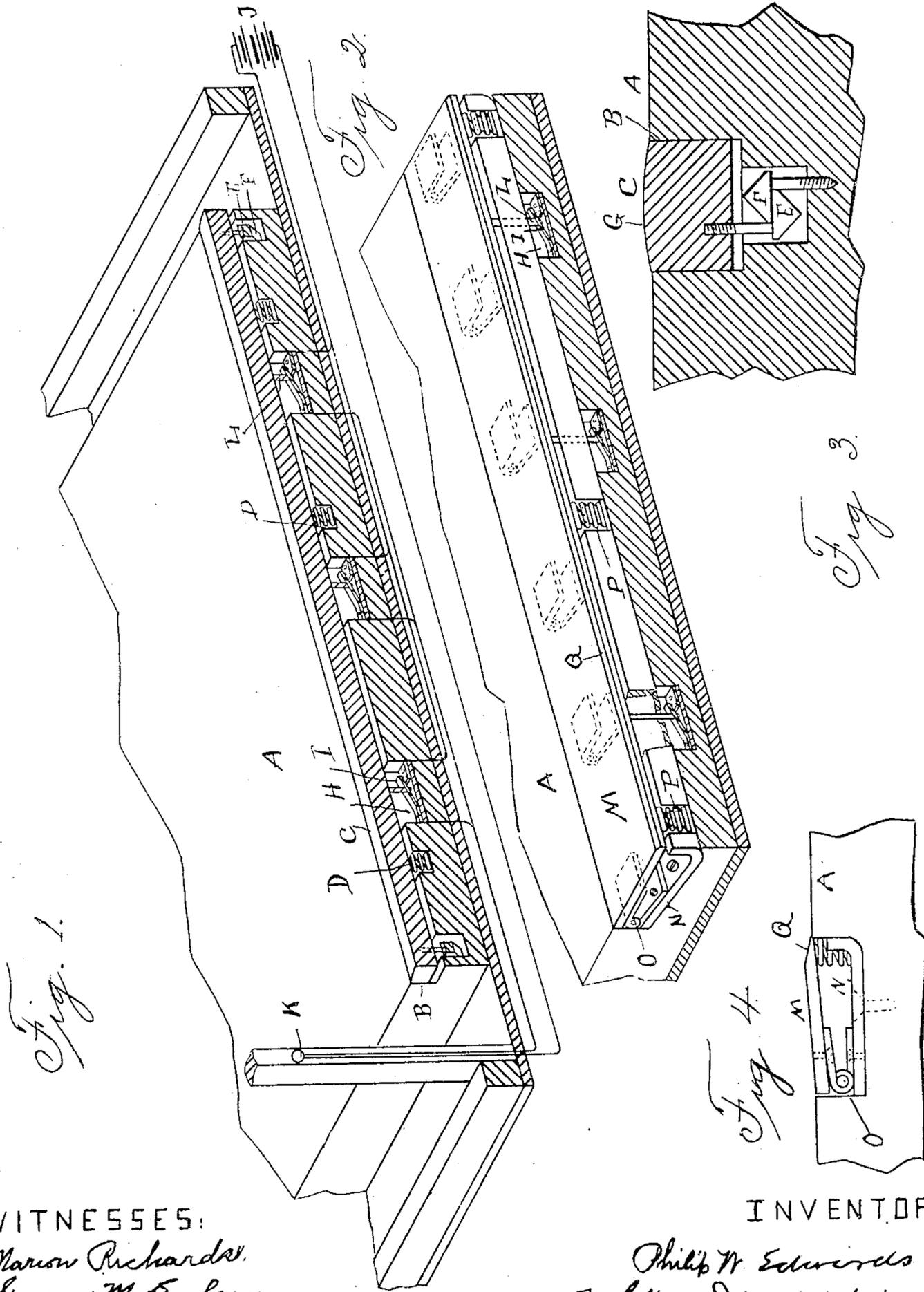


P. W. EDWARDS.
BOWLING ALLEY FOUL LINE.
APPLICATION FILED DEC. 23, 1904.



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UNITED STATES PATENT OFFICE.

PHILIP W. EDWARDS, OF PORTLAND, MAINE.

BOWLING-ALLEY FOUL-LINE.

No. 808,147.

Specification of Letters Patent.

Patented Dec. 26, 1905.

Application filed December 23, 1904. Serial No. 238,096.

To all whom it may concern:

Be it known that I, PHILIP W. EDWARDS, a citizen of the United States, and a resident of Portland, in the county of Cumberland and State of Maine, have invented new and useful Improvements in Bowling-Alley Foul-Lines, of which the following is a specification.

My invention relates to improvements in foul-lines for bowling-alleys.

It is designed to provide means for giving notice when the bowler advances upon or beyond the foul-line when delivering the ball.

It consists, broadly, in forming in the alley a transverse groove, inserting the foul-line in the groove, supporting the foul-line yieldingly and removably in the groove, and providing any convenient means operable by the depression of the foul-line for giving the notice.

My invention may be embodied in many different forms, and I have chosen two forms for the illustration of the general principles of my invention; but my invention is not limited to the forms herein shown and described, any yieldingly-supported foul-lines being within the scope and spirit of my invention.

In the drawings herewith accompanying and making a part of this invention, Figure 1 is a perspective sectional view of a portion of any alley, showing one form of my improved foul-line, the section being taken transversely through the foul-line. Fig. 2 is a similar view of another form of my improved invention, the same being taken at the edge of the foul-line nearest the bowler's position. Fig. 3 is a detail sectional view showing means employed for detachably holding the foul-line shown in Fig. 1 in position, and Fig. 4 is an enlarged detail end view of Fig. 2.

Same letters of reference refer to like parts.

In said drawings, A represents the alley, B a groove in the alley extending transversely thereof, and C the foul-line inserted in said groove and yieldingly supported therein upon a series of springs D. The upward movement of the foul-line, due to the pressure of the springs, is limited by a series of interlocking keepers, one, E, attached to the under side of the foul-line and the other, F, to the body of the alley. The keepers should be adjusted so that the foul-line in normal position is slightly above the bottom of the groove and has its upper edges flush with the surface of the alley at the points of contact therewith,

as seen in Fig. 3. The upper surface of the foul-line, beginning at each edge, may rise a very little above the plane of the surface of the alley, extending gradually from the edges toward the center, as seen at G in Fig. 3. The keepers before referred to loosely engage each other, so that, if desired, the foul-line can be removed from the groove by sliding it endwise until the keepers become disengaged.

Beneath the foul-line—as, for instance, in sockets H—are positioned one or more switches I within an electric circuit which includes a battery J and any convenient signal, as a bell K. The switches are designed to be closed by any downward movement of the foul-line by means of pins L, attached to the under side, which engage and depress the open end of one of the switches until the circuit is closed. I do not intend, however, to be limited to electric signaling, as any means operable by the depression of the foul-line to give a signal is within the spirit of my invention.

In Fig. 2 I have illustrated a second method of constructing and operating the foul-line. In this case the foul-line proper is hinged at or near one edge of a plate and the whole is inserted and secured in the groove in the alley. The two members of the foul-line in this case are represented by M and N, respectively, which are hinged together at O. The free edge of the plate M is yieldingly supported by springs P, and the upper surface of the plate is beveled slightly at the free edge, as seen at Q, so as to offer no abrupt obstruction to the feet of the bowler. The depression of the free edge of the plate operates to close a circuit, as in Fig. 1.

The advantages of my improved foul-line are that it does not deface the alley, the attaching means all being below the surface of the alley in both cases, it is simple in construction, and makes the bowler himself give warning if he advances too far when delivering the ball.

Having thus described my invention and its use, I claim—

1. The combination with a bowling-alley having a transverse groove therein, of a foul-line yieldingly supported in said groove, means for retaining said foul-line in said groove, said retaining means being positioned beneath said foul-line, and a signaling device connected with said foul-line.

2. The combination with a bowling-alley,
having a transverse groove therein, of a foul-
line yieldingly supported in said groove and
loosely-interlocking keepers, one secured in
5 the bottom of the groove and the other to the
under side of the foul-line, adapted to limit
the upward movement of the foul-line.

In testimony whereof I have signed this
specification, in presence of two subscribing
witnesses, this 21st day of December, 1904.

PHILIP W. EDWARDS.

In presence of—

ELGIN C. VERRILL,
NATHAN CLIFFORD.