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(54) **Container for a movable toy and combination with a movable toy**

Container für ein bewegbares Spielzeug und Kombination mit einem bewegbaren Spielzeug

Container pour un jouet mobile et une combinaison avec un jouet mobile

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EP 2 363 183 B1

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Description

[0001] The present invention relates to a combination of a movable toy and a hollow container.

[0002] Toys are known in the art which comprise:

- a hollow container having a unitary form in an undivided state, and separation means adapted to change the state of said container from an undivided state to a divided state,
- a movable toy operably contained in the hollow container in its undivided state, the movable toy having spring winding means,
- the container allowing the movable toy to come out of the container as the container changes from the unitary state to the divided state upon release of the spring of the movable toy, so that said toy is free to move.

[0003] Examples of these combinations of a movable toy and a container are disclosed in patent documents US4736943 and US4817936.

[0004] Particularly, in the embodiments described in these documents, the spring mechanism of the movable toy is only wound up when the movable toy is within the hollow container, by actuation of the wind-up means on the outer surface of the container. Once the spring mechanism of the movable toy has been wound up, after a certain period of time, the container opens.

[0005] When the container is open, the movable toy is free to move.

[0006] It should be noted that the period of time from the action of winding up the spring of the movable toy to the opening of the container may be delimited by minimum and maximum thresholds that are fixed once they are set.

[0007] The problem of the toy combination as described in the above documents lies in the consequentiality of the steps involved. Particularly, once the spring in the movable toy has been wound up and a predetermined time has elapsed from such winding step, the container is opened and the movable toy comes out. In other words, when a user winds the spring of the movable toy, the container opens within a predetermined time, with a duration that cannot be adjusted as desired.

[0008] This means that, although the container opening time is somewhat delayed relative to the action of winding the spring of the movable toy, it is still determined by the time at which the spring winding action is completed.

[0009] As a result, the toy, intended as the movable toy-container combination, is only usable when the user operates the spring winding mechanism.

[0010] GB 2267225 A discloses a divisible container for a wind-up spring toy, wherein one end of the winder of the toy can be used to wind-up the toy before it is placed in the container and the other end has a socket which is engaged by a corresponding projection on one of the container parts. The projection is attached to a locking mechanism which prevents it from rotating, and therefore the wind-up toy from unwinding, when the toy is enclosed within the container. The container part has a button on its outer surface which when pushed releases the locking mechanism of the container so that the projection can turn and the toy can unwind in the container. This causes the container parts to separate to allow the wind-up toy to emerge.

[0011] It is relatively difficult to arrange said known toy into said known container since during this operation the user, usually a child with limited manual skills, must also hold the end of the winder used to wind-up the toy in order to avoid an accidental unwinding thereof. Moreover, both the end of the winder for winding-up the toy and the end provided with the socket are visible on the toy, so as to deteriorate the external shape of the toy, which should resemble a toy figure as much as possible.

[0012] In light of the above prior art, the object of the present invention is to provide a container for a wind-up movable toy which affords increased usability of the toy and the toy-container combination by its final user.

[0013] According to the present invention, this object is fulfilled by a combination of a container and a movable toy as defined in claim 1.

[0014] With the present invention, a container may be provided which is adapted to contain a movable toy so that, once the spring of the movable toy is wound up and the movable toy is introduced into the container, the container only opens (and hence the movable toy comes out of it) when the user actuates an element, such as a button.

[0015] Advantageously, the container of the present invention can transfer the potential energy stored in the container to suitable means, to only divide the container when a user actuates a button external to the container, with the toy in the container.

[0016] Furthermore, in an advantageous aspect of the present invention, once the button has been actuated, a certain period of time, or delay, elapses from the actuation of the pushbutton by the user and the opening of the container.

[0017] The characteristics and advantages of the invention will appear from the following detailed description of one practical embodiment, which is illustrated without limitation in the annexed drawings, in which:

- Figure 1 shows a movable toy and a container adapted to contain such movable toy to form the toy combination of the present invention;
- Figures 2A to 2E show the steps through which a movable toy is introduced into a container to form the toy combination of the present invention;
- Figure 3 is an exploded view of the components of the movable toy and container of the present invention;
- Figure 4 is another exploded view of part of the components of the container of Figure 3;
- Figure 5 is a further exploded view of certain com-

ponents among those shown in Figure 4.

[0018] Referring to the attached figures, numeral 1 designates a combination of a movable toy 2 and a container 3 adapted to contain such movable toy 2 therein, according to the present invention.

[0019] Particularly, the movable toy 2 is embodied, for instance, by a movable toy comprising an elastic energy accumulation system, such as a spring. Preferably, once the spring has been wound up, this movable toy 2 is designed to walk during the spring unwinding time.

[0020] In the attached figures, the movable toy 2 preferably has anthropomorphic features (i.e. a head, two arms and hands, two legs and a trunk, each formed, for instance, of front and rear polymeric half-shells, generally designated by 2A and 2B), the features being for instance similar to those of the monster known with the trade name of Gormiti (® by Giochi Preziosi).

[0021] The container 3 is a hollow container comprising at least two portions 3A and 3B. The portions 3A and 3B are preferably formed of corresponding half-shells (i.e. elements of relatively small thickness, defined by a thin outer edge). The container 3 has a unitary state, in which the two portions 3A and 3B are integral with each other. In this state, the two portions 3A and 3B define a cavity therein, which is adapted to contain the movable toy 2 and other inner mechanisms, as further explained below. Nevertheless, the other inner mechanisms are advantageously integral with at least one of the two portions 3A, 3B and the remaining cavity has a size substantially corresponding to that of the toy contained therein.

[0022] As shown in the attached figures, the hollow container 3 preferably has the appearance of a rock.

[0023] Referring now to Figures 2A to 2E, which shows the various steps for introducing the movable toy 2 into the hollow container 3 to form the toy combination of the present invention, it will be appreciated that the movable toy 2 is operably contained in the hollow container 3 in its unitary state, as described in greater detail hereinafter.

[0024] Referring now to Figures 3, 4 and 5, it can be seen that, in addition to the usual components required for the walking function, well known and not further described herein, the movable toy 2 comprises:

- first wind-up means 4 for winding up a first spring mechanism 5,
- first lock means 6 for locking the release of the first spring mechanism 5 once it has been wound up by operating the first wind-up means 4;
- first motion transfer means, for transferring motion to the hollow container 3; these first motion means may be integral with the first wind-up means 4.

[0025] The operation and interconnection of the above mentioned first wind-up means 4, first spring mechanism 5 and first lock means 6 may be easily understood by looking at the attached figures, and will be not described in further detail herein.

[0026] For the purposes of the present disclosure and according to the particular embodiment of the movable toy 2, it should be noted that:

- the first wind-up means 4 are rotatably mounted, through a tubular element 4A open at one end, to a drive shaft 5A of the first spring mechanism 5; such tubular element 4A has a radial flange 4B at its open end and is coupled at the other end to a cylindrical element 4C which has an axially extending pin 4D coupled to the flange 4B to transfer the rotary motion of the first wind-up means 4 to the first spring mechanism 5 and to simulate the pivotal motion of an arm.

[0027] A further cylindrical element 4E is coupled to the cylindrical element 4C and acts as a shoulder extension of the movable toy 2. Such extension 4E is capable of free clockwise or counterclockwise rotation; when the extension 4E is actuated in the clockwise direction, the first spring mechanism 5 is wound up; radial elements 4F project out of such extension 4E and assist the holding and winding action of the user; the extension 4E has a suitable seat in its free end, which is adapted to ensure a form fit with delay means, as described below;

- the first spring mechanism 5 is held within the trunk of the toy 2 and is mechanically connected to the first wind-up means 4 through the drive shaft 5A;
- the first lock means 6 are adapted to move from a locked position to an unlocked position and include a peg 6A with a holding pawl adapted for engagement with the shaft 5A; in the locked position, the first lock means 6 allow clockwise and prevent counterclockwise rotation of the shaft 5A, whereas no restriction to the motion of the shaft 5A is provided in the unlocked position.

[0028] More generally, referring to the embodiment as shown in the figures, the above mentioned first motion transfer means include a first driving member (the seat 4C) preferably formed in the shoulder extension 4E of the toy 2, which has a non circular, e.g. a star shape, thereby allowing a form-fit with a special driven member 9A (e.g. part of the delay means 9, see below).

[0029] Furthermore, the user-operable first lock means 6 can stop motion transfer to the driven member 9A (in this example they prevent counterclockwise rotation of the shaft 5A). They may consist of a mechanical switch, such as a slider (the peg 6A), advantageously movable along an axis that, with the toy 2 in its proper orientation, has a horizontal extension. In case of an anthropomorphic toy 2, the first lock means 6 are advantageously placed at a shoulder of the toy 2, with the axis of the slider possibly parallel to the forward walking direction of the toy when it is driven by the components required for the walking function.

[0030] Advantageously, the motion transfer means are integral with the wind-up means 4; nevertheless, they

may not be coincident therewith if the toy 2 is not spring-operated but, for instance, battery-powered.

[0031] Also referring to Figure 4, in addition to two portions 3A and 3B the hollow container 3 comprises:

- separation means 7 designed to turn said container from a unitary state to a divided state;
- first actuation means 8 operably connected to said first lock means 6 for unlocking said spring mechanism 5, thereby allowing release of the potential energy stored in said spring mechanism 5, said actuation means 8 being disposed on the outer surface of the hollow container 3 and
- delay means 9 operably connected between said separation means 7 and said first wind-up means 4 of the movable toy 2, said delay means 9 being designed to delay the operation of the separation means 7 by a predetermined non-zero time T, relative to the time of operation of the first actuation means 8, i.e. to delay the operation of said separation means 7 to the end of a first unwinding period of the spring mechanism 5.

[0032] The separation means 7 include second loading means 15 for loading a spring 16 in the hollow container 3; this spring is loaded as the hollow container moves from said divided state to said unitary state, said separation means 7 being operably connected to said second loading means 15 through said delay means 9.

[0033] More generally, the portions 3A, 3B of the hollow container 3 are movable relative to each other. In the unitary state, the first actuation means 8 allow a user to actuate an element held within the volume of the container 3 from outside the container 3, and hence to operate through the container 3.

[0034] The first actuation means 8 advantageously consist of a button, a switch or a lever. Mechanical actuation means are preferable for their simple construction and easy use.

[0035] The hollow container 3 may further include a driven member 9A (here part of the delay means 9), which can receive energy, preferably as motion, for instance as rotary motion, from a member placed in the inner volume of the container 3 (here the seat 4C, the driving member of the toy 2). Therefore, the driven member 9A projects into the inner volume of the hollow container.

[0036] Advantageously, the driven member 9A is connected to second actuation means for actuating a device within the container. In the particular embodiment of the figures, the second actuation means are the delay means 9, which cause the container 3 to open by separating the two portions 3A, 3B.

[0037] Obviously, the second actuation means may cause a motion other than that of mutual separation of the portions 3A, 3B: for example, relative rotation thereof may be envisaged.

[0038] In a preferred embodiment, the driven member 9A is connected to delay means 9, which improves the usability of the toy 2, by both allowing a user to choose the time of operation of the first actuation means 8 on the outer surface of the hollow container 3, and allowing delayed opening to be not necessarily dependent on the time of release of the wind-up device by the user.

[0039] Advantageously, the container 3 includes no wind-up device for the toy 2, which means that no action is required to be made on the container 3 to wind up the motion mechanism in the movable toy 2. Namely, the container 3 has no rotary driving member that can be operated from outside and transfer rotary motion into the inner volume of the container 3.

[0040] It shall be noted that the portion 3A of the hollow container 3 comprises a subframe 10 associated by fastening means with the inner wall 3A' of the portion 3A, whereas the portion 3B of the container 3 comprises another subframe 11 associated by fastening means with the inner wall 3B' of the portion 3B.

[0041] Particularly, a substantially cylindrical pushing member 10A projects from the subframe 10 with a substantially perpendicular orientation, and has a groove formed thereon that defines an abutment surface perpendicular to the axis of the pushing member 10A.

[0042] Furthermore, the subframe 11 has:

- a seat 11B in its front wall 11A for ensuring a form fit with the movable toy 2, particularly for receiving the extension 4E of the wind-up means 4
- a through hole 11C for receiving the pushing member 10A and
- another seat in its back wall 11D for accommodating the delay means 9, which are covered by a case 12 associated with said back wall 11D by fastening means.

[0043] As shown in Figure 3, the delay means 9 include the driven member 9A which receives motion from the toy 2 and a cam 9E (visible in Figure 5 only) having a first curved surface and a second rectilinear surface.

[0044] The cam 9E is operably connected to a catch 13, which in turn may include a cylindrical central portion extending along an axis of rotation and two radial projecting elements, one in such a position as to contact the cam 9E during rotation thereof, and the other in such a position as to create a counteracting surface for the abutment surface of the pushing member 10A.

[0045] In the embodiment of Figure 3, the delay means 9 include first, second and third gears 9B, 9C, 9D, in serially meshed relation. Appropriate selection of gear ratios allows adjustment of the time required for the cam 9E to run one complete turn about its axis, and hence of the predetermined delay time T from the operation of the first actuation means 8 (the button) and the actuation of the separation means 7. It shall be noted that the delay time T corresponds to less than one complete turn of the cam 9E.

[0046] As an alternative to the three gears 9B, 9C, 9D other arrangements known in the art may be envisaged,

such as a belt.

[0047] In Figures 3 and 4, numeral 14 designates a safety button for opening the container 3 when the toy 2 is not inserted in the container 3, with the latter in the unitary state. It comprises a cam 14A which operates against a third radial element of the catch 13, thereby causing a rotation similar to that caused by the cam 9E of the delay means 9, but driven by the user.

[0048] In practice, once the toy 2 is wound up, with the first lock means 6 in the locked position, it will not be automatically unwound and may be inserted in the inner volume of the container 3 by assembling its two portions 3A, 3B.

[0049] Then, the user may operate the first actuation means 8, which in turn operate on the first lock means 6 to move them from the locked position to the unlocked position.

[0050] The energy stored in the toy 2 rotates the driving member, which transfers its rotary motion to the driven member 9A.

[0051] The delay means 9 will cause the container 3 to remain in its unitary state for a period of time T, which is calculated from the moment in which the user operates the first actuation means 8. At the end of the time T, the separation means will open the container 3, for the latter to move to the divided state.

[0052] Those skilled in the art will obviously appreciate that a number of changes and variants may be made to the arrangements as described hereinbefore to meet incidental and specific needs.

[0053] All of these variants and changes fall within the scope of the invention, which is defined by the following claims.

Claims

1. A combination of a movable toy (2) and a hollow container (3) for this toy (2), which toy (2) comprises motion transfer means (4) and systems (5) for storing and selectively releasing energy, said hollow container (3) comprising at least two half-shells (3A, 3B), having a unitary shape in its unitary state, and separation means (7) designed to cause said container (3) to change its state from a unitary state to a divided state, said container (3) defining an inner volume in its unitary state, which volume is adapted to receive said movable toy (2),

- said container (3) allowing the movable toy (2) to come out of it, as it changes from said unitary state to said divided state,
- said container (3) comprising:
- first actuation means (8) on the outer surface of said container (3);
- delay means (9) operably connected with said separation means (7) and designed to delay the operation of said separation means (7) by a predetermined time (T), relative to the time of operation of said first actuation means (8), said delay means (9) delaying the operation of said separation means (7) by a first period of actuation of the motion transfer means (4) of said movable toy (2),

characterized in that

- said movable toy (2) further comprises first lock means (6) designed to move from an unlocked position to a locked position, and vice versa, to unlock or lock the release of the energy stored in said movable toy (2);
- said first actuation means (8) can operate within the inner volume of said container (3) to unlock said first lock means (6) of the movable toy (2).

2. A combination as claimed in claim 1, wherein said delay means (9) comprise a driven member (9A) adapted to receive the motion generated by the motion transfer means (4) of said toy (2) when said toy (2) is within the inner volume of said container (3); said delay means (9) being kinematically connected with said separation means (7).

3. A combination as claimed in claim 1 or 2, wherein said separation means (7) include a spring (16) and said container (3) comprises second loading means (15) for loading said spring (16), said spring (16) being loaded as the hollow container (3) moves from said divided state to said unitary state, said separation means (7) being operably connected to said second loading means (15).

4. A combination as claimed in claim 3, wherein said container (3) comprises a catch (13), which is movable from an unlocked position to a locked position to unlock/lock said separation means (7) to allow or prevent release of the energy stored within said spring (16).

5. A combination as claimed in one of claims 2 to 4, wherein said first actuation means (8) are placed on said hollow container (3) in such a position as to operate on said first lock means (6), and said driven member (9A) of said delay means (9) is arranged to receive motion from a driving member (4C) of the motion transfer means (4), when said movable toy (2) is contained in said inner volume of said container (3).

6. A combination as claimed in claim 5, comprising a kinematic chain which receives motion from said energy storage systems (5) and transfers it to said separation means (7), said kinematic chain having at least:

- a first gearwheel (9B) kinematically connected to said driven member (9A),
- a second gearwheel (9C) meshing with said first gearwheel (9B) and
- a third gearwheel (9D) meshing with said second wheel (9C), the shaft of said third wheel (9D) having a radially projecting profile (9E) which engages with said catch (13), so that after a substantially complete or incomplete turn of said third gearwheel (9D), said catch (13) is operated and the spring (16) of said hollow container (3) unloads, thereby causing the hollow container (3) to change from the unitary state to the divided state.

7. A combination as claimed in claim 6, wherein said radially projecting profile (9E) is embodied by a cam having a first curved surface and a second rectilinear surface.

8. A combination as claimed in any preceding claim, wherein said first actuation means (8) directly engage said first lock means (6), when the latter are in the locked position, to move them into the unlocked position and thus allow the release of the energy of said energy storage system (5).

9. A combination as claimed in any preceding claim, wherein said movable toy (2) has anthropomorphic features, and said first lock means (6) are placed in the proximity of a shoulder of said movable toy (2) and/or said driving member (4C) is placed in the proximity of a shoulder of said movable toy (2).

10. A combination as claimed in claim 9, wherein the lock means (6) consist of a slider parallel to the forward walking direction of the toy (2) when it is driven by the components required for the walking function.

11. A combination as claimed in any preceding claim, wherein the toy (2) is battery-powered.

12. A combination as claimed in one of claims 1 to 10, wherein said systems (5) for storing and selectively releasing energy comprise a spring mechanism connected to wind-up means, wherein said motion transfer means (4) are integral with the wind-up means.

13. A combination as claimed in claim 12, wherein the lock means (6) include a peg (6A) with a holding pawl adapted for engagement with a shaft (5A) of the spring mechanism.

14. A combination as claimed in claim 13, wherein the lock means (6), in the locked position, allow clockwise and prevent counterclockwise rotation of the shaft (5A), whereas no restriction to the motion of the shaft (5A) is provided in the unlocked position.

15. A combination as claimed in claim 13 or 14, wherein said peg (6A) is movable along an axis that, with the toy (2) in its proper orientation, has a horizontal extension.

Patentansprüche

1. Eine Kombination aus einem beweglichen Spielzeug (2) und einem hohlen Behälter (3) für dieses Spielzeug (2), welches Spielzeug (2) ein Bewegungsübertragungsmittel (4) und Systeme (5) zur Speicherung und selektiven Freisetzung von Energie umfasst, wobei der besagte hohle Behälter (3) wenigstens zwei Halbschalen (3A, 3B) umfasst und eine einheitliche Gestalt in seinem einheitlichen Zustand hat, sowie ein Trennmittel (7), welches dazu ausgelegt ist, um den Behälter (3) zur Änderung seines Zustandes von einem einheitlichen Zustand zu einem geteilten Zustand zu veranlassen, wobei der besagte Behälter (3) in seinem einheitlichen Zustand ein inneres Volumen umgrenzt, welches Volumen geeignet ist, das besagte, bewegliche Spielzeug (2) aufzunehmen,

- wobei der besagte Behälter (3) es dem beweglichen Spielzeug (2) erlaubt, aus ihm herauszukommen, wenn es sich von dem einheitlichen Zustand in den geteilten Zustand ändert,
- wobei der besagte Behälter (3) umfasst:

  - ein erstes Betätigungsmittel (8) an der äußeren Oberfläche des besagten Behälters (3);
  - ein wirkungsmäßig mit dem besagten Trennmittel (7) verbundenes Verzögerungsmittel (9), welches dazu ausgelegt ist, den Betrieb des besagten Trennmittels (7) gegenüber der Betriebszeit des ersten Betätigungsmittels (8) um eine vorgegebene Zeit (T) zu verzögern, wobei das Verzögerungsmittel (9) den Betrieb des besagten Trennmittels (7) um einen ersten Zeitraum der Aktivität des Bewegungsübertragungsmittels (4) des besagten, beweglichen Spielzeugs (2) verzögert,

dadurch gekennzeichnet, dass

- das besagte, bewegliche Spielzeug (2) ferner ein erstes, für eine Bewegung von einer entriegelten Position in eine verriegelte Position, und umgekehrt, ausgelegtes Verriegelungsmittel (6) umfasst, um die Freisetzung von in dem beweglichen Spielzeug (2) gespeicherter Energie freizugeben oder zu blockieren;
- das besagte, erste Betätigungsmittel (8) innerhalb des inneren Volumens des besagten Behälters (3) agieren kann, um das besagte, erste

Verriegelungsmittel (6) des beweglichen Spielzeugs (2) zu entriegeln.

2. Eine Kombination nach Anspruch 1, wobei das besagte Verzögerungsmittel (9) ein angetriebenes Bauteil (9A) umfasst, welches geeignet ist, die von dem Bewegungsübertragungsmittel (4) des besagten Spielzeugs (2) erzeugte Bewegung aufzunehmen, wenn sich das besagte Spielzeug (2) innerhalb des inneren Volumens des besagten Behälters (3) befindet; wobei das besagte Verzögerungsmittel (9) kinematisch mit dem besagten Trennmittel (7) verbunden ist.

3. Eine Kombination nach Anspruch 1 oder 2, wobei das besagte Trennmittel (7) eine Feder (16) enthält, und wobei der besagte Behälter (3) ein zweites Spannmittel (15) umfasst zum Spannen der besagten Feder (16), wobei die besagte Feder (16) gespannt wird, wenn der hohle Behälter (3) von dem besagten, geteilten Zustand zu dem besagten, einheitlichen Zustand übergeht, und wobei das besagte Trennmittel (7) wirkungsmäßig mit dem zweiten Spannmittel (15) verbunden ist.

4. Eine Kombination nach Anspruch 3, wobei der besagte Behälter (3) eine Falle (13) umfasst, die von einer entriegelten Position in eine verriegelte Position bewegbar ist, um das besagte Trennmittel (7) zu entriegeln/verriegeln, um die Freisetzung von innerhalb der besagten Feder (16) gespeicherter Energie zuzulassen oder zu blockieren.

5. Eine Kombination nach einem der Ansprüche 2 bis 4, wobei das besagte erste Betätigungsmittel (8) sich an dem hohlen Behälter (3) an einer derartigen Stelle befindet, dass es auf das erste Verriegelungsmittel (6) einwirkt, und wobei das besagte, angetriebene Bauteil (9A) des besagten Verzögerungsmittels (9) derart angeordnet ist, dass es eine Bewegung von einem Antriebsbauteil (4C) des Bewegungsübertragungsmittels (4) aufnimmt, wenn das besagte Spielzeug (2) in dem inneren Volumen des besagten Behälters (3) enthalten ist.

6. Eine Kombination nach Anspruch 5, umfassend eine kinematische Kette, welche von den Energiespeichersystemen (5) Bewegung aufnimmt und diese auf das besagte Trennmittel (7) überträgt, wobei die besagte, kinematische Kette wenigstens aufweist:

- ein erstes Zahnrad (9B), das kinematisch mit dem besagten, angetriebenen Bauteil (9A) verbunden ist,
- ein zweites Zahnrad (9C), das mit dem besagten ersten Zahnrad (9B) kämmt,
- ein drittes Zahnrad (9D), das mit dem besagten zweiten Zahnrad (9C) kämmt, wobei der Schaft des besagten, dritten Rades (9D) ein radial hervorstehendes Profil (9E) aufweist, welches an der besagten Falle (13) eingreift, so dass nach einer substantiell vollständigen oder unvollständigen Umdrehung des besagten dritten Zahnrades (9D) die besagte Falle (13) betätigt wird und die Feder (16) des besagten hohlen Behälters (3) entlädt, wodurch der hohle Behälter (3) veranlasst wird, von dem einheitlichen Zustand in den geteilten Zustand überzugehen.

7. Eine Kombination nach Anspruch 6, wobei das besagte, radial hervorstehende Profil (9E) von einem Nocken verkörpert wird, der eine erste, gekrümmte Oberfläche aufweist sowie eine zweite, geradlinige Oberfläche.

8. Eine Kombination nach einem vorangehenden Anspruch, wobei das besagte erste Betätigungsmittel (8) direkt in das besagte erste Verriegelungsmittel (6) eingreift, wenn das letzte in der verriegelten Position ist, um es in die entriegelte Position zu bewegen und dadurch die Freisetzung von Energie aus dem besagten Energiespeichersystem (5) zu ermöglichen.

9. Eine Kombination nach einem vorangehenden Anspruch, wobei das besagte bewegliche Spielzeug (2) menschenähnliche Merkmale hat, und wobei das besagte erste Verriegelungsmittel (6) sich in der Nähe der Schulter des besagten beweglichen Spielzeugs (2) befindet, und/oder wobei das besagte, antreibende Bauteil (4C) sich in der Nähe der Schulter des besagten beweglichen Spielzeugs (2) befindet.

10. Eine Kombination nach Anspruch 9, wobei das Verriegelungsmittel (6) aus einem zur Vorwärts-Lauf-Richtung des Spielzeugs (2) im Falle seines Antriebs durch die zur Lauf-Funktion benötigten Komponenten parallelen Schieber besteht.

11. Eine Kombination nach einem vorangehenden Anspruch, wobei das Spielzeug (2) batteriebetrieben ist.

12. Eine Kombination nach einem der Ansprüche 1 bis 10, wobei die besagten Systeme (5) zur Speicherung und selektiven Freisetzung von Energie eine mit einem Aufzieh-Mittel verbundene Federmechanik umfassen, wobei das besagte Bewegungsübertragungsmittel (4) integral mit dem Aufzieh-Mittel ausgebildet ist.

13. Eine Kombination nach Anspruch 12, wobei das Verriegelungsmittel (6) einen Haken (6A) mit einer zum Eingriff in die Welle (5A) der Federmechanik geeigneten Halteklaue aufweist.

14. Eine Kombination nach Anspruch 13, wobei das Verriegelungsmittel (6) in der verriegelten Position eine Drehung der Welle (5A) im Uhrzeigersinn zulässt und eine Drehung im Gegenuhrzeigersinn blockiert, während im entriegelten Zustand keine Einschränkung der Bewegung der Welle (5A) vorgesehen ist.

15. Eine Kombination nach Anspruch 13 oder 14, wobei der besagte Haken (6A) entlang einer Achse bewegbar ist, die bei einer ordnungsgemäßen Ausrichtung des Spielzeugs (2) eine horizontale Erstreckung hat.

Revendications

1. Combinaison composée d'un jouet mobile (2) et d'un contenant creux (3) pour ce jouet (2), lequel jouet (2) comprend des moyens de transfert de mouvement (4) et des systèmes (5) pour stocker et sélectivement libérer de l'énergie, ledit contenant creux (3) comprenant au moins deux demi-coques (3A, 3B), ayant une forme unitaire dans son état unitaire, et des moyens de séparation (7) conçus pour amener ledit contenant (3) à faire passer son état d'un état unitaire à un état divisé, ledit contenant (3) définissant un volume interne dans son état unitaire, lequel volume est adapté pour recevoir ledit jouet mobile (2),
ledit contenant (3) permettant au jouet mobile (2) de sortir de ce dernier, lorsqu'il passe dudit état unitaire audit état divisé,
ledit contenant (3) comprenant :

des premiers moyens d'actionnement (8) sur la surface externe dudit contenant (3) ;
des moyens de retardement (9) raccordés de manière opérationnelle avec lesdits moyens de séparation (7) et conçus pour retarder le fonctionnement desdits moyens de séparation (7) d'un temps prédéterminé (T), par rapport au temps de fonctionnement desdits premiers moyens d'actionnement (8), lesdits moyens de retardement (9) retardant le fonctionnement desdits moyens de séparation (7) d'une première période d'actionnement des moyens de transfert de mouvement (4) dudit jouet mobile (2),
caractérisée en ce que :

l edit jouet mobile (2) comprend en outre des premiers moyens de blocage (6) conçus pour passer d'une position débloquée à une position bloquée, et vice versa, pour débloquer ou bloquer la libération d'énergie stockée dans ledit jouet mobile (2) ;
l esdits premiers moyens d'actionnement (8) peuvent fonctionner à l'intérieur du volume interne dudit contenant (3) pour débloquer lesdits premiers moyens de blocage (6) du jouet mobile (2).

2. Combinaison selon la revendication 1, dans laquelle lesdits moyens de retardement (9) comprennent un élément entraîné (9A) adapté pour recevoir le mouvement généré par les moyens de transfert de mouvement (4) dudit jouet (2) lorsque ledit jouet (2) est à l'intérieur du volume interne dudit contenant (3) ; lesdits moyens de retardement (9) étant raccordés de manière cinématique avec lesdits moyens de séparation (7).

3. Combinaison selon la revendication 1 ou 2, dans laquelle lesdits moyens de séparation (7) comprennent un ressort (16) et ledit contenant (3) comprend des seconds moyens de chargement (15) pour charger ledit ressort (16), ledit ressort (16) étant chargé lorsque le contenant creux (3) passe dudit état divisé audit état unitaire, lesdits moyens de séparation (7) étant raccordés de manière opérationnelle auxdits seconds moyens de chargement (15).

4. Combinaison selon la revendication 3, dans laquelle ledit contenant (3) comprend un loquet (13) qui est mobile d'une position débloquée à une position bloquée pour débloquer/bloquer lesdits moyens de séparation (7) pour permettre ou empêcher la libération de l'énergie stockée à l'intérieur dudit ressort (16).

5. Combinaison selon l'une des revendications 2 à 4, dans laquelle lesdits premiers moyens d'actionnement (8) sont placés sur ledit contenant creux (3) dans une position telle qu'ils agissent sur lesdits premiers moyens de blocage (6), et ledit élément entraîné (9A) desdits moyens de retardement (9) est agencé pour recevoir le mouvement d'un élément d'entraînement (4C) des moyens de transfert de mouvement (4), lorsque ledit jouet mobile (2) est contenu dans ledit volume interne dudit contenant (3).

6. Combinaison selon la revendication 5, comprenant une chaîne cinématique qui reçoit le mouvement desdits systèmes de stockage d'énergie (5) et le transfère auxdits moyens de séparation (7), ladite chaîne cinématique ayant au moins :

une première roue dentée (9B) raccordée de manière cinématique audit élément entraîné (9A),
une deuxième roue dentée (9C) s'engrenant avec ladite première roue dentée (9B), et
une troisième roue dentée (9D) s'engrenant avec ladite deuxième roue (9C), l'arbre de ladite troisième roue (9D) ayant un profil radialement en saillie (9E) qui se met en prise avec ledit loquet (13), de sorte qu'après un tour sensiblement complet ou incomplet de ladite troisième

roue dentée (9D), ledit loquet (13) est actionné et le ressort (16) dudit contenant creux (3) se décharge, amenant ainsi le contenant creux (3) à passer de l'état unitaire à l'état divisé.

7. Combinaison selon la revendication 6, dans laquelle ledit profil radialement en saillie (9E) est mis en oeuvre par une came ayant une première surface incurvée et une seconde surface rectiligne.

8. Combinaison selon l'une quelconque des revendications précédentes, dans laquelle lesdits premiers moyens d'actionnement (8) mettent directement en prise lesdits premiers moyens de blocage (6) lorsque ces derniers sont dans la position bloquée, pour les faire passer dans la position débloquée et permettre ainsi la libération de l'énergie dudit système de stockage d'énergie (5).

9. Combinaison selon l'une quelconque des revendications précédentes, dans laquelle ledit jouet mobile (2) a des caractéristiques anthropomorphiques, et lesdits premiers moyens de blocage (6) sont placés à proximité d'une épaule dudit jouet mobile (2), et/ou ledit élément d'entraînement (4C) est placé à proximité d'une épaule dudit jouet mobile (2).

10. Combinaison selon la revendication 9, dans laquelle les moyens de blocage (6) se composent d'une glissière parallèle à la direction de marche en avant du jouet (2) lorsqu'il est entraîné par les composants nécessaires pour la fonction de la marche.

11. Combinaison selon l'une quelconque des revendications précédentes, dans laquelle le jouet (2) est alimenté par pile.

12. Combinaison selon l'une quelconque des revendications 1 à 10, dans laquelle lesdits systèmes (5) pour stocker et libérer sélectivement l'énergie comprennent un mécanisme de ressort raccordé à des moyens d'enroulement, dans lequel lesdits moyens de transfert de mouvement (4) sont solidaires des moyens d'enroulement.

13. Combinaison selon la revendication 12, dans laquelle les moyens de blocage (6) comprennent une cheville (6A) avec un cliquet de maintien adapté pour la mise en prise avec un arbre (5A) du mécanisme de ressort.

14. Combinaison selon la revendication 13, dans laquelle les moyens de blocage (6), dans la position bloquée, permettent la rotation dans le sens des aiguilles d'une montre et empêchent la rotation dans le sens inverse des aiguilles d'une montre de l'arbre (5A), alors qu'aucune limitation au mouvement de l'arbre (5A) n'est prévue dans la position débloquée.

15. Combinaison selon la revendication 13 ou 14, dans laquelle ladite cheville (6A) est mobile le long d'un axe qui, avec le jouet (2) dans son orientation correcte, a une extension horizontale.

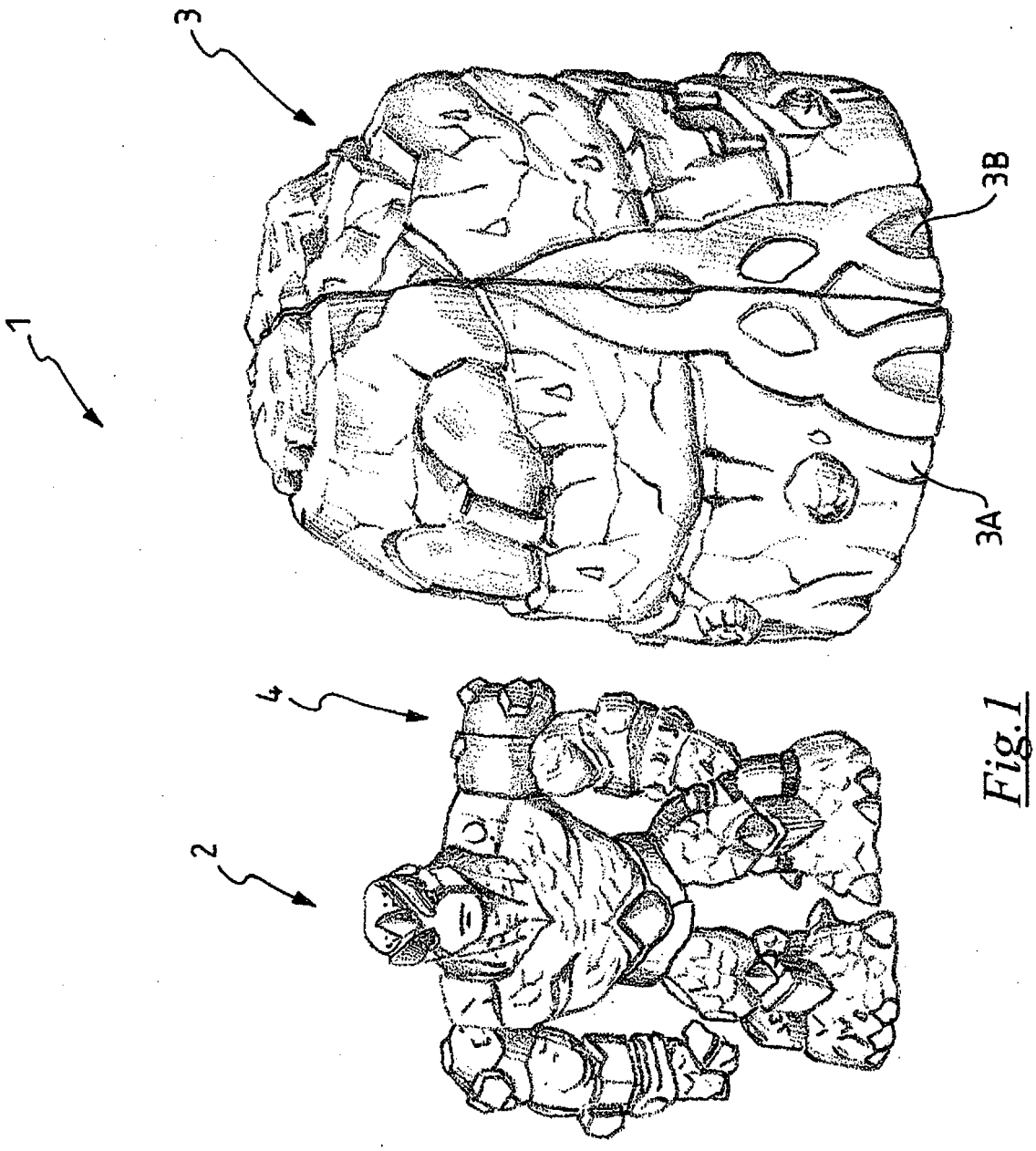


Fig.1

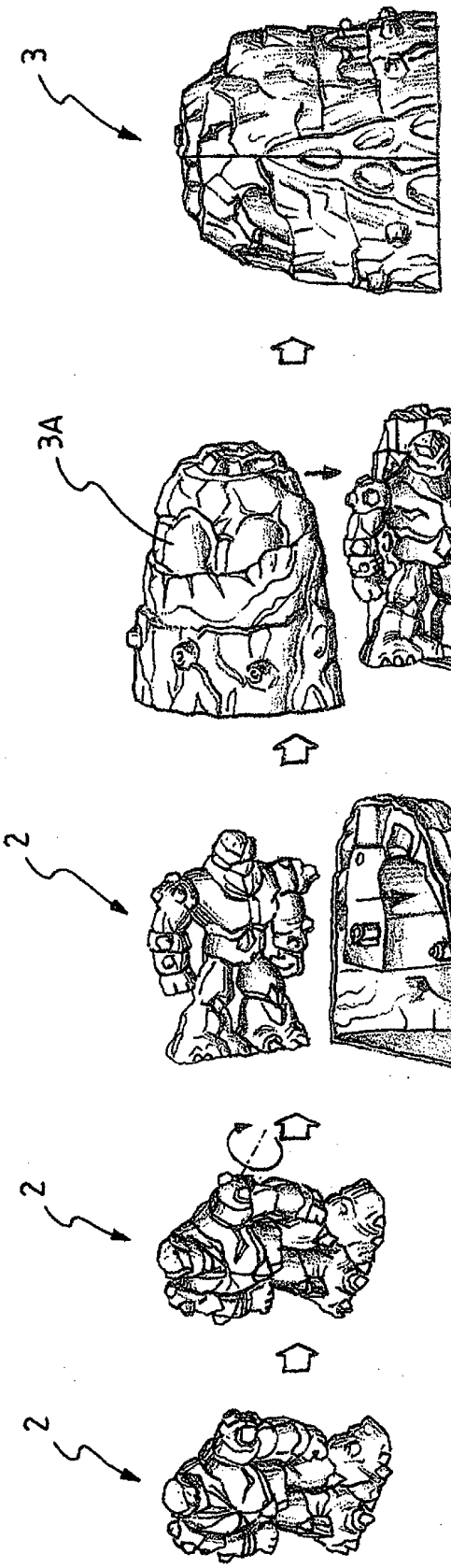


Fig.2E Fig.2D Fig.2C Fig.2B Fig.2A

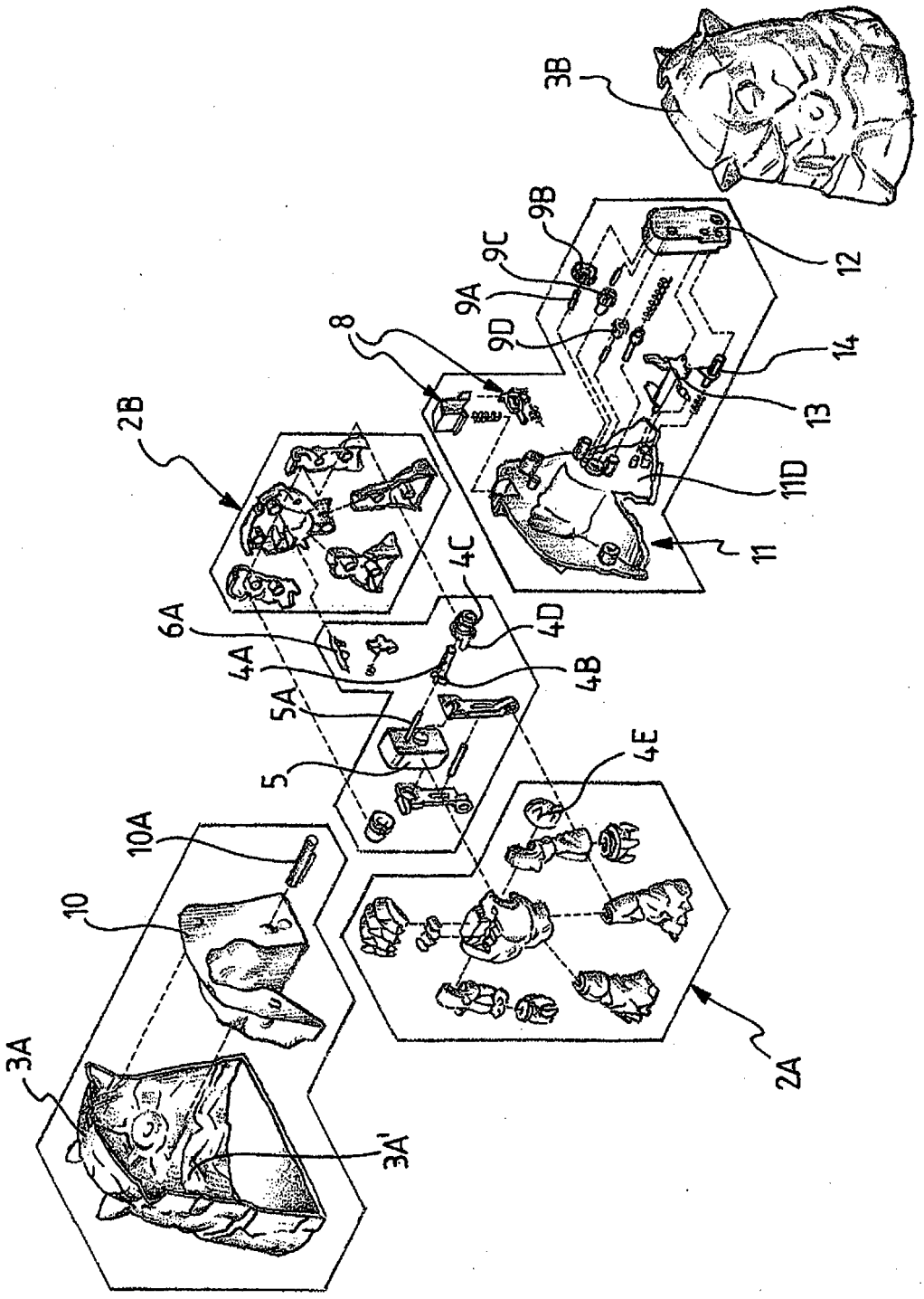

3B
9B
9C
12
9A
9D
14
8
13
2B
11D
11
4C
6A
4D
4A
4B
5A
5
4E
10A
10
3A
3A'
2A

Fig.3

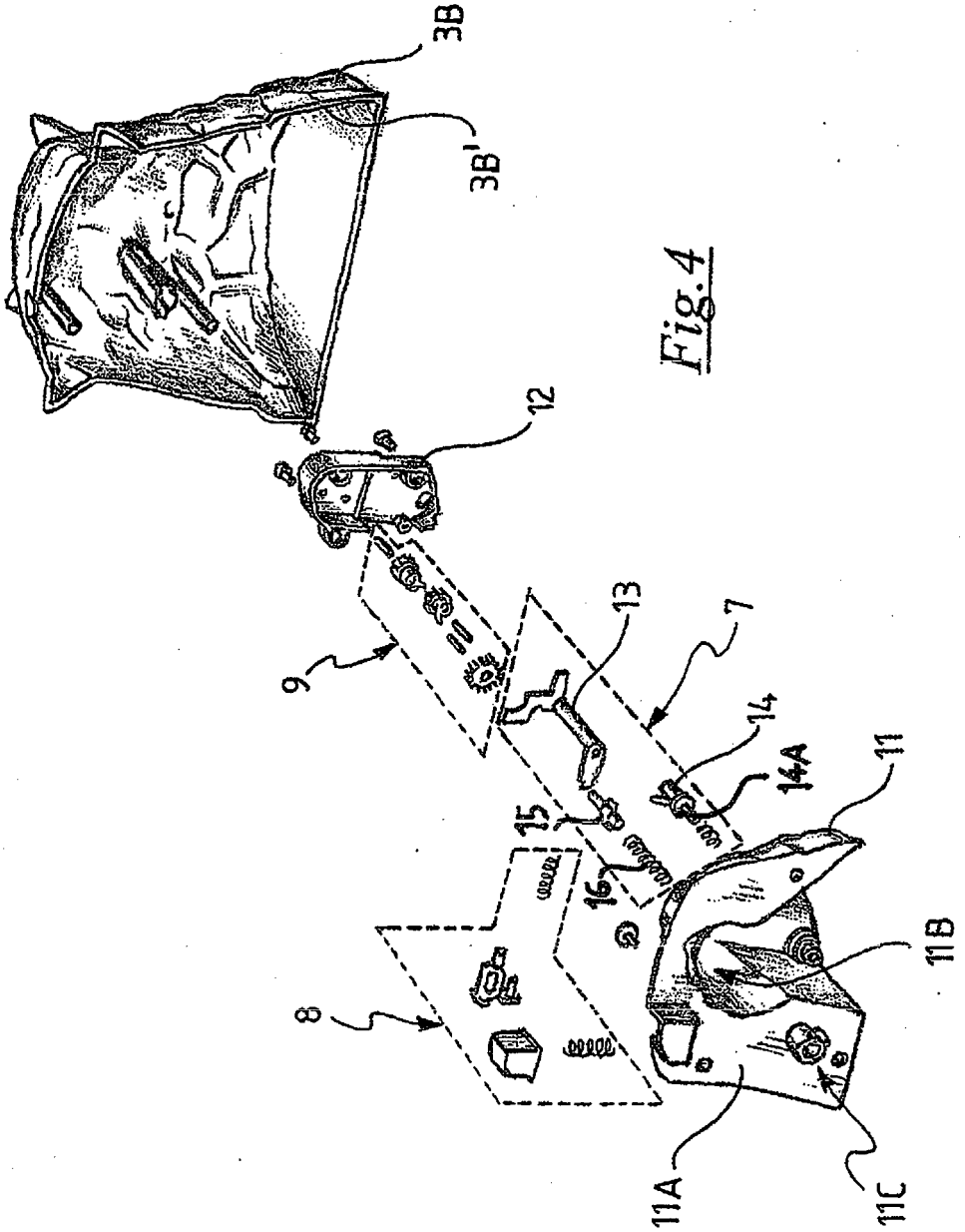


Fig.4

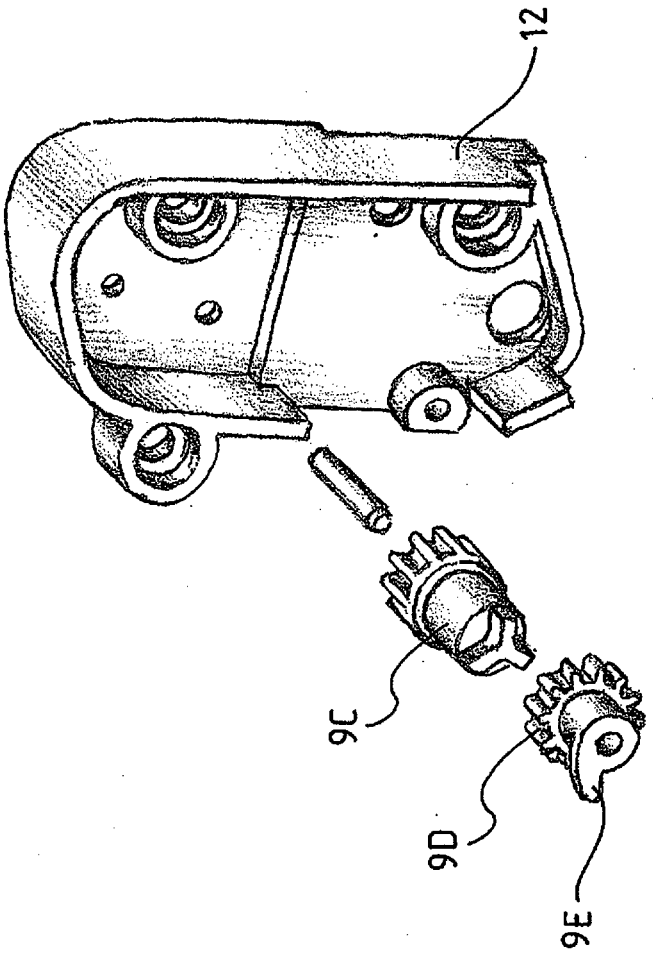


Fig.5

REFERENCES CITED IN THE DESCRIPTION

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