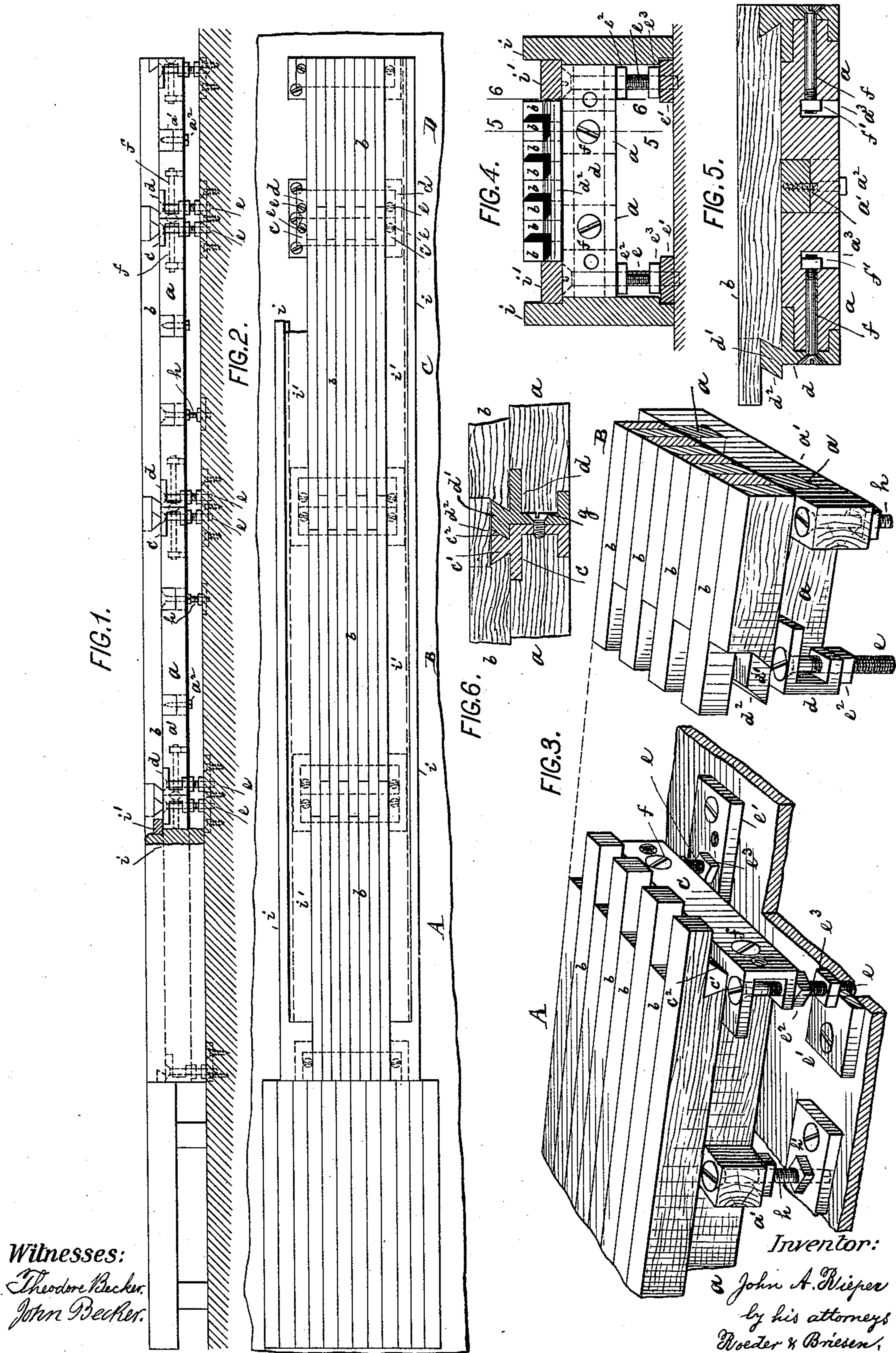


(No Model.)

J. A. RIEPER.
BOWLING ALLEY.

No. 543,141.

Patented July 23, 1895.



Witnesses:
Theodore Becker.
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UNITED STATES PATENT OFFICE.

JOHN A. RIEPER, OF NEW YORK, N. Y.

BOWLING-ALLEY.

SPECIFICATION forming part of Letters Patent No. 543,141, dated July 23, 1895.

Application filed December 5, 1894. Serial No. 530,872. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. RIEPER, of New York city, New York, have invented an Improved Bowling-Alley, of which the following is a specification.

This invention relates to a bowling-alley composed of portable sections that may be readily fitted together and leveled. Thus the bowling-alley may be put up in a short time and without the great care and expense necessary to build the usual permanent alleys.

In the accompanying drawings, Figure 1 is a side view of my improved bowling-alley with the gutter partially broken away. Fig. 2 is a plan of the alley with one of the gutters partly removed; Fig. 3, a perspective view of a joint between two adjoining sections; Fig. 4, an end view of one of the sections; Fig. 5, a longitudinal section on line 5 5, Fig. 4; and Fig 6, a similar section on line 6, 6, Fig. 4.

My improved bowling-alley is composed of a series of portable sections A B C D, &c., each made of convenient length and all adapted to be so fitted together that when connected they form a continuous alley of proper length. Each section is composed, essentially, of a foundation, a superposed bed, and transverse end girders that are adapted to interlock with the end girders of the adjoining sections.

The foundation is composed of two or more longitudinal mortised beams *a*, connected with the cross-beams *a'* by means of tenons and screws *a²*. Upon the foundation thus formed are nailed the narrow flooring-boards *b*, that form the bed of the alley. These boards are made alternately shorter and longer, Fig. 3, so that when two sections A B of the bowling-alley are fitted together they form a tongue-and-slot connection, and consequently a perfect joint.

To the ends of the beams *a* are secured the transverse metal girders *c d*, made of a length to project laterally a short distance beyond the beams and also beyond the flooring *b*. These free ends of the girders are perforated for the reception of screw-bolts *e*, that engage tapped floor-plates *e'*, let into or supported upon the floor of the building. Nuts *e² e³*, carried by the screw-bolts, serve to respectively support the girder and to relieve the

lower end of the bolt from strain. The two girders *c d*, secured to the adjacent ends of every two adjoining sections, are of slightly-different construction and are so made as to form a lock-joint between them.

Each girder is provided with a horizontal top flange and a horizontal bottom flange to form, in effect, a V-beam adapted for the reception of the reduced ends of beams *a*. The girders are attached to the beams by the screw-bolts *f*, Fig. 5, that pass through a longitudinal bore of the beams and are held in place by nuts *f'* secured within mortises *a³*. The girder *c* is provided on its top flange with a nose *c'*, which is set back from the edge of the girder and has an undercut outer edge *c²*.

The girder *d* is provided on its top flange with a nose *d'*, which projects outwardly beyond the edge of the girder and has a beveled outer edge *d²*. When the two sections A B are put together, the nose *d'* will project over the top flange of girder *c*, Fig. 6, and enter beneath the beveled edge *c²* of nose *c'*. In this way the girders *c d* are interlocked in such a way that any vertical motion of one girder will be transmitted to the other girder, and thus the girders will always maintain precisely the same level. That this is of the utmost importance at the joint between the sections A B is evident.

To prevent any possible displacement, the girders *c d* may be connected by screws *g* at their outwardly-projecting ends.

In order to level the alley, the nuts *e² e³* are slackened, the bolts *e* raised or lowered, and then the nuts are again tightened, when the alley will be securely supported and connected in all its parts.

To increase the stability of the structure, the cross-beams *a'* should be supported at their free ends by additional screw-bolts *h*, placed at suitable distances apart and engaging the tapped floor-plates *h'*.

At the sides of the alley I secure to the floor of the building the longitudinal gutter-rails *i*, having an offset to support the outer edge of the gutter-boards *i'*, the inner edge of which is supported upon the projecting ends of the girders *c d*.

It will be seen that my improved bowling-alley presents a compact structure, which may be readily put up or knocked down, and which

when once in place will be amply supported, may be readily leveled, and will not open at the joints.

What I claim is—

- 5 1. A bowling alley composed of foundation beams, floor boards supported thereby, and interlocking cross girders secured to the ends of the beams, substantially as specified.
- 10 2. A bowling alley composed of foundation beams, floor boards supported thereby, and U-shaped end girders, of which one has an outwardly projecting beveled nose, and the other has an interlocking inwardly projecting beveled nose, substantially as specified.
- 15 3. A bowling alley composed of foundation beams, floor boards supported thereby, inter-

locking laterally projecting end girders, floor plates, and screw bolts that secure the girders to the floor plates, substantially as specified.

4. The combination in a bowling alley of 20 the following elements: foundation beams, floor boards supported thereby, laterally projecting interlocking girders, screw bolts engaging the girders, floor plates engaged by the screw bolts, and gutters that are supported 25 by the free ends of the girders, substantially as specified.

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Witnesses:

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