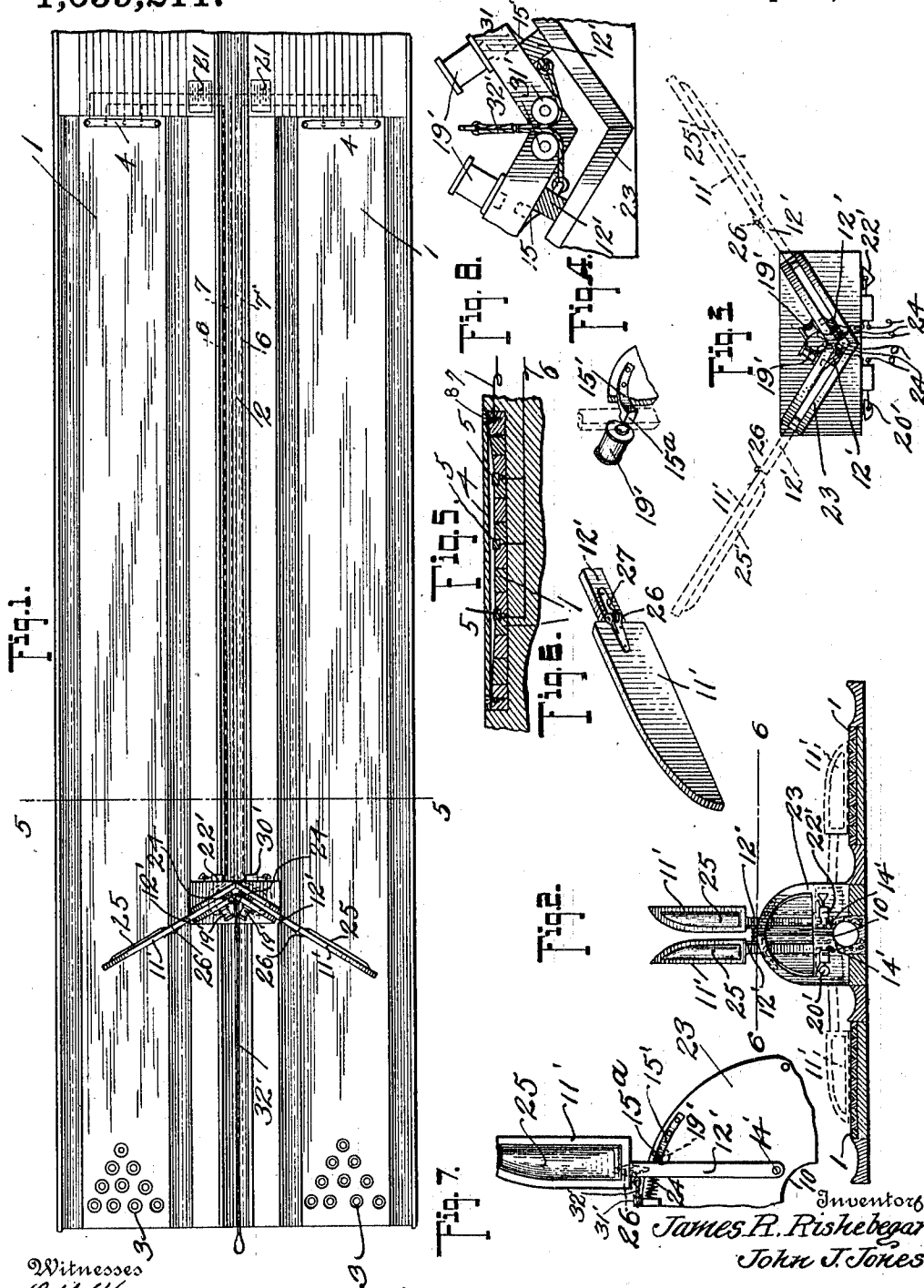


J. R. RISHEBEGAR & J. J. JONES.
 APPARATUS FOR BOWLING ALLEYS.
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Witnesses
E. H. Wagner.
J. W. Kirkley.

Inventors
James R. Rishebegar
John J. Jones
 By *Beal & Co.*
Attorneys.

UNITED STATES PATENT OFFICE.

JAMES R. RISHEBEGAR AND JOHN J. JONES, OF MOUNT PLEASANT, PENNSYLVANIA.

APPARATUS FOR BOWLING-ALLEYS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, JAMES R. RISHEBEGAR and JOHN J. JONES, citizens of the United States, residing at Mount Pleasant, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Bowling-Alleys, of which the following is a specification.

This invention appertains to apparatus employed in connection with bowling alleys and consists primarily in a signal of special construction adapted to be operated by a bowler in stepping over the alley foul line.

An important feature of this invention resides also in the provision of means for preventing the pins on the alley from being bowled over when a player transgresses the rule against stepping over the foul line. The last mentioned means includes primarily a device for deflecting the ball from the alley so that it will be prevented from striking the pins, which would necessitate that they be set up again, even though a foul is registered against the player.

Preferably the deflecting means comprises a signal also, under which conditions it performs a dual function in a manner which will be apparent upon reference to the following detailed description and the accompanying drawings, in which—

Figure 1 is a plan view of the invention wherein the signaling means constitutes ball deflecting mechanism. Fig. 2 is a sectional view on the line 5—5 of Fig. 1, dotted lines showing the signals or deflectors in their operated positions. Fig. 3 is a plan view of the parts shown more fully in Fig. 2. Fig. 4 is a detailed fragmentary perspective view of the locking catch which normally holds the signaling members in upright positions. Fig. 5 is a sectional view through the foul line bar and alley supporting the same. Fig. 6 is a perspective view of the signal or deflector alone. Fig. 7 is a fragmentary detail view showing one of the signal deflectors, with side of its casing removed. Fig. 8 is a view more clearly showing the manually operable means for restoring the signaling or deflecting members to their normal positions.

Throughout the following detailed description and on the several figures of the drawings, similar parts are referred to by like reference characters.

In the drawings, 1 denotes spaced bowling

alleys of conventional construction, between which is the ball return way 2. The pins 3 are adapted to be spotted on the rear ends of the alleys 1 in the customary manner while at the front end of each alley is located a foul line bar 4. The bar 4 is secured at its opposite ends to the alley bed in such a way as to be depressible, as shown in Fig. 5, and said bar when depressed is adapted to make contact with one or more of a plurality of electric contact points 5, beneath the bar and in normal spaced relation thereto. An electric circuit wire 6 is connected to the contacts 5 and a second circuit wire 7 is electrically connected with the bar 4 by being attached to the metallic fastening screw 8 located adjacent to one end of the bar.

It is contemplated that the signaling means comprising the present invention shall be electrically operated, for which purpose the circuit wires 6 and 7 lead to a casing 23 containing electrical means to render operative certain signals supported thereby.

The signals 11' are supported by standards or bars 12' pivoted at their lower ends, as shown at 14', between the sides of the casing 23, said sides being each of angular formation, as shown in Figs. 1 and 3, and being spaced apart. Normally the signals 11' are in approximately vertical positions and are held in such positions by catches 15', said catches being springs formed with heads 15^a which constitute armatures cooperating with electromagnets 19'. The circuit wires 6, 7, and batteries 21 are connected with the magnets 19' so that the latter will be electrified on closing of the circuit caused by depressing the bar 4. The signals 11', however, are not only adapted to perform their function as signals, but when operated, they are adapted to assume positions extending diagonally across and slightly elevated above the beds of the alleys, in which positions, they form deflectors with which a thrown ball is adapted to engage and be deflected from the alley bed.

Since the signal deflectors 11' are arranged in advance of the pins 3, naturally, when either signal is operated so as to assume a position substantially as shown in Fig. 1, it will be in the path of movement of the bowled ball having been thrown into such path by the bowler stepping upon the foul line bar 4. Obviously, when the ball contacts with the deflector 11', it will be thrown outwardly off the bed of the alley

1 and likelihood of bowling of the pins by a foul play entirely avoided. The release of each signal deflector 11' is effected by the closing of the circuit including the magnet 19' by depression of a bar 4, said magnet being thus energized so as to attract the armature 15^a of the spring catch 15', disengaging said catch from the standard or bar 12' and permitting a spring 24 normally bearing against the inner side of said standard to forcibly shove the signal outwardly and downwardly into its deflecting position. The alarms or bells 20' and 22' are, of course, sounded when the signals 11' are actuated and attention is directed to the fact that each signal or deflector 11' is preferably supplied upon its ball engaging surface with a suitable buffer or pad 25 by which the shock is relieved. Also each signal 11' is preferably hinged or pivoted at 26 to its standard 12' and is permitted to yield slightly when the ball strikes the same by the provision of a spring 27 at the pivotal connection, said spring normally tending to hold the signal 11' in alinement with its supporting member 12'.

It is contemplated that various changes may be made in the details of construction of the present invention consistent with the spirit of the same and scope of the claims hereto appended.

After the signals are operated, they may be reset to their original inactive positions by any suitable means or by the pin setting boy, who is stationed within a short distance from the point where the signals are located.

As shown in the drawings, pulleys 31' are carried by the supporting post 9 and casing 23 and pull cords 32' lead to points of connection with the signals and deflectors of said parts 9 and 23 respectively, constituting manually operable means to restore the latter to their normally inoperative positions.

Having thus described the invention, what is claimed as new is:

1. In combination with a bowling alley, normally inoperative means associated with said alley and movable into the path of a bowled ball for deflecting the latter from its course.

2. In combination with a bowling alley, a signal associated therewith and comprising a member movable into the path of a bowled ball to prevent said ball from striking pins upon the alley, and means for operating said signal.

3. In combination with a bowling alley

and pins spotted thereon, means operable to assume a position in advance of the pins to prevent bowling over of the latter by a ball traversing said alley.

4. In combination with a bowling alley and pins spotted thereon, yielding means operable to assume a position in advance of the pins to prevent bowling over of the latter by a ball traversing said alley.

5. In combination with a bowling alley and pins spotted thereon, yielding means operable to assume a position in advance of the pins to prevent bowling over of the latter by a ball traversing said alley, and a manually controlled operating device for said means.

6. In combination with a bowling alley and pins spotted thereon, of means movable into a position extending transversely over the bed of the alley into the path of balls bowled thereon.

7. In combination with a bowling alley and pins spotted thereon, of means movable into a position extending transversely over the bed of the alley into the path of balls bowled thereon, said means including a yieldably supported deflector.

8. In combination with a bowling alley and pins spotted thereon, means comprising a substantially vertical member associated with said alley, and mechanism for moving said member into a position in advance of the pins and in the path of a ball bowled on the alley.

9. In combination with a bowling alley, a deflector associated therewith, means normally holding said deflector in an inoperative position adjacent to the alley, means for releasing the deflector, and means for forcibly moving the deflector into the path of a ball bowled on the alley when the deflector has been released.

10. In combination with a bowling alley, a deflector associated therewith, means normally holding said deflector in an inoperative position adjacent to the alley, means for releasing the deflector, means for forcibly moving the deflector into the path of a ball bowled on the alley when the deflector has been released, and means permitting yielding of the deflector when in its operative position.

In testimony whereof we affix our signatures in presence of two witnesses.

JAMES R. RISHEBEGAR.

JOHN J. JONES.

Witnesses:

P. J. O'CONNOR,

CHESTER L. KING.