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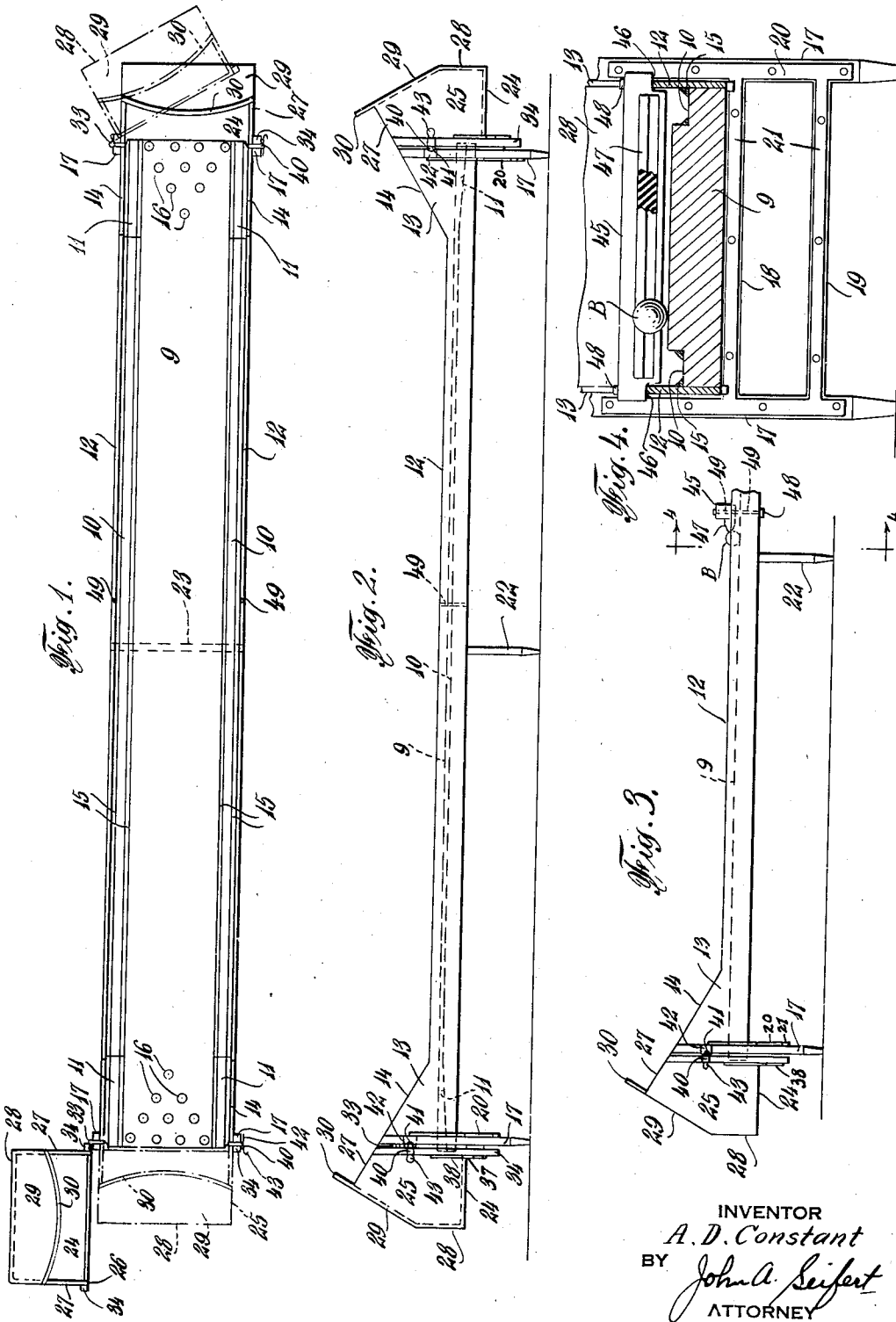
A. D. CONSTANT

2,247,769

BOWLING ALLEY

Filed July 12, 1940

2 Sheets-Sheet 1



INVENTOR
A. D. Constant
BY *John A. Seifert*
ATTORNEY

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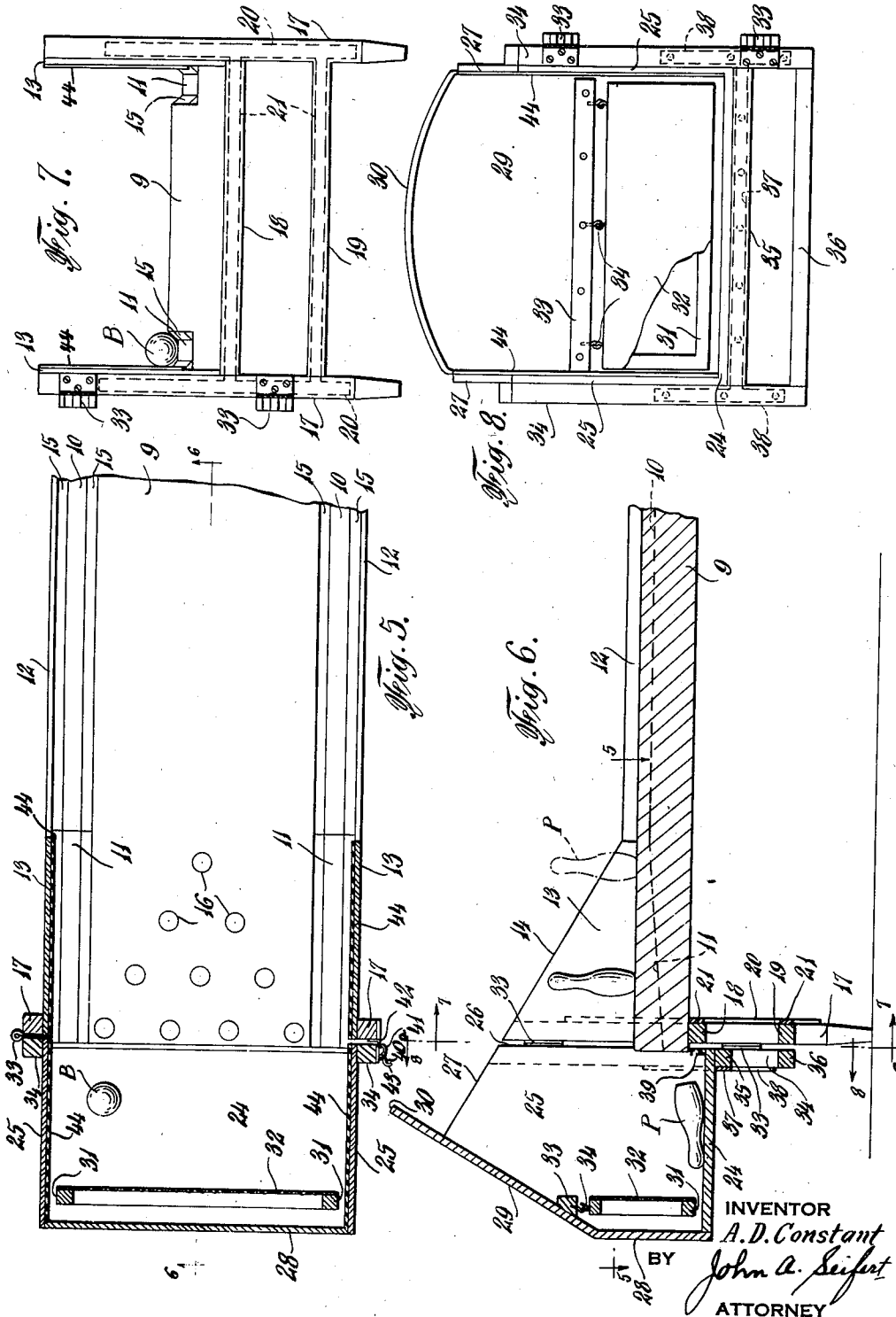
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UNITED STATES PATENT OFFICE

2,247,769

BOWLING ALLEY

Arthur D. Constant, Brooklyn, N. Y.

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5 Claims. (Cl. 273-37)

This invention relates to bowling alleys which may be readily transported and adapted for use in the homes or at pleasure resorts, and it is the principal object of the invention to provide a bowling alley which may be played from either end, so that the opponents of a bowling match may bowl from opposite ends of the alley and set up the pins of their opponent and return their opponent's balls.

It is another object of the invention to provide a novel pit section pivotally mounted on a side of a bowling board and adapted to be releasably secured in mating relation with the ends of the bowling board to receive balls thrown from the opposite ends and to be positioned to extend at a right angle to the ends of the bowling board to permit a bowler to throw or deliver a ball from one end toward a set of pins set up at the opposite end of the bowling board without interference, and said pit sections being constructed to receive the thrown balls and knocked over pins and prevent said balls and pins rebounding from said pit sections to the bowling board.

It is a further object of the invention to adapt a bowling board for the removable mounting of a transverse bar arranged with a resilient facing, whereby a ball is thrown from the end of the bowling board where the pins are set up toward the transverse bar and is repelled by the resilient facing toward said pins.

It is a still further object of the invention to provide a novel construction of ball return gutters in the longitudinal side edges of a bowling board and ball retaining walls along said edges.

Further objects and advantages of the invention will be set forth in the detail description of the invention.

In the drawings accompanying and forming a part of this invention, Figure 1 is a top plan view of a bowling alley showing in full lines one pit section positioned at a right angle to a bowling board and the other pit section in mating relation with the bowling board, and in dot and dash lines the adjustability of said pit sections.

Figure 2 is a side elevational view of the bowling alley with the pit sections in mating relation with the ends of the bowling board.

Figure 3 is a view similar to Figure 2 with one end portion of the bowling board broken away and showing a transverse bar mounted on side walls of the bowling board and arranged to repel balls toward the end of the bowling board from which they are thrown.

Figure 4 is a cross sectional view, on an enlarged scale, taken on the line 4-4 of Figure 3

looking in the direction of the arrows to show the structure of the bowling board and a resilient face of the transverse bar.

Figure 5 is a top plan view of one end portion of the bowling board with its pit section positioned in mating relation to said end portion and partly in section taken substantially on the line 5-5 of Figure 6 looking in the direction of the arrows.

Figure 6 is a longitudinal section of the structure shown in Figure 5 taken on the line 6-6 of Figure 5 looking in the direction of the arrows.

Figure 7 is an end elevational view of the bowling board taken on the line a-a of Figure 6 in the direction of the arrows 7-7.

Figure 8 is an end elevational view of a pit section looking at the receiving end thereof and taken on the line a-a of Figure 6 looking in the direction of the arrows 8-8 and showing part of a cover of a swinging cushion broken away to show a frame of said cushion.

Like characters will designate like parts of the invention throughout the drawings and the following detail description of the invention.

In carrying out the embodiment of the invention illustrated in the accompanying drawings, there is provided a bowling board 9, which may be formed of a single plank or a series of juxtaposed boards, having a smooth upper surface arranged at the opposite longitudinal edges with cut out portions of right angle shape in cross section, as shown in Figure 4, having an intermediate section, constituting the greater part of their length, of uniform depth, as shown at 10, and the opposite end sections of the cut out portions of progressively increased depth to have the horizontal surfaces thereof declining from the intermediate sections to the opposite ends of the bowling board, as shown at 11. The cut out portions 10, 11 are adapted to form gutters for the return of balls B to either end of the bowling board by walls or rails having an intermediate portion 12 of uniform width greater than the thickness of the bowling board 9 and of a length substantially the same as the length of the cut out portion 10, and opposite end portions 13 of progressively increased width to form diverging upper edges 14 and of a length slightly less than the length of the end cut out portions 11. The rails 12, 13 are secured to the side edges of the bowling board 9 with the lower edges of the rails flushed with under surface of the bowling board and the upper edges of the rails extending above the longitudinal middle portion of the upper surface of the bowling board, and the

intermediate rail portions 12 in opposed relation to the intermediate cut out portions 10 and the end rail portions 13 in opposed relation to the cut out end portions 11 with the wide end of the rail portion 13 terminating within the ends of the bowling board for a purpose to be hereinafter described. To facilitate the rolling of the balls along the gutters, the corners at the bottom of the gutters are bevelled by strips of suitable material, such as molding, of triangular shape in cross section, as shown at 15 in Figures 4 and 7, secured in said corners. The upper surface of the opposite end portions of the bowling board 9 between the rail portions 13 is arranged with pin spots in the usual groups of ten, as shown at 16, to facilitate the setting of pins P.

The bowling board 9 is supported in elevated position from a floor by standards at the opposite ends and midway of said ends. The standards supporting the opposite ends of the bowling board comprise a pair of uprights 17 connected to and braced from each other by a pair of parallel cross bars 18, 19, the bar 18 being adapted to engage the lower face of the bowling board and support said board, and the uprights being spaced from each other to engage and be connected to the outer face of the rail portions 13. The connections between the uprights and cross bars are reinforced by a one piece brace or frame member having upright portions 20 fixed to the standard uprights 17 and cross portions 21 fixed to the cross bars 18 and 19, as shown in Figure 4. The standard supporting the midway portion of the bowling board 9 comprises a pair of uprights 22 connected to and braced from each other by cross bars 23, as shown in Figures 1 and 2.

The balls B may be thrown or delivered from either end of the bowling board toward the pins P set on the spots 16 at the opposite end of the bowling board, and the thrown balls and the pins, which are knocked over by said balls, are received by a pit section pivotally mounted on each end of the bowling board. The pit sections are of box form composed of a bottom 24 having opposite side walls 25 fixed to and extending perpendicularly from the bottom with the upper edges inclining from straight side edges 26 to extend as continuations of the diverging edges 14 of the rail portions 13, as shown at 27, and the other side edges of the side walls 25 are arranged with vertical portions adjacent the bottom 24 and inwardly inclining upper portions to accommodate a rear wall having a vertical section 28 and an inwardly inclining section 29, as shown in Figure 6. The rear wall section 29 extends above the upper edges 27 of the side walls 25 and the upper end edge of said wall section 29 extends in arc, as shown at 30 in Figures 1 and 8. To prevent the balls and pins entering the pit sections from rebounding to the bowling board 9, there is provided a swinging cushion in each of said pit sections comprising a rectangular frame 31 having one face covered by suitable material, such as a cloth 32, and swingingly suspended from a cross bar 33 fixed to the inner face of the inclining rear wall sections 29 by suitable means, such as hooks and eyes, fixed in the upper cross piece of the frame and the bar, as shown at 34 in Figures 6 and 8. The inclining rear wall sections 29 will also retain the balls and pins in the pit sections. The length of the open side edges 26 of the side walls 25 is greater than the length of the wide end of the rail portions 13, so that the bottoms 24 of the pin sections will extend below the upper surface of the bowling board 9 when

the pit sections are mounted on the bowling board with the edges 14 and 27 in alignment with each other, and cause the balls and pins to drop and hit the cushion 31, 32. The sound of the balls and pins hitting the rail portions 13 of the bowling board 9 and the side walls 25 of the pit sections is deadened and said rail portions and side walls are protected from said balls and pins by a layer of suitable material, such as fabric or rubber attached to the inner surface of said portions, as shown at 44 in Figure 5.

The pit sections are adjustably mounted on the opposite ends of the bowling board to be positioned in juxtaposed or mating relation to said ends to receive balls thrown from the opposite end and the pins knocked down by said balls, and to extend at a right angle to the bowling board to permit the throwing of balls toward the pins set up on the pin spots 16 at the opposite end of the bowling board. The pit sections are mounted on the bowling board by a pair of suitable hinge members, such as ordinary door hinges 33 having one leaf or strap fixed to the outer face of an upright 17 of the pair of uprights at each end of the bowling board, one hinge being adjacent to the top of the upright and the other hinge being between the cross bars 18 and 19, as shown in Figure 7. The other leaves of the hinges are fixed to an upright of a pair of uprights 34 constituting a part of a frame having a pair of parallel extending cross bars 35, 36 fixed at the opposite ends to the uprights 34 with the bar 35 supporting the bottom 24 of the pit sections and the bar 36 at the lower ends of said uprights 34, as shown in Figure 8. The connections between the bar 35 and the uprights 34 are reinforced by a brace having a cross portion 37 fixed to the bar and vertical portions 38 at the opposite ends of the cross portion fixed to the uprights. The uprights 34 are fixed to and extend along the outer face of the side walls 25 of the pit sections adjacent to the open edges 26 thereof, so that in the close position of the pit sections, the uprights 34 of the pit sections will be in opposed relation with the uprights 17 of the bowling board 9, and the side walls 25 of the pit sections and the rail portions 12, 13 of the bowling board will extend in the same vertical planes, as shown in Figure 5. The mounting of the hinges 33 in spaced relation to each other will prevent canting of the pit sections and thereby eliminate the use of legs for supporting the pit sections from the floor. The ends of the bowling board 9 will extend over the bottoms 24 due to the mounting of standards 17, 18, 19 within said ends as previously stated, and said overhanging end portions of the bowling board are engaged in the close position of the pit sections by a strip 39 of resilient material, such as rubber, fixed to the upper surface of the bottoms 24 of the pit sections, as shown in Figure 6, said resilient strip absorbing the shock of the pins and ball coming into contact with the bottoms 24 and preventing the transmission of said shock to the bowling board and the hinges. The pit sections are releasably retained in close position by a spring actuated latch comprising a lever pivotally mounted on the upright 34 opposite the upright 34 arranged with the hinges 33, as shown at 40 in Figure 5, and yieldingly urged by a spring coiled around the pivot to position a hook end 41 of the lever into a staple 42 fixed to the upright 17 corresponding to the upright 34 supporting the latch lever and the opposite end of said lever having a finger engaging portion 43 to facilitate

the disengagement of the hook end 41 from the staple 42 when it is desired to actuate the pit section to open position.

In the use of the bowling alley, one of the pit sections is actuated to close the adjacent end of the bowling board, as shown in full lines at the right hand side of Figure 1, and a set of pins P is set up on the spots 16 at said end of the bowling board, the setting of the pins may be prior or subsequent to the closing of the end of the bowling board with the pit section, but it is easier to set up the pins while the pit section extends at a right angle to the bowling board, and then the pit section at the opposite end of the bowling board is actuated to extend at a right angle to the bowling board, as shown in full lines at the left hand side of Figure 1, which will permit the delivery of a ball from said end toward the pins at the opposite end of the bowling board without interference.

The bowling alley may also be used by players standing at only one end of the bowling board 9 and delivering balls to hit pins set up at the same end of the bowling board by the use of a rebound cushion comprising a bar 45 of a length greater than the width of the bowling board and having corners on one longitudinal side thereof cut out, as shown at 46 in Figure 4, to permit the mounting of the bar on opposite sections of the rail portions 12 with said latter longitudinal side of the bar extending in parallelly spaced relation to the upper surface of the bowling board. The face of the bar 45 positioned toward the end of the bowling board at which the pins are set up and the balls are being thrown from, is arranged with a resilient facing member 47 composed of rubber or other suitable material attached to the bar below the longitudinal center thereof and having the exposed face of angular shape in cross section, as shown in Figure 3, so that a ball striking the said face will rebound along the bowling board toward the pins. The bar 45 is releasably secured to the rail portions 12 by pins 48 engaged in aligned openings 49 in the reduced ends of the bar and the rail portions 12. When it is desired to use both ends of the bowling board, the rebound bar 45 may readily be removed from the rail portions 12 by removing the pins 48.

Having thus described my invention, I claim:

1. In a bowling alley, a bowling board adapted to support a set of pins at the opposite end portions, and pit sections of box form having an open end and pivotally mounted on a vertical axis at one side of the open end thereof on one side of the bowling board at the opposite ends of the board to adapt said pit sections to be positioned

with the open end of a pit section in mating relation to an end of the bowling board to receive balls thrown from the opposite end of the bowling board at which latter end the pit section has been positioned with the open end thereof extending in a vertical plane at a right angle to said end of the bowling board.

2. In a bowling alley, a bowling board supported at the opposite ends by standards having portions extending above the bowling board at the opposite sides thereof, and pit sections of box form having one end open and pivotally mounted on one portion of each standard at the opposite ends of the bowling board, whereby the pit sections are adjustable to position the open end in mating relation to the ends of the bowling board and to extend at a right angle to said ends of the bowling board.

3. In a bowling alley as claimed in claim 2, side walls having an intermediate portion of uniform height and end portions of progressively increased height, said walls being secured to the sides of the bowling board with the walls extending above the bowling board and the end portions of the walls juxtaposed to the portions of the standards extending above the bowling board.

4. A bowling alley as claimed in claim 2, wherein the pit sections are arranged with a frame member at the open ends thereof having vertical portions extending below the bottom of the pit sections, and the pit sections are pivotally mounted on the standards by a pair of hinge members, one hinge member being fixed to an upper portion of the frame member and a portion of the standards extending above the bowling board, and the other hinge member fixed to the portion of the frame member extending below the bottoms of the pit sections and a portion of the standards below the bowling board.

5. In a bowling alley, a bowling board adapted to support a set of pins at opposite end portions, pit sections pivotally mounted at the opposite ends of the bowling board to adapt the pit sections to be positioned in mating relation to said ends of the bowling board and to extend at a right angle thereto, said pit sections comprising a bottom having a free edge portion extending below the ends of the bowling board in the mating position of the pit sections, side walls and a rear wall, and a strip of resilient material mounted on the free edge portion of the bottoms of the pit sections to engage the under surface of the bowling board and prevent the transmission of shock to the bowling board.

ARTHUR D. CONSTANT.