Jan. 1, 1946. C. METZ 2,392,174

GAME APPARATUS

Filed Aug. 31, 1943 2 Sheets-Sheet 1

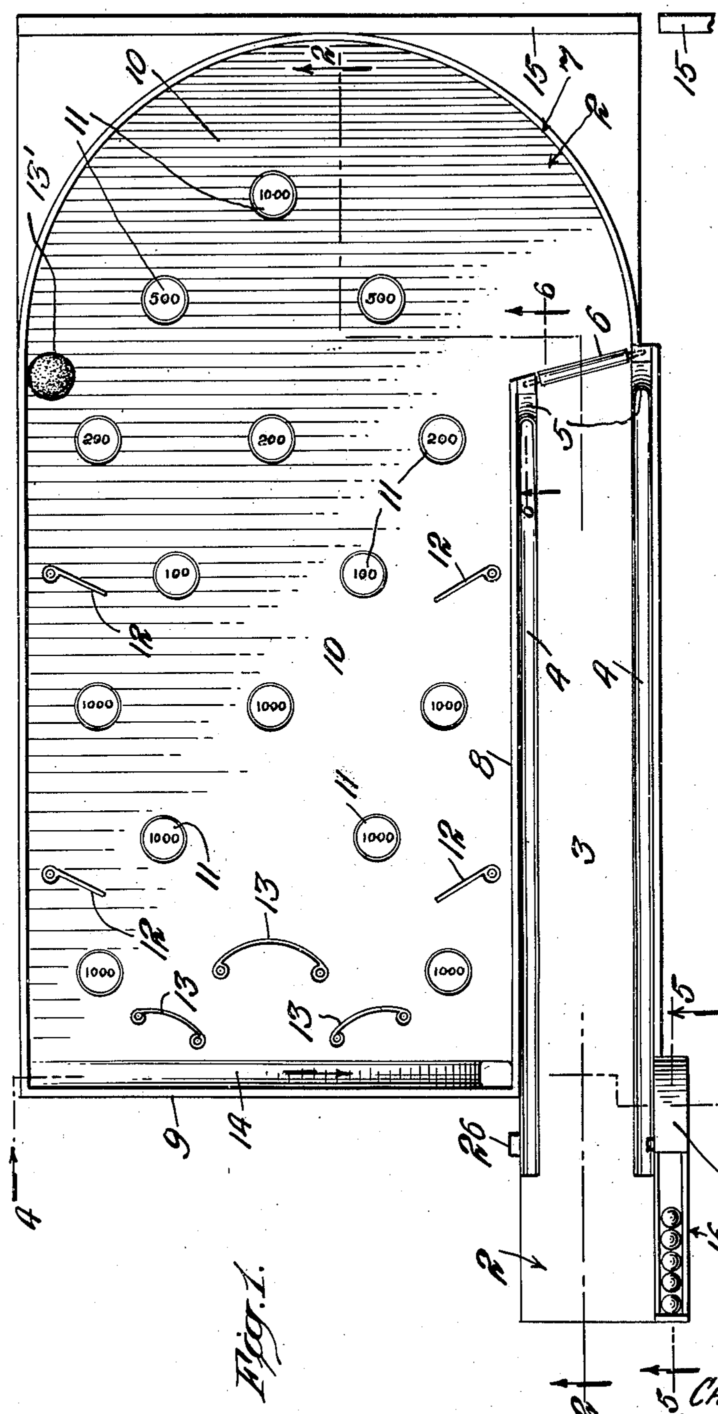


Fig. 1.

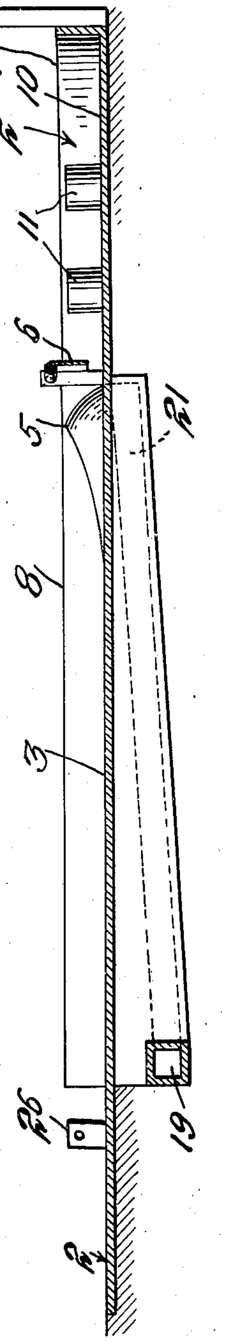


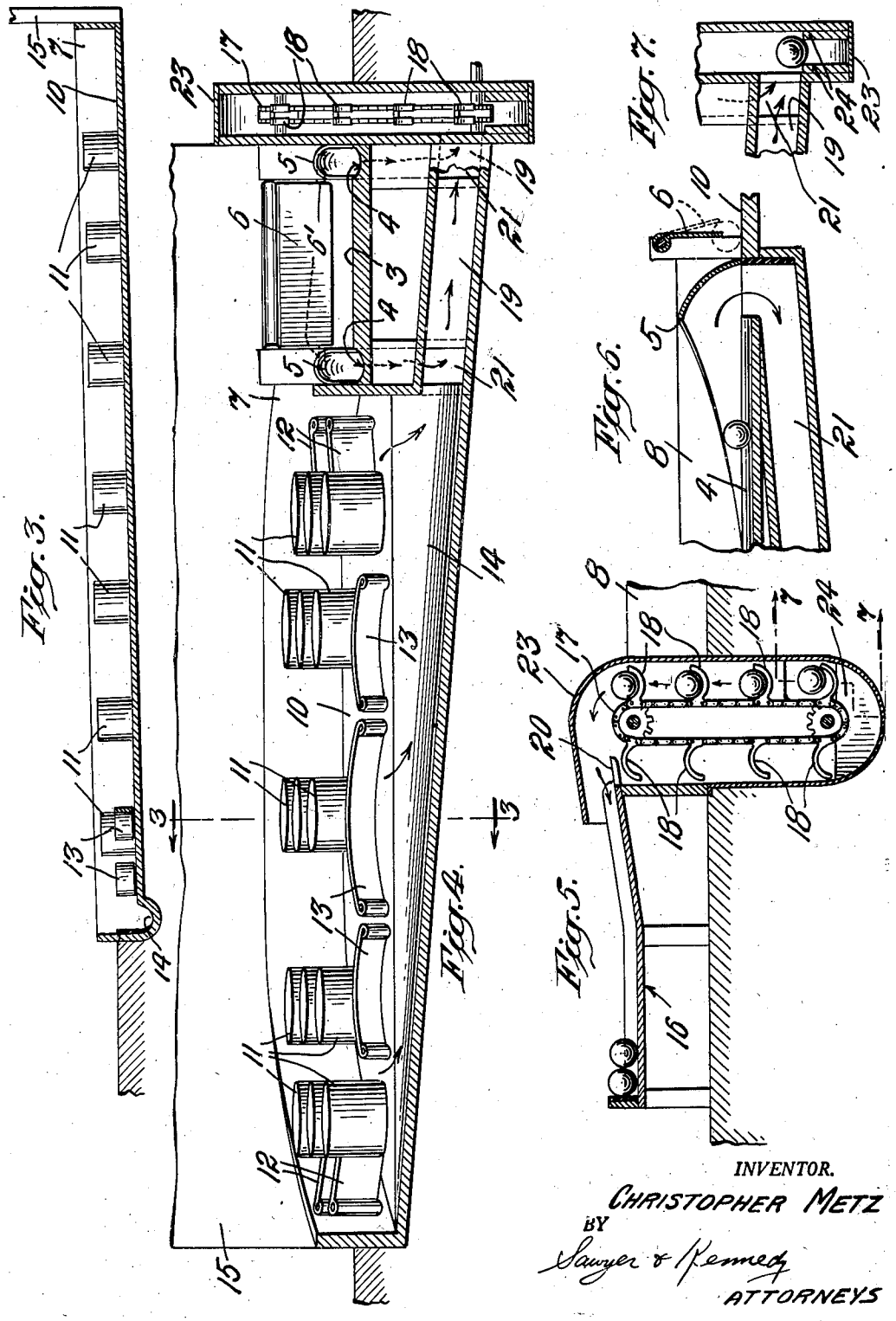
Fig. 2.

INVENTOR.
CHRISTOPHER METZ
BY
Sawyer & Kennedy
ATTORNEYS

Jan. 1, 1946. C. METZ 2,392,174

GAME APPARATUS

Filed Aug. 31, 1943 2 Sheets-Sheet 2



INVENTOR.
CHRISTOPHER METZ
BY
Sawyer & Kennedy
ATTORNEYS

Patented Jan. 1, 1946 2,392,174

UNITED STATES PATENT OFFICE

2,392,174

GAME APPARATUS

Christopher Metz, Baldwin, N. Y.

Application August 31, 1943, Serial No. 500,601

2 Claims. (Cl. 273—37)

This invention relates to game apparatus.

It is an object of the invention to provide a bowling game device of novel character providing for physical exercise for the player, in combination with elements of both skill and chance resulting in a high recreational value.

It is a further object of the invention to provide a game having exercise value equal to that of bowling but not presenting complications as to scoring and other features such as are involved in standard bowling games.

A still further object of the invention is to eliminate the need for pin boys or other attendants in a game of the bowling type.

With these and still other objects which are apparent in the following full description in mind, the invention consists in the combinations and arrangements of parts and details of construction which will now first be fully described in connection with the accompanying drawings, and then be more particularly pointed out in the appended claims.

In the drawings:

Figure 1 is a plan view of a game embodying the invention in a preferred form;

Figure 2 is a longitudinal section along the line 2—2 of Figure 1;

Figure 3 is a longitudinal section of the game of Figure 1, taken on the line 3—3 of Figure 4;

Figure 4 is a cross section taken on the line 4—4 of Figure 1;

Figure 5 is a section taken on the line 5—5 of Figure 1 and showing a part of a ball return apparatus;

Figure 6 is a detail section taken on the line 6—6 of Figure 1; and

Figure 7 is a detail section taken on the line 7—7 of Figure 5.

The essential feature of the game of the invention is that it combines a bowling alley, designated generally by the reference numeral 1, which is a full size or substantially full size alley, with a large scale pin-ball playing field 2, so that the recreational features of the so-called pin-ball games are incorporated together with the exercise and skill features of the game of bowling. In addition, the pin-ball principle employed on the gigantic scale of the invention has recreational features which are not present in small counterparts.

The layout comprises a runway 2, similar to that of a conventional bowling alley, upon which the player stands, which is level or substantially level with the alley bed 3 upon which the balls are rolled and long enough to permit the player to make one or more steps preliminary to releasing the ball. The alley bed 3 is provided with gutters 4 similar to the gutters of conventional bowling alleys but terminating at their far ends in chutes 5, which serve to prevent any balls which slide off into the gutters from entering the playing field and to return such balls in a manner later described. The alley proper terminates in a gate 6 which is urged toward closed position by gravity and will lift so as to permit a ball to roll past, as shown in Figure 6, but is prevented from opening in the return direction by means of stops 6'. The gate 6 is also slanted transversely of the alley, as shown in Figure 1, so as to guide any balls returning and striking the same onto the adjacent playing field. Beyond the gate 6 the ball enters the playing field 2, which may be of any of the very numerous forms of pin-ball playing fields. The particular playing field shown comprises a curved back-stop 7, side walls 8 and a front wall 9 surrounding the forwardly slanted floor 10, down which the balls will roll by gravity. Interspersed over floor 10 are the various scoring bumpers 11, deflector plates 12, and guards 13 and side bumper 13'. A ball propelled past the gate 6 will ultimately roll down the floor 10 to the return gutter 14 and will normally strike one or more of the bumpers, deflector plates and guards 11, 12, 13 and 13', bouncing back and forth between these elements and making one or more scores in so doing. The bumpers 11 may be spring mounted or surrounded by rubber or other elastic material so as to bounce the ball back when it strikes the same and assigned various scoring values, as indicated by the numerals in Figure 1. Each bumper may be connected to electrical apparatus so as to register the player's score cumulatively on a score board, which may be conveniently placed on the rear wall 15. Inasmuch as the specific form of pin-ball playing field used forms no part of the present invention and the bumper constructions, electrical apparatus and scoring boards are in themselves well known, these features are not illustrated or described in detail herein.

There is provided adjacent the runway 2 a ball rack 16, with which is associated an endless chain conveyor 17 (Figures 4 and 5) provided with scoops 18 for carrying balls upward from the end of a passage 19 and delivering the same onto a stripper 20 at the head of an incline forming part of the rack 16. The passage 19 forms, as best shown in Figure 4, a continuation of the return gutter 14 at the front end of the playing field and passageways 21 under the gutters 4

likewise lead into the passage 19, so that all balls are ultimately returned to the conveyor 17.

The construction of the passages 21 is best shown in Figures 1, 2, 4 and 6, and as there shown, any balls in the gutters 4 are received within the chute hoods 5, to be guided downwardly through openings 22 into the passages 21 below the gutters. Any balls, whether returning along the passages 14 or 21, ultimately enter the housing 23 for the conveyor 17 and are received therein by supports 24 (Figure 7) in position for engagement by the scoops 18. As will be understood, a ball resting upon the supports 24 in the position indicated in Figure 7 will serve to prevent any balls back of it from entering the housing 18 and interfering with the operation of the conveyor 17.

Normally the player will be provided with a fixed number of balls per game and this may be controlled by an attendant or, where desired, by any suitable coin-actuated mechanism associated with the ball rack 16. The alley proper may conveniently be a standard bowling alley modified to the extent indicated, and while preferably full width and in other respects identical in construction to a standard bowling alley, the length of the alley may advantageously be abbreviated in certain instances. The player, in any event, receives precisely the same benefit as to exercise as in conventional bowling and the recreational and skill elements of the game may be adjusted in any desired proportions. In the first place, the player must possess sufficient skill to roll the ball directly down the alley without entering the gutters 4 or he will not be able to score. Secondly, the score obtained is controlled to a large extent by the position of the ball widthwise of the gate 6 when it strikes the same, as well as by its velocity and spin. As will be clear the game of the present invention thus introduces precisely the same element of skill in directing the balls as is present in the game of conventional bowling. By varying the various elements having to do with the pin-ball palying field, the elements of skill can be intermixed in practically any desired proportions. Experience has shown that playing fields should be modified or changed fairly frequently if public interest is to be maintained, and the changing of the playing field of the invention from time to time is contemplated. In view of this, the playing field shown in the drawings should be understood as purely illustrative, as playing fields of widely varying shape, construction and scoring features may be utilized and playing fields simulating the scoring features of various games such as base ball, golf and the like may be utilized where found attractive.

In order to prevent players from entering upon the alley past the foul line 25 a standard photo-electric eye arrangement may be installed a short distance down the alley, the beam or beams running across the alley between a port 26 on one side of the alley and box 27 on the conveyor housing 23 on the opposite side of the alley. The beam may be set so as to permit passage of a ball at a proper height but to be interrupted by a player entering upon the alley. No special electric circuits are necessary in this connection, as the electric eye mechanism may simply be connected to the score voiding circuit usually employed in games of the pin-ball type to avoid tilting of the table.

As will be apparent, the game of the present invention combines the best recreational and exercise features of bowling and pin-ball, and with reference to the latter, retains and increases the recreational value while, by its very size and the skill and physical effort involved in bowling, the objectionable features of pin-ball games are eliminated.

What is claimed is:

1. Game apparatus comprising a substantially full width bowling alley having a bowling bed, side gutters along the edges of said bed and a runway for bowlers at one end of said alley, return chutes for balls entering said gutters, a gate at the far end of said alley arranged to permit passage of a bowling ball from said alley but to prevent its return, said return chutes having entrances in front of said gate for receiving balls from said gutters, and a giant pin-ball playing field adjacent and alongside said alley to receive balls therefrom, the said gate forming the entrance to said playing field.

2. Game apparatus according to claim 1, comprising also ball return means for said playing field and elevator means for delivering balls from said return chutes and from said return means to a common location adjacent said runway.

CHRISTOPHER METZ.