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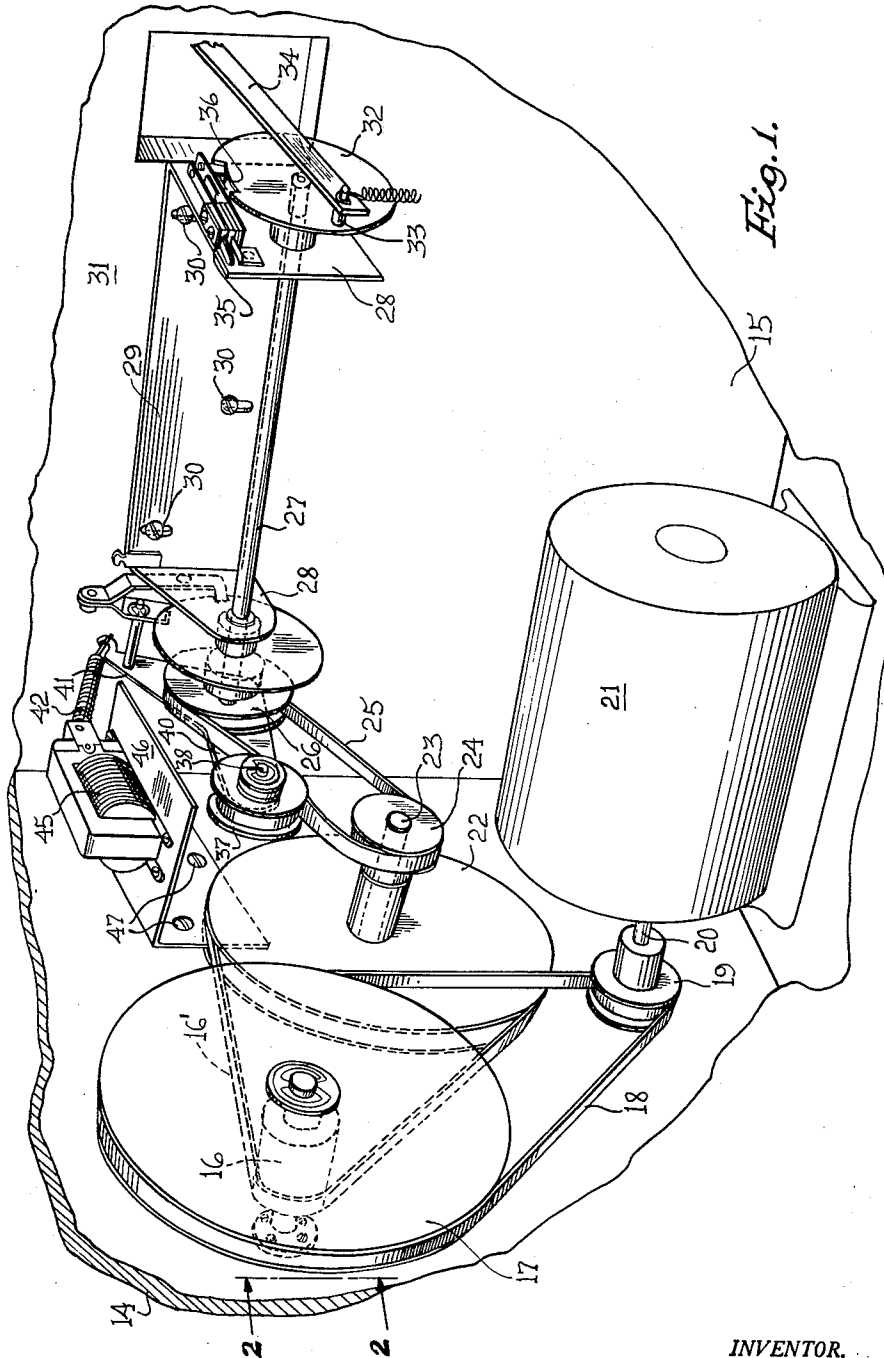
J. C. KOCI

3,053,536

COMBINATION SIMULATED BOWLING PIN RESETTER AND BALL LIFT

Filed Nov. 23, 1959

2 Sheets-Sheet 1



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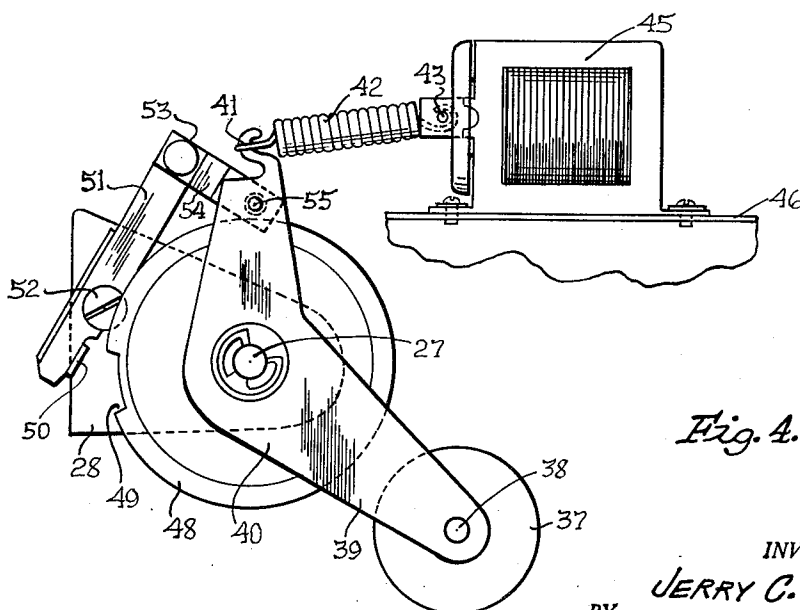
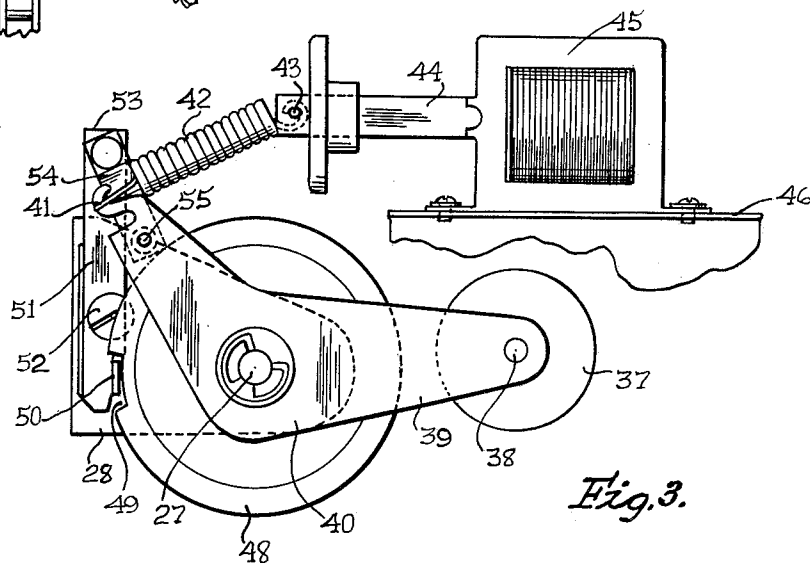
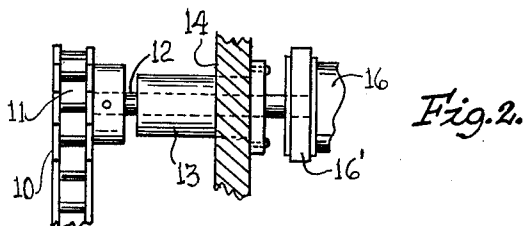
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COMBINATION SIMULATED BOWLING PIN RESETTER AND BALL LIFT

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2 Claims. (Cl. 273-41)

My invention relates to new and useful improvements in a combination simulated bowling pin resetter and ball lift and has for its principal object the provision of an improved construction of this character which will be highly efficient in use and economical in manufacture.

While my invention is especially adaptable for use in the well known simulated bowling amusement game yet the same may be equally employed in connection with any game in which there is required a resetting and ball lifting mechanism.

One of the principal objects of this invention is the provision of an improved construction of the character hereinafter described wherein a simple arrangement of parts comprised of a single driving means is employed for simultaneously resetting the simulated bowling pins and lifting the ball in position to be played.

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 drawings showing the preferred form of construction, and in which:

FIG. 1 is a perspective view of the invention;

FIG. 2 is a fragmentary sectional detailed view taken substantially on line 2-2 of FIG. 1;

FIG. 3 is an elevational view of a control means embodied in the invention; and

FIG. 4 is a side elevational view similar to FIG. 3 but showing the parts thereof in different positions.

The several objects of my invention are accomplished by the preferred form of construction shown in the accompanying drawings.

In this connection a ball lift chain 10 is shown in operative association with a sprocket wheel 11. This chain 10 has connection with the ball lift as shown in my co-pending application, Serial No. 750,006, filed July 21, 1958, now abandoned and causes the same to operate. The sprocket wheel 11 is mounted on a shaft 12 journaled in a bearing 13 fixedly carried by a wall 14 of a cabinet 15 within which the mechanism is arranged. The shaft 12 has fixed thereto a pulley 16 which is formed integral with a grooved, driven wheel 17 fixedly carried by the shaft 12. The wheel 17 by means of a belt 18 is connected to a pulley 19 fixed to a shaft 29 of a continuously energized electric motor 21.

The pulley 16 by belt 16' is connected to an intermediate grooved wheel 22 fixed to a shaft 23 in turn journaled in a suitable bearing provided by the wall 14.

On the shaft 23 is a pulley 24 which is connected by means of a belt 25 to a pulley 26. The pulley 26 is fixed to a shaft 27 journaled through flanges 28 of a bracket 29 secured by bolts 30 to a wall 31 of the cabinet 15. On the shaft 27 is a notched disc 32 to which is connected as at 33 an arm 34 which in turn is connected to the conventional pin resetting mechanism for resetting simulated bowling pins such as is shown, described and claimed in my United States Patent No. 2,829,893. Mounted on the flange adjacent the disc 32 is a holding switch 35 which when the insulated pin 36 thereof rides upon the periphery of the disc 32 will hold the circuit of an electromagnetic solenoid 45 energized until the disc

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32 and shaft 27 make one complete revolution for a purpose hereinafter more fully explained.

Normally the belt 25 in its relationship to the pulleys 24 and 26 is in a slip condition which permits the pulley 24 to rotate without transmitting rotation to the pulley 26.

To condition the belt 25 in a taut condition whereby rotation of the pulley 24 will be transmitted to the pulley 26 I provide a grooved roller 37 which normally rests upon the upper run of the belt 25.

As shown particularly in FIGS. 3 and 4 the roller 37 carried by a stud shaft 38 secured to the end portion 39 of an angularly shaped arm 40. The arm 40 is pivotally carried by the shaft 27. Connected to the opposite end portion 41 of the arm 40 is one end portion of a spring 42, the opposite end portion of the spring 42 being connected as at 43 to the plunger 44 of an electromagnetic solenoid 45. The solenoid 45 is mounted on a bracket 46 which in turn is connected as at 47 to the wall 14. The solenoid 45 is connected in circuit with the starting circuit of the game apparatus. The plunger 44 is normally in a projected position as shown in FIG. 3. This results in relieving the downward pressure of the roller 37 on the belt 25. When the solenoid 45 is energized the plunger 44 is drawn into the coil. This results in bearing the roller 37 upon the belt 25 conditioning the belt 25 tightly between the pulleys 24 and 26 whereby rotation of the pulley 24 will impart rotation to the pulley 26. This rotation will in turn rotate the shaft 27 to actuate the reset arm 34.

Means is provided to prevent an overriding of the disc 32. Such means includes a disc 48 fixed to the shaft 27 and provided with a notch 49. A finger 50 carried by an arm 51 is adapted to engage the notch 49. This arm 51 is pivoted as at 52 to the adjacent flange 28. The end 53 of the arm 51 carries a link 54 pivoted as at 55 to the end portion of the arm 51.

When the solenoid 45 is energized and the plunger 44 is drawn inwardly, the arm 51 will be pivoted to move the finger 50 from latched engagement with the disc 48. By this arrangement overriding of the reset arm 34 is prevented.

It will be apparent that I have provided a simple, inexpensive and effective arrangement for simultaneously operating the ball lift chain 10 and the pin reset arm 34 by a single driving means which is in the form of the motor 21. By such an arrangement the number of parts generally employed for the purposes above stated are reduced to a minimum without in any way interfering with the effective operation of the game apparatus with which my invention is associated.

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. A mechanism for simultaneously actuating a reset arm with a continuously operating ball lift of an amusement game apparatus comprising a normally idle rotatable shaft connected to and operating a reset arm of the apparatus, a continuously operating electric motor, a driven element connected to said motor, said driven element connected to and continuously operating the ball lift of the apparatus, a second driven element, means for connecting said second driven element to said first mentioned driven element, a slip belt connection between said second driven element and a pulley wheel fixedly

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carried by said shaft, an idler wheel associated with said slip belt connection and adapted to take up the tension on said slip belt to cause said shaft to be rotated by said second driven element, supporting means freely carried by said shaft for pivotally supporting said idler wheel relative to said slip belt, means for pivoting said supporting means into a position whereby said idler wheel places said slip belt under tension, a releasable latch means for limiting the distance of rotation of said shaft by said second driven element after said idler wheel is pivoted into operative position with respect thereto, and means movable with said supporting means for releasing said latch to permit the rotation of said shaft when said idler wheel is pivoted into its operative position by said pivoting means.

2. A mechanism for simultaneously actuating a reset arm with a continuously operating ball lift of an amusement game apparatus comprising a normally idle rotatable shaft connected to and operating a reset arm of the apparatus, a continuously operating electric motor, a driven element connected to said motor, said driven element connected to and continuously operating the ball lift of the apparatus, a second driven element, means for connecting said second driven element to said first mentioned driven element, a slip belt connection between said second driven element and a pulley wheel fixedly carried by said shaft, an idler wheel associated with said

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slip belt connection and adapted to take up the tension on said slip belt to cause said shaft to be rotated by said second driven element, an L-shaped bracket freely carried by said shaft for pivotally supporting said idler wheel relative to said slip belt, electromagnetic means for pivoting said L-shaped bracket into a position whereby said idler wheel places said slip belt under tension, a releasable latch means for limiting the distance of rotation of said shaft by said second driven element after said idler wheel is pivoted into operative position with respect thereto, means movable with said L-shaped bracket for releasing said latch to permit the rotation of said shaft when said idler wheel is pivoted into its operative position by said pivoting electromagnetic means, and means responsive to the rotation of said shaft for controlling the period of energization of said electromagnetic means.

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