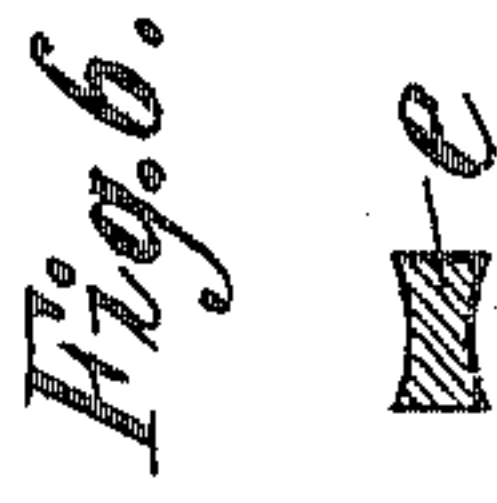
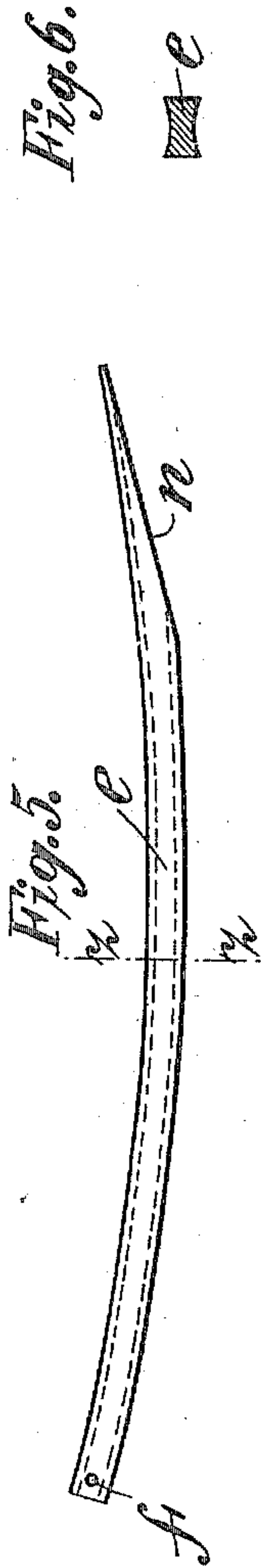
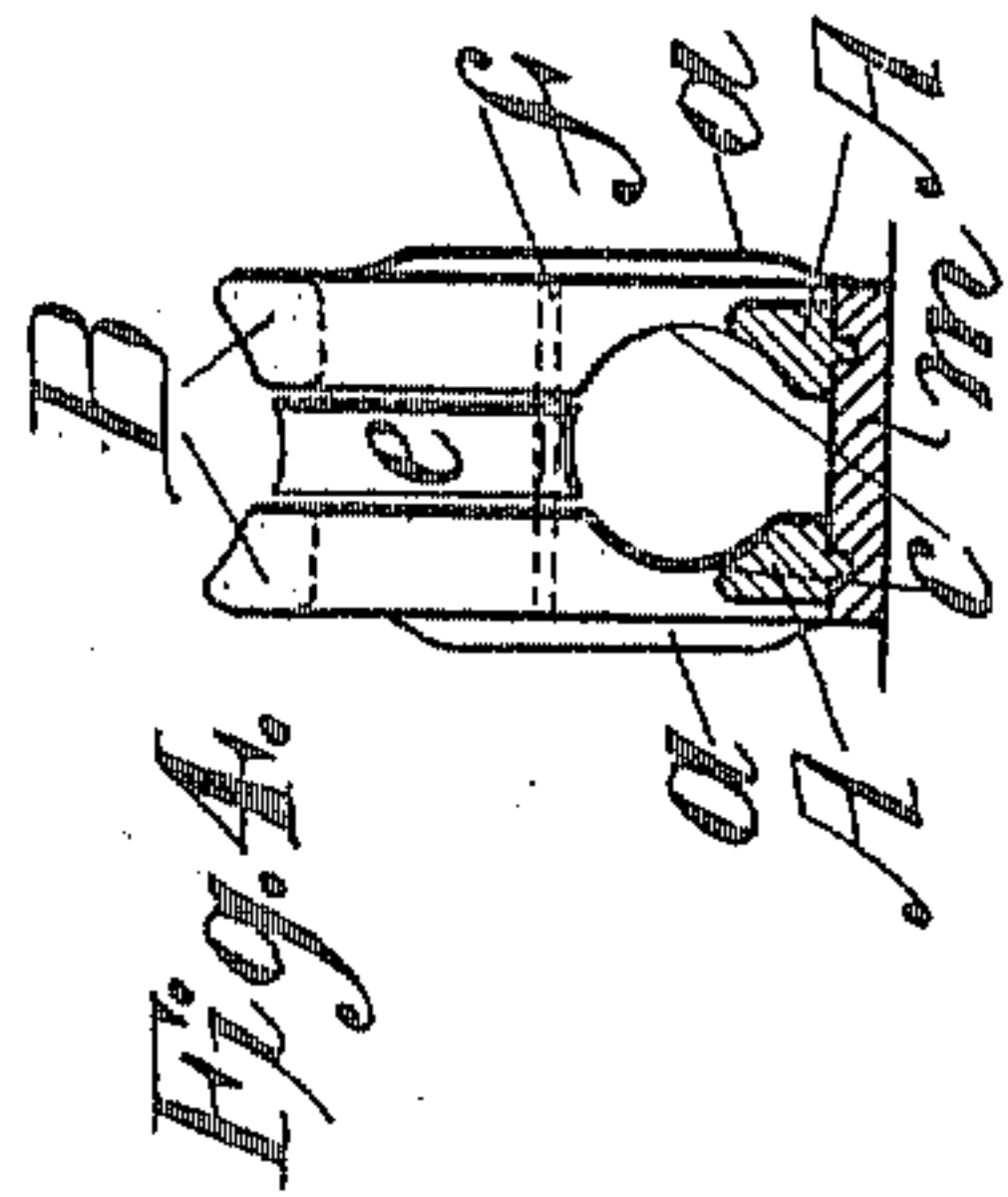
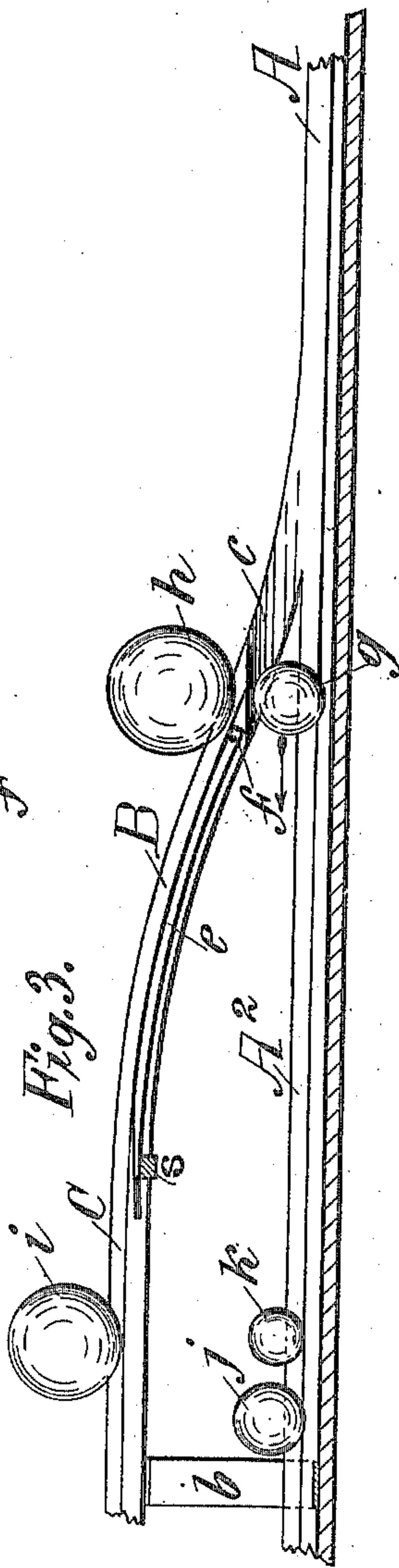
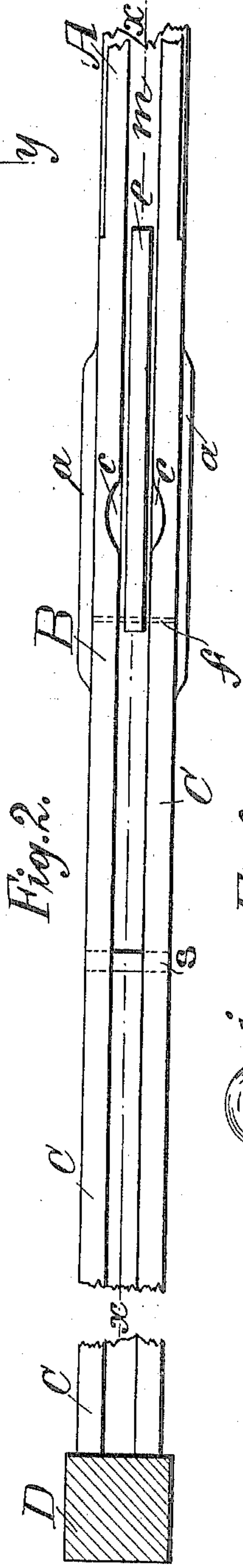
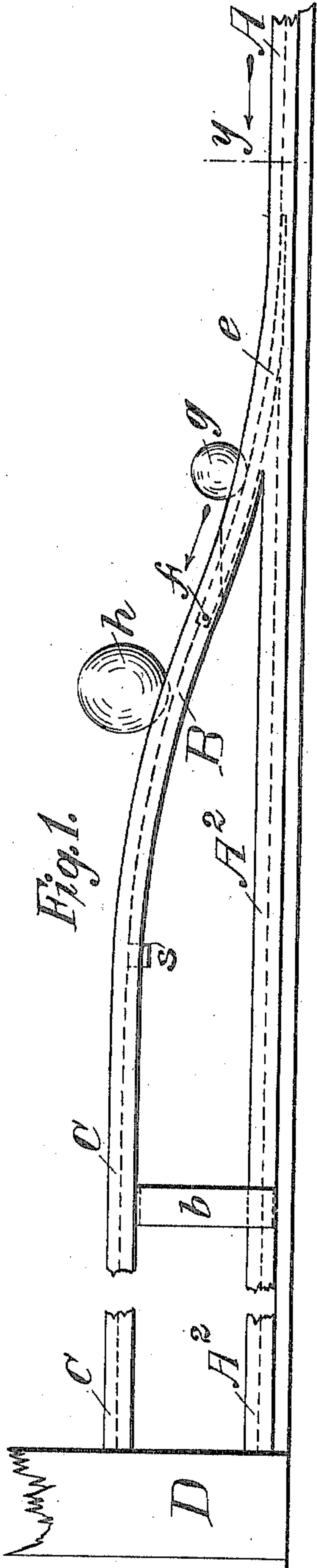


No. 817,504.

PATENTED APR. 10, 1906.

D. F. McCARTHY.
BOWLING ALLEY.

APPLICATION FILED SEPT. 22, 1905.



Witnesses
J. F. McCarthy
J. F. McCarthy

By

Inventor
Dennis F. McCarthy
Attorney
J. F. McCarthy

UNITED STATES PATENT OFFICE.

DENNIS F. McCARTHY, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO THE
BRUNSWICK-BALKE-COLLENDER COMPANY, OF NEW YORK, N. Y., A
CORPORATION OF OHIO.

BOWLING-ALLEY.

No. 817,504.

Specification of Letters Patent.

Patented April 10, 1906.

Application filed September 22, 1905. Serial No. 279,574.

To all whom it may concern:

Be it known that I, DENNIS F. McCARTHY, a citizen of the United States, residing in Lowell, county of Middlesex, and State of Massachusetts, have invented a new and useful Improvement in Bowling-Alleys, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

My invention relates to that class or type of bowling-alley return-ways in which provision exists for a separation of certain of the smaller sizes of the tenpin-balls from the rest, as the whole series of balls may be sent home from the pit end of the alley, so that the said smaller sizes of balls will be homed onto a separate (and lower) terminal or ball-rack from that on which the series of balls of larger sizes is landed. The means by which this separation of the balls of different sizes from each other to effectuate the congregation of one series—say from the largest ball down to the four-and-one-half inch, inclusive, on the upper rack of the “terminal,” and from said four-and-a-half inch down to the very smallest ball used on the lower rack—is commonly known as the “separator” of the return-way, and such separator device has been known and used for a great many years now in various forms or species of ball return-ways.

In the very old-fashioned return-way composed of a ball-track arranged in a right line and running obliquely down from the pit end of the alley to the terminal the separator consisted of an aperture or opening in the ball-track (or ball-trough) located at the forward end or portion of the terminal, through which all the balls below a certain size simply dropped or descended, falling onto a supplemental lower ball-rack arranged vertically beneath the upper main ball-rack.

In the more modern ball return-way, having a rapidly-descending portion at the pit end, a low-down horizontal portion, and an “upgrade” merging at its higher portion into the forward end of the terminal, this same sort of separator has been employed, located just in rear of the upper end of the upgrade—as seen, for instance, in the patent

to Reisky, of February 22, 1896, No. 599,477; but for a number of years now in this “Reisky” type of return-way it has been almost the universal practice to have the separator located at the bottom of the upgrade and the return-way made as shown in the patent to Wiggins, of February 11, 1896, No. 554,611, so that all those smaller balls designed to be landed on a lower ball-rack will not travel up the said upgrade, but passing through the separator will travel or roll onto the lower ball-rack.

In the use of bowling-alleys it is nowadays oftentimes desirable to have all the balls, both the larger and the smaller ones, homed onto and congregated for reuse by the players on the same (upper) terminal, while at the same time it is often preferable to have the balls separated and landed, the larger and smaller ones, respectively, on the upper and on the lower ball-racks in the usual manner.

To provide for use a ball return-way which may at the pleasure of the user of the alley operate either to effectuate the usual separation of the balls or to cause all the balls (both big and little) to be homed onto the upper ball-rack is the object of my invention, which to this end and object consists in the combination with the separator device of means for throwing it at pleasure into disuse and forcing the smaller balls to pursue the same course of travel as the larger ones, as will be hereinafter more fully explained and as will be most particularly pointed out in the claim of this specification.

To enable those skilled in the art to make and use ball return-ways embodying my invention, I will now proceed to more fully describe the latter, referring by letters to the accompanying drawings, which form part of this specification and in which I have shown my invention carried out under the precise structural conditions under which I have so far successfully and extensively practiced it.

In the drawings which illustrate the Wiggins species of return-way (of the Reisky type) I have shown only so much of the return-way as it is necessary to draw in order to fully illustrate my invention, and at Figures 1

and 2 I have shown broken out a considerable portion of the terminal, with the newel-post moved forward to condense the drawing to within the prescribed space-limits, while at Fig. 3 I have omitted to draw the newel-post.

Fig. 1 is a side view of so much of my improved ball return-way as needs to be shown. Fig. 2 is a top view of the same. Fig. 3 is a partial vertical section taken in a plane indicated by the dotted line xx at Fig. 2. Fig. 4 is a vertical cross-section taken in a plane indicated by the dotted line yy at Fig. 1. Fig. 5 is a view, on an enlarged scale, showing the switch device detached. Fig. 6 is a detail cross-sectional view of said switch device, taken in a plane indicated by the dotted line zz at Fig. 5.

In the several views the same part will be found always designated by the same letter of reference.

A is the low-down horizontal portion of the return-way, which at the vicinity of the players' end merges into the lower end of the upgrade B and which has a rearward extension A^2 , thence to the newel-post D, while C is the main upper terminal, which also has its rear end secured to the newel-post D, and into the forward end of which merges the rear most upper part of the upgrade C, as shown, and all according to the usual construction of the well-known Reisky type of return-way.

b is one of the usually-employed metallic supports to the terminal C.

The rails of the upgrade B are each cut out or cut away on their inner sides at their lowest ends, as most clearly seen at c , Figs. 2 and 3, in the well-known way of the Wiggins separator, so that all balls below a certain size (say smaller than five-and-a-half-inch diameter) will when rolling home on the portion A of the return-way readily pass through said cutaway and continue their course of travel on the continuation A^2 , on which they congregate in the usual manner.

At Fig. 3 I have illustrated this mode of operation of the return-way by showing a ball g rolling on the ball-track extension A^2 and passing through the separator cutaway c and by showing at j and k two other small balls (of different sizes) which have previously passed through said separator c and rolled home on the lower terminal A^2 .

e is a curved bar which is placed between or intermediate of the two rails of the upgrade B and is pivotally connected with them by a pin f , passing horizontally through said bar e near one end of it and also through the rails of the upgrade, all as clearly shown in the drawings. The configuration or shape of this bar e , which serves the purpose of a switch bar to close the separator c at pleasure, (as will be presently explained,) is clearly shown in the drawings, in which I have illustrated it

at Fig. 1 turned (down) about its pivot f into that position relatively to the rails of the upgrade in which it operates to close the separator c and force all the smaller balls being homed to roll up on it and pass thence onto the upper terminal (or ball-rack) C. As clearly shown, when this switch-bar e is turned down into or is set in the position in which it is seen in dotted lines at Fig. 1 all the smaller balls homed will travel up thereon, as illustrated at g in said figure, and rolling on past the upper pivoted end of said bar will traverse the upgrade B and roll onto the terminal C just the same as do the larger balls, (one of which is shown rolling home at h ,) that are not affected by either the presence or absence of any such switch-bar. When, however, the switch-bar e is set in the position shown (in full lines) at Figs. 2 and 3, all the smaller balls roll through the separator c , as illustrated at g , Fig. 3, and congregate on the lower terminal or rack A^2 , while all the larger ones, as shown at h and i , Fig. 3, travel on the upgrade B and are homed onto the upper terminal C.

When the switch e is set in the position seen at Figs. 2 and 3, (to leave open the separator,) its (upper) vibratory or free end rests upon and is supported by a suitable stop s , and when turned down into the position seen (in dotted lines) at Fig. 1 its said free end rests upon the bottom board m of the low-down part A of the return-way, as plainly indicated at Figs. 1 and 4.

The switch-bar e is tapered off at its free end portion on one of its faces, (as best seen at n , Fig. 5,) so that when turned down, as per Fig. 1, to close the separator its lowermost portion will fit down onto the upper surface of the bottom board m (see Figs. 4 and 1) for some little distance and so that any one of the smaller balls rolling home, with the lowermost part of its circumferential surface either in contact with or in close proximity to the top surface of m , will roll onto the top surface of the lowermost portion of the switch-bar without meeting with the slightest impediment in its homeward course, and to facilitate the rolling of the smaller balls over the ascending surface of the upgrade that surface of the switch-bar which is uppermost when the switch is set, as shown at Fig. 1, is preferably made concave in cross-section, as best seen at Fig. 6.

It will be understood, of course, that in carrying into effect my invention any modifications in the details of construction which do not change the novel principle and mode of operation of the return-way I have shown and described will render the latter none the less an embodiment of said invention and that although I have shown my invention applied to the "Wiggins" species of the Reisky

type of return-way it may be adapted to other types and species of bowling-alley ball-tracks.

What I claim, broadly, as of my invention, and desire to secure by Letters Patent, is—

In combination, with a bowling-alley ball return-way, formed or provided with any proper form of "ball-separator," means for rendering inoperative, the separator, to there-
by cause the balls of all sizes to roll home onto

the same terminal, or ball-rack, whenever this may be desired; substantially as herein-before set forth.

In witness whereof I have hereunto set my hand this 18th day of September, 1905.

DENNIS F. McCARTHY

In presence of—

W. A. GOODMAN,

D. W. KELLEHER.