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(54) BALL LAUNCHING TOY

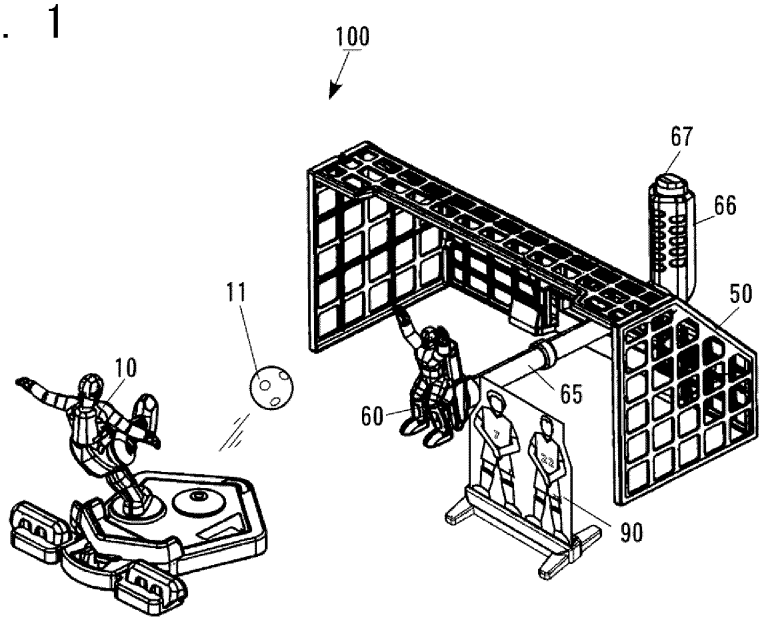
(57) **[Problem]**

To provide a ball launching toy that can suitably launch only regular balls.

[Solution]

A ball launching device that comprises a ball 11 and a launching mechanism provided on a base stand 12, and that uses the launching mechanism to energize and launch the ball 11 set in a prescribed position, characterized in that a fitting recess is formed on the outer surface of the ball 11, on the base stand 12, a ball stand 13 is provided that rises in a mountain shape from the upper surface of the base stand 12, and has a fitting projection 13b formed on the top that fits into the fitting recess to set the ball 11 to a degree that does not obstruct launching of the ball 11.

Fig. 1



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Description

[Technical Field]

[0001] The present invention relates to a ball launching toy that launches a ball.

[Background Art]

[0002] A ball launching toy that launches a set ball has been known conventionally (see Patent Document 1). This launching device is configured to launch a ball by setting the ball on a flat surface, and contacting the ball with an energized striking unit.

[Prior Art Documents]

[Patent Documents]

[0003] [Patent Document 1] Unexamined Utility Model Publication No. H7-12187

[Summary of the Invention]

[Problems the Invention Is Intended to Solve]

[0004] This kind of ball launching toy is designed to allow suitable and safe play when using a regular ball.

[0005] However, according to the ball launching device noted in the abovementioned Patent Document 1, the location where the ball is set is flat, and at that location, not only regular balls but also non-regular balls can be set and launched. Furthermore, not only balls, but items such as marbles that have the risk of causing injury can be sent flying if launched.

[0006] The present invention was created based on these circumstances, and its purpose is to provide a ball launching toy that is safe and that can suitably launch only regular balls.

[Means for Solving the Problems]

[0007] The first means is a ball launching toy that comprises a ball and a launching mechanism provided on a base stand, and that uses the launching mechanism to energize and launch the ball set in a prescribed position on the base stand,

the ball launching toy characterized in that
a fitting recess is formed on the outer surface of the ball, and
on the base stand,
a ball stand is provided that rises in a mountain shape from the upper surface of the base stand, and has a fitting projection formed on the top that fits into the fitting recess to set the ball to a degree that does not obstruct launching of the ball.

[0008] The second means is the first means, characterized in that the ball stand and the launching mechanism are configured to be able to move relatively along the upper surface of the base stand within a range that does not obstruct launching by the launching mechanism.

[0009] The third means is the first means, characterized in that the ball stand comprises a cone-shaped pedestal, and a conical fitting projection erected at the center of the upper surface of the pedestal, and an annular flat surface constituted by the upper surface of the pedestal and on which the edge of the hole of the ball rests is formed around the fitting projection.

[0010] The fourth means is any of the first to third means, characterized in that on the base stand, a figure is provided that has a striking unit for striking and launching the ball placed on the ball stand.

[0011] The fifth means is the fourth means, characterized in that the base stand is provided with a figure, and on the figure is configured a striking unit that strikes and launches the ball using a part of the figure body or a striking tool carried by the figure.

[0012] The sixth means is the fifth means, characterized in that a moving leg is configured to be rotatable around the axis of the part corresponding to a hip joint, can take a rearward swing up position and a forward swing out position by rotating, and is configured to be locked in the swing up position in resistance to a prescribed energizing force, and so that the lock is released by operating an operating element provided on the base stand.

[0013] The seventh means is the fifth means, characterized in that the tip of the foot of the moving leg has an inclined surface formed so that the height of the instep is smaller facing from the top of the instep toward the edge of the foot.

[Effect of the Invention]

[0014] According to the present invention, the ball stand rises in a mountain shape and has a fitting projection at the top, so it is not possible to place a non-regular ball without a fitting recess on the ball stand. Moreover, the height of the placed balls differs between the regular ball placed on the ball stand and non-regular balls placed outside the ball stand.

[0015] Therefore, it is not possible to launch non-regular balls in the same way as regular balls. It is also not possible to launch items such as marbles in the same way as regular balls.

[Brief Description of the Drawings]

[0016]

FIG. 1 is a perspective view of a soccer game device according to an embodiment.
FIG. 2 is a perspective view of a kicker figure and a base stand seen from the rear.

FIG. 3 is a front view of a ball 11.
FIG. 4 is a rear view of the kicker figure.
FIG. 5 (A) is a side view of a foot of a moving leg, and (B) is a top view of that foot.
FIG. 6 is a drawing showing the locking mechanism of an axis leg when the moving let has swung out to the front.
FIG. 7 is a drawing showing the locking mechanism of the axis leg when the moving leg has swung up to the rear.
FIG. 8 is a perspective view showing the internal mechanism of the kicker figure and the base stand.
FIG. 9 is a part showing the ball stand, where (A) is the front view and (B) is the bottom view.
FIG. 10 is a top view of the kicker figure and the base stand.
FIG. 11 is a perspective view of a player display unit.
FIG. 12 is a perspective view of a goal device.
FIG. 13 is an exploded perspective view of a goal.
FIG. 14 is a perspective view of a goalkeeper figure, an operating rod, and a pedestal.
FIG. 15 is a rear side perspective view of the goalkeeper figure.
FIG. 16 is a front side perspective view of a figure holder.
FIG. 17 is an enlarged perspective view of a claw member.
FIG. 18 is an enlarged perspective view of a button and a linear motion member.
FIG. 19 is a side view of a push-out member and the claw member.
FIG. 20 (A) to (C) are top views for explaining the operation of the kicker figure.

[Modes for Carrying Out the Invention]

[0017] Hereafter, an embodiment of the present invention is explained using drawings.

General Configuration

[0018] FIG. 1 is a perspective view of a soccer game device 100 according to an embodiment.
[0019] This soccer game device 100 comprises a kicker figure 10 for kicking out the ball 11, a goal 50, a goalkeeper figure 60, and a player display unit 90.
[0020] FIG. 2 is a perspective view of the kicker figure 10 and a base stand 12 when viewed from the rear. This kicker figure 10 and the base stand 12 constitute a ball launching toy.
[0021] The kicker figure 10 is disposed on the base stand 12 that represents part of the field.
[0022] In the kicker figure 10, an axis leg 10a is fixed to the base stand 12, and a moving leg 10b is a swinging leg. The moving leg 10b is configured to be able to rotate forward and back around the part corresponding to a hip joint of the kicker figure 10, and can be locked in a swung up state to the rear (see FIG. 7).
[0023] A ball stand 13 for setting the ball 11 on is provided on the base stand 12. The ball stand 13 is formed rising in a mountain shape on the upper surface of the base stand 12, and has a fitting projection 13b on the top.
[0024] At the rear part of the base stand 12, an operating lever 12a for changing the planar position of the ball stand 13 and an operating lever 12b that is a trigger to have the moving leg 10b that was locked swung up to the rear swing out to the front.
[0025] The player display unit 90 is disposed at a position between the kicker figure 10 and the goal 50. The player display unit 90 obstructs the ball 11 kicked by the kicker figure 10 from entering the goal 50.
[0026] The goalkeeper figure 60 is supported on the tip of an operating rod 65, and by operating an operating grip 66, this can move vertically, horizontally, and diagonally. The goalkeeper figure 60 can fly away from the operating rod 65 by pressing a button 67 on the operating grip 66.

Detailed Structure

(Ball 11)

[0027] FIG. 3 is a front view of the ball 11.
[0028] Though not particularly restricted, the ball 11 is preferably formed using a soft, lightweight material. For example, the ball 11 is formed using a sponge. The ball 11 is formed with holes 11a that pass through the ball 11 vertically, horizontally, and front to back for airway maintenance in case of accidental swallowing. These holes 11a are connected to each other at the center of the ball 11. These holes 11a constitute a fitting recess that can be fitted with a fitting projection 13b described later, and the ball 11 is set in a prescribed position on the ball stand 13 by fitting.
[0029] The holes 11a for airway maintenance of the ball 11 may also pass through one direction of vertically, horizontally, and front to back. It is also possible to form the fitting recess with which the fitting projection 13b can be fitted separately from the hole 11a for airway maintenance.

(Kicker Figure 10)

[0030] FIG. 4 is a rear view of the kicker figure 10.
[0031] In the kicker figure 10, the axis leg (here, the left leg) 10a is screwed to the base stand 12 at the sole of the foot part. The toes of the axis leg 10a are facing left outward with respect to the direction of the upper body, and the part above the heel of the axis leg 10a is inclined leftward with respect to a vertical axis in the rear view. The upper body of the kicker figure 10 is in upright form with respect to the base stand 12 in the rear view.
[0032] The moving leg 10b of the kicker figure 10 is configured to be able to rotate front and back around a rotation axis 14 (FIG. 2) of the part corresponding to a hip joint of the kicker figure 10. The rotation of the moving leg

10b is done within a plane facing diagonally upwards to the front right.

[0033] The moving leg 10b is attached rotatably to the rotation axis 14. Though not illustrated, inside the moving leg 10b, a projection provided on the moving leg 10b and a projection provided on the rotation axis 14 are abutted against each other by a torsion spring wound on the rotation axis 14 with one end fixed to the rotation axis 14.

[0034] As a result, when the moving leg 10b swings up to the rear, and when the moving leg 10b swings out to the front, the moving leg 10b and the rotation axis 14 move integrally. In a state with the moving leg 10b locked at a position swung up to the rear, when the moving leg 10b is forcibly moved forward, only the moving leg 10b moves forward in resistance to the energizing force of the torsion spring.

[0035] FIG. 5 (A) is a side view of a foot 100b of the moving leg 10b, and FIG. 5 (B) is a top view of the foot 100b.

[0036] As shown in FIG. 5 (A), the foot 100b of the moving leg 10b has a certain amount of thickness. The center part in the width direction of the tip of the foot is an inclined surface 101b for which the height of the instep becomes lower from the top of the instep of the foot 100b toward the tip, and the right side part of that center part is also an inclined surface 102b for which the height of the instep becomes lower from the top of the instep toward the outer edge and the tip (edge) of the foot 100b. Furthermore, the left side part of that center part is also an inclined surface 103b for which the height of the instep becomes lower from the top of the instep toward the inner edge and the tip of the foot 100b.

[0037] By providing the inclined surfaces 101b, 102b, and 103b on the tip of the foot in this way, depending on the position the ball 11 is set at, it is possible to rub the ball 11 up, making it possible to rotate the ball and give a curve to the trajectory. For example, when the ball 11 is rubbed up using the inclined surface 102b, it is possible to kick out the ball 11 to curve to the right while increasing the height.

(Locking Mechanism of Moving Leg 10b)

[0038] FIG. 6 is a drawing showing the locking mechanism when the moving leg 10b is swung out forward, and FIG. 7 is a drawing showing the locking mechanism when the moving leg 10b is swung up to the rear.

[0039] A gear 15 is provided fixed to the rotation axis 14 projecting inside the axis leg 10a.

[0040] A sector gear 17 that rotates around the axis 16 is provided on the gear 15. A coil spring 18 that energizes the moving leg 10b in the direction to swing out forward is attached between the sector gear 17 and the upper body fixed part of the kicker figure 10.

[0041] A locked part 19 that rotates integrally around the same axis is also provided on the sector gear 17. A step part 19a in which the diameter changes rapidly is provided on the outer periphery of the locked part 19.

[0042] Meanwhile, a locking lever 20 that can rotate around an axis 20a is provided at the side of the gear 15. The top end part of the locking lever 20 can be disjointed with the locked part 19 according to the rotation direction of the locking lever 20. A coil spring 21 in which the top end part of the locking lever 20 is brought closer to the locked part 19 is provided between the locking lever 20 and the fixed part of the axis leg 10a.

[0043] With this locking mechanism of the moving leg 10b, when the locked part 19 is rotated by a prescribed angle counterclockwise on FIG. 6 via the gear 15 and the sector gear 17 with the moving leg 10b swung p to the rear, after the top end part of the locking lever 20 makes sliding contact with the locked part 19 by the energizing force of the coil spring 21, it is engaged with the step part 19a (FIG. 7). As a result, reverse rotation of the sector gear 17 by the accumulated energizing force of the coil spring 18 is prevented, and the moving leg 10b is locked in the position swung up to the rear.

[0044] The ball launching mechanism is constituted by the locking mechanism configured as described above and the lock release mechanism explained next.

(Lock Release Mechanism of Moving Leg 10b)

[0045] A lock release lever 23 that rotates around the axis 22 is provided inside the axis leg 10a. The lower end part of this lock release lever 23 projects downward of the kicker figure 10 and extends to inside the base stand 12.

[0046] FIG. 8 is a perspective view showing the internal mechanism of the kicker figure 10 and the base stand 12.

[0047] An operating lever 12b that rotates around an axis 24a is provided on the base stand 12. One end part of this operating lever 12b is energized in the direction going away from the lock release lever 23 by a coil spring 24b. When the operating lever 12b is operated in resistance to the energizing force of the coil spring 24b, one end part of the operating lever 12b presses the lower end part of the lock release lever 23. As a result, the lock release lever 23 rotates clockwise on FIG. 7 around the axis 22, and the top end part of the lock release lever 23 presses on the lower end part of the locking lever 20. Having done that, the locking lever 20 rotates counterclockwise on FIG. 7 around the axis 20a, and engagement of the top end part of the locking lever 20 and the step part 19a is released. As a result, locking of the moving leg 10b is released, and the moving leg 10b is vigorously swung out to the front by the accumulated energizing force of the coil spring 18.

(Ball Stand 13)

[0048] FIG. 9 (A) is a front view of the ball stand 13, and FIG. 9 (B) is a bottom view of the ball stand 13.

[0049] The ball stand 13 is provided with a mountain-shaped pedestal 13a, and a fitting projection 13b erected at the center of the top of the pedestal 13a. Here, the pedestal 13a is a truncated cone. A conical fitting projection 13b having a bottom surface diameter that is smaller

than the upper surface diameter of the pedestal 13a is formed on the upper surface center of the truncated cone. As a result, an annular flat surface made by the upper surface of the pedestal 13a is formed around the fitting projection 13b. This annular flat surface is used for seating the edge of the hole 11a of the ball 11.

[0050] The fitting projection 13b is fitted in the hole 11a of the ball 11 to a degree that does not obstruct launching of the ball 11 and holds the ball 11. The bottom surface diameter of the fitting projection 13b is substantially the same as the diameter of the hole 11a of the ball 11. The top of the fitting projection 13b is rounded.

[0051] With this ball stand 13, by having the annular flat surface, it is possible to always maintain a constant fitting depth for the fitting projection 13b and the hole 11a of the ball 11, and to make it possible to hold the ball 11 stably on the pedestal 13a.

[0052] The ball stand 13 can move in a prescribed direction along the upper surface of the base stand 12. The movement direction and the movement range of the ball stand 13 are not restricted provided they are a direction and range by which the moving leg 10b can reach the ball 11 set on the ball stand 13. Here, as shown in FIG. 9, the movement direction and the movement range are the direction substantially parallel to the extension direction of the intersection line by which the rotation surface of the moving leg 10b and the upper surface of the base stand 12 intersect, and a range that is smaller than the diameter of the pedestal 13b.

[0053] As shown in FIG. 9 (A) and (B), a projection 13c having a rectangular cross section is attached to the bottom side of the ball stand 13. This projection 13c enters from above into a slot 12c (see FIG. 10) formed vertically penetrating the upper wall of the base stand 12. As a result, the ball stand 13 can move along the slot 12c.

(Movement Mechanism of Ball Stand 13)

[0054] The projection 13c of the ball stand 13 is passed through the slot 12c, and as shown in FIG. 7, is fitted in a rectangular recess (not illustrated) of a rack 25 inside the base stand 12, and is screwed to the rack 25. The rack 25 is configured to be able to move along the slot 12c, and is linked to the operating lever 12a via a link 26. In specific terms, the rack 25 is linked to one end part of the link 26 to be able to rotate via a pin (not illustrated), and the other end part of the link 26 is linked to one end part of the operating lever 12a to be able to rotate via a pin 28a. The operating lever 12a is configured to be able to rotate around an axis 28b. As a result, when the operating lever 12a is operated, the rack 25 moves in one direction or the other direction of the slot 12c according to the operating direction of the operating lever 12a.

[0055] As shown in FIG. 8, six teeth 25a are arranged in parallel on the side of the rack 25. Meanwhile, next to the rack 25, a claw member 27 for positioning is provided. The claw member 27 is configured to be able to rotate around an axis 27a, and a claw 27b of one end part is energized by a coil spring 27c in a direction for contacting the rack 25. The claw 27b is configured to mesh with the teeth 25a of the rack 25, and it is possible to change the position of the ball stand 13 in five steps by operating the operation lever 12a.

[0056] In the embodiment, it is possible to change the position of the ball stand 13 in five steps, but provided it is in a range in which the foot of the moving leg 10b contacts the ball 11, it is also possible to have a configuration in which the position of the ball stand 13 can be changed steplessly.

(Player Display Unit 90)

[0057] FIG. 11 is a perspective view of the player display unit 90.

[0058] The player display unit 90 is provided with a panel 91 on which two field players are depicted side by side, and a stand 92 for standing up the panel 91.

[0059] The panel 91 is formed using cardboard or plastic. Meanwhile, an insertion groove 93 in which the panel 91 can be inserted and removed is formed on the stand 92.

[0060] The panel 91 is attached to the stand 92 by inserting the lower end part of the panel 91 into the insertion groove 93.

(Goal 50)

[0061] FIG. 12 is a perspective view of the goal device, and FIG. 13 is an exploded perspective view of the goal 50. Hereafter, the goalkeeper figure 60 side is explained as "front," and the operating grip 66 side as "rear."

[0062] The goal device is provided with the goal 50, the goalkeeper figure 60, and the operating rod 65. The goal 50 is composed of panels 50a, 50b, 50c, 50d, 50e made of a grid pattern plastic (e.g. polypropylene), and a pedestal 52.

[0063] The panels 50a, 50b are panels that constitute the side walls. These panels 50a, 50b have a shape in which the corner where the top side and the rear side of the rectangular panels meet is chamfered to create a hypotenuse.

[0064] The panels 50c, 50d, 50e are each rectangular and constructed as one piece, and their respective joints are thin-walled so that the joints can be folded.

[0065] The panel 50c is attached to the top side of the panels 50a, 50b, the panel 50d to the oblique side, and the panel 50e to the rear side by recess and projection fitting.

[0066] A recess 51 that opens downward is formed at the center in the width direction of the panel 50e.

[0067] The pedestal 52 is attached to be detachable under the panel 50e.

[0068] The panels 50a, 50b, 50c, 50d, 50e may all be integrally configured so as to be foldable, or the panels 50a, 50b, 50c, 50d, 50e may each be configured separately.

(Operating Rod 65)

[0069] FIG. 14 is a perspective view of the goalkeeper figure 60, the operating rod 65, and the pedestal 52.

[0070] The operating rod 65 is attached to the goal 50 in a form passing front and rear through the space defined by the top edge and the side edge of the recess 51 of the panel 50e and the base 52.

[0071] The operating rod 65 is provided with a figure holder 69 at the tip of a stick 68, and has a structure in which the operating grip 66 is provided at the rear end of the stick 68. The figure holder 69 and the operating grip 66 are provided standing up with respect to the stick 68. The figure holder 69 and the operating grip 66, by being provided standing up in the same direction, make it possible to operate the operating grip 66 in the same direction as the direction one wishes to move the goalkeeper figure 60, so it is possible to operate the operating grip 66 intuitively.

(Movement, etc., of Goalkeeper Figure 60)

[0072] As shown in FIG. 14, a flange part 68a that juts out in a fan shape is formed near the operating grip 66 of the stick 68. This flange part 68a enters a groove 53 formed on the upper surface of the pedestal 52. By the flange part 68a having sliding contact left and right on the bottom surface of the groove 53, it is possible to move the goalkeeper figure 60 left and right. It is also possible to tilt the goalkeeper figure 60 left and right by rolling the flange part 68a in a state abutting the bottom surface of the groove 53.

(Figure Release Mechanism)

[0073] FIG. 15 is a rear side perspective view of the goalkeeper figure 60, and FIG. 16 is a front side perspective view of the figure holder 69.

[0074] A slider 61 is provided on the back of the goalkeeper figure 60. A lip groove 62 that extends in the vertical direction is formed on the slider 61. In the slider 61, the top end of the lip groove 62 is closed, and the bottom end is open. Meanwhile, a pair of guides 73 that are fitted to be able to be in sliding contact from below on the lip groove 62 of the slider 61 is provided on the figure holder 69.

[0075] A pair of claws 63 is provided on the lower back side of the goalkeeper figure 60. Meanwhile, a claw member 75 (see FIG. 17) that can rotate around an axis 75a is provided inside the figure holder 69. A pair of claws 75b that project from the front surface of the figure holder 69 and can engage with the claw 63 is provided on the claw member 75. The pair of claws 75b fit the lip groove 62 of the goalkeeper figure 60 with the guide 73 of the figure holder 69, and when the goalkeeper figure 60 is slid along the guide 73 to the lower limit position, the pair of claws 63 engage by the energizing force of a coil spring 80 described later. As a result, the goalkeeper figure 60 is held by the figure holder 69.

[0076] It is possible to provide a torsion spring that works in the same way as the coil spring 80 on the claw member 75 and omit the coil spring 80, or to provide a torsion spring together with the coil spring 80.

[0077] On the other hand, as shown in FIG. 18, a linear motion member 76 capable of moving vertically is provided inside the operating grip 66. This linear motion member 76 is energized upward by a coil spring 77 attached between itself and the fixed part of the operating grip 66, and by pressing the button 67, operates downward in resistance to the energizing force of the coil spring 77.

[0078] The linear motion member 76 and the claw member 75 are linked to each other by a link 78 provided inside the stick 68.

[0079] Specifically, a pin 76a is attached to the lower end part of the linear motion member 76, and this pin 76a is engaged with an inclined slot 78a that is formed on the rear end part of the link 78. Meanwhile, as shown in FIG. 16, another inclined slot 78b is formed on the front end part of the link 78, and a pin 75c attached to the part separated from the axis 75a on the claw member 75 is engaged with this slot 78b.

[0080] As a result, by pressing the button 67, when the linear motion member 76 descends, the link 78 moves to the rear, the claw member 75 rotates in a prescribed direction, and the engagement of the claw 75b and the claw 63 is released.

[0081] It is possible to provide the link 78 with a coil spring that does the same work as the coil spring 77 to energize forward and omit the coil spring 77, or to provide the coil spring together with the coil spring 77.

[0082] As shown in FIG. 19, a push-out member 79 that can move vertically is provided near the claw member 75. The push-out member 79 is energized upward by the coil spring 80. A projection piece 79a that can abut an abutting part 64 (FIG. 15) below the slider 61 is provided on the push-out member 79. The projection piece 79a is pressed by the abutting part 64 below the slider 61 when the goalkeeper figure 60 is lowered along the guide 73, and is pressed downward in resistance to the energizing force of the coil spring 80. As a result, the energizing force of the coil spring 80 is accumulated. Then, the claw 75b and the claw 63 are engaged.

[0083] When the button 67 is pressed in this state, the linear motion member 76 descends, and by the link 78 moving to the rear, the claw member 75 is rotated in a prescribed direction, releasing the engagement of the claw 75b and the claw 63, and by the push-out member 79 rising by the energizing force of the coil spring 80 and pushing out the goalkeeper figure 60, the goalkeeper figure 60 is released.

(Operation of Kicker Figure 10)

[0084] The kicker figure 10 of the soccer game device 100 configured as described above operates as follows.

[0085] By swinging the moving leg 10b of the kicker figure 10 upward by hand (FIG. 20(A)), the rotation axis 14 and the gear 15 rotate counterclockwise on FIG. 5, and furthermore, the sector gear 17 meshed with the gear 15 rotates clockwise on FIG. 5. Having done that, the locked part 19 that is integral with the sector gear 17 rotates in the same direction as the sector gear 17, and the step part 19a of the locked part 19 engages with the top edge of the locking lever 20 by the energizing force of the coil spring 21 (FIG. 7). As a result, reverse rotation of the sector gear 17 and the rotation axis 14 is prevented, and the moving leg 10b is locked in the swung up position. The energizing force of the coil spring 18 is accumulated by rotation of the sector gear 17.

[0086] Next, when the operating lever 12b is operated to the rear, by the lower end part of the lock release lever 23 in the state shown in FIG. 6 being pressed by the operating lever 12b, the lock release lever 23 is rotated clockwise. Having done that, the lower end part of the locking lever 20 is pressed by the top end part of the lock release lever 23, the locking lever 20 is rotated counterclockwise, and engagement of the top end part of the locking lever 20 and the step part 19a of the locked part 19 is released.

[0087] As a result, the moving leg 10b is vigorously swung out to the front by the accumulated energizing force of the coil spring 18, and kicks the ball 11 set on the ball stand 13 (FIG. 20 (B), (C)).

[0088] In this case, when the ball 11 set in the ball stand 13 is in a position relatively close to the kicker figure 10, the toes of the moving leg 10b of the kicker figure 10 enter below the ball 11. For example, in the case of FIG. 20 (B), the foot of the moving leg 10b enters below the ball 11 by rotation of the moving leg 10b, and rubs the ball 11 up on the inclined surface 102b. Because of that, the ball 11 is kicked up high and forward, and the kicked up ball 11 curves to the right.

[0089] Meanwhile, when the ball 11 is in a position relatively far from the kicker figure 10, the foot edge of the moving leg 10b of the kicker figure 10 contacts near the middle in the vertical direction of the ball 11. Because of that, the ball 11 is not rubbed up, but rather the ball 11 is kicked straight out to the front.

(Effect of the Embodiment)

[0090] The following effects can be obtained by the embodiment described above.

[0091] According to the embodiment noted above, the ball 11 is set by fitting the fitting projection 13b into the hole 11a of the ball 11, so it is possible to reliably and safely set the ball 11 in a prescribed setting position.

[0092] According to the embodiment noted above, the fitting projection 13b is conical, so simply by matching the top of the fitting projection 13b and the hole 11a of the ball 11 and placing the ball 11, it is possible to easily fit the fitting projection 13b with the hole 11a.

[0093] Furthermore, according to the embodiment noted above, because the fitting projection 13b is conical, it is possible to improve releasing of the ball 11 when the moving leg 10b is hit against the set ball 11.

[0094] According to the embodiment noted above, because the fitting projection 13b is formed on the ball stand 13, a ball without a fitting recess (called a non-regular ball) cannot be set in the location of the fitting projection 13b because it is blocked by the fitting projection 13b. In fact, because the pedestal 13a of the ball stand 13 has a mountain shape, if an attempt is made to place a non-regular ball on the pedestal 13a, the ball will roll, and cannot be set on the pedestal 13a.

[0095] According to the embodiment noted above, by moving the ball stand 13, it is possible to change the contact location or the contact status of the moving leg 10b on the ball 11, so it is possible to change to various trajectories for the kicked out ball 11.

[0096] Specifically, with the kicker figure 10 of the embodiment, the trajectory of the foot of the moving leg 10b is from right rear to left front seen from above when referring to FIG. 20. The height of the foot of the moving leg 10b changes from high to low to high in conjunction with rotation. By rotation of the moving leg 10b, the direction of the toes also changes. As a result, the abutting location or the abutting state of the foot of the moving leg 10b with the ball 11 changes according to the ball 11 setting position, so it is possible to kick the ball 11 in various trajectories. Particularly with the inclined surfaces 101b, 102b, 103b provided, it is possible to rub up the ball 11 according to the setting position of the ball 11, so it is possible to generate a significant change in the trajectory of the ball 11.

[0097] According to the embodiment noted above, the inclined surfaces 101b, 102b, 103b for which the height of the instep becomes smaller facing from above the instep of the foot 100b of the moving leg 10b to the edge of the foot 100b, so it is possible to rub the ball 11 up according to the setting position of the ball 11, making it possible to rotate the ball 11 and give a curve to the trajectory.

(Modification Examples)

[0098] An embodiment of the present invention was explained above, but the present invention is not limited to the embodiment, and it goes without saying that various modifications are possible.

[0099] In the embodiment noted above, the ball 11 was made to fly by the moving leg (striking unit) 10b of the kicker figure 10 contacting the ball 11, but it is also possible to configure to make the ball 11 fly with a striking tool such as a baseball bat, a racket, or a golf club carried by the figure as the striking unit.

[0100] In the embodiment noted above, the configuration was such that the moving leg 10b of the kicker figure 10 is swung up to the rear and locked, and by releasing the lock, the moving leg 10b is swung out to the front, but it is also possible to configure such that by swinging up the moving leg 10b of the kicker figure 10 to the rear by hand

and simply releasing the hand from the moving leg 10, the moving leg 10b is swung out to the front. In this case, it is possible to configure with a launching mechanism provided in the kicker figure 10, and to release locking of the moving leg 10b by operation of the operating element attached to the kicker figure 10.

[0101] Alternatively, it is also possible to swing up the moving leg 10b using a motor and store energy in the coil spring 18, or to operate the lock release member 23 that releases locking of the swung up moving leg 10b using the motor.

[0102] In the embodiment noted above, the configuration was such that the ball stand 13 is able to move along the upper surface of the base stand 12, but it is also possible to configure so that the ball stand 13 can move vertically in a range in which the fitting projection 13b will not be buried from the upper surface of the base stand 12.

[0103] In the embodiment noted above, the configuration was such that the ball stand 13 can move along the upper surface of the base stand 12, but it is also possible to configure such that the launching mechanism can move along the upper surface of the base stand 12 in a range in which the foot of the moving leg 10b reaches the ball 11. Alternatively, it is possible to configure such that the ball stand 13 and the launching mechanism are both able to move in a range in which the foot of the moving leg 10b reaches the ball 11.

[0104] In the embodiment noted above, the movement direction and movement range of the ball stand 13 were set as the direction substantially parallel to the extension direction of the intersection line in which the rotation surface of the moving leg 10b and the upper surface of the base stand 12 intersect, but it is also possible to move in the left-right direction at the forward position of the kicker figure 10, or move in the front-rear direction at the side position of the kicker figure 10. By working in this way, it is possible to have various locations of the foot of the moving leg 10b contact the ball 11 according to the setting position of the ball 11, and to change so the kicked out ball 11 has various trajectories.

[0105] It is also possible to attach the ball stand 13 to the base stand 12 using a magnet. It is also possible to make it possible to change the attachment location of the ball stand 13.

[0106] Modification examples were explained above, but it goes without saying that these modification examples can be combined with each other as long as they are not inconsistent.

(Other Inventions Derived from the Present Specification)

[0107] Above, an embodiment and modification examples of the present invention were explained, but it is also possible to derive inventions such as the following from the present specification. According to these inventions, the goalkeeper figure can be operated in various ways, making it possible to enjoy the soccer game more.

(First Invention)

[0108] An operating rod provided with: straight rod shaped stick provided penetrating the rear panel of the goal front to back; a figure holder that is provided on one end of the stick, and that supports the goalkeeper figure so that the height direction is orthogonal to the stick; and an operating grip that is provided on the other end of the stick, and that extends in the height direction of the goalkeeper figure.

(Second Invention)

[0109] An operating rod characterized in that in the first invention, the goalkeeper figure is locked in resistance to a prescribed energizing force on the figure holder, and by operation of an operating element provided on an operating grip, the locking of the goalkeeper figure by the figure holder is released, and the goalkeeper figure is released by the energizing force.

(Third Invention)

[0110] A goal device characterized in that the operating rod of the first invention or the second invention is provided, and the operating rod is provided penetrating front to back through an opening of a rear panel.

(Fourth Invention)

[0111] In the third invention, the opening is characterized in that a slot is formed in the left-right direction of the rear panel, and the operating rod is able to move in the left-right direction along the opening.

(Fifth Invention)

[0112] A goal device characterized in that in the fourth invention, comprised is a pedestal that constitutes the bottom edge of the opening and supports the operating rod from below, a groove extending in the left-right direction is formed on the pedestal, a flange part that bulges in concentric form with the stick and that enters the groove is formed on the outer periphery of the stick, and the operating rod moves left and right by the flange part being in sliding contact with the bottom surface of the groove, and rotates around the center line of the stick by the flange part rolling on the bottom surface in the guide groove.

[Explanation of Codes]

[0113]

10	Kicker figure
10a	Axis leg
10b	Moving leg
11	Ball

11a	Hole (fitting recess)
12	Base stand
12a	Operating lever
12b	Operating lever
12c	Slot
13	Ball stand
13a	Pedestal
13b	Fitting projection
14	Rotation axis
15	Gear
17	Sector gear
19	Locked part
19a	Step part
20	Locking lever
23	Lock release lever
25	Rack
25a	Teeth
26	Link
27	Claw member
50	Goal
51	Recess
52	Pedestal
60	Goalkeeper figure
61	Slider
63	Claw
64	Abutting part
65	Operating rod
66	Operating grip
67	Button
68	Stick
68a	Flange part
69	Figure holder
73	Guide
75	Claw member
76	Linear motion member
78	Link
79	Push-out member
90	Player display unit
100	Soccer game device

Claims

1. A ball launching toy that comprises a ball and a launching mechanism provided on a base stand, and that uses the launching mechanism to energize and launch the ball set in a prescribed position on the base stand,

the ball launching toy **characterized in that**
a fitting recess is formed on the outer surface of the ball, and
on the base stand,
a ball stand is provided that rises in a mountain shape from the upper surface of the base stand, and has a fitting projection formed on the top that fits into the fitting recess to set the ball to a degree that does not obstruct launching of the ball.

2. The ball launching toy according to claim 1, **characterized in that** the ball stand and the launching mechanism are configured to be able to move relatively along the upper surface of the base stand within a range that allows launching by the launching mechanism.

3. The ball launching toy according to claim 1, **characterized in that** the ball stand comprises a cone-shaped pedestal, and a conical fitting projection erected at the center of the upper surface of the pedestal, and an annular flat surface constituted by the upper surface of the pedestal and on which the edge of the hole of the ball rests is formed around the fitting projection.

4. The ball launching toy according to any of claims 1 to 3, **characterized in that** on the base stand, a figure is provided, and on the figure is configured a striking unit for striking and launching the ball using a part of the figure body or a striking tool carried by the figure.

5. The ball launching toy according to claim 4, **characterized in that** the figure has an axis leg fixed to the base stand, and the moving leg constitutes the striking unit.

6. The ball launching toy according to claim 5, **characterized in that** the moving leg is configured to be rotatable around the axis of a part corresponding to a hip joint, can take a rearward swing up position and a forward swing out position by rotating, and is configured to be locked in the swing up position in resistance to a prescribed energizing force, and so that the lock is released by operating an operating element provided on the base stand.

7. The ball launching toy according to claim 5, **characterized in that** the tip of the foot of the moving leg has an inclined surface formed so that the height of the instep is smaller facing from the top of the instep toward the edge of the foot.

Fig. 1

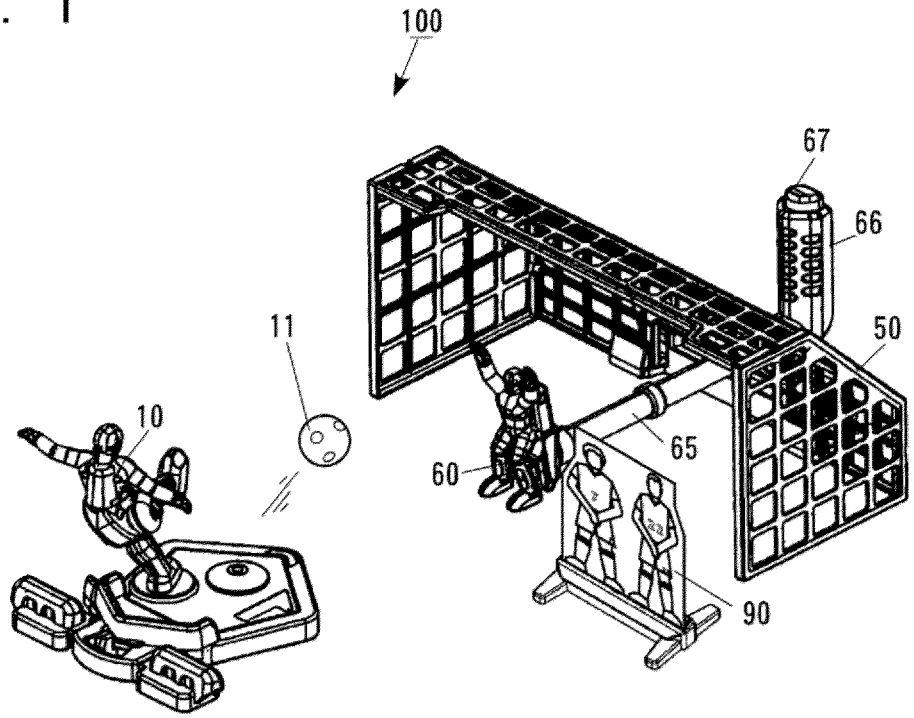


Fig. 2

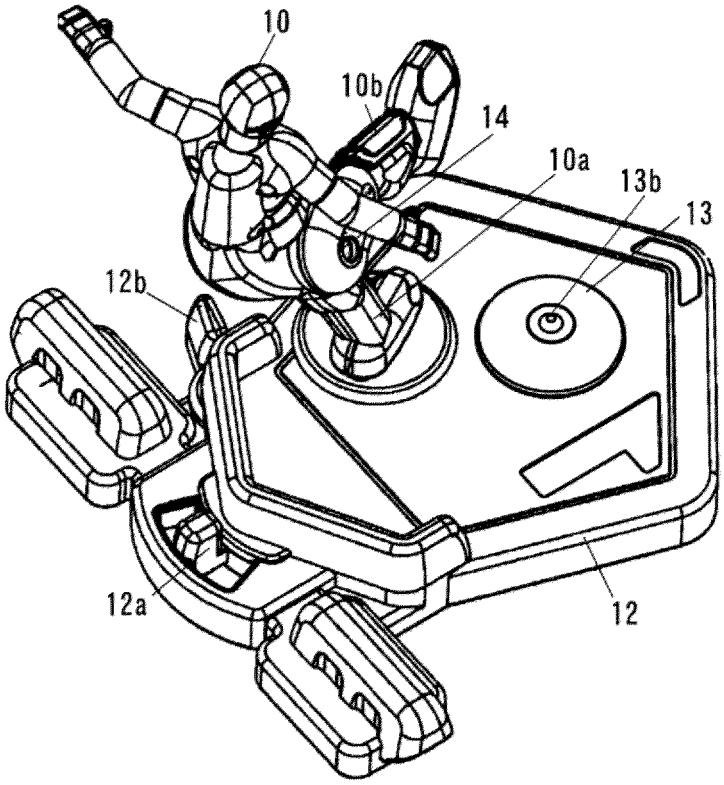


Fig. 3

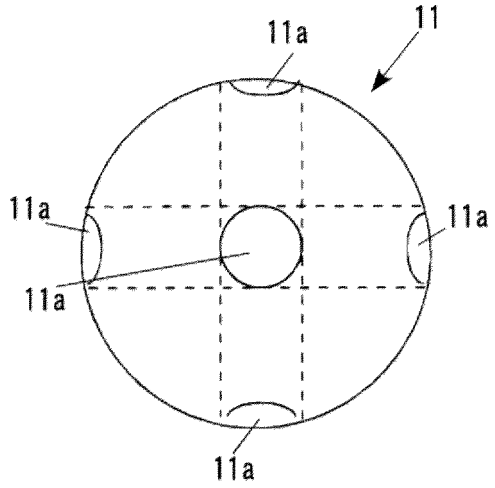


Fig. 4

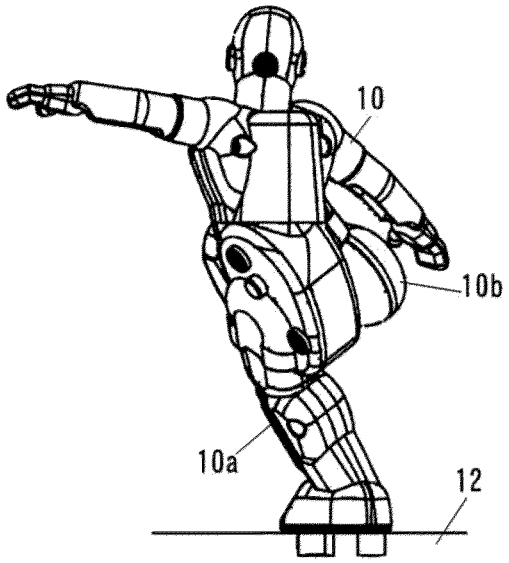


Fig. 5(A)

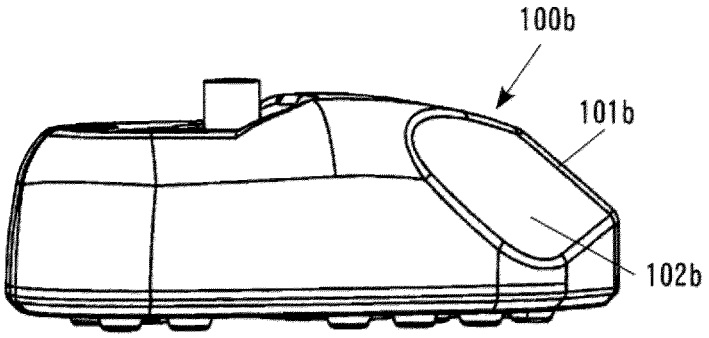


Fig. 5(B)

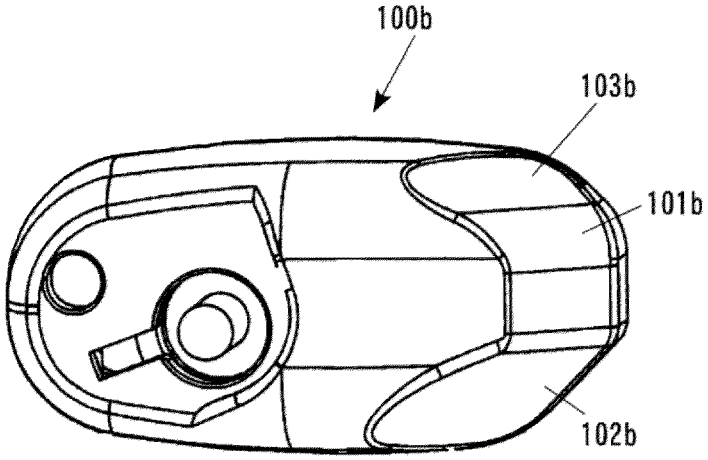


Fig. 6

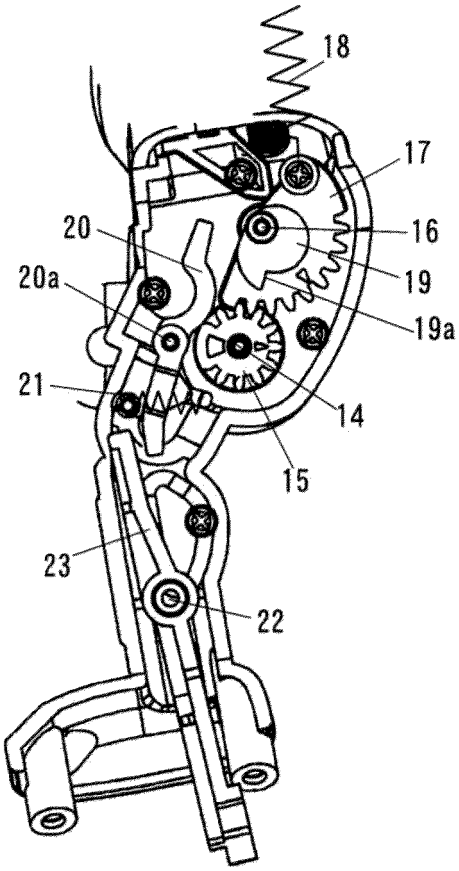


Fig. 7

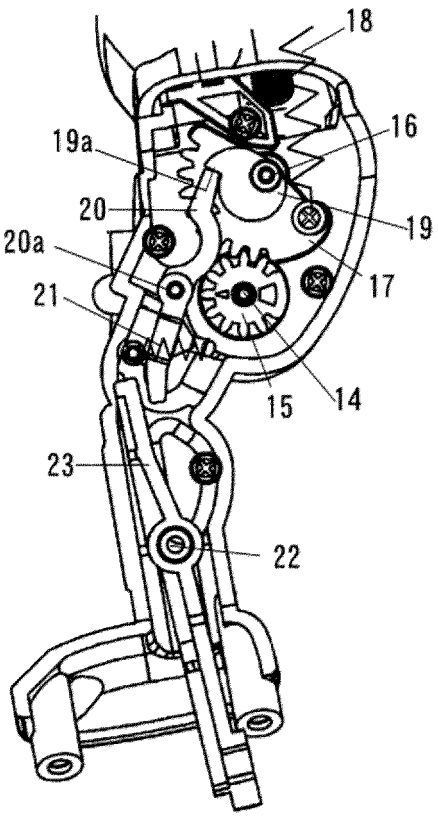


Fig. 8

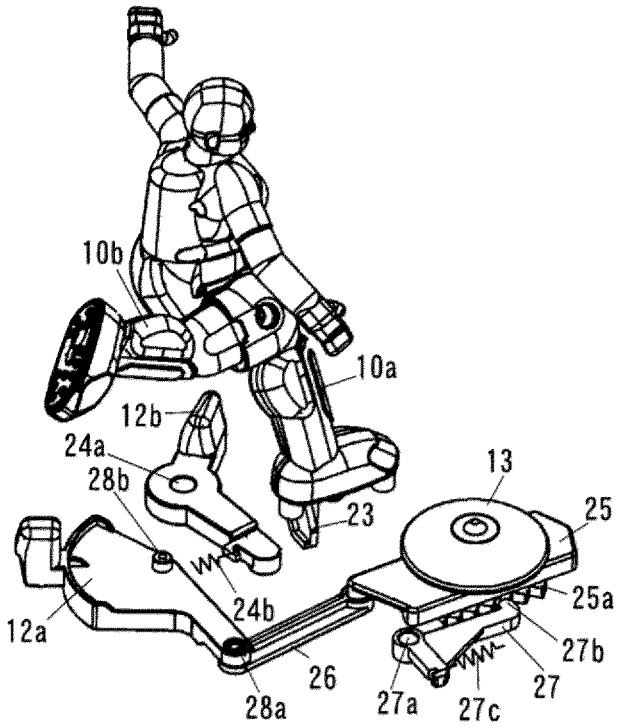


Fig. 9(A)

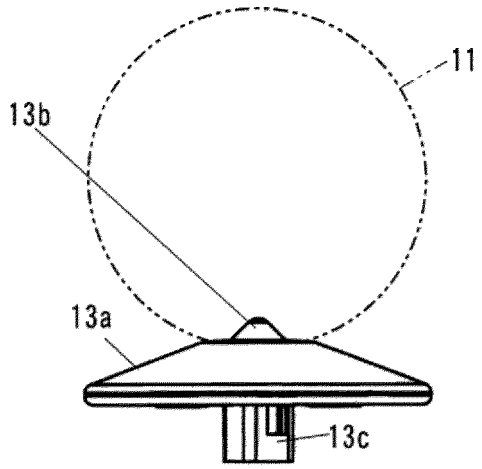


Fig. 9(B)

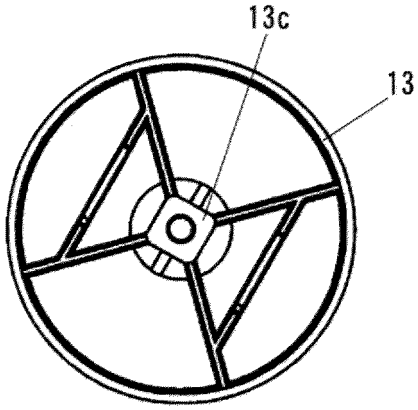


Fig. 10

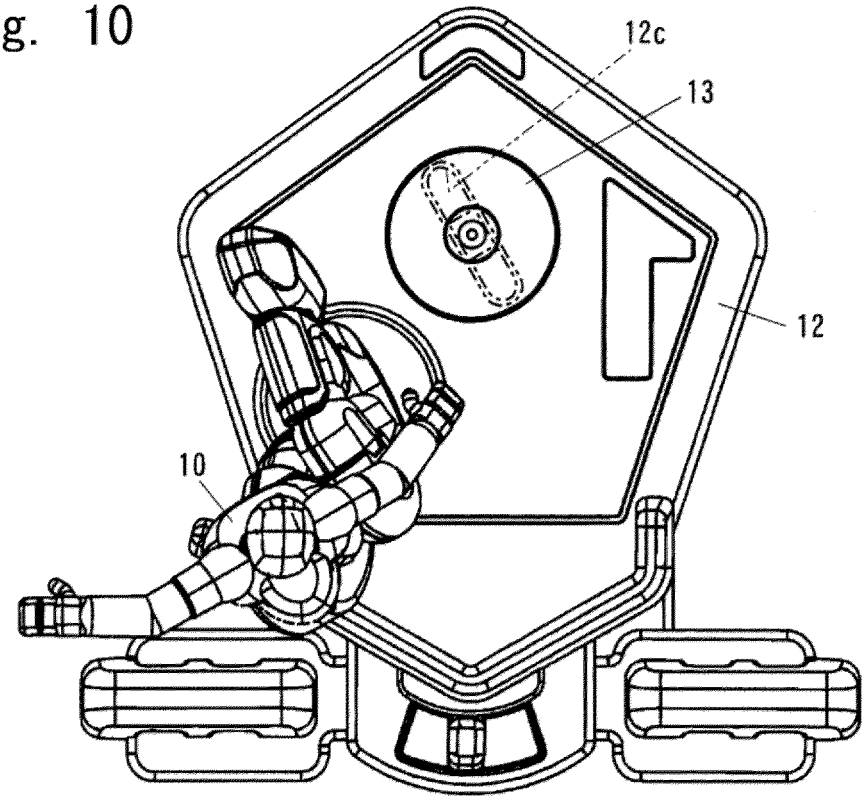


Fig. 11

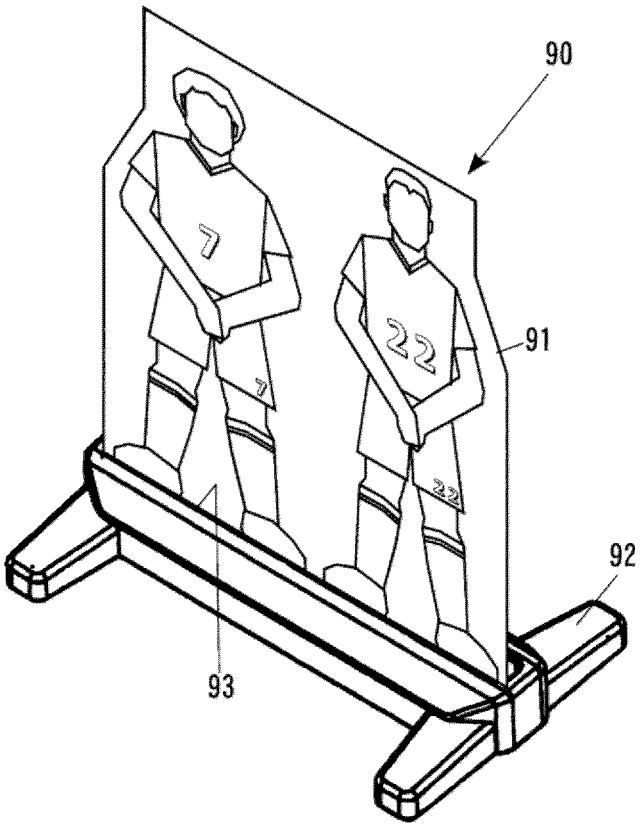


Fig. 12

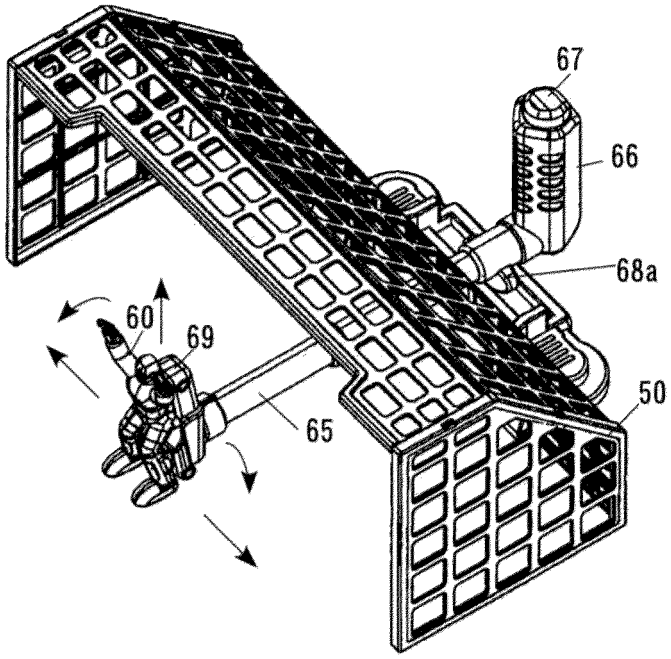


Fig. 13

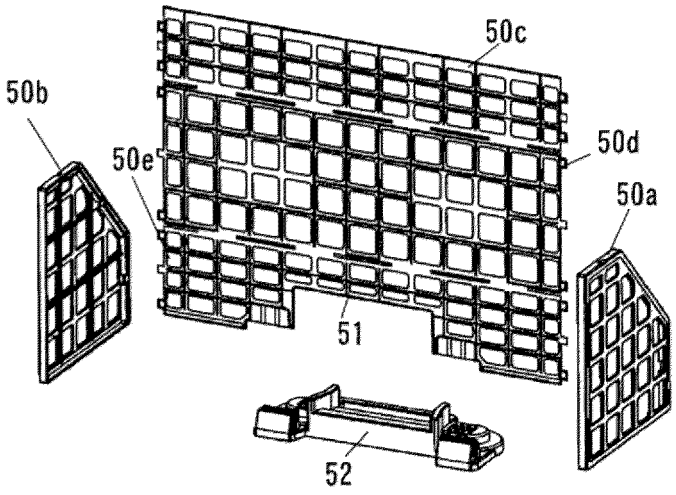


Fig. 14

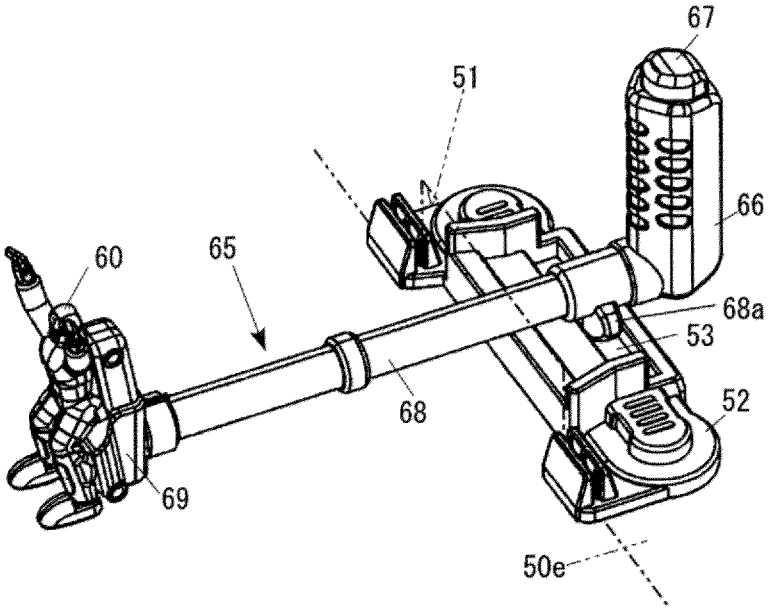


Fig. 15

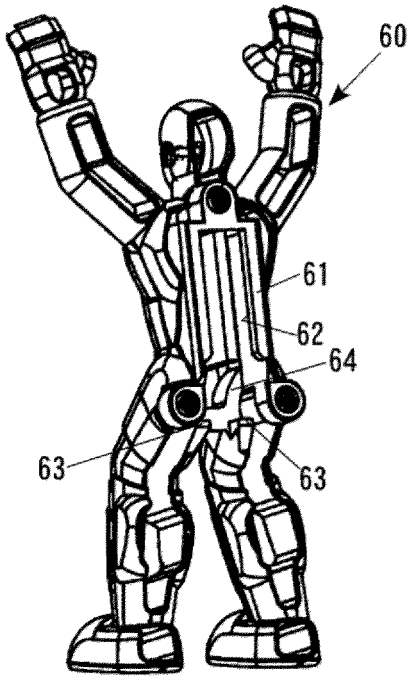


Fig. 16

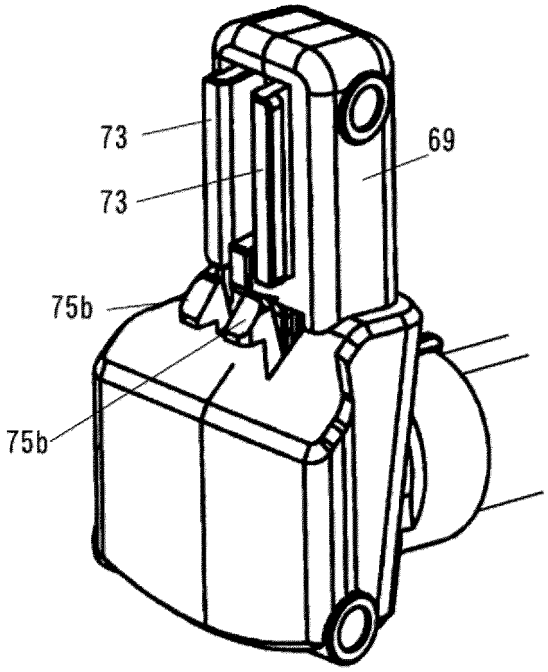


Fig. 17

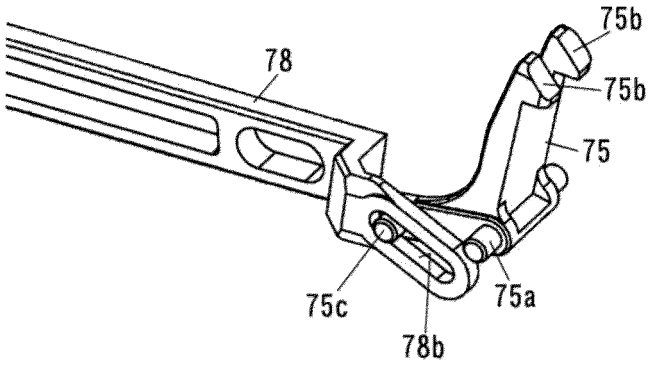


Fig. 18

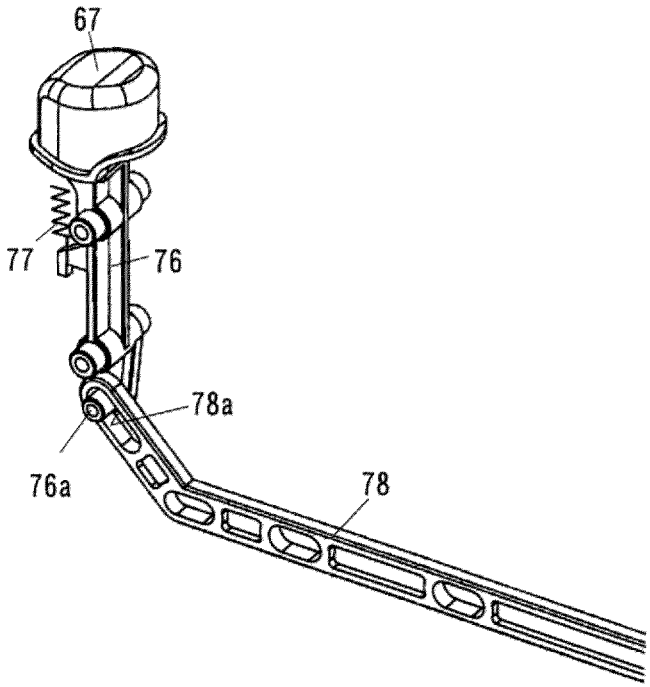


Fig. 19

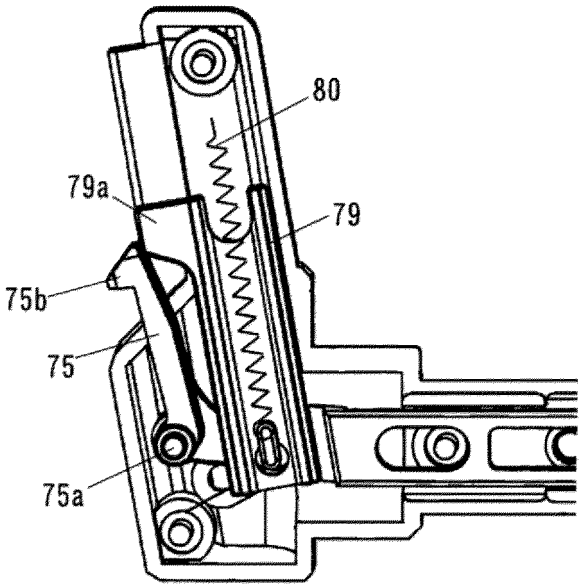


Fig. 20(A)

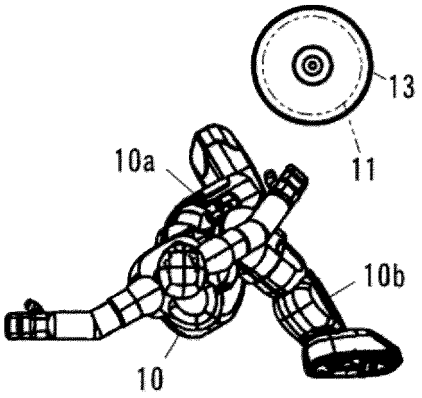


Fig. 20(B)

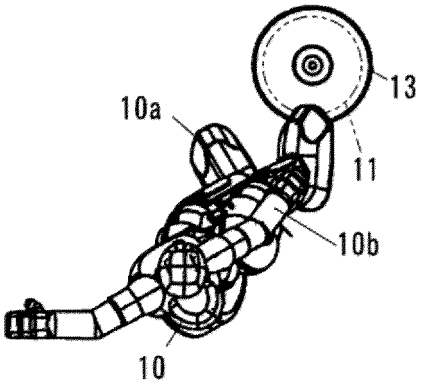
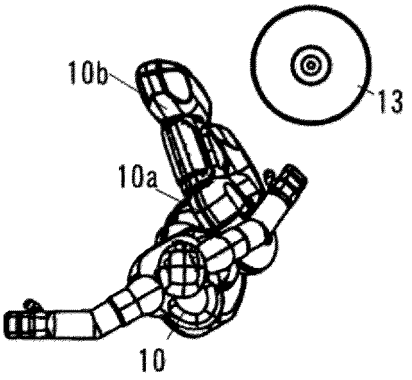


Fig. 20(C)



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EUROPEAN SEARCH REPORT

Application Number
EP 24 19 7303

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 3 888 485 A (CONTI CARL) 10 June 1975 (1975-06-10) * column 3, lines 30-45; figure 2 *	1-7	INV. A63F7/06 A63F7/24 A63F7/40
A	US 2 249 670 A (MAY SIDLE BERTHA) 15 July 1941 (1941-07-15) * the whole document *	1-7	
A	US 1 954 838 A (WOOLSEY CHARLES A ET AL) 17 April 1934 (1934-04-17) * the whole document *	1-7	
A	US 1 632 439 A (FOANS ANDREW B) 14 June 1927 (1927-06-14) * the whole document *	1-7	
A	EP 1 685 881 A1 (M & C TOY CT LTD [CN]) 2 August 2006 (2006-08-02) * paragraph [0011] * * paragraph [0013] *	1-7	

TECHNICAL FIELDS SEARCHED (IPC)

A63F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	21 January 2025	Turmo, Robert

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21-01-2025

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 3888485 A	10-06-1975	NONE	
US 2249670 A	15-07-1941	NONE	
US 1954838 A	17-04-1934	NONE	
US 1632439 A	14-06-1927	NONE	
EP 1685881 A1	02-08-2006	AR 050975 A1	13-12-2006
		AT E430608 T1	15-05-2009
		BR PI0502046 A	12-09-2006
		CN 1810335 A	02-08-2006
		CN 2858010 Y	17-01-2007
		EP 1685881 A1	02-08-2006
		ES 2325166 T3	27-08-2009
		HK 1075353 A2	09-12-2005
		HK 1090864 A1	05-01-2007
		JP 4509849 B2	21-07-2010
		JP 2006204879 A	10-08-2006

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Patent documents cited in the description

- WO H712187 A **[0003]**