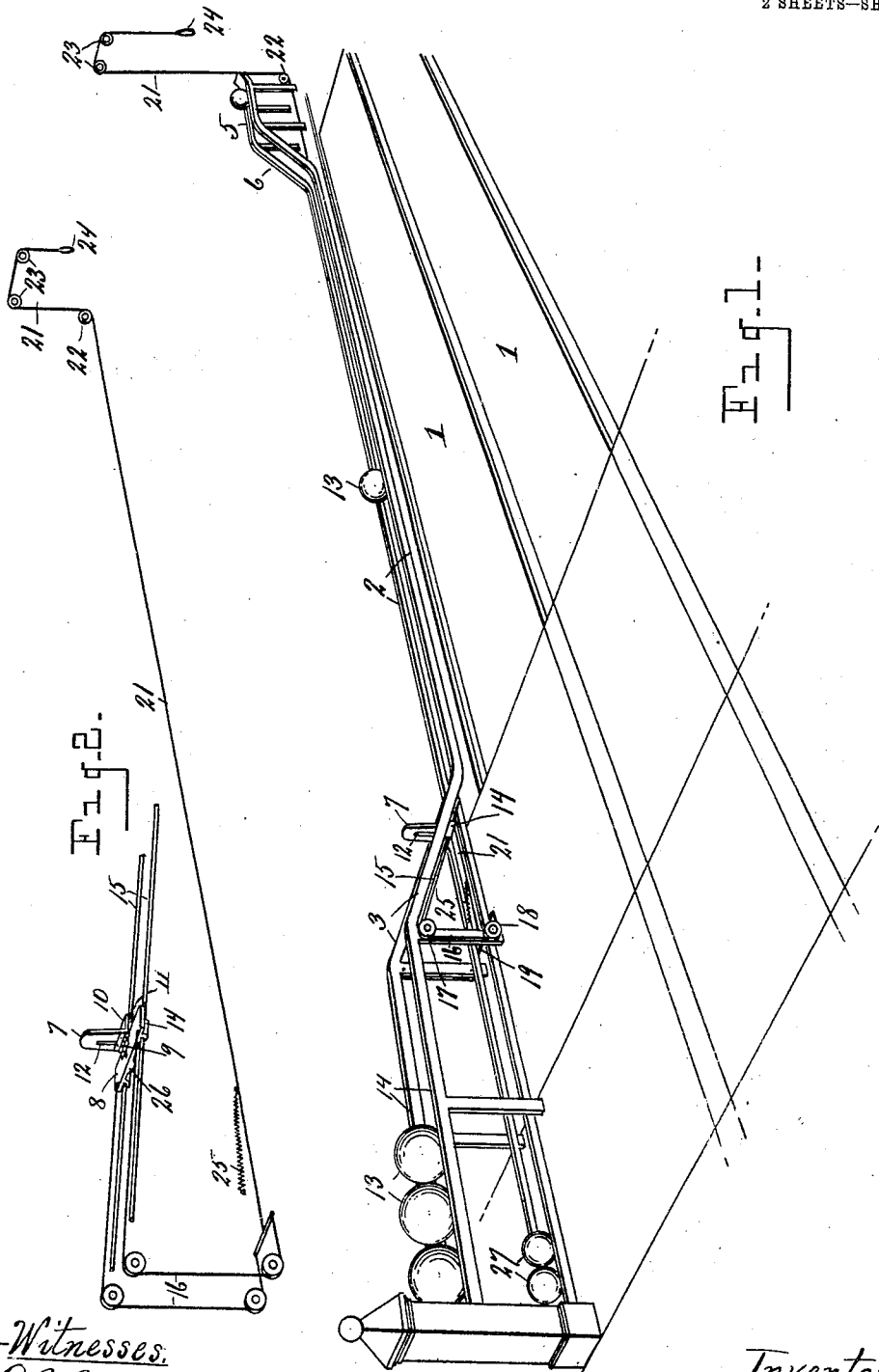


No. 832,250.

PATENTED OCT. 2, 1906.

J. FRISH & A. W. SHANK.
BALL ARRESTER FOR BOWLING ALLEYS.
APPLICATION FILED JAN. 20, 1906.

2 SHEETS—SHEET 1.



Witnesses:
O. B. Baenziger.
J. L. Hewlett.

Inventors:
Augustine W. Shank.
John Frish.
By E. M. Wheeler & Co. Attys.

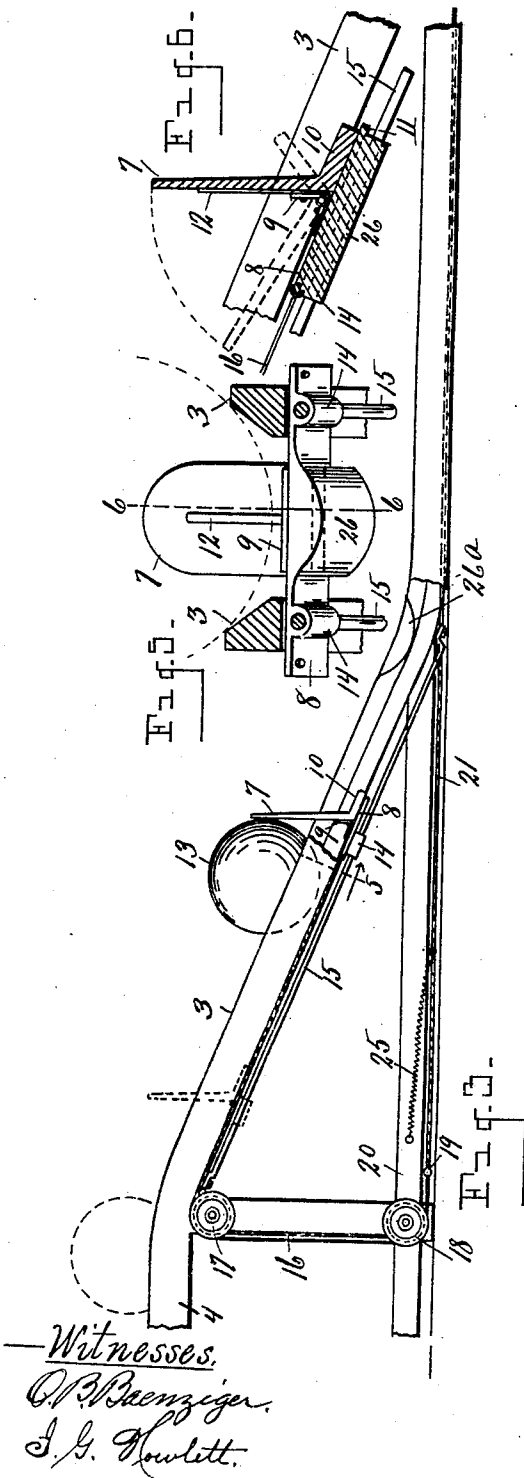
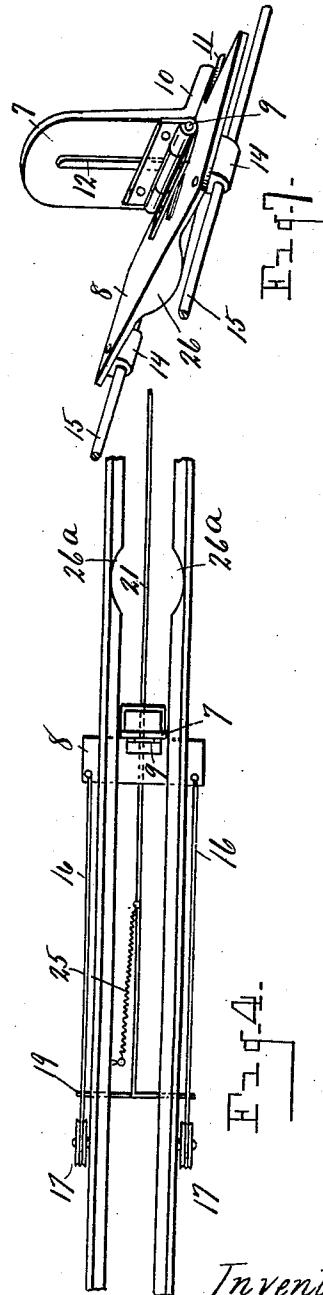
No. 832,250.

PATENTED OCT. 2, 1906.

J. FRISH & A. W. SHANK.
BALL ARRESTER FOR BOWLING ALLEYS.

APPLICATION FILED JAN. 20, 1906.

2 SHEETS—SHEET 2.



Witnesses.
O. B. Baenziger.
J. S. Howlett.

Inventors.
Augustus H. Shank.
John Frish.
By E. Wheeler & Co. attys.

UNITED STATES PATENT OFFICE.

JOHN FRISH AND AUGUSTUS W. SHANK, OF DETROIT, MICHIGAN; SAID SHANK ASSIGNOR TO JOSEPH P. BAUER, OF DETROIT, MICHIGAN.

BALL-ARRESTER FOR BOWLING-ALLEYS.

No. 832,250.

Specification of Letters Patent.

Patented Oct. 2, 1906.

Application filed January 20, 1906. Serial No. 296,936.

To all whom it may concern:

Be it known that we, JOHN FRISH and AUGUSTUS W. SHANK, citizens of the United States, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Ball-Arresters for Bowling-Alleys; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to an automatic ball-arrester for bowling-alleys; and it consists in the construction and arrangement of parts hereinafter fully set forth, and pointed out particularly in the claims.

The object of the invention is to provide simple and efficient means for automatically arresting a ball when returned upon the ball-track should it fail to ride up the incline at the terminal of the track onto the elevated portion on which the balls are supported to render them convenient for use, obviating the necessity of walking on the alley to recover a ball that has run backward onto the track, and preventing the balls on the track meeting in collision to the injury thereof, the arrangement being such as to enable the pin-setter should a ball fail to ride up the incline and become arrested thereon to restore the ball to the elevated portion of the track by pulling upon a rope or strand which extends from the arresting device rearwardly into convenient reach of the pin-setter. The above object is attained by the structure illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view showing our invention applied to the return-track of a bowling-alley. Fig. 2 is a diagrammatical view in perspective showing the apparatus independently of the track. Fig. 3 is an enlarged fragmentary view, partly in section, showing the application of the invention to the inclined portion of the ball-track. Fig. 4 is a plan view of Fig. 3, the horizontal portion of the track being broken away. Fig. 5 is an enlarged transverse section through the inclined portion of the track as on line 5 of Fig. 3. Fig. 6 is a sectional view as on line 6

of Fig. 5. Fig. 7 is a perspective view of the hinged arresting-stop and the slidable base-plate upon which it is mounted.

Referring to the characters of reference, 1 designates a bowling-alley of the ordinary type provided with the usual track 2 for the return of the balls, said track having the inclined portion 3 up which the balls roll by reason of their momentum onto the elevated horizontal portion of the track 4, upon which the balls are supported so as to render them convenient to the bowlers, all of which will be well understood in the art.

The ball-track at the rear is elevated, as at 5, and said elevated portion is connected with the horizontal portion of the track by an inclined track 6. The height of the inclined portion 6 of the track is greater than that of the inclined portion 3, so that the balls in rolling down said inclined portion 6 upon their return will gather sufficient momentum to carry them up the inclined track 3 under ordinary conditions. It often happens, however, that the balls do not roll down the inclined track 6 with sufficient force to carry them up the incline 3 onto the horizontal portion of the track 4. In such cases the balls roll back down the incline 3, and in cases where a second ball has already been started along the track said balls will meet in collision, resulting in injury thereto and blocking the track until some one removes the balls by walking onto the alley. To prevent the balls returning down the incline 3 in cases where they fail to reach the top of said incline, we have provided a hinged arresting-stop 7, which projects upwardly between the rails of the track of the inclined portion 3. Said arrester is connected to a slidable base-plate 8 by means of the hinge 9 and is provided with an angular portion 10, which projects onto the extension 11 at the lower edge of said plate, whereby the arrester is held in a vertical position against any pressure which may be applied to the upper side thereof, but which will swing downwardly to lie parallel with the base-plate 8 by the application of pressure to its lower side. Attached to the base-plate and bearing against the arrester 7 is a spring 12, whose tension is exerted to return the arrester to a vertical position after being depressed.

The arrester is placed between the inclined

rails 3 of the ball-track near the lower ends of said rails, and when a bowling-ball 13 rolls up the incline it strikes the lower side of the arrester and depresses it against the action of the spring 12. Said spring being of very light tension does not materially impede the ball, which ordinarily will pass up the incline onto the horizontal portion 4 of the track. Should the ball not have sufficient momentum to carry it to the top of the incline, it will roll backwardly thereon and strike the upper face of the arrester, which will prevent the ball rolling farther down the incline, as clearly shown in Fig. 3. In order to enable a ball arrested on the incline to be restored to the horizontal portion of the track, the base-plate 8, to which the arrester is attached, is provided at its opposite ends with the eyes 14, through which pass the inclined rods 15 that lie below and parallel with the inclined rails 3 of the track. Attached to the opposite upper corners of the slidable plate 8 are the flexible strands 16, which pass upwardly over the upper pulleys 17 and downwardly around the lower pulleys 18, the ends of said strands 16 being attached to a cross-bar 19 below the lower horizontal portion 20 of the track. Connected centrally to the cross-bar 19 is a strand 21, which extends rearwardly along the track between the rails thereof, thence around the rear lower pulley 22, (see Figs. 1 and 2,) thence upwardly and over the upper pulleys 23, the depending end of the strand having a suitable handle 24. By pulling upon said handle the strand 21 will be drawn upon to actuate the strands or cords 16 and slide the plate 8 upwardly upon the guide-rods 15, thereby carrying upwardly the arrester 7 with sufficient force to propel the ball 13 onto the horizontal portion 4 of the track, as shown by dotted lines in Fig. 3. Attached to the strand 21 is a coiled spring 25, which is elongated as the strand 21 is drawn upon and whose contracting power is sufficient to return said strand when the handle 24 is released. Upon the release of said handle the plate 8, which is provided with a weighted portion 26, will slide downwardly upon the guide-rods 15 to its normal position in readiness for a succeeding operation.

It will now be understood that a ball which fails to ride up the incline 3 of the track will be arrested by the stop 7 and prevented rolling backward onto the horizontal portion of the track and that when so arrested said ball may be easily restored to the elevated portion 4 of the track by a manipulation of the rope or strand 21, as before described. While we have shown a pull-cord 21 as a means of restoring an arrested ball to the elevated portion 4 of the track, we do not desire to be limited to said specific arrangement, as other analogous means may be employed for restoring an arrested ball without departing from the spirit of our invention. The open-

ing 26^a, which is shown at the base of the inclined portion 3 of the track, is for the purpose of allowing the smaller balls 27 to pass through and rest upon the lower portion of the track, as shown in Fig. 1.

The slidable base-plate upon which the arrester is mounted is limited in its downward travel by the strands 16 and is held by said strands in position, whereby when a ball rolls backward upon the inclined portion of the track and strikes said arrester there is no jar or noise, as the flexibility of the strands prevents a sudden and rigid arresting of the ball, thereby overcoming all noise and jar and preventing injury to the arrester.

Having thus fully set forth our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a bowling-ball arrester, the combination with the inclined portion of the track, of means associated with said inclined portion to prevent a ball returning down said inclined portion onto the horizontal portion of the track, said means consisting of a device movable from the path of an ascending ball but serving to arrest and hold upon said incline a return-ball.

2. In a bowling-ball arrester, the combination with the inclined portion of the ball-track, of means associated with said inclined portion of the track for arresting and holding upon said inclined portion a downwardly-rolling ball.

3. In a bowling-ball arrester, the combination with the inclined portion of the ball-track, of an arrester located adjacent to the track in the path of the ball, said arrester permitting the ball to pass freely up the incline, but preventing the ball rolling back, and means for restoring an arrested ball to the upper level of the ball-track.

4. In a bowling-ball arrester, the combination with the ball-track having an inclined portion, of a ball-arrester located in the path of the ball rolling on said inclined portion, said arrester permitting a ball ascending said incline to pass, and serving to arrest a ball moving backward thereon, and means for actuating said arrester to restore an arrested ball to the upper level of the ball-track.

5. In a bowling-ball arrester, the combination with the ball-track having an inclined portion, of an arrester adapted to move from the path of a ball ascending said incline means associated with said arrester serving as a stop to prevent the descent of the ball, and means for actuating said arrester to propel the arrested ball up the inclined portion of the track.

6. In a bowling-ball arrester, the combination with the ball-track having an inclined portion, of an arrester mounted between the sides of the inclined portion of the track, to swing from the path of the ball ascending said incline, and serving as a stop to arrest

the descent of the ball, the arrester being movable to propel an arrested ball up the incline, and means for actuating the arrester to restore an arrested ball operated by the pin-setter.

7. In a bowling-ball arrester, the combination with the ball-track, having an inclined portion, of a hinged arrester mounted between the sides of the track and projecting into the path of the ball, said arrester being movable parallel with the inclined portion of the track, a strand connected with said arrester for actuating it, said strand leading to a point convenient to the pin-setter.

8. In a ball-arrester for bowling-alleys, the combination of the ball-track having an in-

clined portion therein, of a hinged arrester mounted between the sides of the track to slide parallel therewith, inclined guide-rods for directing the sliding movement of said arrester, means connected with said arrester to cause it to slide upwardly upon said guide-rods, and means for restoring said arrester to its normal position.

In testimony whereof we sign this specification in the presence of two witnesses.

JOHN FRISH.
AUGUSTUS W. SHANK.

Witnesses:

E. S. WHEELER,
I. G. HOWLETT.