(No Model)

E. REISKY.

BOWLING ALLEY.

No. 599,477. Patented Feb. 22, 1898.

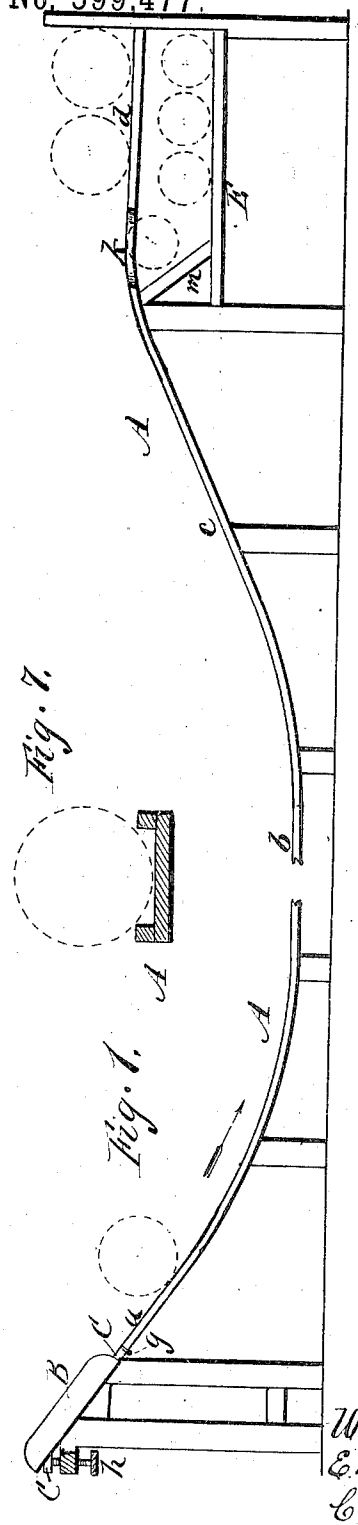


Fig. 7.

Fig. 1.

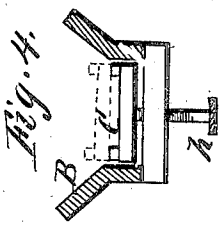


Fig. 4.

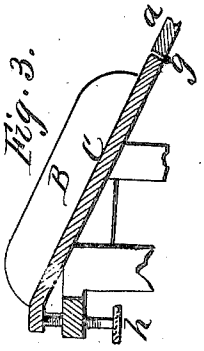


Fig. 3.

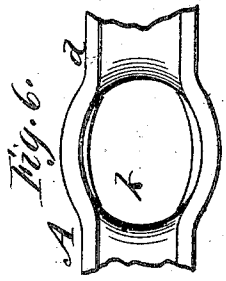


Fig. 6.

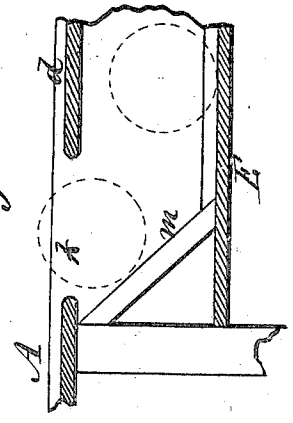


Fig. 5.

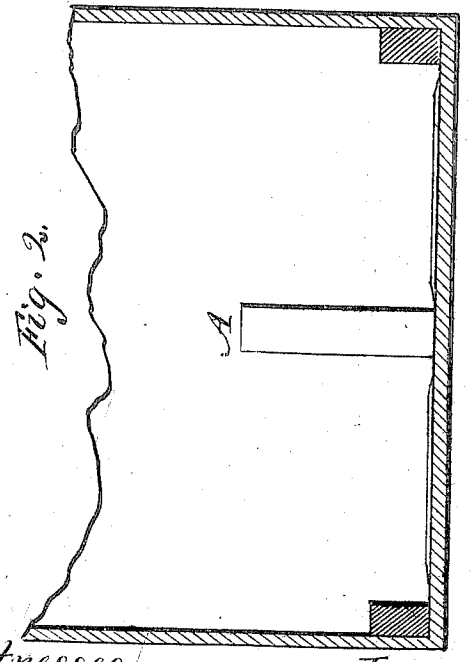


Fig. 2.

Witnesses.
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UNITED STATES PATENT OFFICE.

EMIL REISKY, OF ROCHESTER, NEW YORK, ASSIGNOR TO THE BRUNSWICK-BALKE-COLLENDER COMPANY, OF NEW YORK, N. Y.

BOWLING-ALLEY.

SPECIFICATION forming part of Letters Patent No. 599,477, dated February 22, 1898.

Application filed January 9, 1893. Serial No. 457,844. (No model.)

To all whom it may concern:

Be it known that I, EMIL REISKY, of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Bowling-Alleys; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings accompanying this application.

My invention relates to the ball-track or ball-runway by which the balls are returned from the pit end to the players' end of the alley; and it consists in the novel construction which will be found hereinafter fully described, and which will be most particularly pointed out in the claims of this specification.

Prior to my invention it was customary in the construction of bowling-alleys to have the ball-runway made in the form of a trough, usually provided near the pit end of the alley with some sort of hopper or ball-cage into which the balls were thrown or placed and having a downgrade or descent from the pit end to the players' end of the alley, so that the balls would roll down by gravity, traveling, of course, with a continually-accelerated speed until the eached the playing end of the alley, where they would collect either on a substantially level part of the ball-runway or in some suitable receptacle or receptacles, from which the players could take the balls for use in bowling, as required. This construction of the ball-runway, however, was always objectionable, because of the impetus which the balls would necessarily acquire in approaching the playing end of the alley, which would be such that they would come together and smash up with considerable force, to the great injury of the balls in the course of time, which would become broken or defaced by the pounding action on each other, especially at the vicinities of the "finger-holes" in the balls, as has always been well known and understood to those skilled in the art of building bowling-alleys and familiar with the use thereof. By my invention I have overcome this serious objection, while at the same time providing for use a ball return-way which operates to effectuate a rapid return of the balls from the pit end to the playing end of the alley, while at the same time causing the balls to reach their final destination with no material shock or pounding of the balls against each other.

A secondary feature of my invention consists in the employment of means at the pit end of the alley by which the speed of the balls may be slightly regulated to compensate for the difference in speed which naturally arises during the travel of the wooden balls on the wooden runways in different kinds of weather—that is, when the atmosphere is either very dry or very damp.

To accomplish the object of the primary part of my invention, I construct the ball-runway with a descending portion beginning at the pit end of the alley, where the ball hopper or cage is located, (if one be used,) and running thence toward the players' end of the alley, and also with an upwardly-inclined or ascending portion at the vicinity of the playing end of the alley, which "upgrade," so to speak, takes the impetus or inertia out of the balls just before they are landed on the extreme end portion of the runway, or into or on that part of the runway or receptacle connected therewith from which they are to be selected or picked out by the players for use in bowling.

In order to increase or diminish the initial velocity of the ball as it starts on its run from the pit end of the alley, so as to compensate for the variations in the condition of the atmosphere, which operate to make the ball run either faster or slower, I provide the return-way at the locality at which the balls are put into it by the pit-boys with a vertically-adjustable board or trough-like device, which by having its rearmost end set higher or lower to give it a greater or less degree of inclination, as circumstances may require, will start off the balls placed therein with a greater or less velocity, as occasion may require.

In the drawings, Figure 1 is a view showing a side elevation of a ball return-way made according to my invention. Fig. 2 is a diagrammatical cross-sectional view of a double alley having the ball return-way located intermediate of the two alleys or ballways, the ball return-way being shown in elevation. Fig. 3 is an enlarged detail view showing in longitudinal vertical section the pit-end por-

tion of the ball return-way with its adjustable trough or ball-receiver. Fig. 4 is a rear elevation of the parts shown at Fig. 3. Fig. 5 is a similarly-enlarged detail view showing in vertical longitudinal section the ball receiving and retaining end portion of the return-way or that portion located at the players end of the alley. Fig. 6 is a partial plan or top view of that end portion of the return-way at the vicinity of the playing end of the alley and illustrating particularly the means by which the small balls are separated from the larger ones. Fig. 7 is a detail cross-sectional view showing the preferable or adapted shape in cross-section of the ball return-way.

In the drawings, A is the ball return-way, which consists of a track-runway made, preferably, in the shape of a shallow trough in cross-section, as seen at Fig. 7, and of the proper size to properly accommodate the largest size of balls used on the bowling-alley. This runway A, as shown, is provided at the extreme rear or pit end of the alley with an adjustable ball trough or receiver B, the operation and function of which will be presently described, and gradually descends thence, as seen at *a*, toward the floor of the alley and, running toward the players' end of the alley, preferably nearly quite parallel with the floor, then, in approaching the ball-terminal, passes obliquely upward or ascends, as shown at *c*, until it reaches an elevation convenient for the reception and handling of the balls by the players, as seen at *d*, on which portion *d* the balls come to rest, the first one sent home for use coming into contact with and resting against (as usual) the stop-post, with which the extreme end of the return-way is connected, as shown at Fig. 1. In this figure the position of the balls on the rest or terminal portion *d* of the runway is illustrated by dotted circles at Fig. 1, and this portion *d* is preferably slightly lower at its extreme end or at the vicinity of the stop-post, so that any balls once returned to the terminal end of the return-way will by gravity remain there, the return-way at that point where the ascending portion *c* merges into the nearly horizontal part *d* being, however, formed or provided with an aperture *k*, (see Figs. 5, 6, and 1,) through which what are called the "small" balls descend or fall as they are returned to the players' end of the alley onto a lower terminal receptacle or receiving and retaining trough E, as plainly illustrated by the dotted circles at Fig. 5 and the smaller circles drawn in dotted lines at Fig. 1, a deflecting board or device *m* operating, as clearly illustrated, to break the fall or descent of the smaller balls or cause them to descend through the opening *k* onto the receiving trough or receptacle E with as little noise as possible and without injury to themselves by concussion, all substantially after the fashion of the means employed prior to my invention for a separation of the larger from the smaller balls as they were sent home to the playing end of the alley by the old-fashioned construction of ball return-way, which, however, unlike mine, gradually ascended from the locality of the ball-hole *k* to that point at the vicinity of the pit of the alley at which the balls were put onto the runway or into the hopper or cage connected therewith, and in which, unlike mine, existed the defect of the rapid destruction of the perforated horizontal part *d* in the following well-known manner—that is to say, as is well known to those familiar with the use of the old-fashioned ball-runways, the smaller balls, approaching the aperture or opening *k*, would arrive at this point with such speed or under such a degree of velocity that said balls instead of simply dropping through the aperture *k* would almost span the chasm and, striking with great force against the rearmost half or portion of the perforated terminal *d*, (which, of course, was and is always made of softer wood than the balls,) would soon batter and crush away the wood or stock at this part of the runway *d*, so that the latter would soon get out of repair, besides which this severe and destructive pounding of the portion *d* by the hard smaller balls would make the alley exceedingly noisy. This defect or objection, it will be seen, is wholly cured by the construction which I have herein shown and described, in which the smaller balls (as well as the larger ones) have their velocity so retarded before they reach the opening *k* that they will simply fall through said opening without any banging or pounding against the rearmost portion of the stock in which the aperture is formed, as will be easily understood by an inspection of the drawings and by those familiar with the subject.

I deem it preferable to have the runway made with its center portion, lengthwise, depressed, as above mentioned, especially in cases where the runway may be located between two ballways or alleys, since thereby the view of either alley of the ballway and the playing thereon from the locality of the other ballway or alley is not obstructed, as in the case of the old-fashioned runway, and made in this preferable form the relative degrees of obliquity of the descending portion *a* and the ascending portion *c* should be such that with a given predetermined height of the terminal *d* all the balls put into the hopper or receptacle B at the pit end of the alley will acquire in descending the portion *d* of the runway a sufficient velocity to carry them (as speedily as possible) to and up the ascending portion *c* of the runway and land them on a terminal or receptacle *d* at the playing end of the alley with the least possible velocity and so that a series of balls thus landed on the terminal will arrive there with little or no shock or concussive strain on either the balls or the stop-post at this end of the runway; but the relationship shown of the descending portion *a* and ascending portion *c* of the runway may of course be varied from that I have shown and described, and some other precise form of the

continuous runway may be adopted without departing from the principle of my invention so long as the runway be made with a descending portion *a* starting at the pit end of the alley and an ascending or upgrade portion *c* at the vicinity of the terminal or ball-delivery end of the runway and with the descending and ascending portions having such relative degrees of obliquity that with a given elevation of the terminal *d* or receptacle to which the balls are to be delivered all the balls put onto the runway at the pit end of the alley will be delivered onto said terminal or ball-receptacle at the players' end of the alley without any material shock or concussive action, as above explained.

In practice the operation and effect is simply this, that the balls start from the pit end of the alley in my improved return-way, and while they are sent home or delivered at the playing end of the alley as rapidly as desirable they travel fast from the time they leave the pit end of the alley until they reach the ascending or upgrade portion *c* of the runway, which upgrade simply operates to check the speed of the balls or take out their inertia, so that they land on the terminal or receptacle *d* with practically no speed, or, in other words, without any momentum sufficient to produce any injurious effect on the balls.

As is well known to players and users of bowling-alleys, either from the effect on the hard wooden balls (which are usually made of lignum-vitæ) or on the wooden trough-like return-way, or on both, of moisture in the atmosphere the balls always run more sluggishly in very damp weather than they do in dry weather, and as it is the primary part of my invention to have the balls always landed with the least possible force at the terminal end of the runway I have found it desirable to construct the runway so that in damp weather the balls will be started off at the pit end of the alley with a greater velocity than in very dry weather, and this end I accomplish by the use of the adjustable ball trough or hopper B, into the upper portion of which the balls are thrown by the pit-boys. By having this hopper B adjustable at its highermost end, so as to give it a greater or less degree of inclination, it will operate when its rear end is set at the highest point of adjustment to start the balls off faster than when its highermost end is adjusted to the lowermost position; and this adjustment of its rear end I have shown as effected by means of a set-screw 8, (see Figs. 1, 3, and 4,) by which its rearmost end may be raised and lowered, the forward and lower end of the trough being hinged, as seen at *g*, Figs. 1 and 3, to the rearmost and uppermost extreme of the ball-runway proper.

Having now so fully explained my invention that those skilled in the art can make and use bowling-alley ball return-ways embodying the same either wholly or partially and either in the precise forms herein shown and described or under some mere modification, what I claim as new, and desire to secure by Letters Patent, is—

1. A bowling-alley return-way, comprising a descending, or downwardly-sloped, portion, beginning at the pit end of the alley and returning toward the players' end; and an ascending, or upgrade, portion connected therewith and located near the playing end of the alley, which merges into the ball receiving and retaining terminal of the runway; all, in such manner, as hereinbefore described, that the balls put into the receiving end of the runway will roll downwardly and toward the playing end of the alley and then, ascending the upgrade, or ascending, portion *c* of the runway, will pass thence onto the terminal, or ball-receptacle, at the players end of the return-way without much shock, or concussion; as hereinbefore set forth.

2. In combination with the ball return-way of a bowling-alley, an adjustable ball hopper or trough, located at the pit end of the runway and adapted to be set at different degrees of inclination, to effectuate the starting of the balls put, or thrown, into the hopper, with different degrees of velocity, as occasion may require; all substantially as and for the purpose hereinbefore set forth.

3. In combination with a ball-runway, of a bowling-alley, which is formed with an upgrade, or ascending portion, near the players' end of the alley, which operates to take the speed, or life, out of the ball sent home to the players' end; and a substantially level terminal, or receptacle, *d*, for the retention of the larger balls, a rest, or receptacle, E arranged beneath the one *d*, for the accommodation of the smaller balls; and a perforation, or opening, *k*, in the upper terminal *d*, through which the smaller balls are free to pass after having reached said terminal, for the purpose of the accumulation of said smaller balls on the lower terminal E; all substantially in the manner hereinbefore set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

EMIL REISKY.

Witnesses:
R. F. OSGOOD,
CHAS. A. WIDENER.

Disclaimer in Letters Patent No. 599,477

DISCLAIMER.

599,477.—*Emil Reisky*. Rochester, New York. BOWLING-ALLEY. Patent dated February 22, 1898. Disclaimer filed December 29, 1902, by the assignee, *The Brunswick-Balke-Collender Company*, New York, N. Y.

Enters its disclaimer—

"To disclaim such part, if any, of the said claim, (1) as would include a returnway by which the homing of the ball was not accelerated; and confine the claim to a construction which secures greatly increased speed in the return of the ball, from the pit end to the players' end of the returnway, and, at the same time, prevents injurious concussion of the rapidly homed balls; all substantially as set forth in said patent."—(*Official Gazette, January 6, 1903.*)