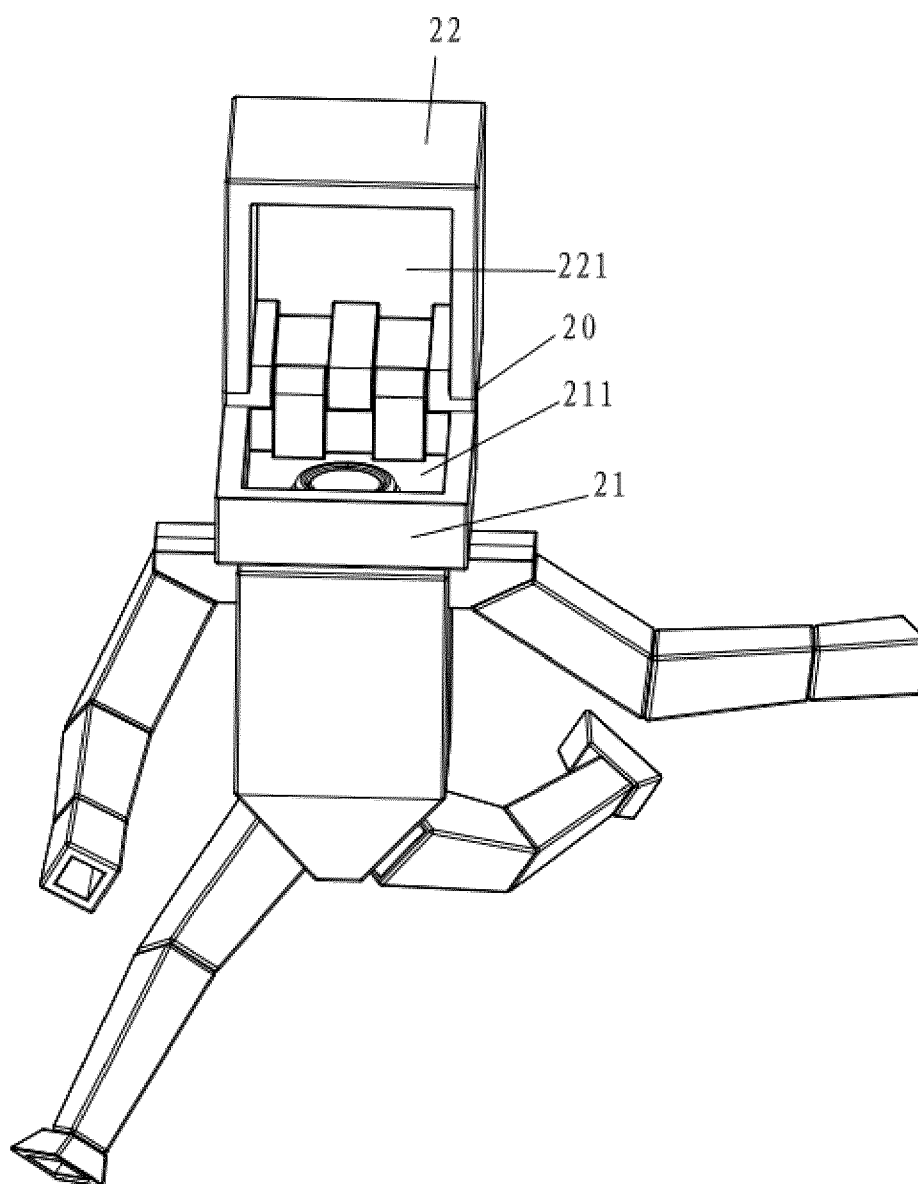


FIG. 5



EUROPEAN SEARCH REPORT

Application Number

EP 24 16 5803

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 2 421 279 A (MEINRAD MARTY) 27 May 1947 (1947-05-27) * column 4, line 37 - line 69; figures * -----	1-9	INV. A63H3/46 A63H3/04
A	JP 2016 049347 A (AREA81 CO LTD; POOLS CO LTD) 11 April 2016 (2016-04-11) * the whole document * -----	1-9	
A	US 1 555 661 A (GROVE RENE D) 29 September 1925 (1925-09-29) * the whole document * -----	1-9	
A	JP S62 111084 U (*) 15 July 1987 (1987-07-15) * the whole document * -----	1-9	
			TECHNICAL FIELDS SEARCHED (IPC)
			A63H
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
Munich		3 September 2024	Turmo, Robert
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 24 16 5803

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2421279 A	27-05-1947	BE 459788 A	29-09-1945
		CH 248830 A	31-05-1947
		FR 929231 A	19-12-1947
		GB 580314 A	03-09-1946
		NL 61121 C	15-05-1948
		US 2421279 A	27-05-1947

JP 2016049347 A	11-04-2016	NONE	

US 1555661 A	29-09-1925	NONE	

JP S62111084 U	15-07-1987	NONE	

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EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- CN 202322151629 [0001]