CLAIMS

1. A hand-held yo-yo ball for manually storing energy, comprising:

two rotating bodies and a connecting shaft having spaced apart first and second ends connecting the two rotating bodies, wherein the rotating bodies comprise a disk body and a shell, wherein the disk body of one rotating body is internally provided with a clutch mechanism having a meshing state and a non-meshing state, the disk body of the other rotating body is internally provided with an energy storage mechanism; the first and second ends of the connecting shaft are respectively connected with the clutch mechanism and the energy storage mechanism; the rotating body at the end where the clutch mechanism is located is adapted to be manually rotated relative to the other rotating body for storing energy in the energy storage mechanism when the clutch mechanism is in the meshing state; and wherein when the clutch mechanism is in the non-meshing state the energy storage mechanism releases the energy to drive the two rotating bodies to rotate synchronously;

wherein the energy storage mechanism comprises an energy storage spring, a spring case in which the energy storage spring is mounted, and a one-way gear mounted above the spring case for preventing the energy storage spring from reversely rotating to release energy when elastic potential energy is stored, wherein both the energy storage spring and the one-way gear can synchronously rotate with the connecting shaft; whereby when the rotating body with the clutch mechanism is in the meshing state and is manually rotated, the energy storage spring and the one-way gear synchronously rotate to store elastic potential energy, whereby when the clutch mechanism is in the non-meshing state the energy storage spring releases the elastic potential energy, and the one-way gear reversely rotates to drive the two rotating bodies to rotate synchronously;

wherein a through hole is formed in the middle of the spring case, the one-way gear downward convexly includes a lug that passes through the through hole and enters into the spring case, a periphery of the lug includes a plurality of arc-shaped pieces distributed at intervals, with a gap kept between the arc-shaped pieces and the lug, a lower end of the arc-shaped pieces includes a hook; whereby when the one-way gear is inserted into the through hole of the spring case, the hook stretches out of the through hole of the spring case to fasten to a side of the through hole, wherein the one-way gear is relatively rotatably connected to the spring case, and an inside end of the energy storage spring is fixedly connected to the gap between the arc-shaped piece and the lug of the one-way gear; and

wherein the one-way gear comprises an internal gear disk and a plurality of automatically rotatable limiting blocks positioned in the internal gear disk, wherein a gear tooth of the internal gear disk comprises a helical gear tooth, and a limiting claw of the limiting block is clamped in the helical gear tooth, thereby realizing a unidirectional rotation of the one-way gear.

2. The hand-held yo-yo ball for manually storing energy according to claim 1, characterized in that: the clutch mechanism comprises a clutch gear set comprising a first clutch gear and a second clutch gear, and an escapement member having a first and a second state controlling the clutch gear set to engage or disengage, wherein a control end of the escapement member extends from a middle of the shell of the rotating bodies, the shell is fixedly connected with the first clutch gear of the clutch gear set, the energy storage mechanism couples with the second clutch gear of the clutch gear set by means of the connecting shaft, wherein the escapement member when in the first state after the clutch gear set is engaged, elastic potential energy is stored in the energy storage mechanism by

manually rotating the shell, then wherein the escapement member when in the second state the clutch gear set is disengaged, thereby causing the energy storage mechanism to release the elastic potential energy to drive the two rotating bodies to rotate synchronously.

3. The hand-held yo-yo ball for manually storing energy according to claim 2, characterized in that: the escapement member comprises a pressing cap extending from a middle of the shell, an escapement shaft having a convex ramp surface disposed thereon, a top pressure column sleeved at a lower part of the escapement shaft, a stroke seat configured for limiting a stroke of the top pressure column, and at least one spring mounted under the second clutch gear of the clutch gear set adapted for jacking up the second clutch gear; wherein a round hole in the middle of the first clutch gear of the clutch gear set correspondingly includes a slope surface matching up with the convex ramp surface of the escapement shaft, a groove adapted for implementing engagement and disengagement of the clutch gear set, and a block surface; whereby pressing the pressing cap, the convex ramp surface of the escapement shaft is switched into the groove of the first clutch gear, whereby the second clutch gear jacks up under the action of the spring to be engaged with the first clutch gear; whereby pressing the pressing cap once again, the convex ramp surface of the escapement shaft is switched into the block surface of the first clutch gear whereby the top pressure column jacks down the second clutch gear until the second clutch gear is disengaged with the first clutch gear.

4. The hand-held yo-yo ball for manually storing energy according to claim 3, characterized in that: a lower part of the stroke seat includes an irregular hole, an end of the connecting shaft is configured as an irregular jack column connected with the irregular hole and fixed with a screw.

5. The hand-held yo-yo ball for manually storing energy according to claim 4, characterized in that: an upper surface of the stroke seat convexly includes an insertion lug, the first clutch gear correspondingly includes an insertion hole, whereby matching up the insertion lug with the insertion hole when the shell is manually rotated, the first clutch gear drives the stroke seat and the connecting shaft to rotate synchronously, and further drives, by means of the rotation of the connecting shaft, the energy storage mechanism to store elastic potential energy.

6. The hand-held yo-yo ball capable of for manually storing energy according to claim 3, characterized in that: an inward direction of the disk body convexly includes three lugs, wherein the at least one spring comprises three springs sleeved in the lugs, and the second clutch gear includes three lug holes sleeved on the lugs.

7. The hand-held yo-yo ball for manually storing energy according to claim 1, characterized in that: the spring case comprises a case body and a cover body, a notch is formed at the edge of the case body, an outside end of the energy storage spring is fixedly connected to the notch, a periphery of the cover body includes three lugs with holes; the cover body connected by screws to the case body, when aligned by holes on the lugs and a screw hole on the rotating bodies.

8. The hand-held yo-yo ball for manually storing energy according to claim 1, characterized in that: the shell of the rotating body at the end where the energy storage mechanism is located includes a mounting position in which the limiting block is mounted,

the middle of the shell is connected to the end of the connecting shaft and fixed by screws, in this way, whereby when the shell is driven by the clutch mechanism to rotate in the meshing state, the energy storage spring and the one-way gear rotate synchronously to store elastic potential energy.

9. The hand-held yo-yo ball for manually storing energy according to claim 1, characterized in that: an outer side surface of the shell includes shanks for fingers to pinch to rotate the rotating body.

10. The hand-held yo-yo ball for manually storing energy according to claim 1, characterized in that: the rotating body where the clutch mechanism is located internally includes a weight ring, the weight ring is arranged in the disk body of the rotating body, a ring cover is covered on the weight ring and is locked to the disk body to fix the weight ring.