United States Patent [19]

Breslow et al.

[11] **3,764,136**

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[54] **GAME APPARATUS**

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[73] Assignee: **Marvin Glass & Associates**, Chicago, Ill.

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[52] **U.S. Cl.** **273/38**, 273/129

[51] **Int. Cl.** **A63d 3/02**

[58] **Field of Search** ..... 273/37, 38, 89, 119 R, 273/119 A, 129

[56] **References Cited**

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801,031	10/1905	Merckling	273/38
607,159	7/1898	Busse	273/102.1 C X
616,557	12/1898	Phares	273/37
2,048,915	7/1936	Bayer	273/129
3,355,173	11/1967	Selker	273/89

FOREIGN PATENTS OR APPLICATIONS

2,265	9/1900	Austria	273/38

Primary Examiner—Anton O. Oechsle

Attorney—James F. Coffee et al.

[57] **ABSTRACT**

An amusement apparatus simulating a bowling type game having an elongated alley and a plurality of pins positionable at one end of the alley and adapted to be overturned by a ball projected over the alley. A ball propulsion device is provided at the opposite end of the alley and comprises an elastic band extending transversely across the alley and through a spherical propulsion member generally on a transverse diameter of the spherical member. The propulsion member is generally of the same diameter as the bowling ball. Spotting means is provided for the pins on the alley and includes complementary attracting permanent magnets embedded in the base of each pin and in the alley to insure that the pins are properly spotted when placed at preselected spotting positions.

6 Claims, 6 Drawing Figures

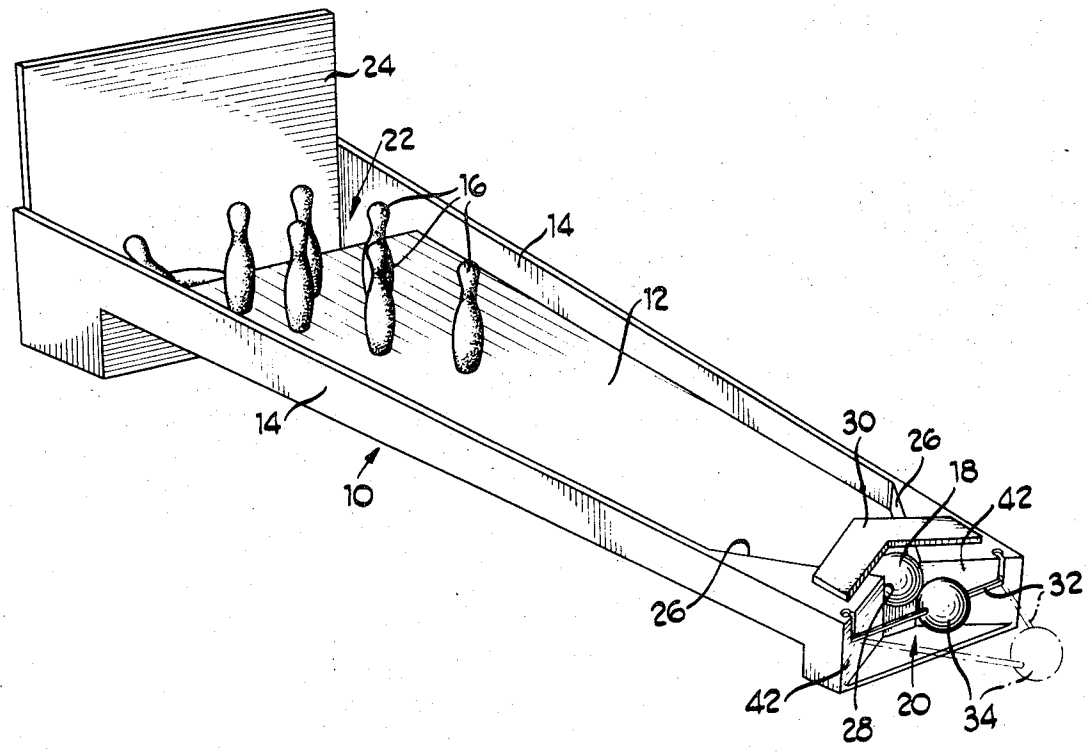


Fig 1

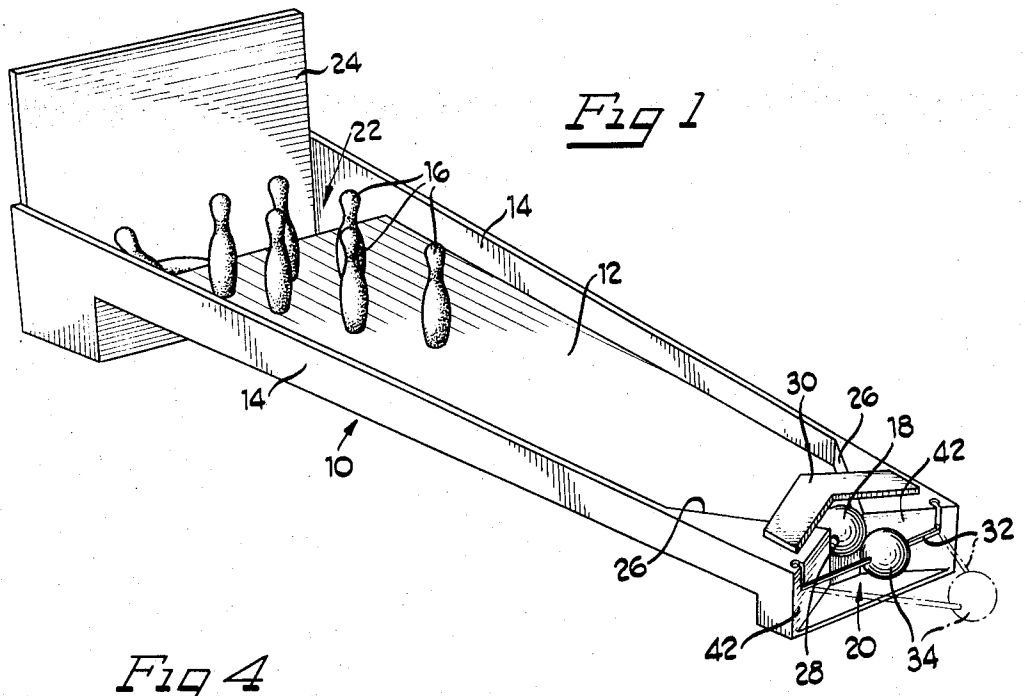


Fig 4

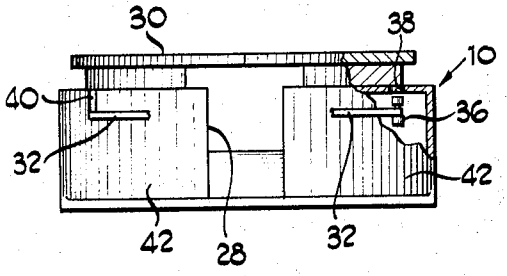


Fig 5

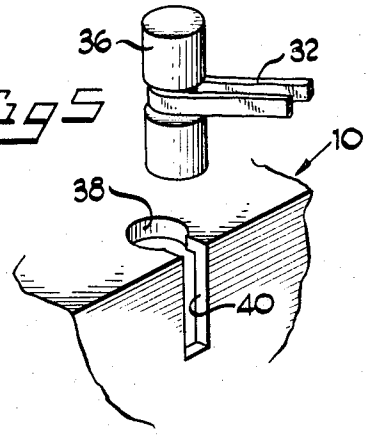
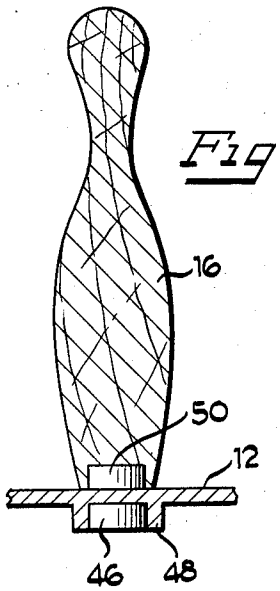


Fig 6



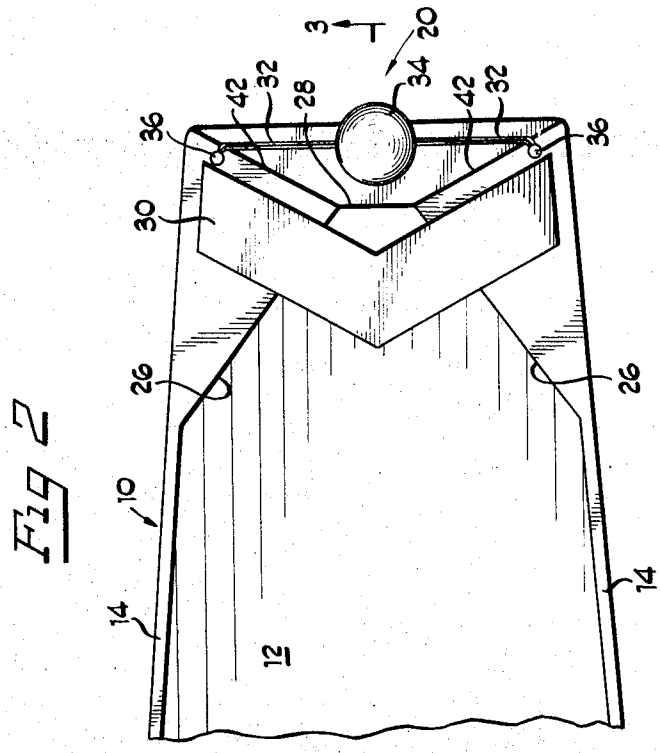

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Fig 2

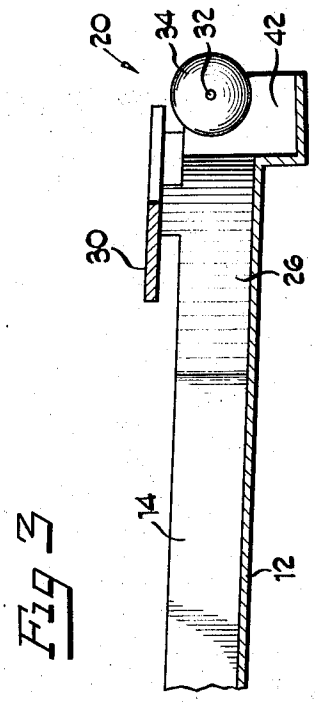
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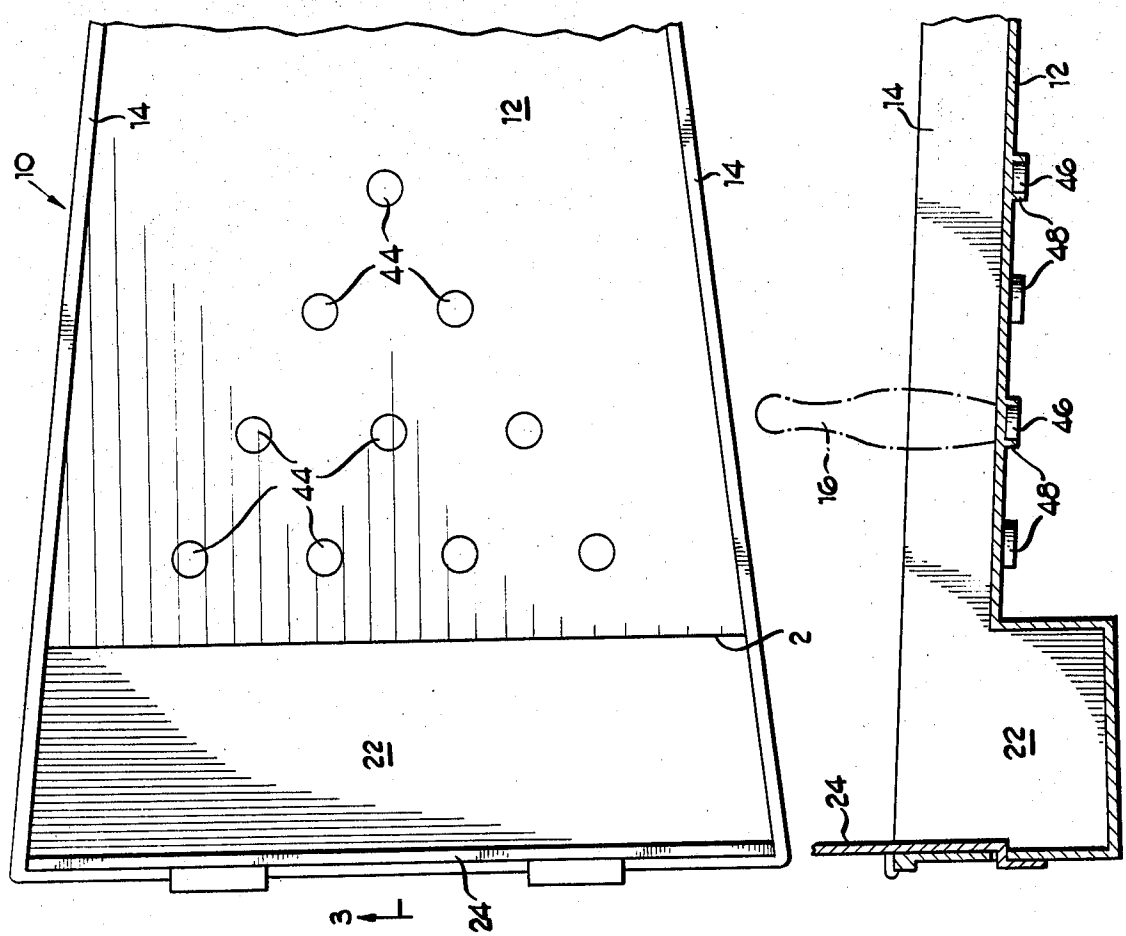
Fig 3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GAME APPARATUS

BACKGROUND AND SUMMARY OF THE INVENTION

This invention relates to a game apparatus and particularly to a new and improved bowling type game.

Heretofore, various portable amusement devices have been devised for use in an ordinary dwelling and consist, in part, of a portable bowling alley which is made of a size convenient for use so as to be placed upon an ordinary table, floor, or the like, and used by one or more persons. A number of these games include a base structure forming a bowling alley, with a plurality of pins positionable at one end of the alley and adapted to be overturned by a ball projected over the alley. In certain known structures, a ball propulsion device is provided generally at the opposite end of the alley. Certain of such games of the character described are shown in the following United States patents:

Christie	235,993
Hoyt	469,249
Bean and Watson	598,894
Merckling	801,031
Stevenson	942,757
Hall	1,136,671
McElhaney	3,079,153

This invention is directed to providing a new and improved bowling type game of the character described.

The principal object, therefore, of the present invention is to provide a new and improved amusement device, particularly a bowling type game apparatus.

One feature of the invention is the provision of a new and improved ball propulsion device which includes an elastic band wrapped around post members removably mounted on opposite sides of the bowling alley, with the elastic band extending transversely across the end of the alley opposite the end where the pins are spotted. A spherical propulsion or striking member is loosely mounted on the band for striking a ball and projecting the ball over the alley toward the pins. The band extends through the spherical propulsion member generally on a diameter thereof transversely of the alley whereby the spherical propulsion member may be spun about its transverse diameter, by a player of the game, while striking a ball to thereby vary the propulsion characteristics of the ball as it is projected down the alley. The angular projection of the ball may be varied by adjusting the longitudinal position of the spherical propulsion member along the elastic band.

In the exemplary embodiment of the invention, the bowling alley is inclined downwardly from the end where the pins are spotted to the ball propulsion device whereby the ball, after it strikes the pins, returns automatically down the inclined alley to a return position defined by upstanding chute-type wall means where the ball again may be struck by the spherical propulsion member.

Another feature of the invention is the provision of new and improved spotting means for the pins on the bowling alley. More particularly, complementary attracting permanent magnets are seated in recesses on the underside of the pins and in the alley whereby the magnetic attraction between the magnetic members insure that the pins are properly spotted when placed at predetermined spotting positions. Of course, the mass of the bowling ball versus the magnetic force of attraction between the magnetic members must be such that the bowling ball can readily overcome the magnetic forces involved to overturn the pins.

It should be pointed out that although the prior patents cited above and the exemplary embodiment of the invention shown herein are directed principally to portable type game apparatus simulating a bowling type game, certain features of the invention, particularly the magnetic spotting means, are equally applicable to much larger installations.

Other objects, features and advantages of the invention will be apparent from the following detailed description taken in connection with the accompanying drawings.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a bowling type game apparatus in accordance with the present invention;

FIG. 2 is a top plan view, partially broken away and on an enlarged scale, of the game apparatus of FIG. 1, with the pins and bowling ball removed therefrom;

FIG. 3 is a vertical section taken generally along the line 3—3 of FIG. 2, with one bowling pin shown in phantom;

FIG. 4 is an elevational view of the front end of the game apparatus, with portions thereof broken away to facilitate the illustration;

FIG. 5 is a partial exploded perspective view illustrating the removable post members about which the elastic band of the ball propulsion device is anchored; and

FIG. 6 is a vertical section through one of the pin members and through a section of the bowling alley to illustrate the magnetic spotting means of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Referring to the drawings in greater detail, the bowling type game or amusement apparatus of the present invention includes a base structure, generally designated **10**, having generally flat wall means defining an elongated bowling alley **12** which is bounded on its sides by upstanding side wall means **14**. A plurality of bowling pins **16** are provided for positioning at one end of the alley **12** and adapted to be overturned by a ball **18** which is projected over the alley by a ball propulsion device, generally designated **20**, at the end of the alley opposite the pins **16**.

As best seen in FIGS. **1** and **3**, the base structure **10** is formed with a bin **22** at the rear thereof and into which overturned pins may be received. A back board **24** is provided behind the bin **22** and protrudes upwardly above the bowling alley **12** to aid in preventing the pins **16** and bowling ball **18** from being propelled out of the base structure as the ball strikes the pins.

As best seen in FIGS. **1** and **3**, the alley **12** is inclined downwardly from the end thereof where the pins **16** are spotted to to the front end thereof where the ball propulsion means **20** is disposed. Thus, the ball **18** tends to return back to its position at the front of the alley after it strikes the pin **16**. Upstanding side wall portions **26** are provided at the front of the alley and converge forwardly toward an aperture **28** which defines a return position for the ball **18** wherefrom it again may be projected over the alley **12** toward the pins **16**. The aperture **28** is of a lesser width than the diameter of the ball **18** to provide a return position for the ball, and the upstanding side wall portions **26** define a chute to guide the ball toward the aperture **28**. An upper plate mem-

ber 30 is secured to the base structure and extends over the alley 12 in front of the aperture 28 to prevent the ball 18 from jumping out of its return position in front of the aperture 28 either on its return thereto or when it is struck, as hereinafter described, to project it over the alley 12 toward the pins 16.

The ball propulsion device or means 20 of the present invention includes an elastic band 32 which extends transversely across the bowling alley, with a spherical propulsion member 34 loosely received on the elastic band 32, the elastic band extending through the spehrical propulsion member 34 on a diameter thereof extending generally transversely of the alley 12. The elastic band 32 actually comprises a continuous loop having ends thereof wrapped around upstanding post members 36 which are removably mounted on the base structure 10 by placing the same through an aperture 38 (as best seen in FIG. 5) and seating post members behind a slot 40 which is narrower than the diameter of the post members. Upstanding wall portions 42 of the base structure 10 diverge forwardly from the aperture 28 outwardly toward the points of connection of the elastic band to the base structure, as defined by the posts 36 and slots 40.

Although the elastic band 32 is described herein (and in the claims) as extending generally transversely across the bowling alley 12, it can be seen that in the particular embodiment shown the band actually is outside of the physical alley surface, i.e., outside of the aperture 28 which defines the return position for the ball 18. No limitations are meant thereby.

With the spherical propulsion member 34 being freely mounted on the elastic band 32 on a transverse diameter thereof, the spherical member 34 may be spun about its transverse axis, by a player of the game, while striking the ball 18 to vary the propulsion characteristics of the ball as it is projected down the alley. In other words, with the member 34 being entirely spherical in nature, its spinning will be transmitted to the ball 18 and various "English" characteristics may be transmitted to the ball 18, somewhat similar to spins applied to a billiard ball. Of course, the spherical member 34 must be of sufficient mass, in conjunction with the force of the elastic band 32, to impart sufficient momentum to the ball 18. Preferably, the spherical member 34 is of the same diameter as the ball 18. In addition, the propulsion characteristics of the ball 18 further may be varied by moving the spherical propulsion member 34 longitudinally along the band 32 to effectively vary the angle of projection of the ball over the alley 12.

Another feature of the invention is the provision of new and improved means for accurately spotting the pins 16 on the alley 12. Such means includes magnetic means in the alley at predetermined spotting positions, and complementary attracting magnetic means in the base of the pins 16 whereby the magnetic attraction therebetween insures that the pins are properly spotted when placed at the predetermined spotting positions. More particularly, as seen in FIG. 2, the normal predetermined spotting positions of bowling pins are marked by appropriate indicia means 44 on the alley 12 in front of the bin 22. Beneath each of the spotting indicia 44 is a disc shaped permanent magnet 46 secured within an annular cylindrical boss 48 beneath the relatively thin wall means on the base structure 10 which defines the alley 12. Each of the pins 16 has a complementary attracting permanent magnet 50 embedded in the base thereof, generally flush with the bottom of the pin. Thus, when the pins 16 are placed in an upright position in the areas designated by the spotting indicia 44, the magnets 46 and 50 will attract each other and insure that the pins are properly spotted in relatively spaced relation at the predetermined spotting positions. Of course, the magnetic forces of attraction between the magnets 46 and 50, versus the mass of the bowling ball 18, must be such that the ball can readily overturn the pins when struck thereby. It also should be pointed out that although complementary pairs of permanent magnets (ie., in the pins and in the alley) are shown in the exemplary embodiment of the invention, and claimed, other appropriate magnetic means may be employed; for instance, providing magnets either in the alley or on the pins and complementary attracting metallic pieces in the other, for attraction purposes.

The foregoing detailed description has been given for clearness of understanding only and no unnecessary limitations should be understood therefrom as some modifications will be obvious to those skilled in the art.

We claim:

1. In a bowling type game apparatus including a base structure having an elongated bowling alley, a plurality of pins positionable at one end of the alley, a ball which is to be rollingly propelled along the alley to overturn the pins, and a ball propulsion device at the end of the alley opposite the pins for propelling the ball toward the pins, the improvement in said ball propulsion device comprising:

means defining a propulsion station extending transversely across the alley at the end thereof opposite the pins and from which the ball is propelled toward the pins, said propulsion station including two spaced apart upright barriers protruding inwardly from opposite sides of the alley, with an aperture formed by the space between said barriers, the aperture having a width less than the diameter of the ball whereby the ball is positionable at the aperture preparatory to propulsion, each barrier having an upstanding diverging guide wall extending from the aperture forwardly in a direction away from the pins;

an elastic band extending transversely of said diverging guide walls in front of the aperture; and

a spherical propulsion impact member mounted on said band, the band extending through the spherical impact member generally on a diameter thereof whereby the spherical propulsion member may be spun about an axis defined by said diameter by a player of the game, in striking a ball, to thereby vary the propulsion characteristics of the ball as it is projected down the alley, said impact member being slidable longitudinally along said band and being capable of being pulled forwardly away from the aperture in any one of an infinite number of directions, whereby said impact member when released is guided toward the aperture by said guide walls and impacts a ball positioned at the aperture imparting propulsion to the ball toward the pins.

2. The apparatus of claim 1 wherein said spherical propulsion member is generally of the same diameter as the ball which is projected over the alley for overturning the pins.

3. The apparatus of claim 1 wherein said elastic band is anchored at its ends to upright post members remov-

ably mounted on said base structure generally on opposite sides of the alley.

4. The apparatus of claim 3 wherein said band is a continuous loop stretched about said post members, with both runs of the loop extending through said spherical propulsion member.

5. The apparatus of claim 1 wherein said alley is inclined downwardly from said one end toward said ball propulsion device, and including upright wall means for directing a projected ball back to a position for striking by the spherical propulsion member after the ball has been projected toward said pins.

6. The apparatus of claim 1 including a generally horizontal guide plate mounted over the aperture between the two barriers for preventing the impact member from being propelled upwardly off of the alley.

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