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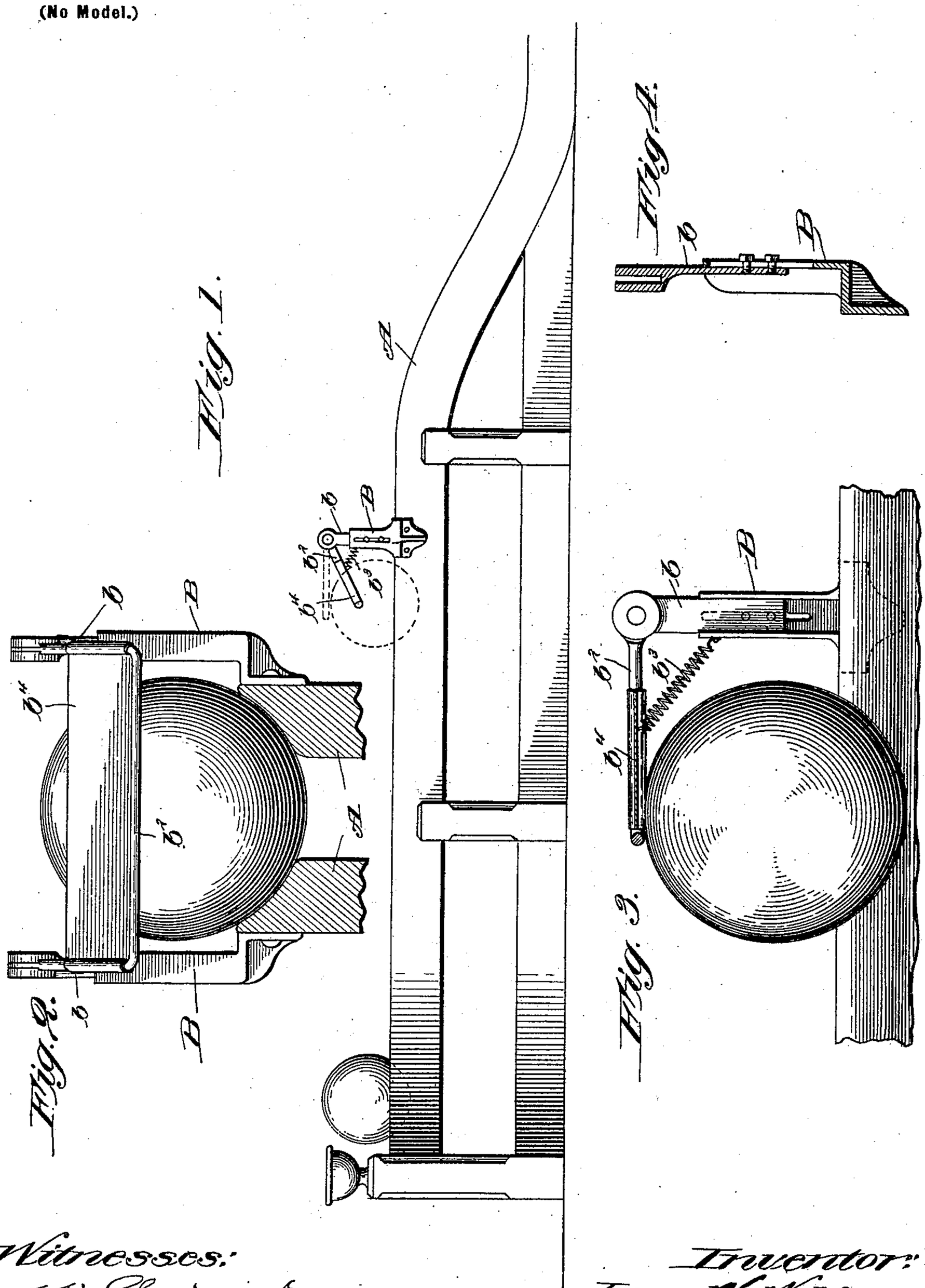
I. W. WOLF.

BOWLING ALLEY.

(Application filed Apr. 6, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

ISAAC W. WOLF, OF CHICAGO, ILLINOIS.

BOWLING-ALLEY.

SPECIFICATION forming part of Letters Patent No. 689,342, dated December 17, 1901.

Application filed April 6, 1901. Serial No. 54,593. (No model.)

To all whom it may concern:

Be it known that I, ISAAC W. WOLF, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Bowling-Alleys; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in bowling-alleys, and more particularly to a device adapted to be applied on the ball-race for the purpose of checking or retarding the movement of the returning ball, thereby preventing violent impact of the same against the end of the race or against other balls therein.

Heretofore in bowling-alleys considerable expense has been occasioned by the injury to the balls due to the impact against each other in the ball-race, and several devices have been constructed for the purpose of lessening the speed or avoiding partly or entirely such impact. Such devices as a rule have not been acceptable, owing to the expensive construction and imperfect operation.

My invention provides a cheap, simple, and durable construction adapted to act positively to engage the ball yieldingly and adapted to check the motion of the same with the effect of avoiding injury.

The invention consists of the matters hereinafter described, and more fully pointed out and defined in the appended claims.

In the drawings, Figure 1 is a side elevation of a ball-race provided with a device embodying my invention. Fig. 2 is an enlarged transverse section of the same. Fig. 3 is an enlarged longitudinal section of the same, showing the ball in elevation. Fig. 4 is a vertical section of a detail of my invention.

As shown in said drawings, A indicates a ball-race of the usual or any desired construction, provided with parallel ways adapted to support the ball, as indicated in Figs. 1 and 2. Rigidly secured on each of said ways by bolting or like means provided with a lateral bend or offset therefrom are the brackets B B. Said brackets extend upwardly above the ways and are channeled, as indicated in Figs. 3 and 4, to receive the arms b, one of which fits closely in each, as indicated in Fig. 3, and is adjustably supported thereon by means of bolts extending through a slot in the bracket and having screw-threaded engagement with the arm. The upper end of each arm, as shown, is provided with a yoke adapted to form one of the members of a hinge-joint. A yoke b^2, formed of a rod flattened at its ends, engages with its ends in said yokes, as indicated in Fig. 2. Said yoke b^2 is directed rearwardly over said ball-race, and springs b^3, herein shown as pulling-springs, are attached on each bracket and to the yoke b^2, as shown in Figs. 1 and 3, and act to hold said yoke downwardly, as indicated in Figs. 1 and 2. A web of sheet-rubber, leather, canvas, or similar material b^4 is stretched tightly and secured at its ends on the arms of the yoke b^2, as shown in Fig. 2.

The operation is as follows: The brackets being secured upon the ways, as shown in Fig. 1, the tension of the springs is adjusted to the desired strain upon the yoke b^2. If now a ball returns along said ways beneath said yoke, the web b^4 engages the top thereof and opposes the rotation, as shown in Fig. 2 and in dotted lines in Fig. 1, and the yoke is pushed upwardly against the tension of the springs. Said springs are so adjusted as to very nearly stop the ball, but to permit sufficient onward motion for the same to pass beyond the yoke, which immediately returns to its engaging position. Obviously the spring b^3 may be adjusted to any desired tension.

From the construction described much greater restraining force is applied to a larger ball than a smaller one, and the same is obviously desirable, owing to the greater weight and momentum of the larger ball. Said brackets B and arms b may be adjusted longitudinally by merely loosening the bolts and moving said arms upwardly or downwardly, as the case may be, and again tightening the bolts.

Obviously many features of construction may be varied without departing from the principle of my invention.

I claim as my invention—

1. The combination with the ways of a ball-race or the like, of a two-part vertically-extensible bracket on each side thereof, a member pivotally supported thereon and vertically

adjustable therewith and adapted to yieldingly engage the top of a ball rolling along said race and acting to retard the same.

2. The combination with a ball-race of a yoke pivoted thereon, means for adjusting the yoke vertically, a flexible web secured on said yoke, a spring engaging said yoke and holding the same normally with its free end depressed, whereby a ball rolling along said race engages with its top beneath said web and elevates the yoke thereby retarding the motion of the ball.

3. The combination with the ball-race of vertically-adjustable brackets thereon, a yoke pivoted at its ends to the upper ends of said brackets, a web extending across said yoke transversely of the race and a spring acting to hold the free end of said yoke depressed whereby a ball rolling along said race engages beneath the yoke and acts to elevate the same against the tension of the spring and is retarded thereby.

4. In a device of the class described, the combination with the ways of a ball-race of a vertically-adjustable bracket secured on each side thereof, a rearwardly-directed yoke pivotally supported on the top of said brackets, a web carried by said yoke and extending transversely of the ball-race and a spring secured on said yoke and one of said bracket-arms and acting to hold the rear or free end of the yoke inclined downwardly in the direction of the motion of a ball on said race.

5. In a device of the class described, a yoke pivoted above a ball-race, means for adjusting its point of pivotal support vertically, a web on said yoke extending transversely of the ball-race and a spring acting to hold said yoke inclined downwardly.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

ISAAC W. WOLF.

In presence of—
C. W. HILLS,
ANNA B. HILLS.