Feb. 13, 1951 C. METZ 2,541,266

BOWLING GAME APPARATUS

Filed Aug. 22, 1946 2 Sheets-Sheet 1

FIG. 1

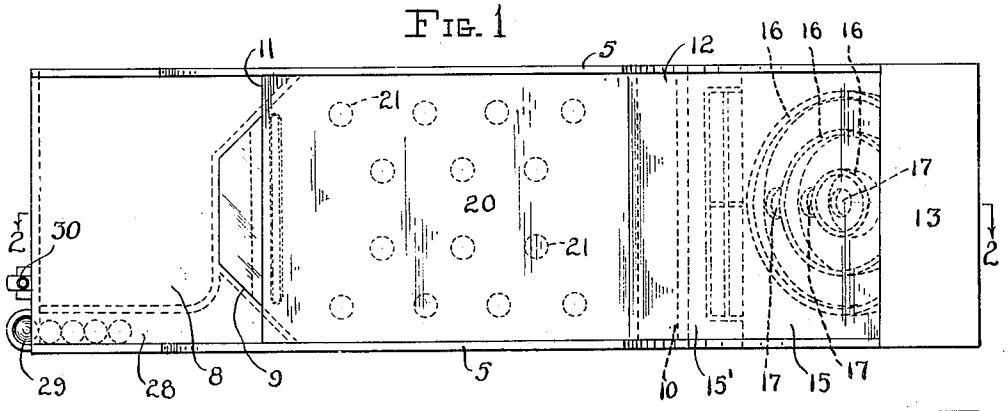


FIG. 2

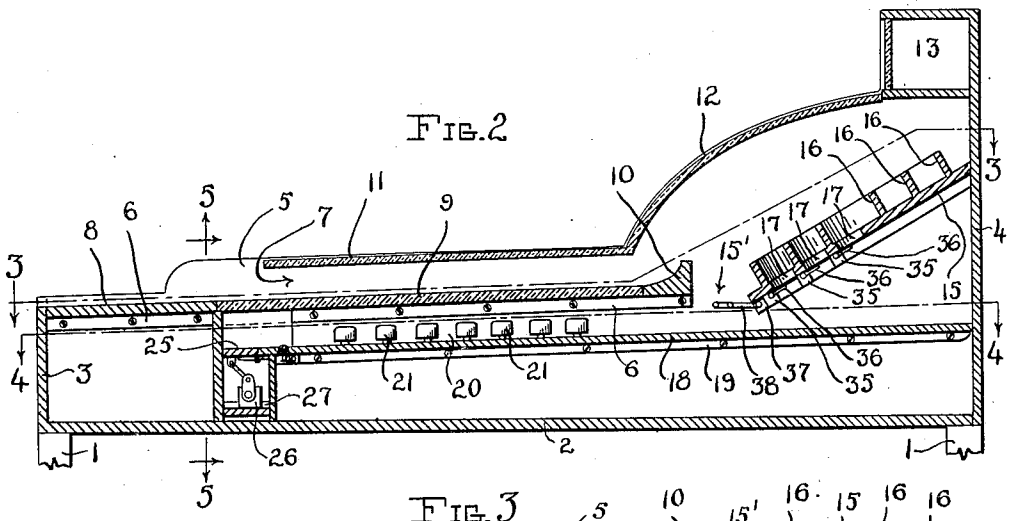
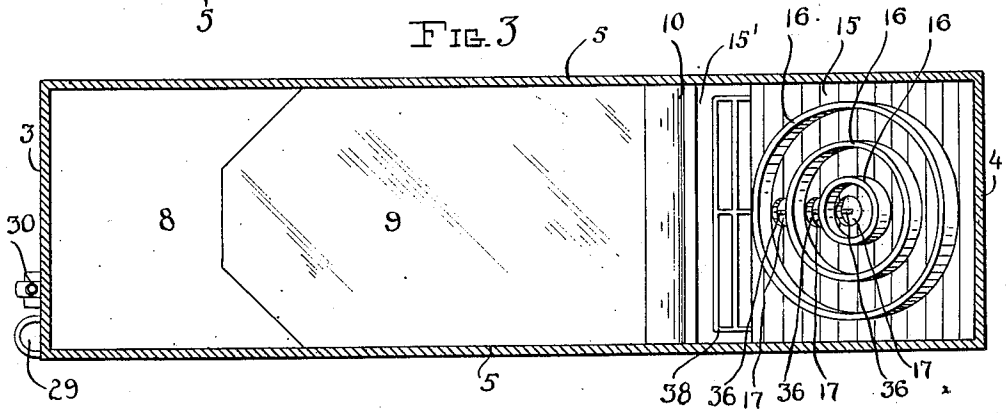


FIG. 3



Christopher Metz
INVENTOR

BY
Hauge & Kennedy
ATTORNEYS

Feb. 13, 1951 C. METZ 2,541,266

BOWLING GAME APPARATUS

Filed Aug. 22, 1946 2 Sheets-Sheet 2

FIG. 4

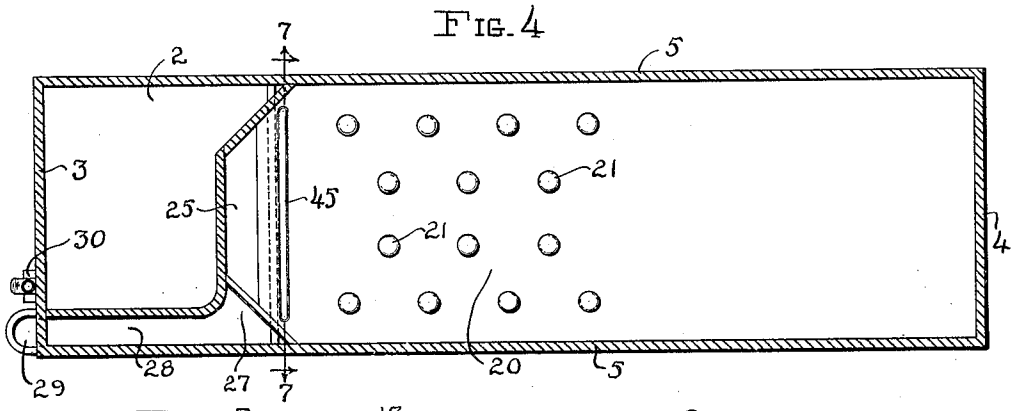


FIG. 5

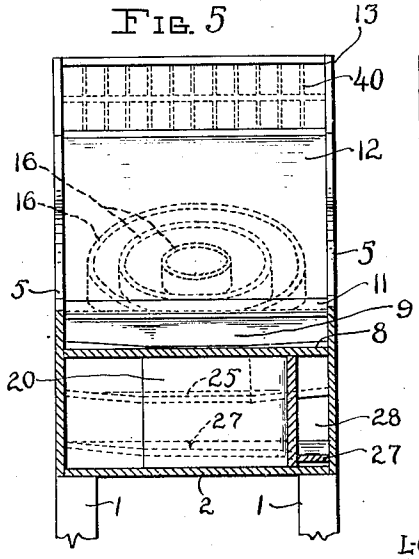


FIG. 6

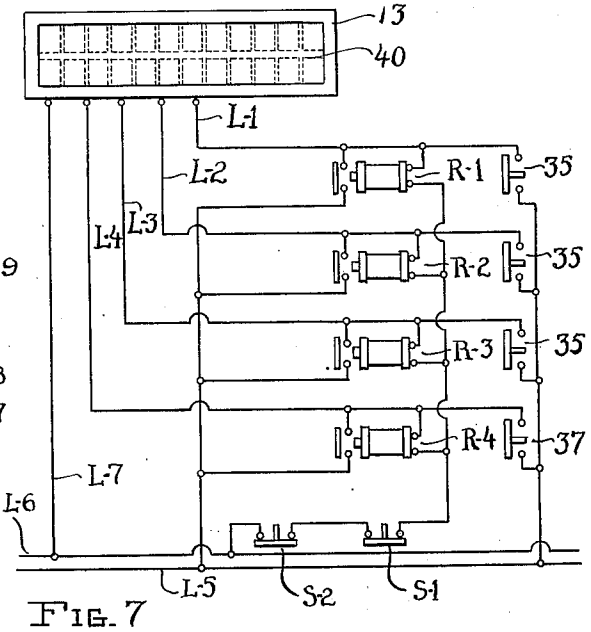


FIG. 7

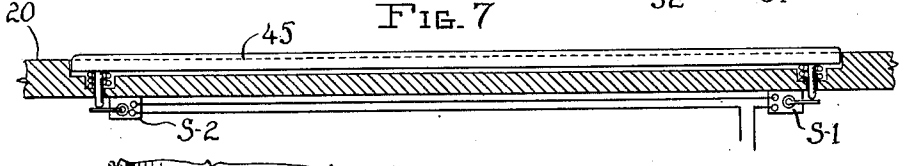
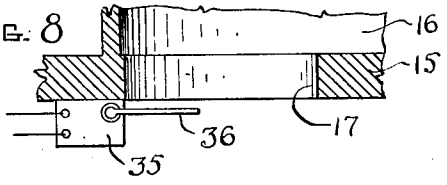


FIG. 8



Christopher Metz
INVENTOR

BY Sawyer & Kennedy
ATTORNEYS

Patented Feb. 13, 1951 2,541,266

UNITED STATES PATENT OFFICE

2,541,266

BOWLING GAME APPARATUS

Christopher Metz, West Hempstead, N. Y.

Application August 22, 1946, Serial No. 692,311

2 Claims. (Cl. 273—95)

1

This invention relates to improvements in game apparatus.

The general object of the invention is to provide a novel game apparatus of the type in which the ball is rolled and a score is obtained by a combination of luck and skill of the player.

With this general object and still other objects which will appear 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 drawing and then be more particularly pointed out in the appended claims.

In the drawing:

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

Figure 2 is a section taken on the line 2—2 of Figure 1;

Figures 3, 4 and 5 are sections taken, respectively, on the lines 3—3, 4—4 and 5—5 of Figure 2;

Figure 6 is a schematic circuit diagram;

Figure 7 is a detail section taken on the line 7—7 of Figure 4; and

Figure 8 is an enlarged fragmentary view of a portion of Figure 2.

The game apparatus of the invention will be supported, at a convenient height, by means of legs 1, indicated fragmentarily in Figures 2 and 5, or in any other convenient way, and includes an elongated and generally rectangular framework or housing having a bottom 2, front wall 3, rear wall 4, and side walls 5. Supported within this framework, as by means of cleats 6, mounted on the side walls 5, is an upwardly inclined bowling surface 7, along which balls may be propelled by the player. The height of surface 7 will be such as to permit the player conveniently to bowl the balls underhand. This section comprises an opaque portion 8 upon which the balls are rolled, a transparent section 9 made of glass or suitable transparent plastic, along which the balls roll and an upwardly curved terminal portion 10 for projecting the balls upwardly and causing them to jump toward the target area to the rear of the machine. A transparent cover, in the form of a flat section 11 and curved section 12, is provided, and a score indicating device of any desired character may be provided at the location 13, on top of the machine. The target area toward the rear of the machine may take various forms. The preferred form comprises a slanting support 15 carrying a number of concentric rings or circular walls 16 arranged after

2

the fashion of the game known as "Skee-ball." Balls which land in the various annular spaces defined by these rings will be discharged from corresponding ports 17, and a ball which lands within none of the rings will roll down the member 15 and will be discharged toward the front thereof through the space 15'.

A ball having dropped through a port 17, or the space 15' will roll down the inclined plane 18 supported on cleats 19 within the housing and through playing field 20 thereof, which is provided with a number of bumpers or other scoring devices 21. A playing field of any of the known bagatelle, or so-called "pin-ball," types may be utilized in conjunction with standard scoring apparatus therefor, and will be visible through the transparent section 9 of the bowling surface and cover 11.

The balls which collect in the front of the field 20 fall through trap 25, provision for dropping this trap and delivering the balls to a location accessible to the player being provided by means of any convenient motor driven device, such as the device 26. Having dropped through the trap, the balls will roll along the transversely inclined surface 27 (Figure 5) and into a channel 28 from which they may be discharged, one by one, into the pocket 29, where they may be obtained by the player. Coin slot means 30 may be provided for energizing the electrical circuits involved and operating the drop 25, so as to make the balls accessible for playing.

Associated with each of the ports 17 is a switch 35 having an operating member 36 extending across the port for energizing the switch upon passage of a ball therethrough and a similar switch 37 having an operating member 38 is provided in conjunction with the opening 15', for closing the switch 37 upon passage of a ball through this opening. A scoring device of any of the known types providing for differential scoring and indicated generally by the numeral 40 (Fig. 6) is provided within the upper housing 13, and the scoring values obtained upon passage of the balls through the playing field may be determined by which of the lines L1, L2, L3 and L4 is supplying current thereto from power line L5, the circuits from score 40 to power line L6 being completed through a common line L7. The energizing of these lines is controlled by the switches 35 and 37 and by the associated relays R1, R2, R3 and R4. Closing the uppermost switch 35, for example, completes a circuit through the winding of relay R1, closing its contacts and in so doing providing also a maintaining circuit

for holding the contacts closed after the associated switch is opened. The operation of the other switches and associated relays is similar.

Switches S1 and S2 (Fig. 7) actuated by a bar 45 in the path of the balls as they leave the playing field are provided and are connected in series with the relay energizing line as shown, and accordingly, as soon as a ball has passed over the playing field, the relay circuits will be interrupted, until a switch 35 or 37 has been closed by another ball. The score obtained by the player for each ball will, accordingly, be determined, first, by which of the ports 17 (or opening 15') the ball passes through and, secondly, by the path of the ball through the playing field. For example, a ball passing through the opening 15' and which energizes the score selecting mechanism through line L4 may be assigned a unit value of scoring, while a ball passing through any three ports 17 may be assigned increasing multiples thereof, such as double value for a ball passing through the lowermost port 16, triple value for a ball passing through the middle port 16, and five times the value for a ball passing through the uppermost port 16. Since the difficulty of placing the ball in the various concentric circles in the target area increases in this order, the player's skill determines, to a large extent, the score which is obtained. This element may, therefore, be controlled by adjusting the scoring ratios so as to increase or decrease the progressive ratios referred to above.

What is claimed is:

1. Game apparatus comprising a bowling surface, a target at one end thereof for receiving balls propelled therealong, the said target having a plurality of ports for discharging balls downwardly therefrom, a return surface upon which the balls may roll backwardly under the bowling surface, a bagatelle playing field associated with the second said surface, and the said bowling surface having a transparent section above said playing field and covering its entire width.

2. Game apparatus comprising a bowling surface, a rise at the end of said surface for imparting an upward direction of motion to balls propelled therealong, a target for receiving said balls, the said target having a plurality of ports for discharging balls downwardly therefrom, a return surface upon which the balls may roll backwardly under the bowling surface, a bagatelle playing field associated with the second said surface, and the said bowling surface having a transparent section above said playing field and covering its entire width.

CHRISTOPHER METZ.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
836,561	Bush	Nov. 20, 1906
1,272,014	Darby	July 9, 1918
1,612,912	Esmarian	Jan. 4, 1927
1,788,336	Schneider	Jan. 6, 1931
1,988,251	Pattison	Jan. 15, 1935
2,201,446	Moloney et al.	May 21, 1940
2,218,968	Hooker	Oct. 22, 1940
2,251,305	Tarbox	Aug. 5, 1941