

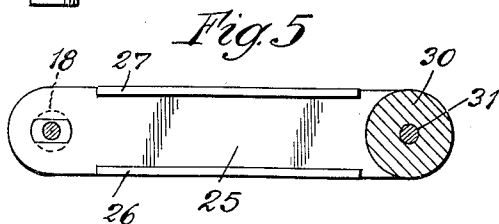
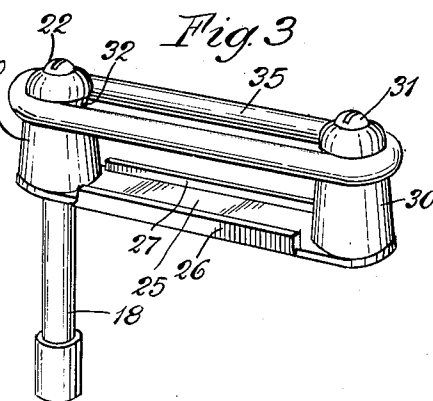
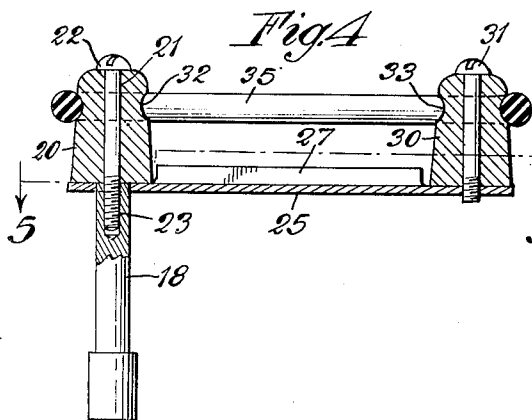
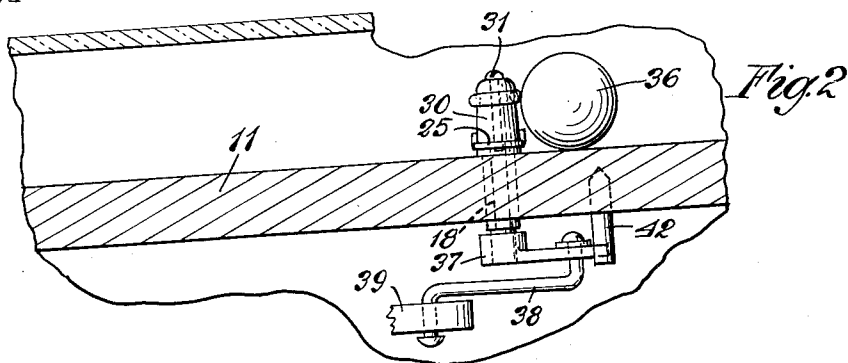
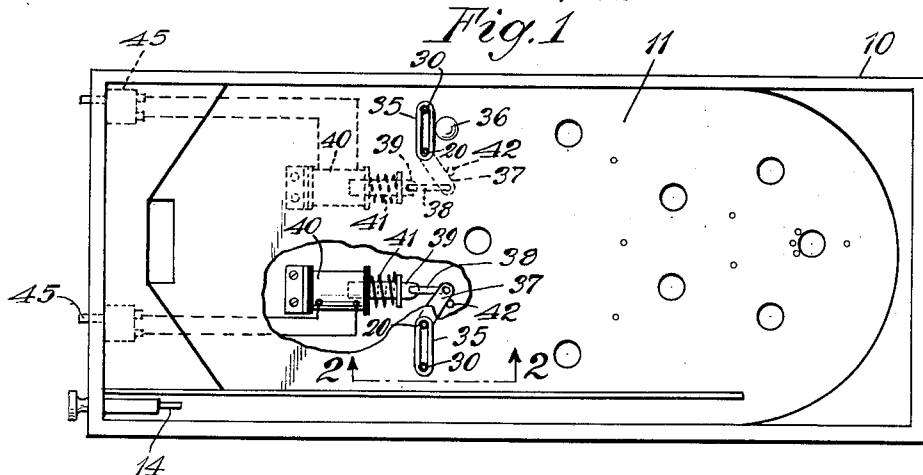
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PIVOTAL BALL RETURN MEANS FOR PIN GAMES

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PIVOTAL BALL RETURN MEANS FOR PIN GAMES

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2 Claims. (Cl. 273—129)

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This invention relates to a game apparatus and particularly to a ball bumper useful in pin games.

The bumper forming the subject matter of the present invention is adapted to render a game more interesting and to draw out to a greater degree the skill of a player. The construction embodying the present invention is simple and economical. In order that the invention may be understood it will now be disclosed in connection with drawings wherein—

Figure 1 is a top plan view of one form of game employing the present invention.

Figure 2 is a sectional elevation on line 2—2 of Figure 1.

Figure 3 is a perspective view of a bumper embodying the present invention.

Figure 4 is a sectional elevation of the bumper of Figure 3.

Figure 5 is a view along broken line 5—5 of Figure 4.

As previously pointed out the bumper embodying the present invention may be used with other games than the one shown above and it is therefore to be understood that the invention is not limited to such game but may be used generally in any desired type of game.

Referring to the drawings, the game includes cabinet 10 having suitable playing board 11 usually inclined. Playing balls may be projected on to the board by any suitable means such as spring biased plunger 14.

The game may be provided with any number of bumpers and objectives, in addition to the bumper embodying the present invention. Ball return means and scoring means may be provided. In addition, coin slides and the like for controlling the playing of the game may also be provided.

Referring particularly to a bumper embodying the present invention, of which any number may be disposed in a game, such bumper generally comprises post 18 suitably journaled in board 11 for rotary movement. Post 18 has head portion 20 extending above board 11. Head 20 is provided with axial slot 21 through which bolt 22 projects. Bolt 22 has threaded portion 23 engaging a suitably shaped recess in post 18.

At the bottom of head 20 there is provided flat elongated strip 25 extending at right angles to the head. Strip 25 has edges 26 and 27 bent upwardly along the sides for the major portion of its length. At the free end of strip 25 there is auxiliary head 30 generally similar to head 20.

Auxiliary head 30 is bolted to the free end of strip 25 by bolt 31.

Head 20 and auxiliary head 30 have annular grooves 32 and 33 respectively near the upper portions thereof. Sprung over the two heads and normally lying in the annular grooves is flexible cord 35 of rubber or the like. The two heads and rubber cord 35 are so designed that ball 36, when resting against the bumper, will have the rubber cord contact the ball approximately near the equatorial part of the ball.

The bumper is adapted to be oscillated about the axis of post 18. This is accomplished by any suitable means either manually or electrically. Thus as shown, post 18 has the bottom end thereof coupled to crank 37 which in turn is connected by link 38 to armature 39 of solenoid 40. Armature 39 is normally biased to an extreme position by spring 41. Pin 42 carried by board 11 at the bottom thereof is provided to limit the rest position of the armature and linkage and thus determine a rest position for the bumper.

Push button 45 is provided for controlling a circuit to solenoid 40. When the solenoid is energized, the armature will be pulled in and will cause the bumper to be quickly moved around the axis of post 18.

As is evident in Figure 1, the bumpers may be disposed on opposite sides of the game field, each bumper having its individual switch. The direction of movement of the bumpers will be so selected as to throw the ball in desired direction. As shown, the bumpers are moved in opposite directions to throw a ball toward one end of the playing field. It is evident that the resistance of rubber cord 35 as well as the turning movement of the bumper will have substantial effect upon the direction and speed of ball movement. Flanges 26 and 27, particularly the flange adjacent a ball, will also have some effect upon control of the ball. Such flanges will prevent cutting a ball on the strip. The various parts of the bumper will be made of suitable material, either metal or plastic.

What is claimed is:

1. In a game apparatus having a flat playing board upon which balls are adapted to roll, a post rotatively mounted in said board generally perpendicular thereto, a head carried by said post above said board, a flat strip extending from said post along said board, a second head carried by the free end of the said strip, said two heads being parallel, an elastic ring disposed around said two heads and normally lying at a

distance above said strip and manually controlled means for rotating said post to move said arm.

2. The construction according to claim 1 wherein said manually controlled means includes a solenoid and linkage system.

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The following references are of record in the file of this patent:

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