F. W. VIRGIEN, Sr.

CAROM BOWLING ALLEY.

APPLICATION FILED AUG. 21, 1913.

1,124,365.

Patented Jan. 12, 1915.

5 SHEETS—SHEET 1.

Fig. 1.

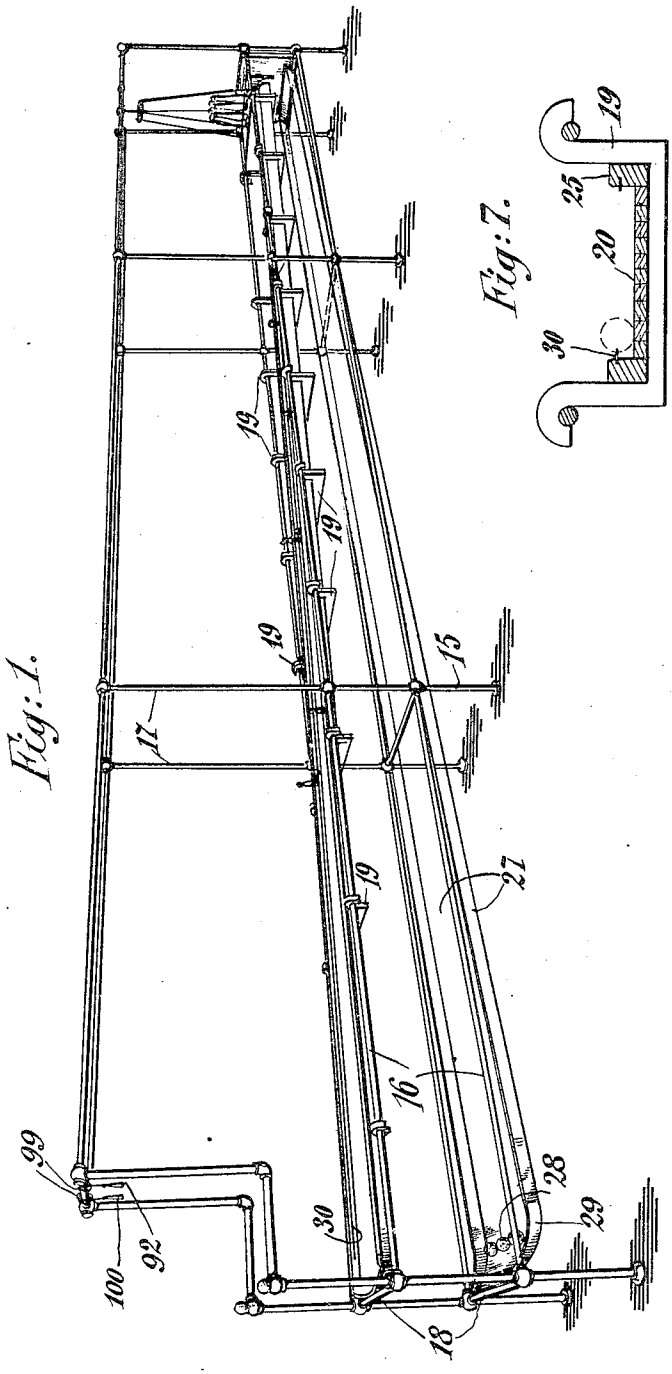
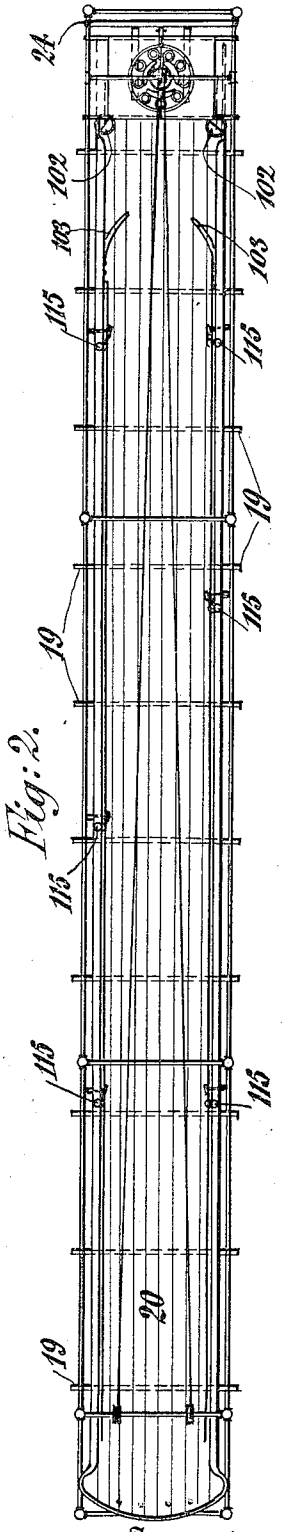


Fig. 7.

Fig. 2.



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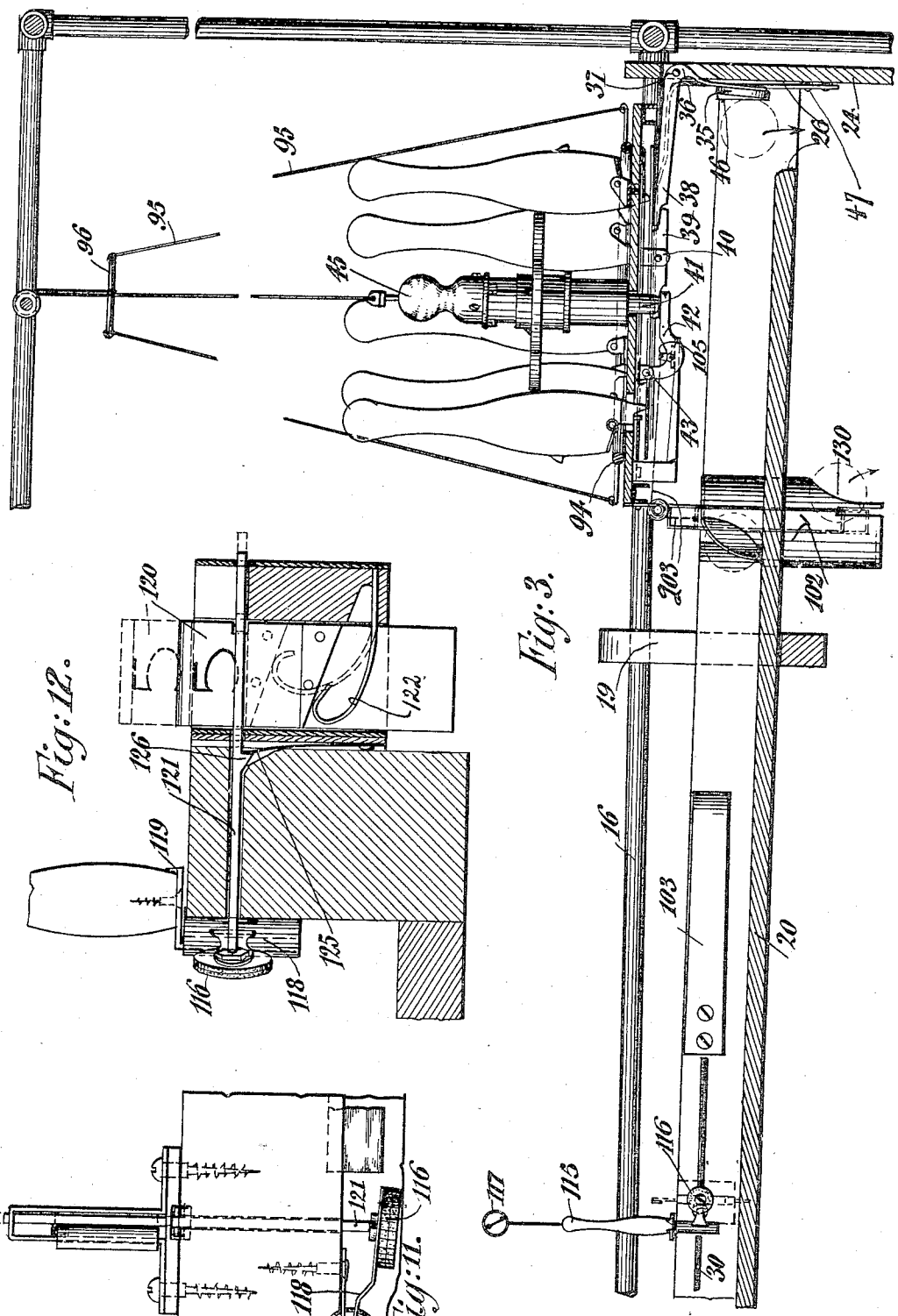


Fig. 3.

Fig. 12.

Fig. 11.

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5 SHEETS-SHEET 3.

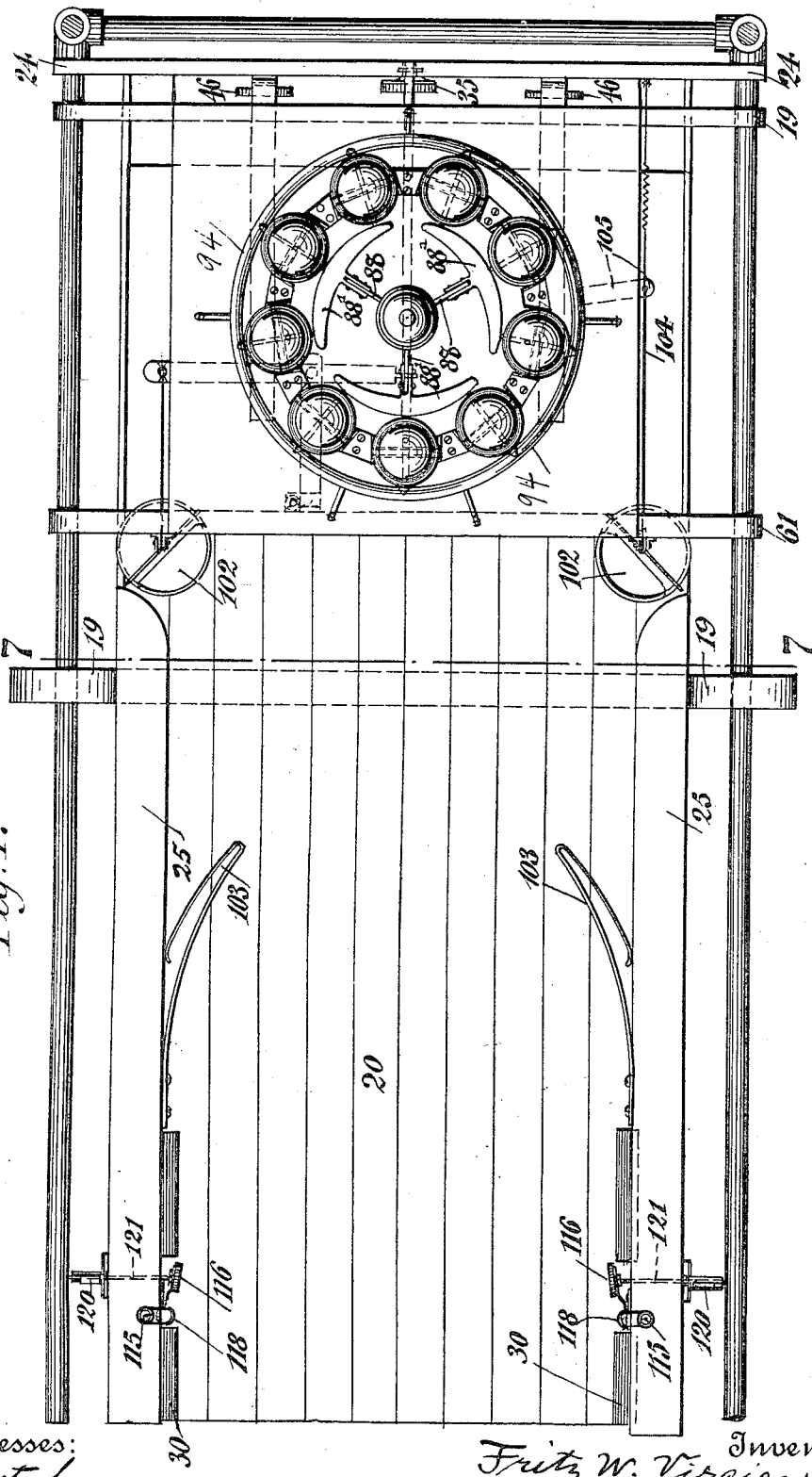


Fig. 4.

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5 SHEETS—SHEET 4.

Fig. 10.

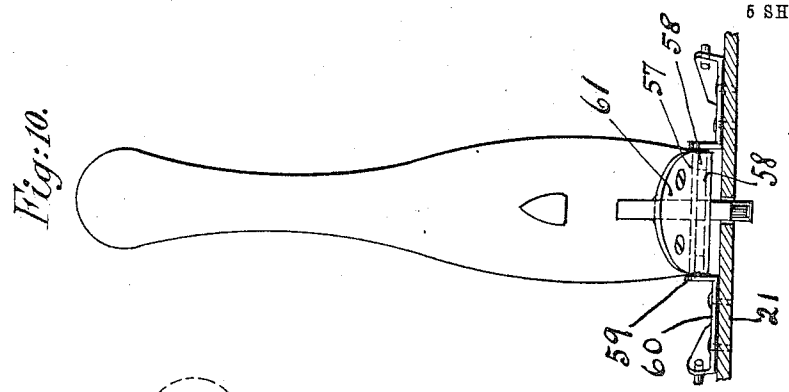
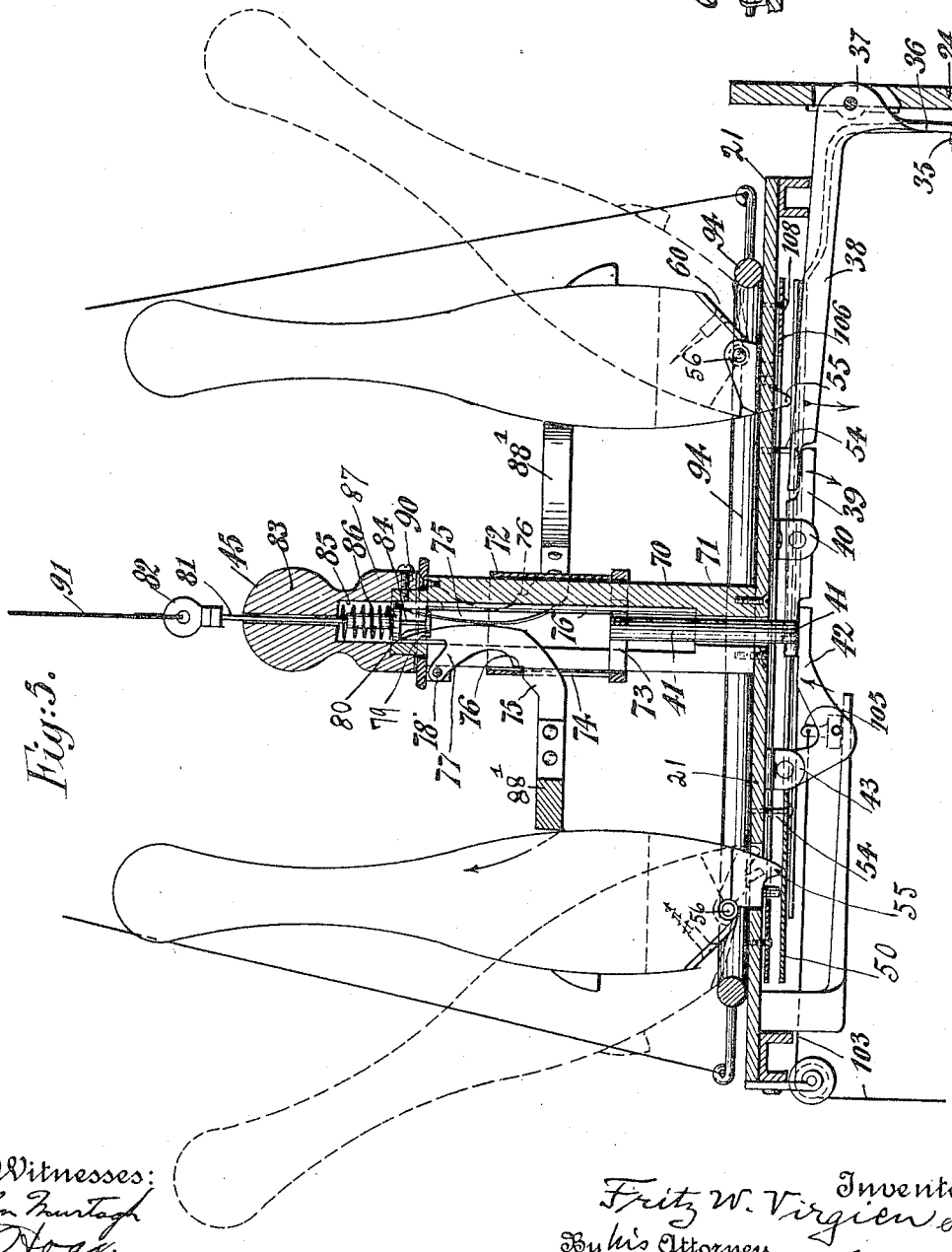


Fig. 3.



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5 SHEETS—SHEET 5.

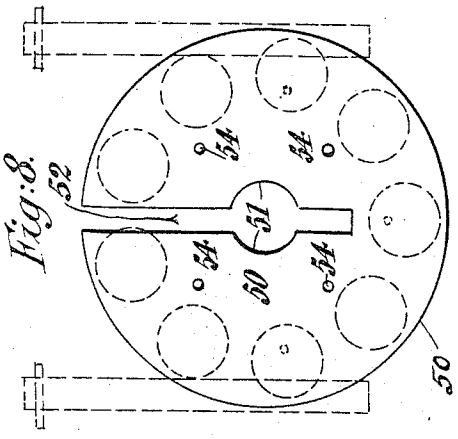


Fig. 8.

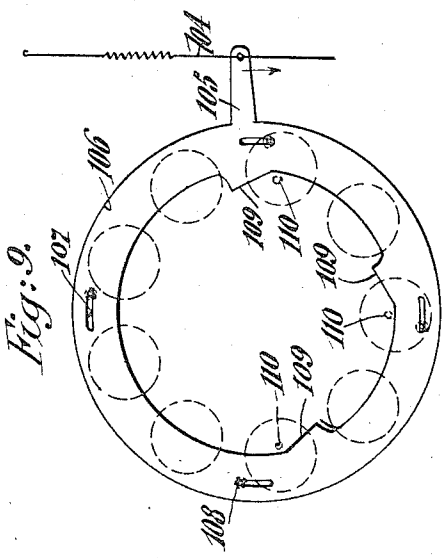


Fig. 9.

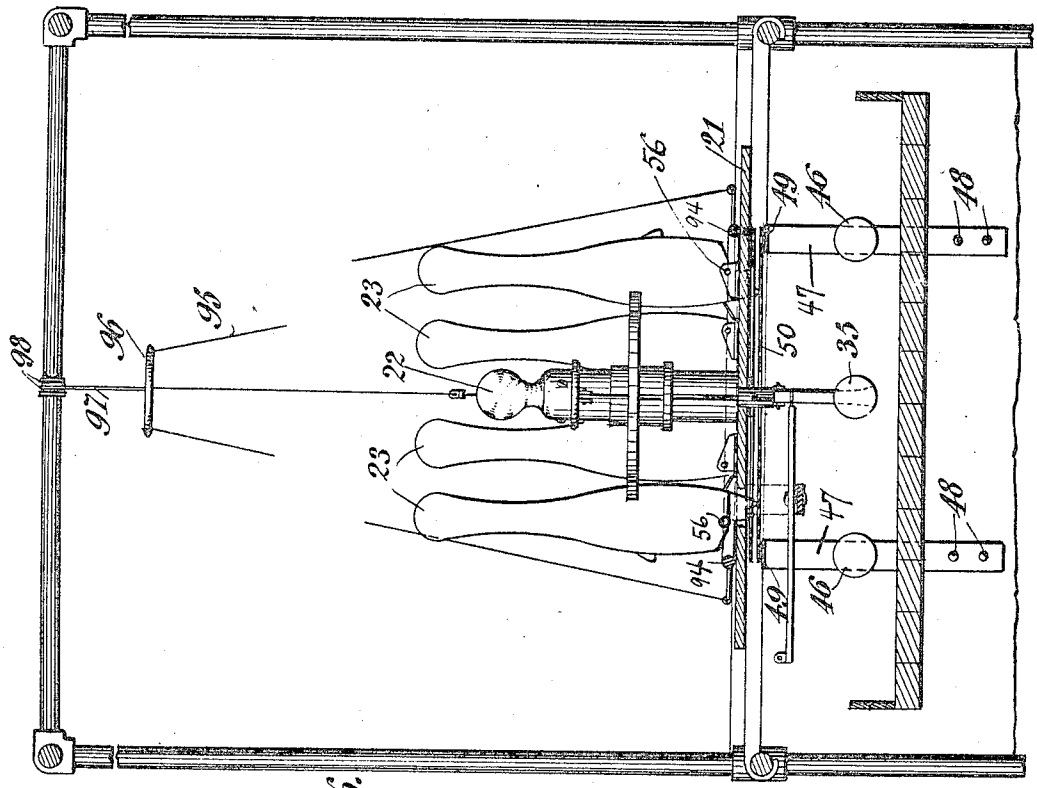


Fig. 6.

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UNITED STATES PATENT OFFICE.

FRITZ W. VIRGIEN, SR., OF YONKERS, NEW YORK.

CAROM BOWLING-ALLEY.

1,124,365. Specification of Letters Patent. Patented Jan. 12, 1915.

Application filed August 21, 1913. Serial No. 785,882.

To all whom it may concern:

Be it known that I, FRITZ W. VIRGIEN, Sr., a citizen of the United States of America, residing in Yonkers, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Carom Bowling-Alleys, of which the following is a specification.

This invention relates to a new game to which I have given the name "carom bowling alley", and which partakes to some extent of the features of the carom billiard table and of a bowling alley.

For this purpose, the invention consists of a carom bowling alley, which comprises an alley-way, a supporting frame for the same, a base-plate on which a center-pin and nine auxiliary pins are arranged and below which the alley terminates, a back-board at the rear of the pins provided with targets, lever connections between the targets and the center and auxiliary pins by which either is thrown in the nature of strikes and spares, pockets arranged in front of the base-plate and pins, means connecting said pockets with the pins for making so-called pocket strikes, and means connected with the center and side pins for lifting the same from the ingoing end of the alley for resetting the pins without requiring help for doing so.

The invention consists in these parts individually and collectively considered, and in further certain details of construction in the center-pin and auxiliary pins, also in the arrangement of the so-called duck-pins along the side-timbers of the alley, and also in certain other details of construction which will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a perspective view of my improved carom bowling alley showing the general arrangement of the same as adapted for outdoor use, Fig. 2 is a plan-view of the same, Fig. 3 is a vertical transverse section through the alley showing the construction and support of the same, Fig. 4 is a plan-view of the base-plate and pins supported thereon, Fig. 5 is a vertical central section through the base-plate, targets, and connecting levers between the targets and the center and auxiliary pins, Fig. 6 is a detail vertical transverse section, showing the arrangement of the center and side targets, Fig. 7 is a vertical transverse section on line 7—7 of Fig. 4, Fig. 8 is a plan-view of the disk used when making certain plays, Fig. 9 is a plan-view of the shifting ring used for certain plays, Fig. 10 is a view of a pin shown detached, and with its brackets for engaging the adjacent pins, and Figs. 11 and 12 are details of the duck-pins arranged at opposite sides of the alley.

Similar letters of reference indicate corresponding parts throughout the different figures of the drawings.

Referring to the drawings, the supporting frame 15 of my improved carom bowling alley is constructed of iron tubing and connecting joints for the same, the upright tubes of which are attached to the floor when the alley is used indoors, or into supporting sockets set in the ground when the same is used outdoors. The frame 15 is formed of longitudinal side-tubes 16, upright rods 17, and transverse tubes 18, which can be readily put up and connected. On the side-tubes, a proper distance from the ground, is supported by means of transverse U-shaped hangers 19, the alley 20 proper. The ingoing end of the alley is on a level with the base-plate 21 for the center-pin 22 and auxiliary pins 23, the alley being inclined from the ingoing end to a back-board 24, which is located at the rear of the base-board, the alley ending near the back-board, while the side walls 25 thereof extend to the back-board as shown in Fig. 4. A space 26, clearly shown in Fig. 3, is left between this end of the alley and the back-board so as to permit the dropping of the balls and return of the same in an inclined runway 27 to the ingoing end of the supporting frame. The balls 28 are delivered in the pocket or trough 29, as shown in Fig. 1.

The alley-way itself is constructed in the usual approved manner of making wooden alleys provided with side-timbers forming the side-walls 25 as shown in Fig. 7, but having rubber cushions 30 at their inner faces, as shown in Fig. 7, so that the balls will not strike against the wooden timber, but form noiseless contact therewith, and act as rebounding cushions as in billiard tables.

The balls, whether thrown by cue or by

hand, do not pass over the base or pin-board but under the same so as to strike the center target 35 or side-targets 46, of which the center-target is in line with the center of the alley and the side-targets equidistantly therefrom, one at each side of the backboard, as shown in Fig. 4.

The center-target is arranged at the lower shorter arm 36 of a fulcrumed elbow-lever 37, shown in Fig. 5, which is fulcrumed to the backboard 24, the longer arm 38 extending in forward direction to a point under the base or pin-board 21, where it engages the short intermediate lever 39, which is fulcrumed to a stud 40 at the underside of the base or pin board, the opposite end of the intermediate fulcrumed lever 39 being connected with a recessed pin 41 at the lower end of the center-pin 45, while a lever 42 is pivoted at 43 to the underside of the base-board 21 at a point opposite to the fulcrumed intermediate lever 39, the lever 42 also engaging the pin 41. These lever connections between the target and the pins serve to absorb some of the shock given to the target by the ball, so that the force of the shock upon the pins is lessened.

The side-targets 46 are connected with fulcrumed angle-levers 47 which are attached to the backboard at their lower ends by screws 48 and press by their forwardly-extending horizontal portions 49 against a disk 50 which may be split, so that the respective halves thereof, when raised by the striking of the corresponding side-targets 46, will upset a certain number of pins, shown in Fig. 6, which has an opening 51 and a radial slot 52, said disk being suspended by four fixed pins 54 from the base board 21, as shown in Figs. 5 and 6. When either one of the side-targets 46 is struck by a ball, the disk is lifted against the bottom of the base-board. Each of the auxiliary pins 23 is provided at its bottom with a projection 55 which extends below the base-board 21, and each of the auxiliary pins 23 is pivoted at 56 as shown in Fig. 5.

The auxiliary pins 23 are hinged at their lower ends by means of transverse sleeves 57 to pins 58 on the side-walls 59 of bearing plates 60 attached to the pin-board 21, the rear-side of the bottom-pins being inclined as shown at 61, so that the pins when thrown are supported in inclined position on an inclined bottom side-plate of the same. The pivot 56 of the pins 23 is so placed that the weight of the pins will maintain them in normal standing position, but will permit a sudden pressure on the projections 55 to throw them into inclined position. This sudden thrust is obtained by striking one of the side-targets 46 which causes the raising of the disk 50 until it strikes the projections 55 of the pins. When one of the side targets is struck, a certain number of pins are upset into inclined position, and when all of the side-pins are upset, a spare is made.

The center-pin is constructed differently from the auxiliary pins and is shown in detail in Fig. 5. It is composed of a cylindrical center-portion 70, which is permanently attached to the base-board 21 by means of fastening screws 71, and a cylindrical portion 72 which is guided on the portion 70 and provided with a downwardly-extending bottom-pin 41 that is raised at its lower recessed end by the actuating levers 39 and 42, said pin being connected with a cross-bar 73 secured to the sleeve 72. This sleeve is provided with three vertical slots 74 equidistantly from each other which engage radial swinging-arms 75, having recesses 76, seating on the sleeve 72, the outer ends of the swinging-arms 75 extending through the slots 74 of the sleeve 72, and permitting the outward motion of the same on the lifting of the sleeve 72 by the pin 41. The upper lug-shaped ends 77 of the arms 75 are pivoted at 78 to the upper part of the cylindrical portion 70, while the inner ends of the radial swinging-arms 75 are provided with recesses 79 which are engaged by a disk 80 at the lower end of a pin 81 which passes through the upper portion of the center-pin 45 to a point above the same, the pin 81 being provided with a ring-shaped terminal 82 at its upper end. The upper end 83 of the center-pin is screwed onto a portion 84. It is provided with a socket 85, in which is located a helical spring 86, which acts at its lower end on a collar 87 secured to the pin 81, whereby the same is held in downward position in engagement with the upper ends of the swinging-arms 75. The lower ends of the swinging-arms 75 are connected with three radial arms 88, the outer ends of which are provided with segments 88^1 which are located adjacent to the bases of the three groups of side-pins, as shown in Fig. 4, and serve to throw the three groups of side-pins. When the pin 41 at the lower end of the center-pin 45 is lifted, the swinging-arms 75 are released by the action of the upward-slide of the sleeve 72, and the spring 86 presses against the collars 87 and 80, and this collar 80 against the upper ends of the arms 75 to force the arms 75 upwardly against the pins 23 and thereby upset all of them into inclined position, making, thereby, a strike. When it is desired to return the radial arms to their normal position, the rod 81 is drawn upwardly and the collar 79 engaging the slots of the swinging-arms 75, draws these arms into their normal position. The rod 81 is connected with a wire 91 by the connection 82, which wire extends forwardly to the forward end of the alley and

is there provided with a handle 92. The operation of this handle thereby returns the arms 88 and segment 88^1 to normal position.

The side-pins 23 are surrounded at their lower end by means of a ring-shaped iron ring 94 which rests on the base-board 21, said ring being connected by a wire cord 95, with an assembling member 96. To this member 96 is applied another wire cord 97 which extends over a pulley 98 over which the wire cords 98 and 91 are conducted and over intermediate guide-pulleys 99 to the forward end of the alley, where the cord 98 is provided with a handle 100 so that the ring 94 can be raised, in order that the auxiliary pins which are thrown, are returned into normal or set-up position. For setting up the auxiliary pins, the handle 100 is pulled, while for returning the center-pin into normal position, the handle 92 on the cord is pulled as explained.

At both sides of the alley, near and in front of the base-board 21 are arranged pockets 102, and at both sides of the alley in front of the pockets inwardly-projecting springs 103, by which the balls are deflected toward the diagonally opposite pockets. In the pockets are suspended wire strings 203, each of which is provided with an eye at the upper end that is connected by a wire cord 104 with a lever-arm 105 applied to a ring 106 which is guided by means of slots 107 on headed pins 108 of the base-board, and is provided at the inner circumference with inclined projections 109 which coöperate with pins 110. As soon as a ball drops into the pocket and strikes the wire string 203, suspended therein, it throws up the pivoted arm 105 which moves the ring 106 by any familiar link device so as to throw the same into shifted position and produce the throwing of the three pins and make, thereby, a so-called flush. If desired, as shown in Fig. 9, the arm 105 can be directly attached to the shifting-ring 106. The shifting ring 106 may have a spring for returning it to operative position, while the arm 105 is restored to operative position by the force of gravity, after the impacting ball has escaped from pocket 102 by means of opening 130.

At opposite sides of the alley, and at considerable distances from each other, are arranged small duck-pins 115 which are pivoted to the side-timbers 25 and provided with a rubber disk 116 projecting into the alley-way, so that when they are struck by one of the balls, a bell 117 at the upper end of the duck-pins is sounded, so as to indicate the striking of one of the duck-pins, for which a certain number is allowed in the score. The first duck-pin is placed a long distance from the stand of the players, while the last pin, when four duck-pins are used, is placed close to the base-board. The bases of the duck-pins are attached to a bracket 119 on the swinging part 118 of the roller support, and move therewith when it is struck. This roller or washer is approximately level with the rubber cushion in the side-timbers of the alley. To indicate the number of times that the duck-pins have been struck, during the game, a counting device is provided. This consists of a plate 120 with numbers thereon which is provided with slots engaged by a rod 121. The lower end of the plate 120 is engaged by a spring 122 which pushes the plate upwardly when the rod disengages the plate. Every time that a roller is struck, the rod is moved inwardly and the plate is pressed upwardly another number, while a spring 125 engaging a lug 126 on the rod aids to return the rod to its normal position. The balls, after they have reached the end of the alley, either through the space 26 or into the pockets 102 and its exit 130, drop on to the return chute 27 and roll to the forward end of the apparatus into the pocket 29, ready for another throw.

I claim:

1. An improved bowling alley, comprising an alley, pivoted pins at the rear end thereof and arranged in a plurality of rows, said pins being upset from a vertical position by the impact of a ball, a member encircling said pins, and adapted to peripherally engage said pins when upset, and means for moving said member to restore said pins to an upright position, operated from the front of the alley.

2. A bowling alley, comprising an alley, pivoted pins at the rear end of the alley, targets connected with said pins, said targets being adapted to be struck by the balls thrown, and movable connections between said targets and said pins for lessening the velocity of motion imparted to said targets, and imparting said motion of lessened velocity to the pins, whereby said pins are upset from their vertical position.

3. A bowling alley, comprising an alley proper, pivoted pins at the rear thereof, targets connected to said pins, and adapted to be struck by balls rolled along said alley proper, said alley proper being rearwardly inclined, and having a space intermediate said targets and its backboard, and a return chute under said space, whereby said balls are automatically returned to the front of the alley.

4. A bowling alley, comprising an alley proper, pivoted pins at the rear thereof, spring-actuated means for upsetting pins, a latch for said spring-actuated means, and controlling means adapted to release said spring-actuated means by the impact of a thrown ball.

5. A bowling alley, comprising an alley proper, pivoted pins at the rear thereof, spring-actuated means for upsetting pins, a latch for said spring-actuated means, controlling means adapted to release said spring-actuated means by the impact of a thrown ball, and means for resetting said spring-actuated means, and adapted to be operated from the front of the alley.

6. A bowling alley, comprising an alley proper, pivoted pins at the rear thereof, pockets in said alley, connecting means in said pocket actuated by the impact of a ball to upset some of said pins, communicating means between the bottom of said pocket and a return chute for said balls, and means for resetting said connecting means.

7. A bowling alley, comprising an alley proper, pivoted pins at the rear thereof, pockets in said alley, carom means at the side of said alley for directing an impacting ball to the pocket, connecting means in said pocket actuated by the impact for said ball to upset some of said pins, communicating means between the bottom of said pocket and a return chute for said ball, and means for resetting said connecting means.

8. In a bowling alley, the combination of an alley proper, a target at the side thereof and adapted to be moved by the impact of a ball, and a device for recording the number of said impacts, and actuated by said target.

9. An improved carom bowling alley, comprising an alley proper, pins at the rear end of the alley, targets below the pins connected with the pins for throwing the pins when struck by the ball, and means for raising the pins to their initial position.

10. An improved carom bowling alley, comprising an alley proper, pins at the rear of the alley, pockets at the side of said alley, and having targets therein adapted to be struck by the balls, and means connected with said targets for throwing some of the pins.

11. In an improved carom bowling alley, a center pin, pins arranged around the center pin having an inclined bottom and hinged in position, means connected with the pins for upsetting the same onto the inclined bottom, and means for placing the pins into their original position.

12. In combination, a plate, pins pivoted to the plate having an inclined bottom, projections on the pins, a second plate engaging the projections, and means for operating the plate for throwing the pins onto the inclined bottom.

13. In combination, a plurality of pins pivoted in position and having an inclined bottom, a center pin having arms extending to the pins, and means for operating the center pin to cause the arms to throw the other pins onto their inclined bottom.

14. In combination, a plurality of pins, means for throwing the outside pins in groups, and a ring embracing said pins and adapted to be raised to return said pins to their initial position.

15. In a carom bowling alley provided with an alley, spring devices at the side of the alley, holes in the alley, and targets in the holes arranged to be struck by the balls engaging the spring devices, and means connected with the targets for throwing some of the pins.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

FRITZ W. VIRGIEN, Sr.

Witnesses:
PAUL GOEPEL,
JOHN MURTAGH.