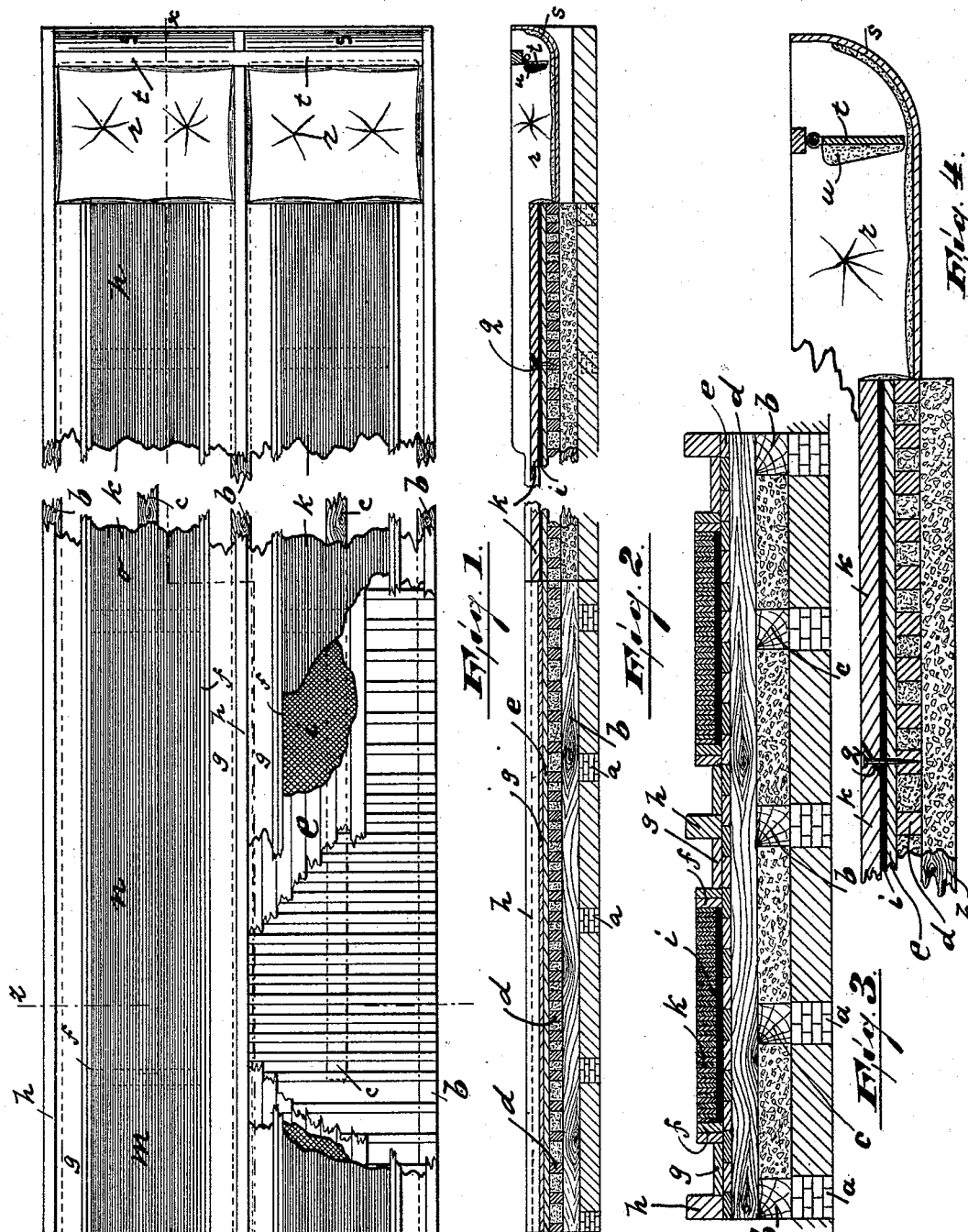


(No Model.)

H. MONTGOMERY.
BOWLING ALLEY.

No. 490,916.

Patented Jan. 31, 1893.



WITNESSES:

Wm. Orrell.
John Francis Cahill

INVENTOR:

Henry Montgomery
BY
Sartner & Co.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

HENRY MONTGOMERY, OF NEWARK, NEW JERSEY.

BOWLING-ALLEY.

SPECIFICATION forming part of Letters Patent No. 490,916, dated January 31, 1893.

[Application filed June 20, 1892. Serial No. 437,241. (No model.)]

To all whom it may concern:

Be it known that I, HENRY MONTGOMERY, a citizen of the United States, residing at 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 sag, warp, or be affected by changes of temperature.

The invention is an improvement on my patent No. 471,244, dated March 22, 1892, and 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 claims.

Referring to the accompanying drawings, in which like-letters of reference indicate corresponding parts in each of the several figures. Figure 1. is a top plan view, with a portion broken away, to better show the interior construction and arrangement of my improved bowling alley. Fig. 2. is a longitudinal sectional view on line *x*, Fig. 1. Fig. 3. is a transverse section on line *z*, Fig. 1, and Fig. 4. is an enlarged view of the rear end and pit of my alley, similar to the rear portion of Fig. 2.

In said drawings *a, a*, represent piers or piles, arranged in the ground and adapted to support the longitudinal beams or sills *b* and also the center beams *c*, said center beams starting at about five feet from the home end of the alley and running parallel with the longitudinal beams for a distance of about twenty feet. The space between all said beams may be filled in with concrete or any desired material. To the top of said beams and parallel to each other are secured cross-bars *d*, arranged at different intervals. As clearly shown in Figs. 1 and 2, said cross-bars are closer together under that part of the surface, where the balls are apt to strike and

also at the rear end of the alley, where the falling pins are apt to create an additional strain. The space between said crossbars may be filled in with cement, ashes or any suitable material, or may be left open for the purpose of ventilation. To the top of said bars *d* is secured a floor *e* of Georgia pine or similar wood, on which again are arranged the double binders *f* of the alley, and the floors *g* and sides *h* of the gutters. Between the binders *f*, and on top of the pine flooring *e* may be arranged a layer of felt rubber or other sound deadening material *i* throughout the entire length of the alley. Said felt or rubber being adapted to act as a cushion for the surface *k* of the alley proper. This surface *k* is by preference built up in four distinct sections *m, n, o* and *p* as shown in Fig. 1. of the drawings.

The section *m* extending for about five feet at the home end of the alley may be of Georgia pine and adjoins the section *n* which consists of about fifteen feet (in length) of maple. The third section *o* which is again of Georgia pine fills up the space between the second section *n* and the fourth section *p*, which latter is of maple and occupies about five feet at the rear end of the alley. These several sections are composed of narrow strips of their respective wood, which interlock with each other, that is to say, their joints are beveled in a longitudinal direction, as shown at *q* in Figs. 2 and 4. This form of beveling prevents the ripping or tearing of the surface, at the joints when being planed or sand-papered.

At the rear end of the alley is arranged the ordinary padded pit *r*, provided with an upwardly substantially circular extension *s*. Above the starting point of said extension is pivotally supported the bumper *t*, to which is secured the cushion *u*, substantially wedge shaped in cross-section having its greatest thickness at the top. The curved portion *s* and the specially constructed bumper *t* prevent the pins or balls from getting behind or jamming at the lower part of the said bumper. As the balls have the tendency to rise on coming in contact with the bumper, the wedge shaped cushion causes them to drop back in the pit.

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

1. In a bowling alley, piers or piles arranged
5 in the ground at certain intervals, beams or
sills arranged on said piers and extending
longitudinally and parallel to each other
throughout the alley, the space between said
beams being filled up with concrete, cross-
10 bars secured to said beams at certain inter-
vals, a pine floor arranged on said cross bars,
double binders on each side of the alley, a
layer of felt, rubber, or any suitable material
between said binders and on said floor, and a
15 series of narrow strips of wood arranged edge-
wise on said felt and adapted to form the
surface for the alley, substantially as de-
scribed and for the purposes set forth.

2. In a bowling alley, piers or piles arranged
20 in the ground, beams or sills arranged on said
piers and extending longitudinally and par-
allel to each other throughout the alley, cen-
ter beams arranged between said beams and
extending for a certain distance from or about
25 from the home end of the alley, the space be-
tween all said beams being filled up with con-
crete, cross bars secured to said beams, and
spaced narrower or wider as specified, a pine
floor arranged on said crossbars, double bind-
30 ers on each side of the alley, a layer of felt,
rubber or any suitable material between said
binders and on said floor, and a series of nar-
row strips of wood standing edgewise on said
felt and adapted to form the surface for the
35 alley, substantially as described and for the
purposes set forth.

3. In a bowling alley, piers or piles arranged
in the ground, beams or sills arranged on said
piers and extending longitudinally and par-
40 allel to each other throughout the alley, cen-
ter beams arranged between said beams and
extending for a certain distance from or about
from the home end of the alley, the space be-
tween all said beams being filled up with con-

crete, cross bars secured to said beams, and 45
spaced narrower or wider as specified, a pine
floor arranged on said cross bars, double bind-
ers on each side of the alley, a layer of felt,
rubber, or any suitable material between said
binders and on said floor, and a series of nar- 50
row strips of wood standing edgewise on said
felt and arranged in four sections of Georgia
pine and maple alternately, said sections be-
ing adapted to form the surface for the alley,
substantially as described and for the pur- 55
poses set forth.

4. In a bowling alley, a pit provided with a
curved extension, a bumper pivotally secured
at the radial center of said curve and a cush- 60
ion secured to said bumper, said cushion hav-
ing its greatest thickness at the top, all said
parts substantially as described and for the
purposes set forth.

5. In a bowling alley, a pit having its rear
wall built substantially in the form of an up- 65
wardly extending curve in combination with
a bumper and cushion swung in bearings
above the arc of said circular rear wall and
arranged so that the lower end of said swing-
ing bumper and cushion will just clear the 70
circular wall of the pit, substantially as de-
scribed.

6. In a bowling alley, a pit having a circu-
lar rear wall, in combination with a bumper
and cushion swung in bearings arranged in 75
the radial center of said circular wall and
arranged so that their lower edge will just
clear the said wall of the pit, said cushion
being substantially wedge shaped in cross-
section, the thickest portion being at the top 80
of said cushion, substantially as described.

In testimony that I claim the foregoing I
have hereunto set my hand this 10th day of
June, 1892.

HENRY MONTGOMERY.

Witnesses:

ALFRED GARTNER,
WM. I. BELL.