

(No Model.)

H. MONTGOMERY.
BOWLING ALLEY.

No. 471,244.

Patented Mar. 22, 1892.

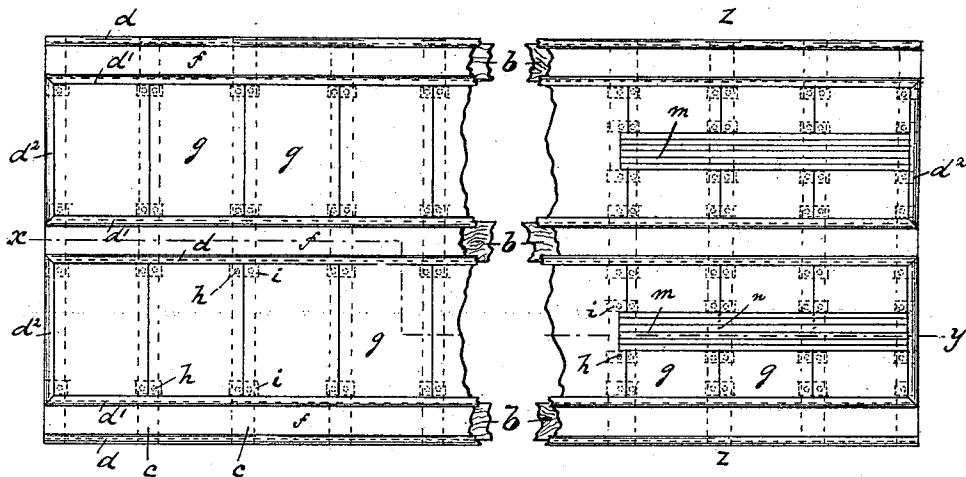


Fig. 1.

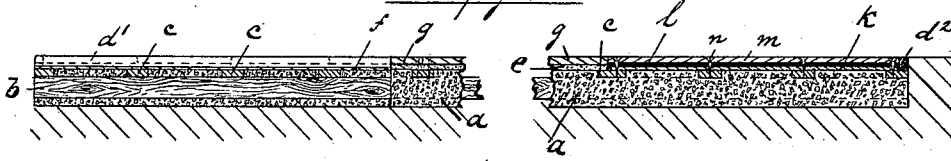


Fig. 2.

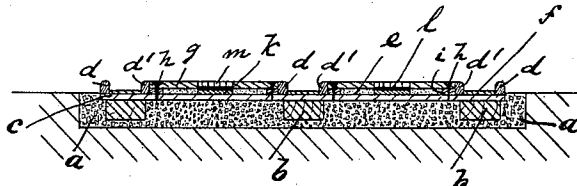


Fig. 3.

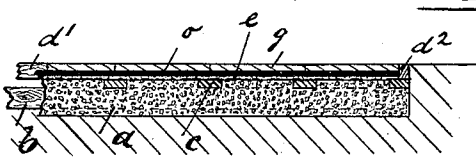


Fig. 4.

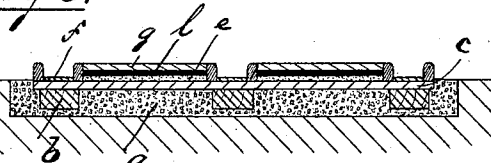


Fig. 5.

WITNESSES: _____ INVENTOR: _____

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UNITED STATES PATENT OFFICE.

HENRY MONTGOMERY, OF NEWARK, NEW JERSEY.

BOWLING-ALLEY.

SPECIFICATION forming part of Letters Patent No. 471,244, dated March 22, 1892.

Application filed October 15, 1891. Serial No. 408,763. (No model.)

To all whom it may concern:

Be it known that I, HENRY MONTGOMERY, a citizen of the United States, residing in Newark, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Bowling-Alleys; and I do hereby 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 letters of reference marked thereon, which form a part of this specification.

The object of this invention is to provide a bowling-alley solid and durable in construction and which will not warp, get out of order, or be affected by the change of temperature.

The invention consists of the improved bowling-alley and the arrangement and combination of the various parts thereof, substantially as will be hereinafter more fully described, and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several views, Figure 1 is a top plan view of a part of my improved bowling-alley. Fig. 2 is a longitudinal section on line *x y*, Fig. 1. Fig. 3 is a transverse section on line *z z*, Fig. 1. Fig. 4 is part of a sectional view similar to Fig. 2, showing a modification of my improved bowling-alley; and Fig. 5 is a sectional view similar to Fig. 3, showing the same modification.

In said drawings, *a* represents a solid concrete foundation, in which are embedded three beams *b b b*, running parallel and longitudinally throughout the entire length of my improved alley. To the top of said beams and parallel to each other are arranged at certain intervals cross-bars *c c*. These bars are also embedded in said concrete foundation. Upon the said concrete foundation and covering the cross-bars is a layer of gaging-mortar *e* about one inch thick. Above each beam are arranged two parallel strips *d d'*, between which is laid the gutter-floor *f*. These wooden strips *d' d' d' d'*, Fig. 1, together with the cross-strips *d² d²*, form the edges or bindings for the surface plates *g g* of the alley. The said plates or slabs of slate are so arranged that the joints

are made directly over the cross-bars *c c* and are secured thereto by screws *h h* or in any desired manner, and are of such thickness that when resting on the gaging-mortar *e* the upper surfaces of said plates are level with the strips *d d'*, as shown in Fig. 3. Where the plates are secured to the cross-bars *c c*, short ties *i i* are inserted to insure a solid bearing for the corners of said plates or slabs.

Centrally situated at the home end of each alley is a plank *k*, resting directly upon cross-bars *c c* and firmly secured thereto. Upon said plank is a thin layer of felt, rubber, or other suitable material, as shown at *l* in Figs. 2 and 3, forming a cushion for the bouncing-board *m*, which latter consists of a series of parallel strips of maple or other hard wood. The said bouncing-board is laid level with the surface of the alley and is secured to the plank *k* and to cross-bars *c c* by nails *n n*.

If preferred, a layer of felt, rubber, or other suitable material *o* may be placed between the gaging-mortar and the plates or slabs of slate, as shown in Figs. 4 and 5. This felt is saturated with tar or any suitable adhesive mixture, thereby forming a cushion for the plates *g g* and also a binding between said plates and the gaging-mortar. In this case the tie-pieces *i i* and the screws *h h* are dispensed with, as is also the bouncing-board arrangement.

The object of the felt in either case is to reduce or diminish the rebound of the ball as it strikes the surface of the alley after leaving the hand of the bowler.

As the beams *b b b* are situated directly under the gutters, as shown in Figs. 1 and 3, they may be readily replaced, and the floor of the gutter may also be renewed at any time without disturbing or interfering with the rest of the alley.

In constructing the alley a thin layer of concrete cement is first placed upon the ground. Upon this layer the beams *b b b* are placed at such distances apart that they will be directly under the gutters. The cross-bars *c c* are then secured to the beams at such distances so that the joints of the surface plates will always come about over the center of said bars. The space between and around the beams and cross-bars is then completely filled

with cement, so that the surface thereof is level with the surface of said cross-bars. The wooden bands or strips d d' d^2 are then secured to said cross-bars, as shown in Figs. 1 and 3. The spaces between the binding-strips are then filled with the gaging-mortar, so that when the plates or slabs of slate are placed thereon the surfaces of said plates are on a level with the top of the said binding-strips. Before the plates are firmly secured to the cross-bars the short tie-pieces are inserted under the corners of said plates to insure a solid bearing.

At the home end and in the center of each alley is placed the bouncing-board arrangement, as before described, and at either side smaller plates are firmly secured to the cross-bars by screws.

The construction of the modification, as shown in Figs. 4 and 5, is similar to that above described, with the exception that felt saturated with tar is placed between the gaging-mortar and the slate plates, and the bouncing-board arrangement, together with the screws and ties, is dispensed with.

The joints between the plates g g are filled with a cement composed of white lead and powdered slate, and are thereby made smooth and uniform with the surface of the alley.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a bowling-alley, a concrete foundation, beams embedded therein longitudinally and parallel to each other, cross-bars secured to said beams at certain intervals, plates or slabs of slate secured to said cross-bars, and a layer of gaging-mortar between said plates and the concrete foundation, substantially as described, and for the purposes set forth.

2. In a bowling-alley, a concrete foundation, beams embedded therein longitudinally and parallel to each other, cross-bars secured to said beams at certain intervals, plates or slabs of slate secured to said cross-bars, a layer of gaging-mortar between said plates and the concrete foundation, a plank secured to the said cross-bars at the home end of the alley and parallel to the longitudinal beams, a thin layer of felt, rubber, or any suitable material arranged on said plank, and a series of parallel wooden strips arranged on said felt and secured to said plank, said strips being

adapted to cushion the ball when started, all said parts being arranged substantially as described, and for the purposes set forth.

3. In a bowling-alley, a concrete foundation, beams embedded therein longitudinally and parallel to each other, cross-bars secured to said beams at certain intervals, wooden strips secured to said cross-bars and arranged to run parallel with and above said longitudinal beams and adapted to form the edges for the gutters and the binders for the alleys, plates or slabs of slate secured to said cross-bars, and a layer of gaging-mortar between said plates and the concrete foundation, substantially as described, and for the purposes set forth.

4. In a bowling-alley, a concrete foundation, beams embedded therein longitudinally and parallel to each other, cross-bars secured to said beams at certain intervals, wooden strips secured to said cross-bars and arranged to run parallel with and above said longitudinal beams and adapted to form the edges for the gutters and the binders for the alleys, plates or slabs of slate secured to said cross-bars, a layer of gaging-mortar between said plates and the concrete foundation, a plank secured to the said cross-bars at the home end of the alley and parallel to the longitudinal beams, a thin layer of felt, rubber, or any suitable material arranged on said plank, and a series of parallel wooden strips arranged on said felt and secured to said plank, said strips being adapted to cushion the ball when started, all said parts being arranged substantially as described, and for the purposes set forth.

5. In a bowling-alley, a concrete foundation, beams embedded therein longitudinally and parallel to each other, cross-bars secured to said beams at certain intervals, a layer of gaging-mortar on top of said cross-bars and covering the said concrete foundation, a layer of felt saturated with tar or any suitable adhesive mixture arranged on said layer of gaging-mortar, and plates or slabs of slate on said felt, all said parts being arranged substantially as described, and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 9th day of October, 1891.

HENRY MONTGOMERY.

Witnesses:

ALFRED GARTNER,
ABRAHAM MANNERS.