July 23, 1957 E. C. ANDERSON 2,800,048

CONTAINER WITH MUSIC BOX UNIT

Filed Dec. 29, 1952 3 Sheets-Sheet 1

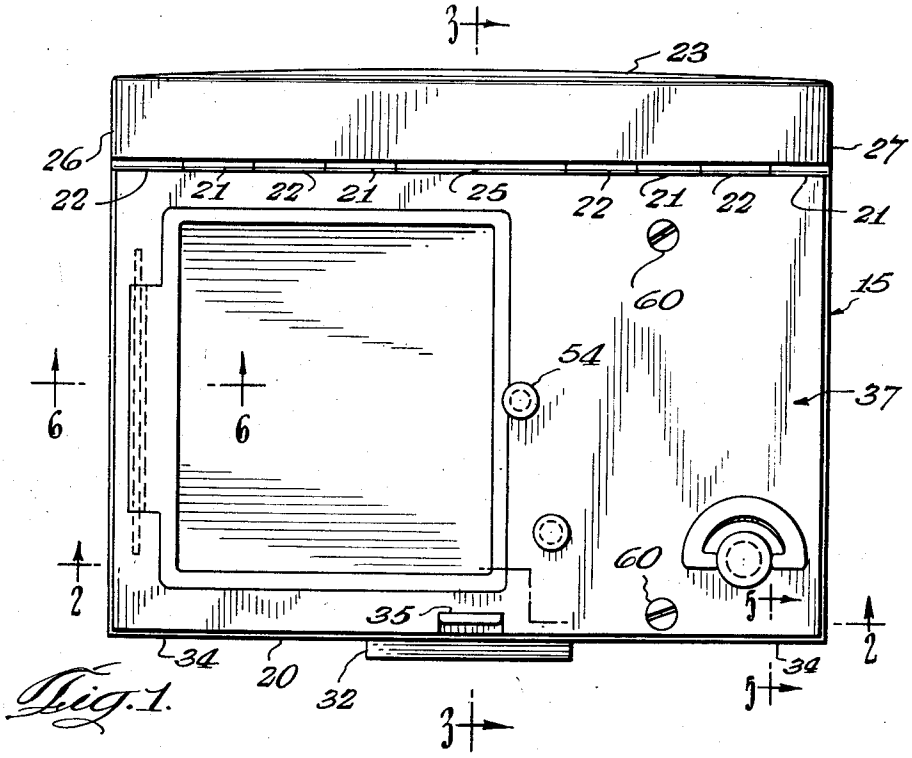


Fig. 1.

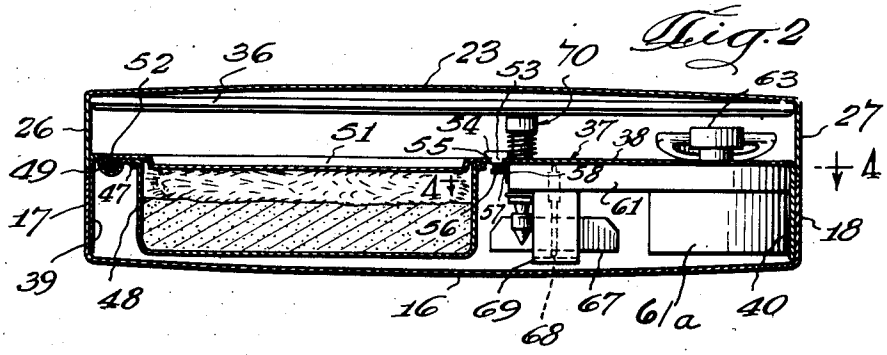


Fig. 2

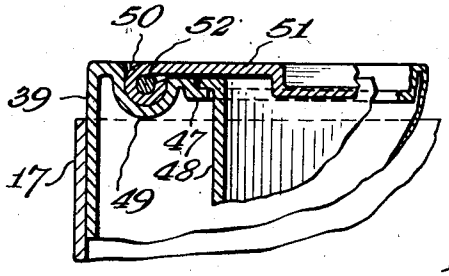


Fig. 6.

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July 23, 1957 E. C. ANDERSON 2,800,048

CONTAINER WITH MUSIC BOX UNIT

Filed Dec. 29, 1952 3 Sheets-Sheet 2

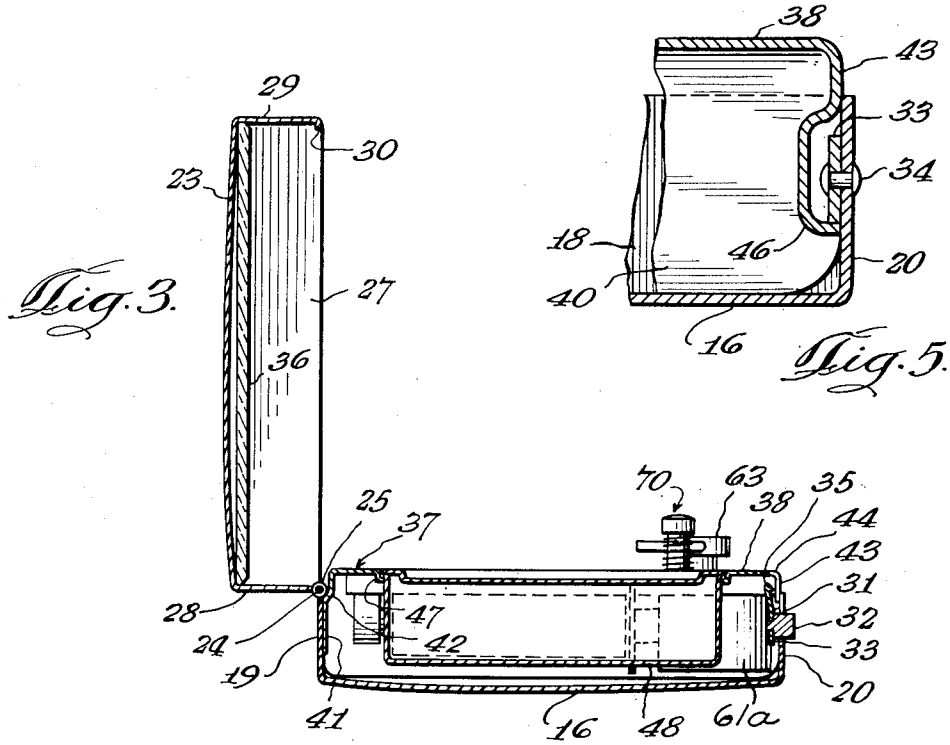


Fig. 3.

Fig. 5.

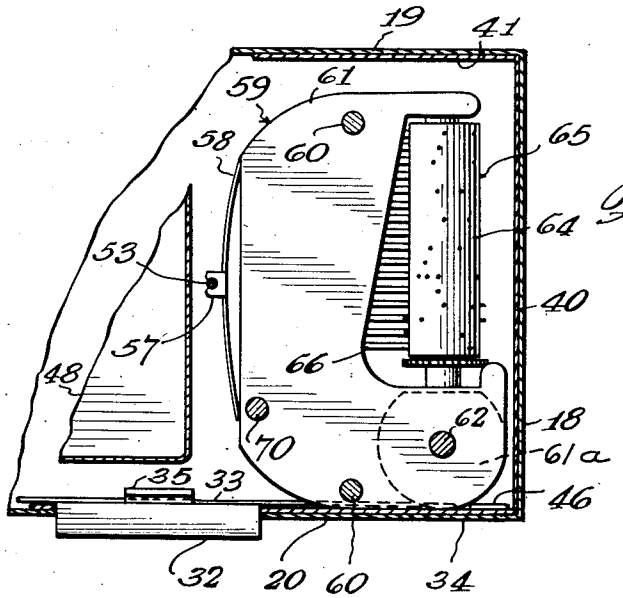


Fig. 4.

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July 23, 1957 E. C. ANDERSON 2,800,048

CONTAINER WITH MUSIC BOX UNIT

Filed Dec. 29, 1952 3 Sheets-Sheet 3

Fig. 7.

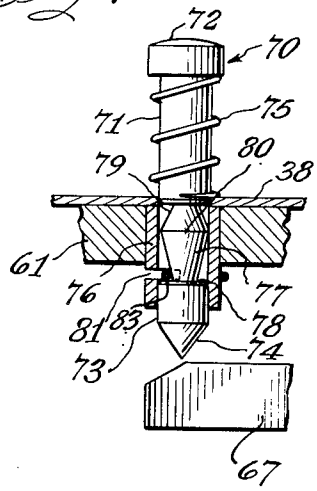


Fig. 8.

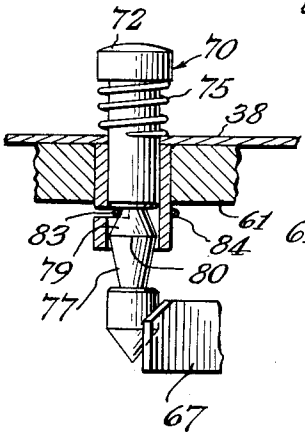
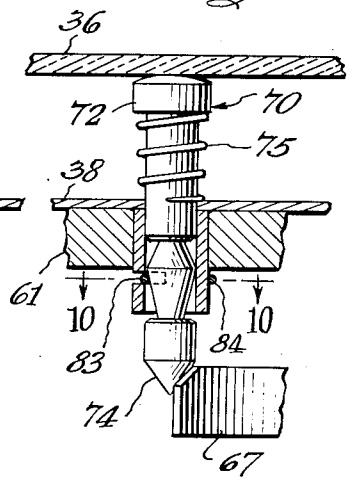


Fig. 9.



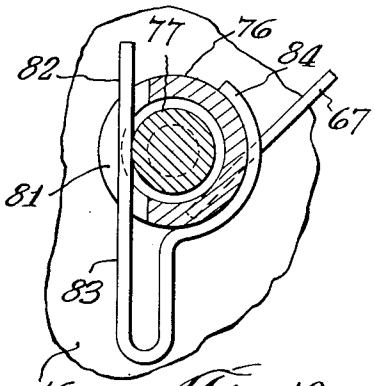


Fig. 10.

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2,800,048

CONTAINER WITH MUSIC BOX UNIT

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Application December 29, 1952, Serial No. 328,476

5 Claims. (Cl. 84—95)

This invention relates to a container such, for example, as a ladies' compact, which is provided with a music box unit; and in particular it relates to an improved control mechanism for the music box unit which permits the unit to be started and stopped automatically by movement of the closure for the container, or manually when the closure is open.

The principal object of the invention is to provide a control mechanism for a music box unit which may be operated automatically by the closure of a container in which the music box may be mounted, or manually, as desired.

A further object is to provide such a control mechanism which may be incorporated in music box units as now constructed without major modification of the unit.

Still a further object is to provide a container which has a music box unit contained therein, as a compact with such a unit, in which the user may set the control mechanism for the music box so that the unit starts automatically when the container is opened and stops automatically when it is closed, or so that the unit must be started and stopped manually when the compact is open.

These and other objects and advantages will appear more fully from the specification and accompanying drawings, in which:

Fig. 1 is a plan view of a compact in accordance with the invention, the closure being in its open position;

Fig. 2 is a sectional view taken as indicated along the line 2—2 of Fig. 1 with the closure in its closed position;

Fig. 3 is a sectional view taken as indicated along the line 3—3 of Fig. 1;

Fig. 4 is a fragmentary sectional view taken as indicated along the line 4—4 of Fig. 2;

Fig. 5 is an enlarged fragmentary sectional view taken as indicated along the line 5—5 of Fig. 1;

Fig. 6 is an enlarged fragmentary sectional view taken as indicated along the line 6—6 of Fig. 1;

Fig. 7 is a greatly enlarged fragmentary sectional view showing the control pin for the music box unit in its "on" position;

Fig. 8 is a view similar to Fig. 7 showing the control pin in its manual "off" position;

Fig. 9 is a view similar to Figs. 7 and 8 showing the control pin in its automatic "off" position; and

Fig. 10 is a fragmentary sectional view on an enlarged scale taken as indicated along the line 10—10 of Fig. 9.

The invention is illustrated in the drawings, and here described as applied to a ladies' compact although it is plain that it could be equally well applied to a music unit installed in a jewel box, or any other container which is provided with a closure.

Referring to the drawings in greater detail, and referring first to Figs. 1 to 3, inclusive, a ladies' compact has a case, or container, indicated generally at 15, formed from a single piece of metal which is shaped to provide a bottom 16, end walls 17 and 18, a rear wall 19 and a front wall 20. The upper margin of the rear wall 19

is provided with a plurality of spaced rolled hinge eyes 21 between which are hinge eyes 22 for a closure, indicated generally at 23, which is pivotally secured to the case 15 by means of a hinge pin 24 (Fig. 3). A filler tube 24*a* fills the space between the hinge eyes 21 and 22 at the center of the hinge structure. The closure 23 is formed from a single piece of metal shaped to provide a top panel 25, ends 26 and 27, back 28 and front 29 so that when the closure is in its closed position as shown in Fig. 2 the top panel 25 is spaced above the top margin of the case 15. As best seen in Fig. 3 the margin of the front wall 29 of the closure is indented at its center to provide a lug 30 which forms part of a closure latch. The front wall 20 of the case 15 is slotted at 31 to receive a finger piece 32 for a latch spring 33 which is secured to the front wall 20 of the case by means of rivets 34 (Fig. 1). A latch hook 35 on the latch spring 33 projects above the margin of the front wall 20 of the case to engage the latch lug 30 on the closure in the usual fashion. Preferably the closure 23 is provided with a mirror 36.

A platform member, indicated generally at 37 (see Figs. 2 and 3), includes a platform portion 38 and down-turned end portions 39 and 40 by means of which the platform member is mounted in the case 15 with the platform 38 spaced above the bottom 16 of the case. A down-turned rear portion 41 on the platform member 37 is recessed at 42 to accommodate the hinge eyes 21 and 22 of the case and the closure. The platform 37 is also provided with a down-turned front portion 43 which is slotted at 44 to accommodate the latch hook 35 on the case 15, the lower margin of the down-turned front portion 43 being above the latch spring 33 and being provided adjacent its ends with downwardly extending hooks 45 and 46 which are adapted to project beneath the ends of the latch spring 33 to retain the platform 37 within the case 15. The engagement between the hook 46 and the end of the latch spring 33 is shown in detail in Fig. 5.

As seen in Figs. 2 and 3 the platform portion 38 of the support platform 37 is provided at one end with a large rectangular opening which has a stepped margin 47 to receive a powder container 48 of conventional design. Referring to Fig. 6, between the down-turned end portion 39 of the platform and the adjacent part of the stepped margin 47 is an arcuate recess 49 to accommodate a hinge loop 50 of a closure 51 for the powder container, the closure 51 being hinged in the arcuate recess 49 by means of a hinge pin 52. A latch pin 53 provided with an enlarged head 54 is slidably mounted in a slot 55 in the platform 38 so that a margin of the head 54 may overlie the edge of the closure 51 for the powder container. A base lug 56 on the pin 53 is recessed to receive a yoke 57 (Fig. 4) on a latch spring 58 by means of which the head 54 of the pin 53 is pressed into engagement with the edge of the closure 51 for the powder container. As seen in Fig. 2, the head 54 of the latch pin is beveled so that the edge of the closure 51 may slide the pin sideways as it is closed, providing a snap latch.

As best seen in Figs. 2 and 4, a music box unit, indicated generally at 59, is secured to the underside of the platform 38 by means of a pair of screws 60 which extend through the platform 38 and into the frame 61 of the music box unit. The music box unit is of conventional construction and thus is not described in detail except to state that it has the usual main spring (not shown) which is carried in a housing 61*a*, and is secured to a shaft 62 which projects through an opening in the platform 38 to receive a winder 63. The shaft 62 is connected by suitable gearing to a pin drum 64 provided with pins 65 which engage reeds 66. The gearing also drives a rotatable fly 67 which is mounted on a pin 68

carried in a bracket 69, the fly 67 rotating parallel to the platform 38.

The control mechanism for the music box unit 59 includes a control pin, indicated generally at 70, which extends through registering apertures in the platform 38 and the music unit frame 61. As best seen in Figs. 7 to 10, the control pin 70 has a shank 71 capped by an enlarged head 72, the shank 71 having at its lower end a stop portion 73 which is provided with a pointed tip 74. The control pin 70 is slidably mounted in the frame 61 for movement between the "on" position illustrated in Fig. 7 and the manual "off" position illustrated in Fig. 8, and is constantly urged toward its "on" position by means of a compression spring 75 which is wound around the shank 71 between the head 72 and a sleeve 76 which is frictionally seated in the frame 61 of the music box unit. The portion of the shank 71 of the control pin which extends through the sleeve 76 is provided with an elongated frusto-conical automatic control portion 77 which is spaced from the stop portion 73 at the inner end of the pin 71 and which tapers toward said stop portion, there being a shoulder 78 at the inner end of the automatic control portion 77 which forms the upper margin of the stop portion 73. Toward the head 72 from the automatic control portion 77 is a frusto-conical manual control portion 79 which is tapered in the opposite direction from the automatic control portion 77, the division between said control portions being along the line 80. The sleeve 76 is provided at one side with a slot 81 to receive a hairpin-like spring 82 which has a straight leg 83 extending through the slot 81 to engage the control pin 70, and an arcuate leg 84 which embraces the sleeve 76 opposite the slot 81.

The operation of the control mechanism for the music box unit 59 is as follows: The control pin 70 has a stable "on" position as seen in Fig. 7, to which it is urged by means of the compression spring 75, and in which it is retained by abutment of the shoulder 78 of the control pin against the hairpin-like spring 82. In this position the stop portion 73 at the inner end of the control pin is clear of the fly 67. In this position the control pin 70 extends a sufficient distance above the platform 38 that its head 72 may be contacted by the mirror 36 in the closure 23 as the closure is moved toward its closed position, and as seen in Figs. 2 and 9 when the closure is in its closed position the control pin 70 is depressed a sufficient distance by the closure to bring the pointed inner portion 74 of the stop 73 of the control pin into contact with the fly 67, so that when the closure 23 is latched by engagement of the latch lug 30 with the latch hook 35 the control pin 70 is held in the automatic "off" position shown in Fig. 9. It will be noted that in this position the control pin 70 is unstable because the hairpin-like spring 82 is still below the line 80 which separates the frusto-conical automatic control portion 77 from the oppositely tapered frusto-conical manual control portion 79, and the tendency of the pin 70 to move to its "on" position under the urging of the compression spring 75 is overcome only by the fact that the closure 23 is in its closed position. Thus, the elongated frusto-conical automatic control portion 77 permits both a stable "on" position of the control pin 70 and an unstable automatic "off" position.

From the foregoing description of the operation it is apparent that the length of the frusto-conical automatic control portion 77 of the control pin 70 must be great enough to permit the pin to be clear of the fly 67, or to contact the fly in the manner shown in Fig. 9, without having the line of division 80 between the two frusto-conical portions move below the hairpin-like spring 82. To state this in another way, the automatic control portion 77 must be long enough that when the closure 23 is in its closed position, with the pin 70 in its automatic "off" position, the hairpin-like spring 82 is in engagement with the upper part of the automatic control portion 77. In other words, the length of the automatic control portion 77 must be greater than the distance the pin 70 moves from the "on" position of Fig. 7 to the automatic "off" position of Fig. 9.

If it is desired to operate the music box manually, the control pin 70 may be depressed by hand against the pressure of the compression spring 75 until the hairpin-like spring 82 snaps over the line 80 which separates the automatic control portion 77 from the manual control portion 79, and when this occurs the frictional engagement of the arm 83 of the hairpin-like spring 82 with the frusto-conical manual control portion 79 of the pin is sufficient to overcome the force by which the spring 75 urges the pin 70 toward its "on" position. This is the manual "off" position shown in Fig. 8, which, like the "on" position of Fig. 7, is a stable position of the pin. When the music box unit is on manual operation, it may be returned to automatic operation merely by gripping the head 72 of the pin 70 to draw the pin outwardly a sufficient distance for the hairpin-like spring 82 to again snap over the line 80 which separates the two frusto-conical control portions.

While I have shown and described certain embodiments of my invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claims.

I claim:

1. In a music box unit, in combination; a frame provided with a hole; a fly rotatably mounted on said frame; a control member extending through the hole in the frame and movable with respect thereto so that its inner end may contact the fly to control operation of the music unit, said control member having a detent; interengaging means on the frame in resilient engagement with said detent to retain the control member in a stable "off" position in contact with the fly, said member being movable upwardly to free said detent from said resilient engagement, and said member when freed from said engagement having an unstable "off" position in contact with the fly and a stable "on" position clear of the fly, the outer end portion of said control member being above the frame; and resilient means urging said member upwardly to "on" position.

2. In a music box unit, in combination: a frame; a fly rotatably mounted on said frame; a control pin extending through the frame and slidable therein so that its inner end may contact the fly to control operation of the music unit, said control pin having an elongated frusto-conical automatic control portion spaced from and tapering toward the inner end of the pin, and a short frusto-conical manual control portion above said automatic control portion which tapers in the opposite direction; a spring engaged with the frame and adapted to be engaged by either of said frusto-conical portions of the pin, whereby when the short frusto-conical portion is engaged with the spring the pin is in a stable "off" position in contact with the fly, and the length of said elongated frusto-conical portion being such that when the larger portion thereof is engaged with the spring the pin is in an unstable "off" position in contact with the fly and when the smaller portion thereof is engaged with the spring the pin is in a stable "on" position clear of the fly, the outer end of the control pin in said "on" position being so located with respect to the frame that when the unit is mounted in a container the container closure may contact the control pin as it is moved to closed position to slide the control pin to and retain said pin in its unstable "off" position; and means urging the pin to "on" position.

3. A musical compact comprising, in combination: a container provided with a hinged closure; a mounting platform having downturned margins by which it is supported in spaced relation to the bottom of said con-

tainer, said platform having a hole; a music box unit having a frame which is secured to the underside of said mounting platform and a fly mounted in the frame which rotates parallel to said platform, said frame having a hole in register with the hole in the platform; a control member extending through said registering holes and movable with respect to the frame so that its inner end may contact the fly to control operation of the music unit, said control member having a detent; interengaging means on the frame in resilient engagement with said detent to retain the control member in a stable "off" position in contact with the fly, said member being movable upwardly to free said detent from said resilient engagement, and said member when freed from said engagement having an unstable "off" position in contact with the fly and a stable "on" position clear of the fly, the outer end portion of said control member being above the platform so that as the closure moves to closed position it contacts said outer end portion to move said control member to and retain it in said unstable "off" position; and resilient means urging said member upwardly to "on" position.

4. A musical compact comprising, in combination: a container provided with a hinged closure; a mounting platform having downturned margins by which it is supported in spaced relation to the bottom of said container; a music box unit having a frame which is secured to the underside of said mounting platform and a fly which rotates parallel to said platform; a control pin extending through the frame and slidable therein so that its inner end may contact the fly to control operation of the music unit, said control pin having an elongated frusto-conical automatic control portion spaced from and tapering toward the inner end of the pin, and a short frusto-conical manual control portion above said automatic control portion which tapers in the opposite direction; a spring engaged with the frame and adapted to be engaged by either of said frusto-conical portions of the pin, whereby when the short frusto-conical portions of the pin is engaged with the spring the pin is in a stable "off" position in contact with the fly, and the length of said elongated frusto-conical portion being such that when the larger portion thereof is engaged with the spring the pin is in an unstable "off" position in contact with the fly and when the smaller portion thereof is engaged with the spring the pin is in a stable "on" position clear of the fly, the outer end of the control pin in said "on" position projecting above the frame so that as the container closure is moved to closed position it may slide the control pin to and retain said pin in its unstable "off" position; and means urging the pin to "on" position.

5. In a music box unit, in combination: a frame provided with an aperture; a sleeve in the aperture which has a transverse slot inside the frame; a fly rotatably mounted on said frame; a control pin making a snug sliding fit in the sleeve for movement between a stable "off" position with its inner end portion in the path of the fly and a stable "on" position clear of the fly, said pin having an enlarged head outside the frame which is the only part of the pin larger in diameter than said sleeve, and said pin having a control section which includes oppositely tapering frusto-conical control portions of different lengths; a hairpin-like spring having a leg in said slot resiliently engaged with said control section so that when it engages the shorter control portion the pin is in its stable "off" position and when it engages the longer control portion the pin is resiliently movable between its stable "on" position and an unstable "off" position contacting the fly; and a compression spring under the head of the pin urging the pin to "on" position.

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