

July 29, 1941.

I. H. WILSEY
GAME APPARATUS
Filed July 31, 1939

2,250,690

3 Sheets-Sheet 1

Fig. 1.

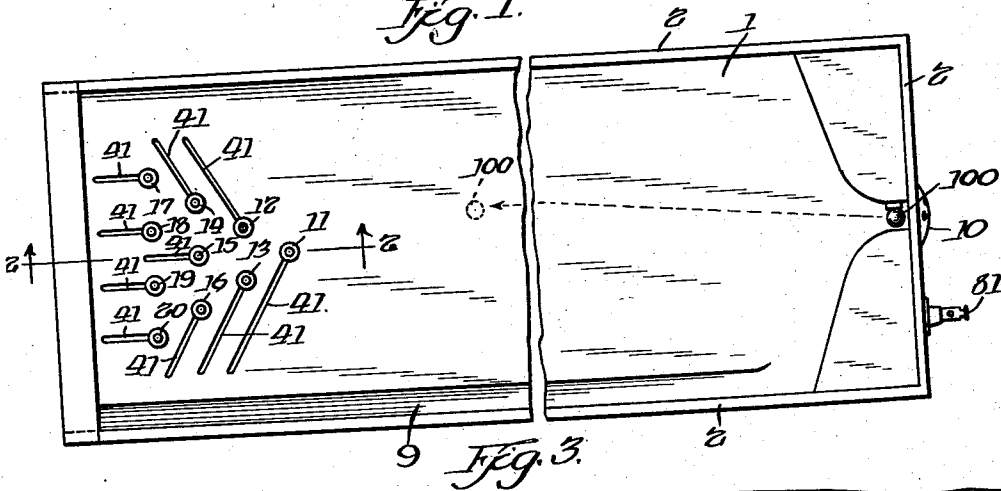
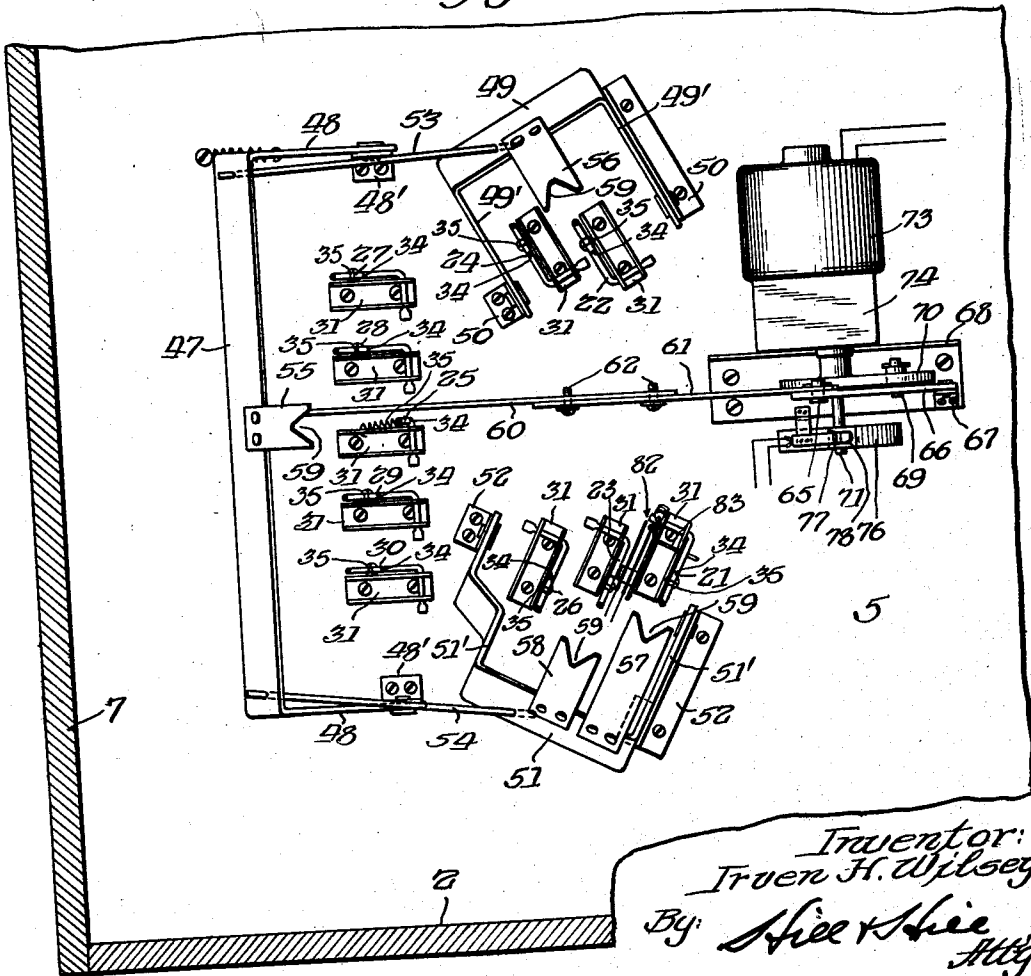


Fig. 3.



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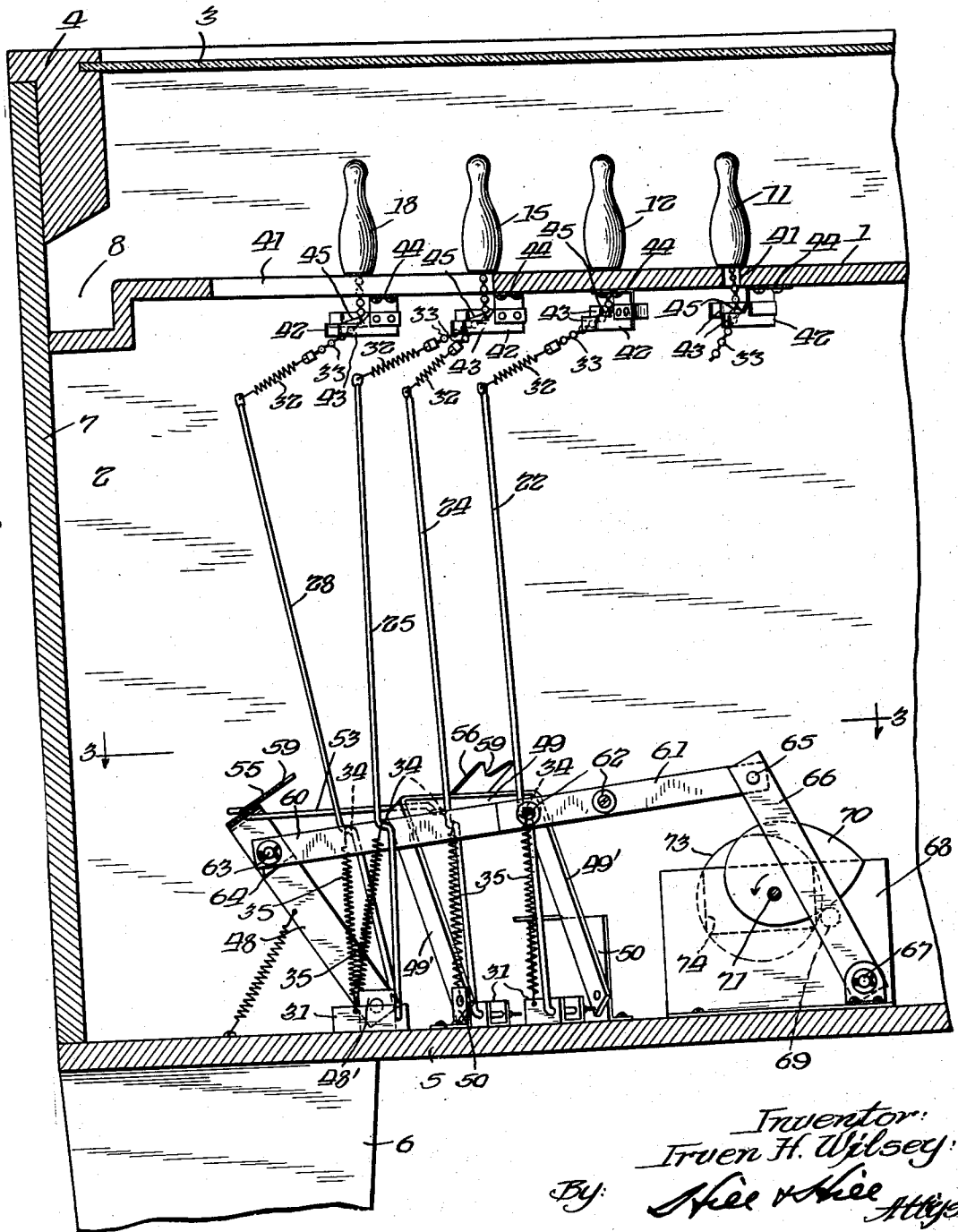
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3 Sheets-Sheet 2

Fig. 2.



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UNITED STATES PATENT OFFICE

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GAME APPARATUS

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Application July 31, 1939, Serial No. 287,540

14 Claims. (Cl. 273-45)

My invention belongs to games or amusement devices, and particularly to a game of skill simulating bowling, ten pins or the like, in which one or more targets are disposed or spotted on the game board, and a missile projected over the board to displace or knock them to one side. The present invention relates more particularly to apparatus for resetting or replacing the pins or targets to playing position after they have been displaced, either by a direct hit by the missile, or by their being struck by another target pin which has been displaced by the missile.

The invention has among its objects the production of a device of the kind described that is simple, inexpensive, efficient, durable, reliable and convenient for use in various games to which it may be applicable.

A further object of the invention is an apparatus which will permit the displacing of the targets when struck, but is operative for resetting or setting up the displaced targets as desired without requiring the manual handling of individual pins. It also has as an object the production of such a device in which the setting up may be controlled at a point remote from the end of the board or alley where the pins are set up or played on, the pins being spotted at the proper predetermined point on the game board or alley.

A further object is the production of apparatus of the kind described in which the targets and pins are maintained in their proper positions for play until hit and displaced and which after effecting complete displacement will hold them displaced until it is desired to reset them, at which time it will then simultaneously replace or reset them, each target in its proper place.

A further object is the production of an apparatus of the kind described to which indicating mechanism may be readily applied since the apparatus is adapted for being equipped with auxiliary mechanism for indicating hits, recording scores or accumulated scores, or for other accessories.

The invention has as a further object a setting apparatus for use on a board provided with predetermined paths of travel for the targets when hit, the preferred construction, as shown in the embodiment illustrated, being the provision of a slot or slots leading away from the spotted position of the target to a point away from the normal set up position of the targets, with a plurality of arms, one for each target, arranged below the board or alley and flexibly connected to the targets through the slots, means being

provided to control the movements of the arms at desired times.

Many other objects and advantages of the construction herein shown and described will be obvious to those skilled in the art from the disclosure herein given.

To this end my invention consists in the novel construction, arrangement and combination of parts herein shown and described, and more particularly pointed out in the claims.

In the drawings, wherein like reference characters indicate like or corresponding parts:

Fig. 1 is a top plan view of a game board arranged to simulate a bowling alley;

Fig. 2 is an enlarged vertical sectional view taken substantially on line 2-2 of Fig. 1;

Fig. 3 is a plan sectional view taken substantially on line 3-3 of Fig. 2;

Fig. 4 is a view similar to a portion of Fig. 2, showing the position of one of the targets which has been displaced and which is to be reset;

Fig. 5 is a similar view of the same illustrating the target set in position with the mechanism in position during the resetting operation prior to the retrieving of the arms to the positions shown in Fig. 2;

Fig. 6 is a perspective view showing a target and one of the latch devices illustrating the method of retaining of the mechanism or target in the position shown in Fig. 2; and

Fig. 7 is a diagrammatic view illustrating a simple circuit for controlling the operation of the resetting mechanism.

In the embodiment of the invention shown, 1 represents a game board provided with marginal walls 2 and an end wall 4, 3 representing a plate of glass covering the board and supported by the marginal walls. There is also provided bottom partition 5 and an end wall 7 which is preferably removable. The board described may be supported on legs 6 (see Fig. 2, only one being shown), or in any other suitable manner. The game board shown which simulates a bowling alley of the usual type, only of less size than the regulation bowling alley, is provided with an alley 8 at the end and an alley 9 at one or both sides, as the case may be, the alleys being so inclined that a ball or missile dropping into the alley 8 or into the alley 9 will roll back to the projector 10. The projector 10 is not shown in detail as any type of projector may be employed. It may be mentioned, however, that I have shown a portion of a projector in Fig. 1 which forms the subject matter of a copending case and need not be described herein in detail. For targets

I provide one or more members, ten being shown, which simulate bowling pins, these being identified by the numbers 11 to 20, inclusive. When any one or more of the targets are struck by a missile they are thrown out of position and follow a predetermined path to a point outside of their ordinarily spotted position, as will be more fully described hereinafter.

Arranged below the board 1 are a plurality of arms in the form of rods 21 to 30, inclusive, which are pivotally secured to the bottom 5 by means of brackets 31. There is an arm for each target, the upper end thereof being secured to its respective target, preferably by means of a spring 32 and a short linked chain 33, so that each of the pins and its respective arm is both yieldably and flexibly connected to its respective arm. The arms are each provided with a spring 35 having one end secured to a plate 31 and the other end to an offset 34 in the arm, the tendency of the springs 35 being to move an arm when its respective target is struck to carry the target out of its spotted position.

As most clearly shown in Fig. 1, a slot 41 is provided for each target, the same extending away from the spotted position of the pin so that when a pin or target is struck it will be moved by its arm along the direction that its respective slot extends. When the targets are all set in their spotted position for play they are releasably anchored or held in this spot by the latch members designated generally by the numeral 42 and shown in detail in the perspective view Fig. 6. Each latch consists of a U-shaped member having wings 43, one of which is more or less yieldable and may be forced away from the other. The latches 42 are provided with the extensions 44 by means of which they may be secured to the underside of the board adjacent the end of the slot where the pin or target will stand when ready for play. Each latch is provided with the cam extension 45 which will engage a link in the chain 33 and normally prevent the arm being drawn by the spring 35 to displace the target. When the target, however, is struck and moved or tilted, the movement of the chain 33 tends to spring one or the other of the wings 43 to one side, releasing the chain 33 so that the spring 35 will so draw the arm as to move the target along the line of its respective slot 41 out of the normal playing position and maintain it there until it is desired to retrieve or reset the targets.

Arranged below the play board 1 is a bar 47 having legs 48 pivotally secured to brackets 48' attached to the bottom 5. There are also two somewhat similarly formed bars, one 49 having legs 49' attached to brackets 50, and the other bar 51 having legs 51' attached to brackets 52 to the bottom 5. The bars 49 and 51 are connected to the bar 47 by means of the links 53 and 54, respectively. When the bar 47 is moved the bars 49 and 51 are simultaneously moved and these reset the apparatus as will be more fully described hereinafter. The bar 47 is provided with the member 55 arranged to cooperate with arm 25, 49 with a bracket 56 arranged to cooperate with arm 22, and arm 51 with brackets 57 and 58 arranged to cooperate with arms 21 and 23, respectively. Arms 24, 26, 27, 28, 29 and 30 are engaged by and cooperate with the bars 49, 51 and 47, respectively during the resetting. The bar 47 may be moved or manipulated in any desired manner. As shown, the same is provided with a link

formed of two parts 60 and 61 secured together by bolts 62, so that the length of the link or bar may be adjusted. The end of the link opposite 47 is pivotally secured at 65 to an arm 66 suitably secured at 67 to a bracket on the base plate 68. A cam roller 69 is secured to the arm arranged to cooperate with the cam 70 mounted on shaft 71. There is provided a motor 73 and reduction gear box 74 arranged to provide a drive for the shaft 71, the cam control arrangement being such that the cam is given one rotation in a cycle, moving the bar 47 forward or toward the projector 10, causing the several arms connected with the targets to be moved to set position, and thereafter retrieve the same to retracted position shown in Figs. 2 and 3.

Any sort of electrical circuit and switches may be employed for giving the desired action. There is shown a cam member 76 mounted on the shaft 71 which is arranged to control, by means of its cam face 77, a switch 78, making contact with the contact member 79. There is also provided a switch 80 which may be manipulated in any suitable manner, a simple push button 81 being shown for purposes of illustration. There is also shown a switch 82, it being understood that there is a switch 82 for each arm 21 to 30, inclusive. In the drawings, Fig. 3, only one switch is shown and this in connection with arm 21, it being understood that all of the switches may be the same. This switch 82 is controlled by means of an arm 83 adapted to be engaged by the arm 21 as will be hereinafter described. It may be mentioned that switches similar to 82 controlling other circuits may also be employed for controlling indicating mechanism or for other purposes. As mentioned, a simple circuit arrangement is shown and this only for the one arm, the circuit controllers 82 being multiplied, one for each arm, so that regardless of how many balls are hit or which ones, the device will operate as will be described in connection with the single arm.

A circuit may be closed by closing switch 80 which may be traced as follows: 84, 85, 86, 86, 82, 87, 88, 89 back to the line. A circuit may also be closed through 84, 90, 79, 78, 91, 88 and 89, either one energizing the motor or breaking the circuit, as the case may be. The circuit through switches 80 and 82 is the starter circuit and may be immediately broken since starting the motor causes the member 76 to rotate, closing the circuit through 78 and 79 and this is held until 76 has made a complete rotation, at which time it is automatically broken.

In playing the game, assuming that the targets are set up in the position shown in Fig. 1 so that the arms and resetting mechanism are substantially in the positions shown in Figs. 2 and 3, a ball 100 is projected down the board toward the targets. Assuming that it strikes target 11 and knocks it to one side and also targets 12 and 15, these targets being displaced as previously described and as shown in Fig. 6, are released from the latches 42 and under the tension of the springs 35, arms 21, 22 and 25 are thrown and moved into positions similar to the arm 25 shown in Fig. 4, with arm 21 engaged in the notch 59 in bracket 57 and arm 22 in the notch 59 in bracket 56, these three targets then being out of play. The ball 100 rolls into the alleys 8 and 9 back to the projector. Another ball may then be projected to knock down further targets or switch 80 closed to re-

trieve the target to playing position. We will assume that after one ball it is desired to retrieve the targets. Switch 80 is closed by pushing button 81, closing the circuit through the motor, causing the motor to drive the cam 70 and switch cam 76. The motor then continues to run through the circuit formed at the switch 78—79 and the cam moves the arm 66 (see Fig. 2) to a position substantially as shown in Fig. 5, retrieving the targets 11, 15 and 12 substantially as shown in Fig. 5 so that the chain or flexible connection 33 is caught in the latch. As the motor continues to run arm or link 66, through the connector 60 and 61, moves the bar 47 to the left, at the same time moving the bars 49 and 51 to the position shown in Figs. 2 and 3. This leaves the targets reset and they are substantially as shown in Fig. 2 and held in that position. When the next ball is projected the cycle of operations is repeated. As the arm 21 returns to the position shown in Fig. 3 through the auxiliary arm 83, it opens the switch 82 which remains open until the next cycle.

I have found that energy is stored in the springs by the motor or equivalent power and this is sufficient to more than remove the individual targets. It is found that the energy is sufficient to also release one or even more than one subsequent targets. That is to say, the ball need only barely transmit enough energy to an individual target to unlatch it, but this will at times carry on and build up a great chain of energy and release additional targets. To this extent this distinguishes the game from bowling, in which all of the energy must be in the ball, and this increases the skill arm effect, as it has been demonstrated that a skillful unlatching angle play on one target may bring about unlatching or releasing of additional targets.

In this application, as before mentioned, the projecting mechanism is not shown in detail, since this forms the subject matter of a separate application, as also any mechanisms and circuits for indicating or recording devices.

With the apparatus shown and described, a game of bowling may be played the same as if on the regular full-sized alley and the hits scored in the same manner. It is possible to have strikes, spares and the like with the game apparatus. While the game has been particularly described in connection with bowling, it will be obvious to those skilled in the art that features of the same are applicable to other types of games in which a missile is projected along a board to a target. Other types of targets may be employed and the arrangement of the slots defining the path of the targets after being hit need not be laid out in the particular way set forth in the application and as shown in the drawings.

Having thus described my invention, it is obvious that various immaterial modifications may be made in the same without departing from the spirit of my invention; hence I do not wish to be understood as limiting myself to the exact form, construction, arrangement and combination of parts herein shown and described, or uses mentioned.

What I claim as new and desire to secure by Letters Patent is:

1. In a game apparatus of the kind described, a board providing a playing surface, said board having a slot through the same, a target slidably mounted on said board at said slot, the slot defining a path of travel of the target, means disposed below the board and operatively connected

to the target through said slot for releasably maintaining the target in playing position and thereafter automatically moving the target when played on, out of playing position and operative for returning the target back to playing position.

2. In a game apparatus of the kind described, a board providing a playing surface, said board having a plurality of slots through the same, a plurality of targets slidably mounted on said board at said slots, the slots defining paths of travel of the targets, means disposed below the board and operatively connected to the targets through said slots for releasably maintaining the targets in playing position and after an initial displacement of the target, moving the target played on out of said playing position and thereafter operative at will for returning the target back to playing position.

3. In a game apparatus of the kind described, a board providing a playing field surface, a plurality of targets slidably mounted on said board thereat, means for positively moving a target played upon in a direction substantially parallel to said playing surface to a position out of the playing field, said means operative to return the same to positions on the playing field, and means for releasably maintaining the targets in said positions.

4. In a game apparatus of the kind described, a board providing a playing surface simulating a bowling alley, targets arranged on a playing field at one end of said board, means normally retaining the targets in playing position on the playing field and operative after the displacement of a target to move and guide the same laterally over said board from its playing position to a position adjacent a side of the field, and mechanism for returning any displaced targets to their playing field positions.

5. In a game apparatus of the kind described, a board providing a playing surface and simulating a bowling alley, a missile simulating a bowling ball, displaceable targets arranged on said board on a playing field, means operative after displacement of a target or targets to move and guide on the board all displaced targets out of initial playing field positions, mechanism for retrieving the said means and returning said targets to their respective positions on the playing field, and means for releasably securing the retrieved targets in their initial playing positions in the playing field.

6. In a game apparatus of the kind described, a board providing a playing surface and simulating a bowling alley, a ball, targets arranged on the face of said board, means automatically operative after the displacement of a target or targets to remove all displaced targets and set them up to one side and out of the playing area positions, mechanism for retrieving the said means and resetting said targets in their initial playing positions in the playing field, and means for controlling the said retrieving mechanism to retrieve the targets to their playing positions after a desired cycle of plays.

7. In a game apparatus of the kind described, a playing board providing a playing surface, a plurality of targets mounted on the board and movable thereover, said board constructed to guide the targets during their movement, an arm for each target operatively connected thereto at the lower end of the target for moving the targets across the board into and out of operative position, and means for controlling said arms to

retrieve a displaced target and return the same to an initial playing position as desired.

8. In a game apparatus of the kind described, a board providing a playing area surface, a missile, a plurality of targets movably mounted on said board and attached thereto at their bases, means for laterally moving a displaced target played upon to a side of the playing area, said means operative to retrieve the same to playing position after the desired number of plays, and means for releasably maintaining the targets in playing position until displaced by the missile or in their displaced position outside the playing area.

9. In a game apparatus of the kind described, a board providing a playing field, a ball movable over the board, a plurality of targets disposed on the surface of said board, actuating means for moving a target played upon and displaced by the ball over the surface and out of the playing field and there resetting them, means operative to restore said actuating means and return the displaced targets to initial playing positions in the playing field, and means for releasably retaining the targets in initial playing positions until displaced in play.

10. In a game apparatus of the kind described, a game board, a target mounted thereon and movable thereover in a predetermined path, an arm movably arranged below the board and operatively connected to said target, flexible means cooperating therewith for detachably securing the base of the target in position on the board in the path of a missile, means for moving the arm and attached target when the target is struck by a missile, and means for retrieving the arm and target after the target has been displaced.

11. In a game apparatus of the kind described, a game board simulating a bowling alley, a plurality of targets mounted thereon and each movable thereover in a defined path, an arm for each target arranged below the board and each operatively connected by flexible means to its respective target, means for engaging said connecting means and releasably maintaining the target in set position, said last mentioned means op-

erative to release the target and arm when the target is struck by a missile, means for automatically actuating the arm when the target is released and moving the target along its respective defined path, and means for moving any arms of any displaced targets to restore the targets to their initial set position.

12. In a game apparatus of the kind described, a game board simulating a bowling alley, a plurality of targets mounted thereon and movable thereover, an arm for each target arranged below the board, flexible means passing through the board for each arm and target for operatively connecting the arm and target, individual means for catching each target, flexible means for maintaining the targets in set position and operative to release the target when the target is displaced, individual means for each arm for actuating the same when the associated target is released and moving the target from its initial playing position, and means for restoring any displaced arms to return the targets to their set position and re-energizing the arm actuating means.

13. In a game apparatus of the kind described, a board providing a field of play, a plurality of targets mounted on the board and movable over the face thereof in a direction parallel thereto, means operative to laterally move a target played upon and displaced, from and to a position on said board without the field of play, said means operative to return all displaced targets and guide them to their respective individual playing positions.

14. In a bowling game apparatus of the kind described, a board providing a field of play, a plurality of targets mounted on the board, said targets movable thereover on the face thereof and parallel thereto within or without a field of play, means for moving a target struck or displaced by the impact of a missile to without the field of play and setting them up thereat, and means operative to retrieve the displaced targets from outside of the field of play to their set up playing positions within the field of play.

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