Patent claims

1. A cylinder, comprising two mirror-symmetric cylinder mechanisms which jointly drive a latchbolt control ring;

wherein the cylinder mechanism comprises an electrical locking ring and a control pillar, wherein the control pillar passes through the rotation centers of the electrical locking ring and the latchbolt control ring one after another;

wherein one of the two control pillars is provided at its front surface with a rotatable shaft and the other is provided at the front surface with a counter bore, wherein the rotatable shaft is inserted into the counter bore and may rotate inside it, wherein the rotatable shaft passes movably through the latchbolt control ring and the latchbolt control ring may rotate around the rotatable shaft;

wherein each of the two control pillars is equipped with a first control pin and a second control pin, wherein the first control pin and the second control pin circulates around the rotatable shaft, wherein a rotation direction, in which the first control pin controls the latchbolt control ring to unlatch, corresponds to a rotation direction, in which the second control pin controls the latchbolt control ring to unlatch;

wherein the first control pin passes in sequence through the electrical locking ring of a first mirror symmetric side, the latchbolt control ring and the electrical locking ring of a second mirror symmetric side, wherein the electrical locking ring of the second side controls the unlocking and locking movement of the first control pin and the electrical locking ring of the first mirror symmetric side does not limit the unlatching movement of the first control pin;

wherein the second control pin passes in sequence through the electrical locking ring of the second mirror symmetric side, the latchbolt control ring and the electrical locking ring of the first mirror symmetric side, wherein the electrical locking ring of the first mirror symmetric side controls the unlocking and locking movement of the second control pin and the electrical locking ring of the second mirror symmetric side does not limit the unlatching movement of the second control pin.

2. The cylinder as claimed in claim 1, characterized in that

the cylinder mechanism comprises a mechanical locking ring, wherein the mechanical locking ring and the control pillar rotate synchronously.

3. The cylinder as claimed in claim 1, characterized in that

the cylinder mechanism comprises an elastic resetting part, wherein the elastic resetting part and the control pillar form a rotational torque and the elastic resetting part tights the electrical locking ring in an opposite direction of unlatching.

4. The cylinder as claimed in claim 1, characterized in that

the first control pin and the second control pin have each a fan-shaped cross section, and the arc size of the fan shape is m;

wherein the electrical locking ring on the first mirror symmetric side is provided with two arc-shaped through holes, the arc size of one arc-shaped through hole is 2 m and the arc size of the other arc-shaped through hole is 3 m;

in case that the first control pin matches the arc-shaped through hole of the electrical locking ring on the first mirror symmetric side that has an arc size of 3 m, the first control pin may rotate at the same angle clockwise and anti-clockwise within the arc-shaped through hole of the electrical locking ring on the first mirror symmetric side without rotating the electrical locking ring on the first mirror symmetric side, when the first control pin in located in the middle of the arc-shaped through hole that has a 3 m arc size of the electrical locking ring on the first mirror symmetric side, the electrical locking ring is in the standby state;

in case that the first control pin matches an arc-shaped through hole of the latchbolt control ring that has an arc size of 2 m, the latchbolt control ring rotates therewith when the first control pin rotates in a direction of unlatching and the latchbolt control ring does not rotate therewith when the first control ring rotates with an arc size of m in an opposite direction of unlatching;

in case that the first control pin matches the arc-shaped through hole of the electrical locking ring on the second mirror symmetric side that has an arc size of 2 m, when the electrical locking ring (9) on the second mirror symmetric side is locked, the first control pin cannot rotate in a direction of unlatching, but rotate with an arc size of m in an opposite direction of unlatching.

5. A control component, comprising the cylinder as claimed in any one of the claims 1 to 4, characterized in that

the control component further comprises a motored locking mechanism, wherein the motored locking mechanism limits the rotational displacement of the electrical locking ring.

6. The control component as claimed in claim 5, characterized in that
the motored locking mechanism comprises a motor, two groups of transmission mechanisms that are arranged mirror symmetrically and two output components that are arranged mirror symmetrically, wherein the two groups of transmission mechanisms are commonly driven by the motor and the transmission mechanisms transmit power of the motor to the output components;
wherein an output end of the motor is provided with a driving gear, wherein the driving gear is attached to an output shaft of the motor;
wherein the two groups of transmission mechanisms further comprise each an input gear, wherein both input gears are designed as frontend gears, and wherein rotational shafts of both input gears are parallel to each other;
wherein one driving gear is engaged with both input gears, wherein the two input gears are spaced 180 degrees from each other on the circumference of the driving gear.

7. The control component as claimed in claim 6, characterized in that
the transmission mechanism further comprises a middle gear and an output gear;
wherein the input gear drives the middle gear to rotate, and wherein the middle gear and the output gear engage with each other.

8. The control component as claimed in claim 7, characterized in that
the middle gear comprises a first middle gear, a second middle gear and a third middle gear, wherein the input gear and the first middle gear are fixed coaxially, and wherein the first middle gear, the second middle gear, the third middle gear and the output gear engage with one another in sequence.

9. The control component as claimed in claim 8, characterized in that
the first middle gear is provided with a rotatable shaft, wherein on the rotatable shaft of the first middle gear is fixed attached with an overrunning clutch, wherein the overrunning clutch is attached with the first middle gear.

10. The control component as claimed in claim 9, characterized in that

the third middle gear puts output to the output gear unidirectionally.

11. The control component as claimed in claim 10, characterized in that
a rotatable shaft is provided on a locking shell, wherein an overrunning clutch is attached to the rotatable shaft of the locking shell, wherein the third middle gear is further attached to the overrunning clutch of the rotatable shaft of the locking shell.

12. The control component as claimed in claim 7, characterized in that
the output component is designed as a motored jamming hook, wherein one end of the motored jamming hook is designed as a hook end and the other end is a pin shaft connecting end, wherein the motored jamming hook is provided with an oval through hole, wherein the motored jamming hook swings around the pin shaft connecting end;
wherein the front end of the output gear is provided with an eccentric pillar, which passes through the oval through hole;
wherein the eccentric pillar circulates around a central shaft of the output gear when the output gear rotates, wherein the eccentric pillar drives the motored jamming hook to swing.

13. The control component as claimed in claim 6, characterized in that
the motored locking mechanism is provided with two mirror-symmetric automatic unlocking rings, wherein both mirror-symmetric automatic unlocking rings are driven by the two groups of transmission mechanisms;
wherein the cylinder is provided with two mirror-symmetric electrical unlocking cams, wherein the electrical unlocking cams and the control pillar rotate synchronously;
wherein the automatic unlocking rings trigger the electrical unlocking cams to rotate when an extruding portion of the electrical unlocking cams falls on the rotation track of an extruding portion of the automatic unlocking rings.