Nov. 17, 1936. R. B. STEWART 2,061,112

GAME DEVICE

Filed Nov. 9, 1933 3 Sheets-Sheet 1

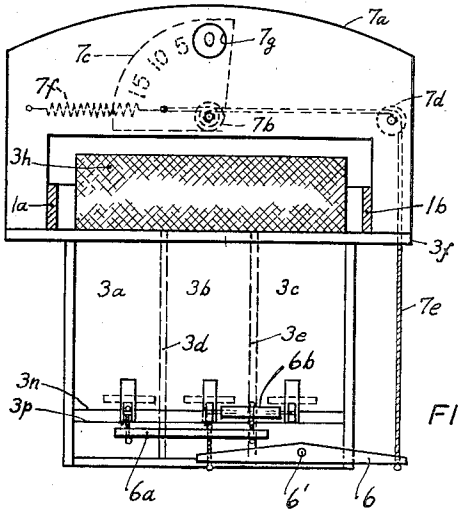


FIG. 1

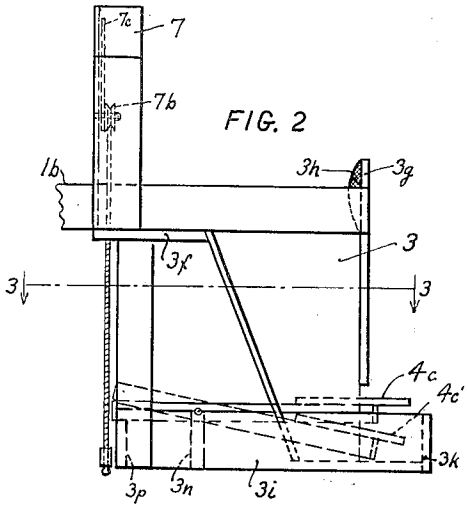


FIG. 2

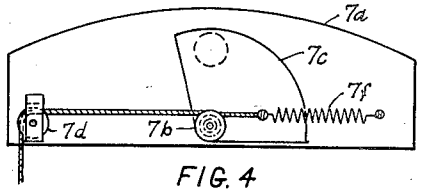


FIG. 4

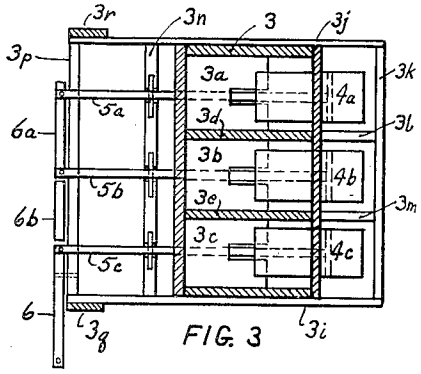


FIG. 3

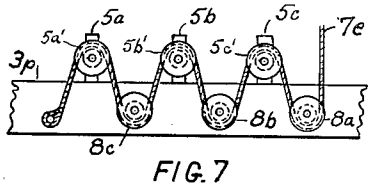
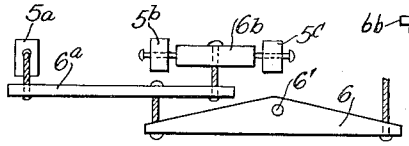


FIG. 7

FIG 1a.



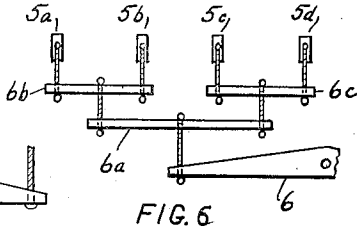


FIG. 6

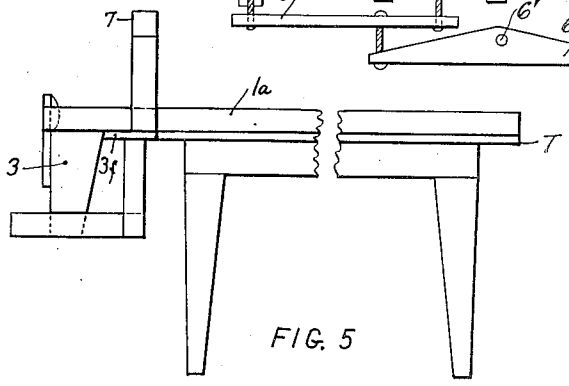


FIG. 5

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GAME DEVICE

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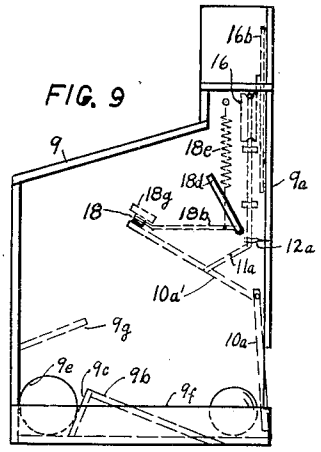


FIG. 9

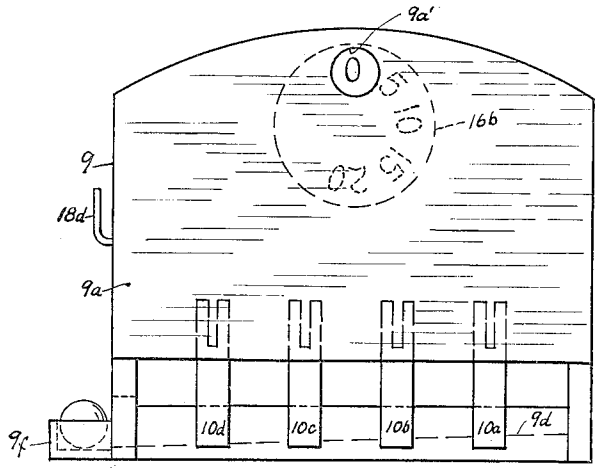


FIG. 8

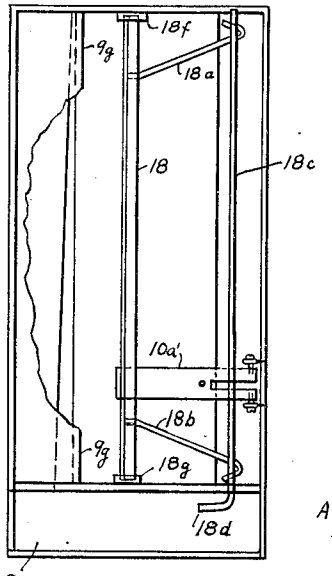


FIG. 10

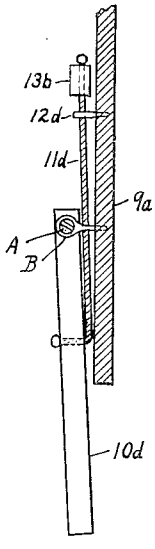


FIG. 12

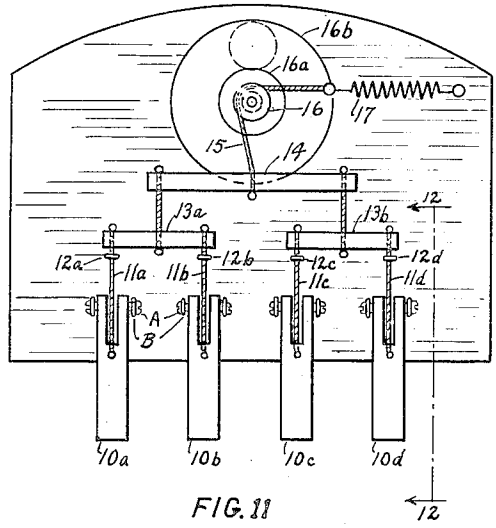


FIG. 11

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GAME DEVICE

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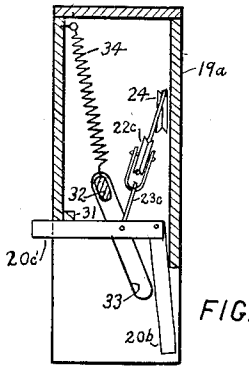


FIG. 14

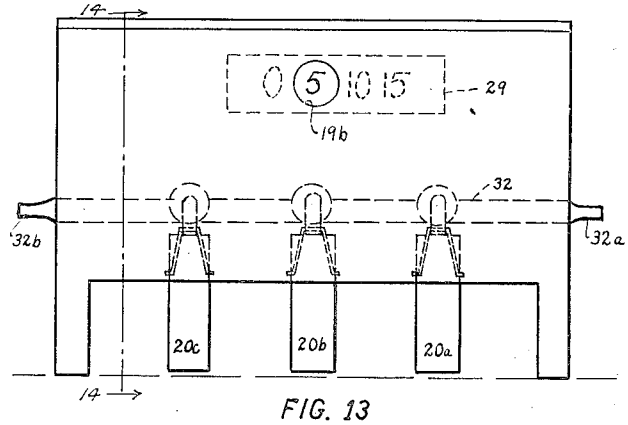


FIG. 13

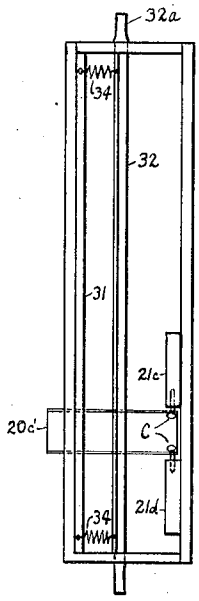


FIG. 15

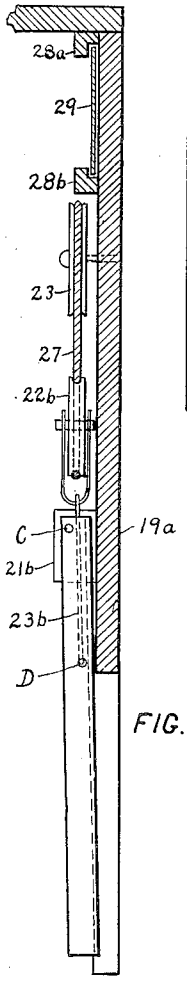


FIG. 17

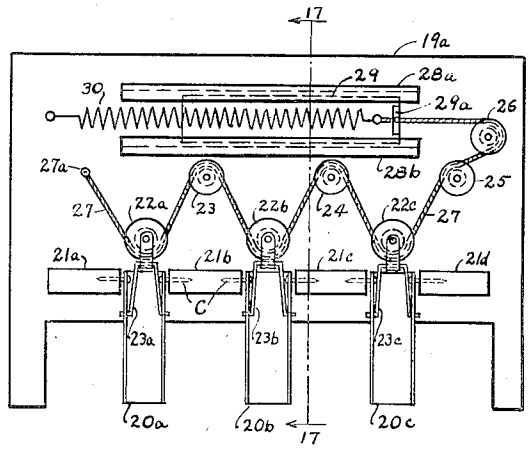


FIG. 16

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Patented Nov. 17, 1936 2,061,112

UNITED STATES PATENT OFFICE

2,061,112

GAME DEVICE

Ralph B. Stewart, Chevy Chase, Md.

Application November 9, 1933, Serial No. 697,332

20 Claims. (Cl. 273—118)

My invention relates to a game device, and more particularly to a game device provided with a plurality of targets which are operated by projectiles.

An object of my invention is to devise a game device having a number of targets and to provide means for automatically indicating the total number of targets hit, or the total score allotted to targets that are hit.

A further object is to provide a totalizing score indicator for a plural-target game having a bi-directional operating connection between each target and the indicator, whereby movement of any target in either direction effects a movement of the indicator in a corresponding direction.

Still another object is to devise a game device having a plurality of target members and a totalizing score indicator mechanism wherein a single operating element for the indicator serves to normally bias all of the target elements to the latched or set position.

Another object of my invention is to devise a portable game device of the bowling type which utilizes the top of a table as the alley or bowling surface. Other forms of my device are designed to use the floor or any flat surface as the alley.

My invention is clearly illustrated in the accompanying drawings, in which:

Figure 1 is a front view partly in section of one form of the invention;

Figure 1*a* illustrates the equalizer bar connection of Figure 1.

Figure 2 is a side view of Figure 1;

Figure 3 is a section of Fig. 2 along line 3—3;

Figure 4 is a partial view of Fig. 1 viewed from the back and showing only the score indicating device;

Figure 5 shows the invention of Figs. 1 to 4 mounted on a table;

Figure 6 shows an indicator actuating device adapted to be operated by four targets;

Figure 7 is an enlarged view of a modification of the indicator actuating device;

Figure 8 is a front view of another form of my invention;

Figure 9 is a side view of Figure 8;

Figure 10 is a plan view of Figure 9 showing the top removed and showing one target in the tripped position;

Figure 11 is a rear view of the front panel of Fig. 8 showing the targets and the indicating device;

Figure 12 is a partial view of Fig. 11 along the line 12—12 showing a detail of the target trigger construction;

Figure 13 is a front view of a third form of my invention;

Figure 14 is an end sectional view of Fig. 13 along line 14—14;

Figure 15 is a plan view of Figure 13 with the top removed and showing one target in tripped position;

Figure 16 is a rear view of the front of Fig. 13 showing the indicating device;

Figure 17 is an enlarged sectional view of Fig. 16 along the line 17—17.

In Figures 1 to 5 I have illustrated the details of one form of my invention which is adapted to be placed upon the top of a table and employed as a bowling game, using croquet balls as the projectiles. A side view of the assembled game mounted upon a table T is shown in Figure 5. The top of the table serves as the alley or surface along which the balls are rolled, and two side members 1*a* and 1*b* form the sides of the alley to direct the balls towards the game device, which is supported at the left end of the table of Figure 5 by the side rails 1*a* and 1*b*. At the end of the side rails 1*a* and 1*b* is arranged a rectangular box-like structure 3 provided with two partitions 3*d* and 3*e*, dividing the box into three compartments or pockets 3*a*, 3*b* and 3*c* respectively. The upper open ends of the pockets lie in the same plane as the top of the table T, and the board 3*f* forms a continuation of the table top surface between the end of the table and the front edge of the box 3 over which the balls pass into the pockets. The back side 3*g* of the box 3 extends above side rails 1*a* and 1*b* and is provided with a padded covering 3*h* extending across the three pockets to serve as a bumper or pad to absorb the impact of the balls and prevent rebound. The back side 3*g* also does not extend entirely down to the bottom of the box 3, thereby leaving an opening in the rear of each pocket through which the balls may be discharged into three pockets of a tray construction formed to the rear of the box 3 by side members 3*i*, 3*j*, 3*k* and partitions 3*l* and 3*m*. Located within the three pockets of box 3 are three target members 4*a*, 4*b* and 4*c* which are carried by levers 5*a*, 5*b* and 5*c*, respectively, which in turn are pivotally mounted upon a cross-bar 3*n* secured between side pieces 3*i* and 3*j*. The levers 5*a*, 5*b* and 5*c* are arranged to move within slots formed in the inclined front side of the box 3, and the target members 4*a*, 4*b* and 4*c* form movable bottoms for the pockets 3*a*, 3*b* and 3*c*. As

will be seen in Figures 2 and 3, the target members 4a, 4b and 4c project out of the pockets of box 3 through the openings at the rear and project into the pockets of the tray construction. The front ends of side members 3i and 3j are joined by cross members 3p and are also joined to the board 3f by vertical members 3q and 3r. The ends of levers 5a, 5b and 5c extend beyond the cross member 3p, and one end of lever 6 is connected to each end of these levers through equalizer bars 6a and 6b, as shown in Figures 1, 1a and 3. Equalizer bar 6b is connected between the ends of levers 5b and 5c in a manner to permit the free movement of each bar independently of the other, as by pins freely passing through holes formed in the ends of the levers and secured in the ends of the equalizer bar. The connection between the ends of equalizer bar 6a and the center of equalizer bar 6b is a flexible connection formed of a cord or like material, and the connection between the other end of equalizer bar 6a and the end of lever 5a is a flexible connection of the same type. A flexible connection is also provided between the end of lever 6 and a point on equalizer bar 6a such that equal movements of the levers 5a, 5b and 5c about their axes will produce equal rotation of the lever 6 about its pivotal point 6'.

Immediately above lever 6 is arranged a score indicating device enclosed in housing 7 having a front panel 7a, on the back side of which is pivotally mounted a pulley 7b to which is attached an indicator card 7c. As indicated in Fig. 1 the panel 7a is mounted above the alley to provide space for the balls to pass underneath the panel. A second pulley 7d is pivotally supported on the rear side of the panel 7a immediately above the free end of lever 6, and a flexible cord 7e is connected to the end of lever 6, passes over pulley 7d, is looped around the pulley 7b, and the free end secured to one end of the biasing spring 7f, the other end of which is anchored to the panel 7a. Frictional engagement of one turn of the cord 7e around pulley 7b is sufficient to maintain the indicator card 7c in position, but, if desired, a positive connection may be provided between the cord and the pulley in order to prevent slippage. The panel 7a is provided near the top center with an opening 7g through which are displayed the indicating numerals carried by the indicator card 7c.

Operation of the game shown in Figures 1 to 5 is as follows: If a ball is rolled down the alley it will be directed into one of the pockets 3a, 3b or 3c containing target members 4a, 4b or 4c, and the weight of the ball will cause the target member to assume a depressed position illustrated at 4c' in Fig. 2. It will be understood that the device is originally adjusted so that the tension of the biasing spring 7f, acting through the cord 7e, lever 6, and equalizer bars 6a and 6b, is sufficient to hold the ends of lever 5a, 5b and 5c down against cross bar 3p and maintain the targets in the raised or operating position as shown at 4c in Fig. 2. Movement of target members from the position indicated at 4c to 4c', causes the lever 6 to be rotated through a definite angle, which in turn causes a definite rotation of the indicator card 7c through cord 7e. If another ball falls into a different pocket and operates another target member, the indicating disc will be rotated to a second position, and a third ball in the third pocket will cause the disc to be rotated to the final position. The numerals carried by the card 7c for the different positions may indicate the total number of pockets occupied, or if desired, the numerals in the second and third positions may be made proportionately larger than the numeral in the first position in order to place a premium upon filling more than one pocket. It is obvious that when a ball enters one pocket, the target in that pocket is operated and remains operated until the ball is removed from the tray at the rear of the device, and any additional ball which falls into this particular pocket does not change the indicator device. The first ball which enters a pocket depresses the target and passes out of the pocket into the tray at the rear, but maintains the target depressed until removed from the tray. The indicator shows a maximum when each of the pockets is occupied by a ball, and preferably only as many balls are used as there are numbers of pockets, the object of the game being to place a ball in each pocket. After all the balls have been rolled, the score indicated by the card 7c is noted and then the balls are removed from the tray in the rear of the box and rolled again for another score.

It will be understood that more than three pockets may be provided in the box 3. Fig. 6 shows an equalizer bar connection to be used for connecting four target levers 5a, 5b, 5c and 5d to the lever 6 where four pockets are provided.

In Fig. 7 I have shown a modified arrangement for operating the indicator and card 7c, or for totalizing the operating movements of levers 5a, 5b and 5c. Pivotally supported on the ends of the levers are pulleys 5a', 5b' and 5c' respectively, and a number of similar pulleys 8a, 8b and 8c are supported upon cross-bar 3p in the same plane with the lever pulleys. The cord 7e is passed over the pulleys in the manner shown in Fig. 7, and the free end is secured to bar 3p. With this arrangement the movement of any target lever is transmitted to the card 7c independently of the position of the other levers, and the card indicates the total movement of all the levers. It is obvious that the arrangement of Fig. 7 may be extended to accommodate any desired number of target levers.

The device illustrated in Figs. 1 to 5 is constructed as a unit independent of the table on which it is supported, and side rails 1a and 1b are detachably secured to the device to facilitate the transporting and storing of the game.

Another form of my invention is illustrated in Figures 8 to 12. In this arrangement the game device is constructed as a portable unitary structure which may be placed upon any smooth surface such as a floor or the top of a table. Also, in this arrangement the target members when tripped by the projectile are maintained in tripped position independently of the projectile.

Referring to Figures 8 to 12, the device is enclosed within a housing 9 provided with a front panel 9a on which most of the score indicating mechanism is mounted. Figure 11 shows a rear view of the panel 9a, from which it will be seen that four target members 10a, 10b, 10c and 10d are pivotally supported on the rear of the panel, and extend downwardly into the opening below the panel in the path of the projectile ball which is rolled upon the surface supporting the game device. Each target member is pivotally secured to the panel by means of screws A arranged on each side of the pivoted end of the member and passing through screw eyes B secured to the panel, as shown in Figures 11 and 12, but it will be understood that any suitable pivotal connection may be employed. The target members are provided with

flexible cord connections 11a, 11b, 11c and 11d passing through screw eyes 12a, 12b, 12c and 12d and connected, respectively, to the ends of equalizer bars 13a and 13b. The manner in which the cord connections are secured to the target members and pass through the screw eyes is clearly shown in Figure 12. Each target member is provided with a slot opposite its cord connection to prevent interference from the cord when the target is tripped from the latched position. Flexible cord connections also extend from the midpoints of equalizer bars 13a and 13b to equalizer bar 14. A flexible cord 15 is secured at one end to the middle of equalizer bar 14 and is looped around pulley 16 pivotally secured on the rear of the panel 9a, and the free end of the cord 15 is attached to one end of the biasing spring 17, the free end of which is anchored to the panel 9a. Pulley 16 is provided with an enlarged flange 16a to which is secured an indicator disc 16b having appropriate numerals marked on the face thereof and adapted to be displayed in front of an opening 9a' formed in the panel near the top.

The manner in which the target members are pivotally supported on the rear of the panel and connected by cord connections with the equalizer bars is clearly shown in Fig. 12. It will be noted that the pivotal axis of the target member lies to the left of the point of attachment of the cord to the target member, and the upward pull of the spring 17, acting through the cord connections and the equalizer bars, tends to rotate the target member in an anti-clockwise direction and force the target against the rear bottom edge of the panel 9a. The targets are thus maintained in latched position by the tension of the biasing spring 17, which also serves to operate the indicator disc 16b. The arrangement is such that with all of the targets placed in latched position, the card 16b is in the zero or starting position.

Operation of the arrangement shown in Figs. 8 to 12 is as follows: When a projectile strikes one of the target members, it is moved to the rear, and as the point of attachment of the cord connection to the target member passes to the left of the pivotal axis of the target member, see Fig. 12, the upward pull on the cord connection serves to rotate the target member in a clockwise direction into the position indicated at 10a' in Figures 9 and 10. The clockwise movement of the target is stopped when the outer end comes in contact with a stop bar 18 extending across the housing 9a, and the target is maintained in this tripped position by the tension of the biasing spring 17. Movement of the target from the latched to the tripped position results in an upward movement of one end of one equalizer bar, which movement is transmitted through the cord connection 15 and rotates the indicator disc through one position to indicate a score. Tripping of the remaining targets results in increased movement of the indicator disc through equal amounts, and the indication on the disc serves to totalize the score allotted to the targets.

For resetting the targets, the stop bar 18 is supported by arms 18a and 18b which in turn are supported from a rod 18c pivotally mounted in the two ends of the housing 9 and provided at one end with a handle portion 18d extending outside of the casing. A spring 18e is also connected between a point on the housing and the arm 18b and serves to normally maintain the bar 18 in contact with stop members 18f and 18g secured to the ends of the housing (see Figs. 9 and 10). To return the targets to their latched position, the handle 18d is operated to move the stop bar 18 in an anti-clockwise direction and thereby force the target members into the latched position shown at 10a in Figure 9.

In order to collect the balls which enter the box 9 and convey them out of the box, a floor board 9b is arranged in the box inclined towards the back, and an oppositely inclined board 9c is arranged behind the board 9b and cooperates with the back wall of the box to form a runway or trough to collect the balls entering the box. The bottom of the runway so formed is slightly elevated at the right side of the box as shown at 9d in Fig. 8. An opening 9e is formed at the end of the trough at the left side of the box through which the balls may pass out of the box and into a tray 9f arranged on the left side of the box. A baffle board 9g is arranged immediately above the trough within the box in order to deflect the balls down into the trough as they leave the board 9b.

It is obvious that the game device shown in Figs. 8 to 12 may be modified and adapted to accommodate any number of the target devices. It is also obvious that instead of employing the device as a bowling game, the targets may be operated by projectiles shot from a gun or other suitable instrument. For this purpose, the game device need not be arranged with the targets adjacent the floor, but it is possible to invert the arrangement and have the targets project above the enclosing housing or box.

The third form of my invention is illustrated in Figs. 13 to 17. The housing for the game device is provided with a front panel 19a on the back side of which is arranged the targets and the score indicating mechanism. Three targets 20a, 20b and 20c formed of sheet metal having a channel cross-section are pivotally supported at their upper ends between blocks 21a, 21b, 21c and 21d by suitable pins C passing through holes formed in the sides of the channel construction. Sheaved pulleys 22a, 22b and 22c are pivotally secured to the target members by U-shaped links 23a, 23b and 23c respectively, the ends of the links passing through holes D formed in the sides of the target members near the middle thereof. A number of pulleys 23, 24, 25 and 26 are rotatably mounted upon the back side of the panel 19a in the manner shown in Figure 16, and a flexible cord 27 has one end secured to the panel at 27a and is passed alternately over the target pulleys and stationary pulleys as shown in Fig. 16. Near the top of the panel are arranged two parallel guide bars 28a, and 28b, each provided with suitable grooves forming a guide for slidably supporting a rectangular indicating card 29. A block 29a is secured to the indicator card at one end, and the cord 27 passes through a hole formed in this block and suitable clamping means is provided for adjustably clamping the block to the cord. The free end of the cord 27 is attached to one end of a biasing spring 30, the other end of which is secured to the panel so that the cord 27 is maintained under tension. A window or opening 19b is formed in the panel 19a in front of the indicator card 29 through which may be seen one or another of the numerals carried on the front face of the indicator card.

Operation of the arrangement shown in Figures 13 to 17 is as follows: The arrangement is normally such that with the targets in the latched position shown in Fig. 16, the indicator card 29 occupies the zero position, and the tension of the biasing spring 30 serves to maintain the targets in

their latched position. This will be apparent from Figure 17 where it is shown that the pivotal axis D of the link **23***b* lies to the right of the pivotal axis C of the target, and the upward pull of the link against the target tends to rotate the target in an anti-clockwise direction and maintain contact with the lower rear edge of panel **19***a*. The game device is placed upon any suitable surface and the projectiles are directed against the target members. When one of the targets is struck, it is moved backwards, and the pivotal axis of the link **23***b* passes to the left of the pivotal point of the target and the upward pull on the target exerted by the spring **30** through the cord **27** causes the target to rotate in a clockwise direction and assume the position shown at **20***c'* in Fig. 14, where movement of the target is arrested by the stop bar **31**. As the target moves from latched to tripped position, a definite amount of slack is introduced into the cord **27** which is taken up by the spring **30** and the indicator card **29** is moved to an indicating position. Tripping of additional targets results in further movement of the card **29** to indicate a total score allotted to the number of targets which are tripped.

In order to return the targets to the latched or operating position a bar **32** is arranged above the target members and having end portions **32***a* and **32***b* extending through inclined slots **33** on each side of the box to provide handles for depressing the bar and forcing the target members back into latched position. Suitable springs **34** are attached to each end of the bar and to the upper part of the casing for returning the bar to its normal position after each operation.

It will be noted that in the two arrangements illustrated in Figures 8 to 12 and 13 to 17, the target members are mounted and connected with the indicator operating mechanism by what may be called "toggle pivots". In each case the tension of the biasing spring which serves to move the indicator card also functions to maintain the target member both in the latched position and in the tripped position. It will also be noted that in all forms of operating connections between the targets and the indicator, as in Figs. 1, 6, 7, 11 and 16, the operation is bi-directional, that is, operation of any target from latched position to tripped position moves the indicator a definite amount in one direction, and movement of the target back to latched position returns the indicator to its original position, and each target has a definite control over the indicator independently of the other targets. For example, if two targets are struck simultaneously the indicator will be moved the same distance as where the targets are struck one after the other. Also, due to the bi-directional operating connections between each target and the indicator, the indicator is automatically returned to the zero position when all targets are set in latched or operating position.

The game devices shown in Figures 8 to 12 and 13 to 17 are particularly suited for indoor putting practice, using golf balls as projectiles, by placing the games on the floor and putting the balls at the targets.

While I have illustrated three different forms of my invention, other modifications coming within the scope of my invention will be obvious to those skilled in the art.

What I claim is:

1. In a game device, a plurality of movable targets each having a tripped position and a latched position, an indicator, means for biasing said indicator towards indicating position, means including operating connections between said indicator and said targets for totalizing the movement of said targets, said biasing means serving to maintain each of said targets in latched position.

2. In a game device, a plurality of movable targets, an indicator, biasing means for said indicator, a plurality of stationary pulleys, a pulley connected to each of said targets, a flexible member one end of which is fixed with respect to said stationary pulleys running over each of said pulleys and rotatably engaging said indicator, said biasing means being connected to the other end of said flexible member.

3. In a game device, a plurality of movable targets, each carrying a pulley, an indicator, biasing means for said indicator, a plurality of stationary pulleys, a flexible member, one end of which is fixed with respect to said stationary pulleys, said flexible member passing alternately over said stationary pulleys and said target pulleys and the other end being operatively connected to said indicator.

4. In a game device, a plurality of movable targets, an indicator, an operating element for said indicator, bi-directional operating connections from said targets to said indicator operating element, the movement of said bi-directional connections being proportional to the total movements of said targets, said connections being arranged to totalize the operative movements of said targets.

5. In a game device, a housing having a plurality of chambers, each chamber containing a movable target, an indicator for said targets, an operating element for said indicator, bi-directional operating connections between said targets and said indicator element, each target having the same maximum movement, means rendering each target inoperative upon operation of each of said targets, said connections being arranged to totalize the operative movements of said targets.

6. In a game device, in combination, a housing having a plurality of targets, an indicator for said targets, an operating element for said indicator, bi-directional operating connections between said targets and said indicator element, each target having the same maximum movement, means for rendering each target inoperative upon the first operation thereof, and means for restoring said targets to operative position.

7. A game device having a plurality of targets each having a set position and a tripped position, an indicator to register the hits made on said targets, means connecting the targets to the indicator for actuating the indicator, said means including a single biasing element for biasing all of said targets individually to one of said two positions.

8. A game device having a plurality of targets each having a set position and a tripped position, an indicator to register the hits made on said targets, means connecting the targets to the indicator for actuating the indicator, said means including a single biasing element operating to bias the indicator to indicating position and to hold each target in either the set position or the tripped position.

9. A game device having a plurality of targets each having a set position and a tripped position, a biasing element common to said targets, and means for connecting said biasing element to each target for simultaneously applying equal

biasing forces to all of said targets tending to hold said targets in one of said positions.

10. A game device having a plurality of targets each having a set position and a tripped position, a biasing element common to said targets, and an equalizer bar arrangement connecting said targets to said biasing element for applying equal biasing forces to all of said targets.

11. A game device having a plurality of targets each having a set position and a tripped position, an indicator to register hits made on said targets, and an equalizer bar arrangement connecting the targets to the indicator to actuate the indicator and totalize the movement of said targets.

12. A game device having a plurality of targets each having a set position and a tripped position, an indicator to register hits made on said targets, an equalizer bar arrangement connecting the targets to the indicator to actuate the indicator and totalize the movement of said targets, means for biasing said indicator to indicating position, said biasing means also acting through said equalizer bar arrangement to bias each of said targets to set position.

13. A game device having a plurality of targets each having a set position and a tripped position, an indicator to register hits made on said targets, means connecting the targets to the indicator to actuate the indicator, and a single biasing element for simultaneously biasing said indicator for movement in one direction and for biasing each of said targets in set position.

14. A game device having a plurality of targets each having a set position and a tripped position, a biasing element common to said targets, and connections from said biasing element to said targets operable to yieldably hold said targets individually in either the set position or the tripped position.

15. A game device having a plurality of pivotally mounted targets, an indicator to register hits made on said targets, means connecting the targets to the indicator to actuate the indicator, said means including biasing means operating to hold the target yieldably at either side of a dead center position, and to actuate the indicator when the target is moved past the dead center position upon being struck by a projectile.

16. In a game device, a plurality of targets each having a set position and a tripped position, an indicator for said targets, means for biasing said indicator towards indicating position, and operating connections between said targets and said indicator for restraining the movement of said indicator by said biasing means when said targets are in set position and for totalizing the movement of said targets when moved to tripped position.

17. In a game device, a plurality of targets each having a set position and a tripped position, an indicator for said targets, means for biasing said indicator towards indicating position, means including said biasing means for maintaining each of said targets in tripped position when moved from set position.

18. In a game device, a plurality of targets each having a set position and a tripped position, an indicator for said targets, means for biasing said indicator towards indicating position, means including said biasing means for maintaining each of said targets in tripped position when moved from set position, and a single movable element for simultaneously returning all of said targets from tripped position to set position.

19. In a game device, a plurality of targets each having a set position and a tripped position, means for biasing said targets towards tripped position when moved from set position, an indicator, and means connecting said targets with said indicator for totalizing the movement of said targets, and a single movable element for simultaneously returning all of said targets from tripped position to set position.

20. In a game device, a plurality of targets each having a set position and a tripped position, means for biasing each target for movement in opposite directions from a point intermediate the set position and tripped position, an indicator, means connecting said targets to said indicator for totalizing the movements of said targets, and a single movable element for simultaneously returning all targets from tripped position to set position.

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