BOXER PUPPETS AND REPRODUCTION OF BOXING MOVEMENTS

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ABSTRACT

"IMPROVEMENTS IN BOXER PUPPETS AND REPRODUCTION OF BOXING MOVEMENTS", particularly of boxer puppets which include a series of movements ordered through commands mounted beside the ring and manually activated by two competitors, so that these referred puppets can provoke various blows, including with the arms, body and legs, creating a fighting situation very close to reality. Composed of boxer puppets (1), which are positioned on a small ring (2) and are monitored by two competitors through the activation of controls (3) disposed in pairs, in two opposite points of the mentioned ring (4), preferentially on a diagonal; each mentioned boxer puppet (1) is positioned standing on the ring (2), having the right foot (4) pivotally coupled to a mechanism; the same occurs with the left foot (5); the boxer puppet (1) has characteristics of movement for the legs, trunk, arms and head.
BOXER PUPPETS AND REPRODUCTION OF BOXING MOVEMENTS

[0001] This document is a request for a Patent of Invention for “IMPROVEMENTS IN BOXER PUPPETS AND REPRODUCTION OF BOXING MOVEMENTS”, particularly boxer puppets which include a series of movements ordered through commands mounted beside the ring and manually activated by two competitors, so that these referred puppets can apply various blows, using the arms, body and legs, creating a fighting situation very close to reality.

STATE OF TECHNIQUE

[0002] The present state of technique is composed of boxer puppets deposited by this inventor under no. PI 0100497-2, which analogously refers to the execution of fighting movements through commands activated by the competitors. In summary, there is a ring and, in two of its opposed vertices, commands for the right and left hands of each competitor, so that the corresponding boxer puppet moves by command of the respective competitor.

[0003] Although these boxer puppets have satisfactory efficiency, considering the state of the technique, the inventor, searching for constant advance and improvement in the operational and manufacturing functions of the product, now requests important improvements put into effect in various devices of the boxer puppet. In general, the previous patent describes two boxer puppets, where each has its own, identical and individual movement, manipulated by two players. It also affirms that they are fixed, one in front of the other on a square base, simulating a ring, having four controls, two for each boxer.

[0004] The previously mentioned patent document also affirms that the puppets oppose one another, launching a variety of blows, as in a conventional boxing match, even possibly causing a knockout. In this case, a blow of predetermined intensity on the head could activate a lock on the knee, causing the puppet which was hit to fall on its back; this mechanism can be reactivated.

[0005] The operation of the puppet, using the previous technique, was on an extremely complex construction, with an excessive number of parts, notably in reference to the body and arm movements, including helicoids springs. Besides this, the activators revealed an assembly of parts which had the purpose to pass, guide and move the activation cables; however, the movement and guiding system needed some modifications to offer greater durability, efficiency and a quick response from the various activators.

[0006] It should be noted that in the drawing of Figure C of the previous patent request, the puppet’s body showed a cylinder to rotate it, besides the helicoids spring, interconnecting the arms and, last, a complex mechanism of couplings for the arms and cables to move the head.

THE INVENTION

[0007] The invention presented here has a series of improved constructive aspects, when compared to the previous technique. These characteristics extend to all sectors of the toy, that is, going from the activators, activation, rotation and cable guide mechanisms, as well as the mechanism to move the puppet’s body, arms and head.

[0008] Technically, the improved boxer puppets use a shaft with a sphere inside the ring on each command mechanism, so that this sphere supports the fixed and rotating claws which transmit the movements to the various parts of the puppet through cables.

[0009] In each command mechanism mentioned there is a trigger through which a cable passes over the sphere and ascends inside the puppet, arriving at a crosspiece system which operates the puppet’s arm movements, simplifying the response and making it more efficient, when compared to the mechanism of the previous technique.

[0010] Another aspect altered in the present invention consists in the head moving mechanism, which is designed to be moved when activating the respective cable which connects to a rod terminal.

[0011] The mechanism to move the puppet’s body was also altered to gain more efficiency, durability and simplicity in construction, basically, a type of intermediary ring pivotally coupled to the puppet’s lower members, this ring receives two terminals in diametrically opposed points, also pivotally coupled and projecting till a larger diameter ring, placed above them which, on its part, is topped by a relatively thin plastic sheet (34) projecting towards the puppet’s head (35), where there are terminals (36), to receive the respective cables and over which covers are placed, forming the heads themselves (37).

[0012] The plastic sheet mentioned is composed of intermediate vertical slits, in which a transverse shaft is coupled, which projects from these slits beyond the sheet, where it is pivotally coupled, so that the cables coming from the activation trigger are fixed on the free ends of this shaft, as well as the shafts which extend to the right and left arms of the puppet, each one corresponding to its respective trigger. In summary, the invention stands out by proposing movements through activation controls, installed on the sides of the ring, diagonally opposite, two activators on each contrary sector, that is, one for the right hand and another for the left. In summary, each activating command mentioned performs four basic movements, so that each assembly, jointly, performs all the trunk, head, leg and arm movements of the puppets.

[0013] With the construction mentioned here, the boxer puppets can be manipulated with greater efficiency by the competitors, with quick responses, besides the fact that important innovations were added to the mechanism to move the trunk, head, arms and to move the feet.

DESCRIPTION OF THE DRAWINGS

[0014] The invention will be explained below, based on the drawings enclosed, which represent:

[0015] FIG. 1: Perspective view showing a boxer puppet with feet and respective devices, as well as the activating commands;
[0016] FIG. 2: Perspective view showing basically the same details of the previous figure, from another angle;
[0017] FIG. 3: Perspective view showing basically the same details of the previous figures, with the boxer puppet seen from the back;
[0018] FIG. 4: Perspective view showing basically the same details of the previous figures, with the boxer puppet seen from another angle;
[0019] FIG. 5: Perspective view showing basically the same details of the previous figures, with the boxer puppet seen from another angle;
[0020] FIG. 6: Perspective view showing basically the same details of the previous figures, with the boxer puppet seen from the back and the body erect;
[0021] FIG. 7: Perspective view showing basically the same details of the previous figures, with the boxer puppet seen from the back and the body slightly inclined;
FIG. 8: This figure shows part of the ring, with some cables passing under it, to reach the boxer puppets, as well as the activating commands on one side of the ring;

FIG. 9: This figure shows a boxer puppet with the devices of the right and left feet, seen from the side, with the activating commands;

FIG. 10: This figure shows part of the ring, seen from the underside, with a boxer puppet on it, identifying the position of the support panels;

FIG. 11: This figure shows the ring with two boxer puppets, seen from above, also showing the activating commands;

FIG. 12: This figure shows a partial and enlarged view of the boxer puppet's trunk;

FIG. 13: This figure shows a partial and enlarged view of the boxer puppet's upper legs and lower trunk;

FIG. 14: This figure shows a partial and enlarged view of the boxer puppet's upper trunk, part of the head and arms;

FIG. 15: This figure shows a partial and enlarged view of the boxer puppet's head;

FIG. 16: This figure shows a partial and enlarged view of the boxer puppet's upper legs from the back and the knee region;

FIG. 17: This figure shows a partial and enlarged view of the boxer puppet's legs, from the side, especially the knee region, where it folds for a knockout.

**DETAILED DESCRIPTION**

The “IMPROVEMENTS IN BOXER PUPPETS AND REPRODUCTION OF BOXING MOVEMENTS”, the object of this request for Patent of Invention, consists in a toy, composed of boxer puppets (1), which are positioned on a small ring (2) and are monitored by two competitors by activating controls (3) disposed in pairs in two opposite points of the mentioned ring (1), preferably on a diagonal.

The ring (2) is similar to a natural ring, that is, composed of a floor and side protection with ropes (or similar) distributed on the four sides. Each boxer puppet (1) mentioned is standing on the ring (2) floor, with the right foot (4) pivoted coupled to a specific mechanism, while the left foot (5) is also supported on a specific mechanism.

Each activating command (3) is composed by the activator itself (6) in the form of a handle (like a joystick), which is coupled on the bottom to a shaft (7) projecting inside the ring (2), passing concentrically to a guiding device (8) for the cables which will provide the actions. The shaft (7) is directly coupled to a cylindrical nucleus (9), but it is fixed to a seat (10) where a spherical joint (11) operates, enveloped by a ring (12), with 'ears' (13) for fixation. Just a bit ahead of the ring (12) there is a second cylindrical assembly (14), incorporating 'ears' (15) fixing it to the bottom, while a cable guide (16) is inserted near this second cylindrical assembly (14), while orifices (17) also serve as guides for the various cables.

After going through the orifices, already inside the ring (2), the cables meet on each side a group of support panels (18), each one equipped with a plurality of orifices (19) to direct one mentioned cable, one panel for each handle mentioned. To better understand the arrangement, the right support panel is numbered (180), while the left support panel is numbered (18E) and these two alphabetical references also apply to the cables to be described in detail.

As to the body of each boxer puppet (1), it is formed by right (4) and left (5) feet and from each foot mentioned, there are plastic covers (20) projecting vertically, forming the puppet's legs; these covers (20) are pivoted near the feet through couplings (21) and also in the knee region, from where other covers (22) project forming the upper portion of the legs; these covers (22) end in an intermediate surrounding element (23) representing the genital and buttock regions of the puppet, where some cable passage guides (24) are concentrated. In the upper central region of this intermediate element (23) there is a connector (25) whose extremities form coupling pins for pivoting bearings (26) which incorporate a large diameter ring (27), on which the covers (28) which form the front and back parts of the puppet's (1) trunk are located.

The trunk includes a cable passage guide (29) fixed on the mentioned cover, while two levers (30) for the arms are aligned with the passages of the guide mentioned (29), each one with a side 'ear' (31) having an orifice to receive the lower end of helicoid springs (32), whose upper ends are fixed to seats (33) incorporated to a relatively thin plastic sheet (34) projecting in the direction of the puppet's head (35), where there are terminals (36) to receive the respective cables and the covers which form the heads themselves (37). In this manner, the boxer puppet's (1) head will be movable to front and back with relative flexibility, notably the action of the head (35) in association with the helicoid springs (32).

The mentioned relatively thin plastic sheet (34) is composed of intermediate vertical slits (38), through which passes the cylindrical section (39) crosspiece which projects from these vertical slits beyond the sheet, where it pivots onto the levers (30), consequently activating the helicoid springs (32). On the free ends of this mentioned crosspiece (39) there are cylindrical sleeves (40) acting as seats for the cylindrical extremities (41) which incorporate equally cylindrical sleeves (42), with orthogonally positioned shafts in relation to the previous ones, which receive cable holder devices (43), besides helicoid springs (43e) which work to return the mentioned crosspiece (39) through a joint.

The covers (44) forming the arms are pivotally coupled onto this assembly described, which fit into seats (45) on the trunk covers, while the covers (46) forming the forearm are pivotally coupled onto those of the arms; these covers (46) incorporate the gloves (47).

The boxer puppet's (1) right foot (4) is arranged on the ring (2), particularly on a vertical device (48), whose end forms a fixed sleeve (49) with the central shaft (50) providing a small movement for the right foot in relation to the central shaft (50), for they are united, while the mentioned vertical device is coupled onto a terminal base (51) on the side of which there is a small cylindrical tower (52), on whose diametrically opposed sector the terminals of a helicoid spring (53) are compressed, around the mentioned vertical device (48), so as to provide the right foot's return (4), when it rotates in translation, activated by the cable system. The left foot (5) is seated on a cylindrical device (54), in front of which a base (55) is conjugated, receiving a helicoid spring (56), with the function to always pull the left leg, folding it.

In the region of the right leg's knee, or immediately above it, the boxer puppet (1) has a knee disarming device, should the puppet receive a blow on the chin, simulating a knockout, that is, a locking element is foreseen, substantially in the form of an "L" (57), articulated onto the shaft (58); one of the ends of this locking element (57), forms a point (59) to be normally retained by the tooth (60) foreseen on the lower right leg cover, while the other end of the "L" mentioned receives a cable holder (61); a flexible side extension (62) with teeth, acts as a pressure element and locks the boxer puppet (1) in the armed position.

The activation controls (3) are divided into right command (3D) and left command (3E); the right command (3D) receives the right cables (1D), (2D), (4D), (5D) and...
which, after passing by the mentioned right command (3D) project inside the ring (2), go through the right support panel (18D) and extend till the respective holders.

In relation to the left command (3E) it receives the left cables (1E), (2E), (3E), (4E), (5E), which then go through the mentioned left command (3E) and project inside the ring (2), pass through the left support panel (18E) and extend till the respective holders.

Cable (3E) extends till the left foot of the boxer puppet (1), where it couples under the mentioned left foot, so that, when activated by the left handle (6) in the direction to pull cable (3E), the left leg will move backward (stretching it), that is, it leaves the left leg in an extended position, returning to normal when the knee inclines toward the front by action of the helicoid spring (56), which has the function to pull the leg and fold it. On the other hand, moving the left handle (6) sideways, causes the right foot to rotate and, consequently, the right leg moves. These movements are better explained in the section where the movements are described.

Thus, the cables mentioned are projected inside the boxer puppet (1): cables (1E) and (2E), activated by the left handle, extend till the cylindrical terminals (30), directly acting on the crosspiece (39), so that these cables are responsible for raising (rotating) the arms, through the lever effect caused by the mentioned crosspiece (39).

The right and left forearms (46), respectively, receive cables (4D) and (4E), each one responsible for activating the correspondent forearm (46) when a right or left punch is provoked.

In relation to the trunk or thorax of the boxer puppet (1), it can be moved forward and to the sides. For this, cables (5D), (6D) and (7D) act on ring (27) to move the thorax forward and to the sides, while cables (1D) and (2D) are applied to the cross immediately above ring (27), so that, responding to the user’s command, it allows the thorax to move to the left or right, by the rotating shaft (27a).

A stretchr (63) projects from the back of the boxer puppet’s head (1), till the ring region (27) to maintain the head looking towards the front while the thorax moves, simulating the posture of an athlete practicing this sport.

On the other hand, two side stretchers (64) project from the upper portion of the internal structure of the puppet’s head, which go through the ring (27) and extend till the intermediary element (23), to maintain the head aligned sideways while the thorax moves.

On the back and upper parts of the head, there is a cable holder (65) from where cable (66) is extended till holder (61), that is, it is a wire or cable (65) connecting the lever (67) of the chin and the lock (57) of the right leg. Thus, when the puppet receives a punch on the chin, the wire or cable (65) activates the lock (57) mentioned on the right leg, liberating its roller so that the lock falls, simulating a knockout. To rearm the right leg and continue the fight, one must only bring the right leg forward, for the lock (57) to place it again in position. In reality, boxer puppet (1) can perform, in essence, four movements, activated by the right and left commands (3). Let us see the movements made by the right activating command:

Movement 1 (D): trunk rotation is performed starting by rotating the activator itself (6), as described;

Movement 2 (D): moving the activator itself (6) up makes the trunk incline forward, and returning the activator automatically makes the trunk return, as described;

Movement 3 (D): moving the activator itself (6) sideways (without rotating it), makes the boxer puppet’s (1) waist move right or left, as described;

Movement 4 (D): the activator itself (6) has a trigger (G) (like a joystick) which, on being moved, sends the right arm forward, as described, and releasing the trigger, the arm returns.

Let us see the movements made by the left activator:

Movement 1 (E): rotating the left activator itself (6) to the right and left, makes the corresponding arm move up and down, in quick movements, as described;

Movement 2 (E): taking the activator itself (6) down, the left leg remains extended; on returning to normal, the knee inclines lightly forward, as described;

Movement 3 (E): by moving the activator itself (6) sideways, the right foot (4) rotates (consequently the right leg), from a small movement of the heel, besides causing an angular movement of the body, keeping the left foot (5) (consequently the left leg) fixed;

Movement 4 (E): the same movement 4 (D), for the left arm.

1. “IMPROVEMENTS IN BOXER PUPPETS”, composed of boxer puppets (1), which are positioned on a small ring (2) and are monitored by two competitors through activation controls (3) disposed in pairs in two opposite points of the ring (1) mentioned, preferentially distanced one from the other along a diagonal; each mentioned boxer puppet (1) is standing on the ring (2), having a right foot (4) pivotally coupled to a mechanism; the same occurs with the left foot (5); CHARACTERIZED BY, each activating command (3) being composed of an activator itself (6) in the form of a handle coupled on the bottom to a shaft (7), which projects inside the ring (2), passing concentrically to a device (8) which guides the cables to provide the actions; shaft (7) is directly coupled to a cylindrical nucleus (9), but this nucleus is fixed onto a seat (10) where a spherical joint (11) acts, involved by a ring (12); this ring has two holding ‘ears’ (13); lightly to the front of the ring (12) is a second cylindrical assembly (14) which incorporates holding ‘ears’ (15) at the bottom, whereas, near this second cylindrical assembly (14), a cable guide (16) is inserted, while orifices (17) act as guides of the various cables; on leaving the orifices, already inside the ring (2), the cables meet a group of support panels (18) on each side, each one equipped with a plurality of directing orifices (19) for the mentioned cables; there is one panel for each referred handle; the boxer puppet (1) has characteristics of movement for legs, trunk, arms and head.

2. “IMPROVEMENTS IN BOXER PUPPETS”, according to claim 1, CHARACTERIZED BY the body of each boxer puppet (1) being formed by right (4) and left (5) feet. From each foot mentioned, plastic covers (20) project vertically, forming the puppet’s legs; these covers (20) are pivoted near the feet by couplings (21) and also in the knee region, from where other covers (22) project, which form the upper portion of the legs, ending in an intermediary covering element (23) representing the genital region and buttocks of the puppet, where some guides (24) are concentrated, to pass the cables; in the upper central region of this intermediate element (23) there is a connector (25) whose ends form coupling pins of pivoting bearings (26) which incorporate into a large diameter ring (27), on which covers (28) are located, forming the front and back parts of the boxer puppet’s trunk (1).

3. “IMPROVEMENTS IN BOXER PUPPETS”, according to claim 1, CHARACTERIZED BY the trunk having a cable passage guide (29) fixed onto the cover, whereas, aligned with the cable guide (29), there are two levers (30) of the arms, each one with a side ‘ear’ (31) with an orifice to receive the lower end of helicoid springs (32), whose upper ends are fixed
onto holders (33) incorporated onto a relatively thin plastic sheet (34) which projects towards the head (35) of the puppet, where terminals (36) are located, to receive the respective cables and on which the covers are applied, forming the head itself (37); the mentioned relatively thin plastic sheet (34) is composed of intermediate vertical slits (38), through which goes a cylindrical section crosspiece (39) projecting through the mentioned vertical slits beyond the sheet, where pivoting on the levers (30) occurs, consequently activating the helicoid springs (32); there are cylindrical sleeves (40) on the free ends of this mentioned crosspiece (39) which act as seats for cylindrical points (41) incorporating equally cylindrical sleeves (42), with orthogonal shafts, in relation to the others, which receive cable holders (43); to this assembly, the covers (44) forming the arm are pivotally coupled, resting in seats (45) in the trunk covers, while the forearm covers (46) are pivotally coupled to those forming the arms; these last ones also incorporating gloves (47).

4. "IMPROVEMENTS IN BOXER PUPPETS", according to claim 1, CHARACTERIZED BY the right foot (4) of the boxe puppet (1) being disposed on the ring (2), particularly on a vertical device (48), whose end forms a fixed sleeve (49) with a central shaft (50), while the mentioned vertical device is coupled onto a terminal base (51) beside which there is a small cylindrical tower (52), in whose diametrically opposed sectors the terminals of a helicoid spring (53) are compressed, which is involved by the mentioned vertical device (48), to provide the return of the right foot (4) whenever it rotates in translation, activated by the cable system.

5. "IMPROVEMENTS IN BOXER PUPPETS", according to claim 1, CHARACTERIZED BY the left foot (5) being seated on a cylindrical device (54), in front of which a base (55) is conjugated, which receives a helicoid spring (56), acting on the left leg, folding it.

6. "IMPROVEMENTS IN BOXER PUPPETS", according to claim 1, CHARACTERIZED BY, the boxer puppet (1) having a deactivating device in the region of the knee of the right leg, composed of a locking element, substantially in the form of an "L", (57) articulated onto shaft (58) and one of the ends of this locking element (57), having a point (59) to be normally retained by the tooth (60) foreseen on the cover of the lower part of the right leg, while the other end of the referred "L" receives a cable holder (61); a flexible side extension (62) with teeth acts as a pressure element and locks in the armed position of the boxer puppet (1).

7. "IMPROVEMENTS IN BOXER PUPPETS", according to claim 1, CHARACTERIZED BY the activation controls (3) being divided into right command (3D) and left command (3E); the right command (3D) receives the entrance of right cables (1D), (2D), (4D) (5D) and (7D), which, after going through the mentioned right command (3D) project inside the ring (2), go by the right support panel (18D) and extend till the respective holders; the left command (3E) receives the entrance of left cables (1E), (2E) (3E), (4E), (5E), which, after going through the mentioned left command (3E) project inside the ring (2), go by the left support panel (18E) and extend till the respective holders.

8. "IMPROVEMENTS IN BOXER PUPPETS", according to claim 1, CHARACTERIZED BY cables (1E) and (2E) extending till the cylindrical terminals (30), so as to act directly on crosspiece (39), which makes these cables responsible for raising (rotating) the arms.

9. "IMPROVEMENTS IN BOXER PUPPETS", according to claim 1, CHARACTERIZED BY the right and left forearms (46), respectively receiving cables (4D) and (4E).

10. "IMPROVEMENTS IN BOXER PUPPETS", according to claim 1, CHARACTERIZED BY cables (5D), (6D) and (7D) acting on ring (27) to promote the movements of the thorax forward and sideways; cables (1D) and (2D) are applied on the cover immediately above the ring (27); rotation of the thorax is both to left or right, by rotating shaft (27A).

11. "IMPROVEMENTS IN BOXER PUPPETS", according to claim 1, CHARACTERIZED BY the head of the boxer puppet (1) having a stretcher (63) projecting behind, which extends till the ring (27) region, maintaining the head looking forward during the movement of the thorax; from the upper part of the internal structure of the puppet's head project two side stretchers (64) which go by the ring (27) and extend till the intermediate element (23) to keep the head aligned laterally during the movement of the thorax; in the back and upper parts of the head there is a cable holder (65) from where goes cable (66), extended till holder (61), that is, it is a connecting wire or cable (65) between lever (67) of the chin and the lock (57) on the right leg.

12. "REPRODUCTION OF BOXING MOVEMENTS", CHARACTERIZED BY the boxer puppet (1) having four movements in the right and left activating commands (3); the movements of the right activating command (3) are the following:

Movement 1 (D): the trunk is rotated by rotation of the activator itself (6);
Movement 2 (D): moving the activator itself (6) up causes the trunk to incline forward; returning the activator, automatically returns the trunk;
Movement 3 (D): moving the activator itself (6) sideways (without rotating it), moves the waist of the boxer puppet (1) to left: or right;
Movement 4 (D): the activator itself (6) has a trigger (0); activating this trigger moves the right arm towards the front; loosening the trigger returns the arm.

13. "REPRODUCTION OF BOXING MOVEMENTS", according to claim 12, CHARACTERIZED BY movements of the left activating command (3) being the following:

Movement 1 (E): rotating the left activator itself (6) to the right and left raises and lowers the corresponding arm in fast movements;
Movement 2 (E): moving the activator itself (6) down keeps the left leg straight; returning to normal makes the knee incline lightly to the front;
Movement 3 (E): moving the activator itself (6) sideways causes the right foot (4) to rotate (consequently the right leg) with a small movement of the heel, besides causing an angular movement of the body, keeping the left foot (5) (consequently the left leg) fixed;
Movement 4 (E): this is the same movement 4 (D), for the left arm.

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