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B. RADTKE

2,127,753

TELLTALE DEVICE

Filed Nov. 14, 1936

Fig. 1.

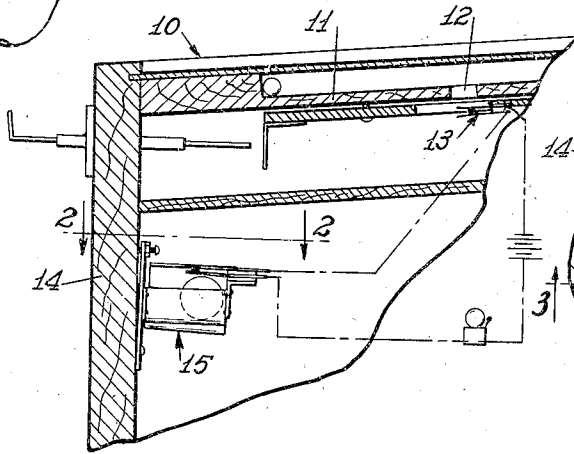


Fig. 2.

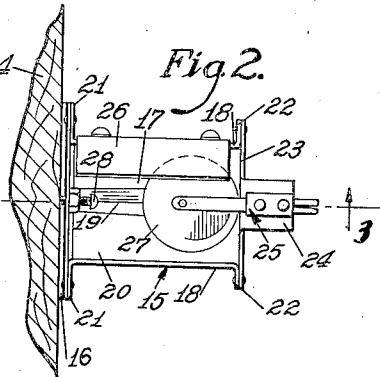


Fig. 3.

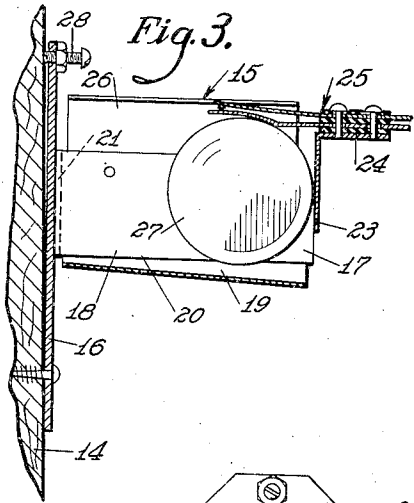


Fig. 4.

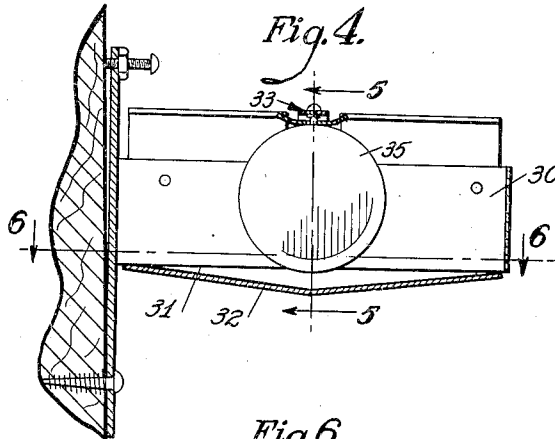


Fig. 6.

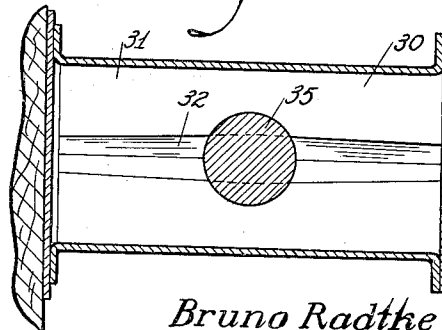
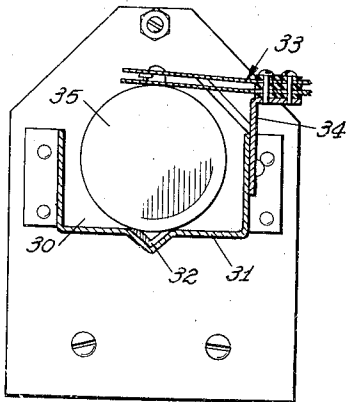


Fig. 5.



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TELLTALE DEVICE

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7 Claims. (Cl. 200—52)

This invention relates to tell-tale devices.

It is an object of this invention to provide an improved tell-tale device which is relatively simple and inexpensive in construction and highly efficient in use.

Another object of the invention is to provide an improved tell-tale device which will facilitate a detection of fraudulent operation of coin controlled apparatus, or any other apparatus with which the device may be associated.

A further object of the invention is to provide an improved anti-tilt device which will act as a circuit breaker when the apparatus with which it is associated is tilted into a position not normal to its operating position.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawing showing the preferred form of construction, and in which:

Fig. 1 is a fragmentary sectional view of a game apparatus embodying a preferred form of the present invention and showing the same in side elevational view;

Fig. 2 is a plan view of the preferred form of the present invention as seen from line 2—2 in Fig. 1;

Fig. 3 is a longitudinal sectional view of the same taken along line 3—3 in Fig. 2;

Fig. 4 is a longitudinal sectional view of a modified form of the present invention;

Fig. 5 is a transverse sectional view of the same taken along line 5—5 in Fig. 4; and

Fig. 6 is a horizontal sectional view of the same taken along line 6—6 in Fig. 4.

The invention as illustrated in the drawing is shown associated with a game apparatus which includes a cabinet 10 having an inclined playboard 11 over which balls are adapted to gravitate. There are formed in this inclined playboard conventional openings, one of which is indicated at 12. Beneath the opening 12 is mounted a switch 13 which is positioned with respect to the opening 12 in a manner that a ball passing through the opening 12 will drop upon the switch to effect an engagement of the two poles of the switch 13.

In the structure of the cabinet 10 it is important that the angle of the playboard 11 with respect to the horizontal be maintained, that is, if that angle be increased, the gravity of the ball upon the surface of the playboard will be affected and the ball will gravitate thereover with greater momentum. This increase of the momentum of the ball will cause the ball to act in a manner other than it is intended that it should act and remove a portion of the hazard necessary for the display of skill upon the part of the person playing the game.

To this end a tell-tale or anti-tilt device 15 is employed to render the game inoperative if the angle of the playboard be varied from the incline intended. As shown, the tell-tale device 15 is mounted upon a front wall 14 of the cabinet 10, and comprises a mounting plate 16 having a U-shaped trough 17 fixed thereto and extending laterally therefrom. This trough 17 consists of side walls 18 formed integrally with a bottom wall 20. Each of the side walls 18 is provided with an angled portion 21 at its left end and an angled portion 22 at its right end (Fig. 2); the portions 21 being fixed to the mounting plate 16 to support the trough 17 with respect thereto and the portions 22 being connected to and supporting an end wall 23. The end wall 23 in turn has an angled portion 24 which supports a switch member 25 with the resilient elements or poles thereof positioned above the trough 17 adjacent the end wall 23.

A valley or groove 19 is formed in the bottom wall 20 of the trough 17, and this valley 19 is of graduated depth being shallow at the left end (Fig. 3) and deepest at the end adjacent the wall 23. A ball 27 is normally disposed in the trough 17 and is adapted to ride upon the edges of the valley 19 formed in the wall 20. A cover plate 26 is fixed to one side wall 18 and partially covers the trough 17 sufficient to prevent removal of the ball 27. A set screw 28 is provided to facilitate an adjustment of the trough with respect to the wall upon which the device is mounted.

Under normal operating conditions the ball 27 will seek the wider part of the valley 19 and consequently about the end wall 23 of the trough. In this position the upper surface of the ball 27 will engage the lowermost element of the switch 25 and cause the switch to assume a closed or circuit completing position. As shown in Fig. 1, the switch 25 may be incorporated in the signal circuit of the game apparatus, normally conditioning the electrical circuit for operation by the switch 13 when a played ball affects the switch 13 as said ball passes through the opening 12. It will be noted by reference to Fig. 1 that if the pitch of the playboard 11 is increased by raising the end of the cabinet 10 opposite to the end 14 upon which the tell-tale device is mounted, the ball 27 by gravity will seek the lowermost point of the trough 17 and will consequently move away from the wall 23 and roll out of engagement with the switch member 25 thereby allowing the switch by its own resiliency to disconnect and break the circuit in which it is embodied.

The cabinet 10 may be provided with a unit 15 mounted upon its rear wall (not shown) which unit would operate to prevent a complete operation of the game apparatus by breaking a circuit similar to that shown when the incline of the

playboard 11 is decreased by raising the end wall 14.

A modified form of the invention is shown in Figs. 4, 5 and 6, and comprises a longitudinal trough 30 of a U-shaped structure, the bottom wall 31 of which has a valley 32 formed therein, the wider part of which is midway between the ends of the trough 30. A switch member 33 is mounted upon a bracket 34 supported by the side wall of the trough 30 in a manner to dispose the switch 33 midway between the ends of the trough 30 directly above the latter so that a ball 35 which normally rests at the wider reach of the valley 32 will engage and close the switch 33. This type of structure provides one unit for detecting the change of angle of the cabinet with which it is associated in either one of two directions.

It is important to observe that in both structures the supporting bracket structure is simple and easy to construct, and that the trough arrangement assures positive movement of the ball with no lost motion in starting or stopping. Moreover, it is important to observe that the flexible switch arm is arranged above the ball so that the latter wedges itself into position and the contacting operation of the switch is positive instead of fluttery and weak as in the case of previously known ball-contact arrangements.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

1. An anti-tilt device comprising a channel bracket having a horizontal bottom plate in which is formed a longitudinally extensive trough, means at one end of said trough providing a mounting member for said bracket, the latter having an end wall portion at the opposite end of said trough and opposite side wall portions between said mounting member and said end wall, a switch member mounted on said end wall above said trough and having an elongated flexible operating arm extending toward the center of the trough and substantially parallel therewith, and a ball member adapted to roll in said trough into and out of position beneath said operating arm for substantially wedging engagement beneath the latter to move the same and operate said switch responsive to tilting of said bracket.

2. A tell-tale device including a support constituting a horizontal runway, a ball movable back and forth in said runway, a switch mounted on said support and having a yieldable operating arm projecting collaterally over said runway above said ball for engagement by the latter to operate said switch when said support is tilted into a predetermined position, said operating arm being constructed and arranged so that said ball will be substantially wedged therebeneath in said predetermined position.

3. In a device of the class described, means

providing a ball runway, a ball movable back and forth in said runway responsive to tilting movement of the same, a switch arranged at one end of said runway and having an elongated flexible operating arm movable in a vertical direction and arranged to extend at a height above said ball and substantially parallel with the length of the runway such that said ball may roll into frictional operative engagement with said arm and beneath the same.

4. In a device of the class described, a mounting member, means providing a horizontally extensive ball runway supported by said member, a switch mounted at an end of said runway and having an elongated flexible arm projecting in the direction of the length of the runway and at a height adequate to permit a ball in said runway to roll into frictional engagement with said arm therebeneath to flex the same and operate said switch, and a ball in said runway and movable back and forth for the purpose aforesaid.

5. In a device of the class described, a mounting member, means providing a horizontally extensive ball runway supported by said member, a switch mounted at an end of said runway and having an elongated flexible arm projecting in the direction of the length of the runway and at a height adequate to permit a ball in said runway to roll into frictional engagement with said arm therebeneath to flex the same and operate said switch, and a ball in said runway and movable back and forth for the purpose aforesaid, said arm being curved conformably with the curvature of said ball to increase the frictional contact between the latter.

6. In a device of the class described, a mounting plate attached in the region of its lower edge to an object for tilting movement in a vertical plane toward and away from said object, means at an opposite edge of said mounting member and movable adjustably against said object to effect relative tilting movement of the mounting member with respect thereto, means attached to said mounting member and providing a horizontally extended runway, a ball in said runway, a switch at the end of said runway opposite said mounting member, said switch having an elongated yieldable operating arm and being mounted to project that arm in the direction of the length of the runway above said ball, said arm having a part curved conformably to the curvature of said ball, said ball moving in said runway into frictional engagement with and beneath the curved part of said arm to operate said switch responsive to tilting movement of the runway.

7. In a device of the class described, a mounting plate constructed for attachment in adjustable positions on a vertical wall member, a horizontally extending ball runway attached at one end to said mounting member, said runway having a trough formation in its bottom to guide a ball, a ball movable back and forth in said runway and trough responsive to tilting movement thereof, a switch mounted on said runway and having a spring operating arm projecting above said runway at a height above said ball to permit movement of the latter therebeneath to frictionally engage the same for movement to operate said switch.

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