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S. J. MURPHY

2,642,058

BALL PROJECTOR

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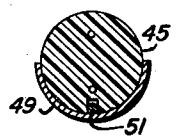


FIG. 2

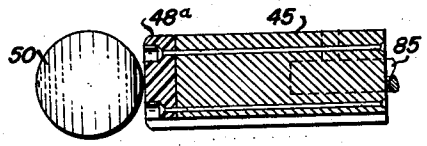
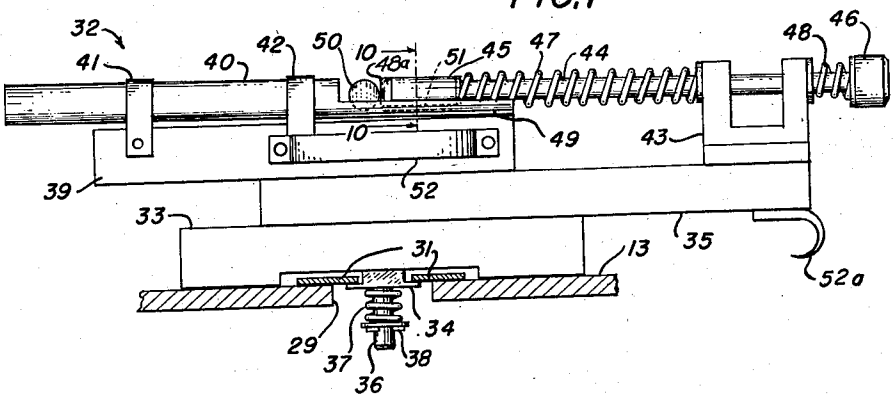


FIG. 3

FIG. 1



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BALL PROJECTOR

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1 Claim. (Cl. 124—26)

1

This invention relates to games and more particularly to an apparatus for playing games of the type in which balls or disks are projected over the surface of a level board or alley.

One object of this invention is to provide a board of the above nature in which the gun mounting is adjustable so as to provide free horizontal swinging and lateral sliding of the gun, whereby the gun may be effectively aimed.

A further object is to provide an apparatus of the above nature which will be simple in construction, inexpensive to manufacture, easy to install and manipulate, compact, ornamental in appearance, and very efficient and durable in use.

With these and other objects in view, there has been illustrated on the accompanying drawing one form in which the invention may conveniently be embodied in practice.

In the drawing,

Fig. 1 is a side view of a gun for projecting balls for use in the bowling game, showing a portion of the table in cross-section.

Fig. 2 is a cross-sectional view of a portion of the gun taken on the line 10—10 of Fig. 1.

Fig. 3 is a longitudinal sectional view showing the construction of the plunger head in the gun of Fig. 1, and a ball in operative relation thereto.

Referring now to the drawings, in which like reference numerals denote corresponding parts throughout the several views, the numeral 13 indicates a table for bowling, and provision is made of a ball gun 32 (Fig. 1) having a rectangular base 33 which is transversely channeled in its lower surface so as to permit it to embrace the strips 31 while resting upon the table 13, and which has a laterally extending bottom guide rail 34 of inverted T-shape secured thereto. The guide rail 34 is adapted to be inserted in the slot 29 outwardly of the ends of the pair of strips 31, and then slid laterally so as to interlock with said strips and thus retain the gun 32 for transverse sliding movement upon the table 10.

The rectangular base 33 carries a horizontally swingable bar 35 which has a vertical shaft 36 extending downwardly through said base 33 and through the guide rail 34. In order to retain the swingable bar 35 frictionally against the upper surface of the base 33, the lower end of the vertical shaft 36 is provided with a coiled spring 37 which bears against the lower surface of the guide rail 34 and is retained on said shaft by means of a cotter pin 38.

A forwardly extending elongated block 39 is secured to the upper surface of the swingable

2

bar 35 for supporting a cylindrical barrel 40 which has a slight upward inclination in a forward direction, and which is secured to the block by means of a pair of straps 41, 42, of inverted U-shape.

The rear end portion of the swingable bar 35 is provided with an upstanding U-shaped block 43 which slidably carries a horizontal plunger 44 having a cylindrical head 45 and a rear handle 46, a driving coil spring 47 embracing said plunger between said head and the block 43, and a relatively short cushioning coil spring 48 embracing said plunger between the block 43 and the handle 46. The head 45 preferably has a facing 48a of pressed plastic-impregnated laminated fabric, and secured thereto by any suitable means such as rivets (not shown).

A rear top portion of the cylindrical barrel 40 is cut away so as to provide a semi-cylindrical lower portion 49 in which the plunger head 45 is slidably disposed, and which will permit the operator to insert a bowling ball 50 in front of said head 45. Thus, it will be seen that the operator may draw the head 45 back against the force of the driving spring 47, by means of the handle 46, and when said handle is released, the head 45 will strike the ball 50 and project it forwardly from the barrel 40. The spring 48 will, of course, cushion the handle 46, near its extremity of forward movement, so that noisy and destructive impact of said handle 46 against the block 43 will be avoided.

The upward inclination of the barrel 40 will tend to prevent the ball 50 from rolling forwardly and thus leaving the barrel prematurely. However, in order to prevent the ball 50 from rolling rearwardly when the plunger head 45 is drawn back in preparation for a shot, the inside of the semi-cylindrical barrel portion 49 is provided with an upward projection 51, the head 45 being slotted in order to accommodate said projection. Thus, the ball 50 will be maintained positively in a position where it may be efficiently struck by the head 45 and projected forwardly through the barrel 40.

The opposite sides of the elongated block 39 are preferably provided with a pair of horizontal handles 52, which may be grasped by one hand of the operator so as to assist him in accurately aiming the gun 32. Provision is also made of a hooked handle 52a which is secured to the lower rear portion of the swingable bar 35, and which may be grasped by the other hand of the operator if desired so as to facilitate the aiming and operation of the gun 32.

The object in projecting the ball **50** will be to strike a set of ten bowling pins **53** (Fig. 3) which will be set up in triangular formation upon the opposite end portion of the alley.

Operation

When the table **10** is to be used for bowling, the gun base **33** will, of course, rest firmly upon the table **13**, and the T-shaped guide rail **34** will be engaged under the edges of the strip **31** so that the gun **32** will have a stable means of support, while the player may move the gun laterally to any desired position, and also swing the gun upon the vertical shaft **36** so as to aim the gun accurately.

The player may insert the ball **50** in the semi-cylindrical barrel portion **49**, pull back the plunger **44** by means of the handle **46**, aim the gun **32**, and then release the handle **46** so that the spring **47** will drive the head **45** forwardly to strike the ball **50** and project it from the barrel **40**.

While there has been disclosed in this specification one form in which the invention may be embodied, it is to be understood that this form is shown for the purpose of illustration only, and that the invention is not to be limited to the specific disclosure, but may be modified and embodied in various other forms without departing from its spirit. In short, the invention includes all modifications and embodiments coming within the scope of the following claim.

Having thus fully described the invention, what is claimed as new, and for which it is desired to secure Letters Patent, is:

In a bowling ball projector for a game board, a base, a barrel mounted for horizontal swinging movement on said base, said barrel being upwardly tilted at its forward end to prevent the ball from leaving the barrel prematurely, a headed plunger at the rear of said barrel for propelling a ball through said barrel, a U-shaped guide block supported by said base for slidably holding said plunger, a coiled spring surrounding said plunger and engaging the guide block and the plunger head, said barrel being cut away at the top of its rear section to permit the ball to be dropped therein into propelling position in front of said plunger, said plunger having a vertical slot in its forward end, an upward projection in the rear portion of said barrel located in said slot to prevent the ball from following said plunger rearwardly when it is retracted against its spring to loading position, a handle on the rear of said plunger, and a spring cushion located between said rear handle and said U-shaped guide block to reduce the noise of impact and to prevent injury to said handle.

STEPHEN J. MURPHY.

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