C. W. STEVENS.

BOWLING ALLEY.

APPLICATION FILED APR. 27, 1917.

1,339,425. **Patented May 11, 1920.**

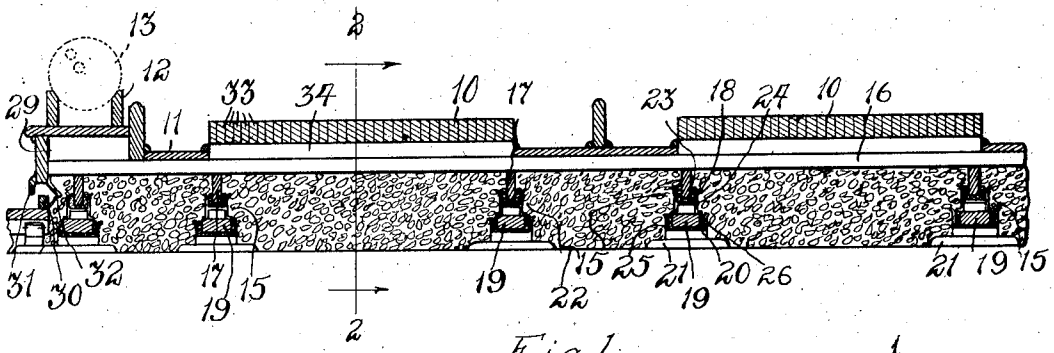


Fig 1

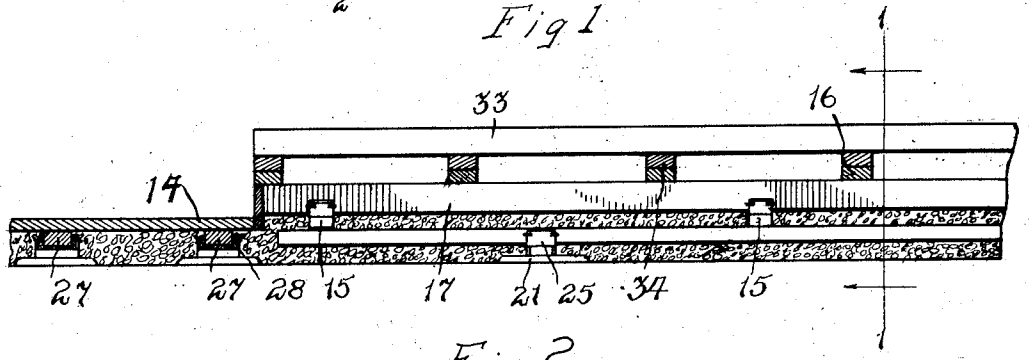


Fig. 2

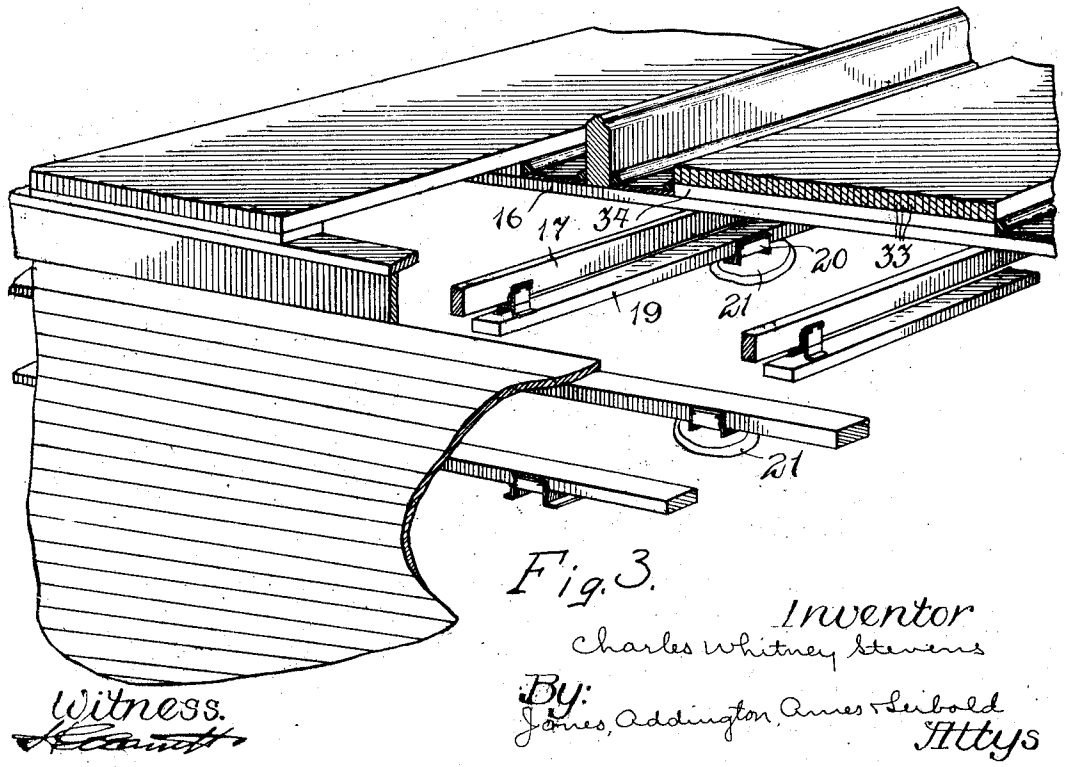


Fig. 3.

Witness.

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UNITED STATES PATENT OFFICE.

CHARLES WHITNEY STEVENS, OF CHICAGO, ILLINOIS, ASSIGNOR TO STEVENS PARTITION AND FLOOR DEADENER CO., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

BOWLING-ALLEY.

1,339,425. Specification of Letters Patent. Patented May 11, 1920.

Application filed April 27, 1917. Serial No. 164,975.

To all whom it may concern:

Be it known that I, CHARLES WHITNEY STEVENS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Bowling-Alleys, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to bowling-alleys.

One of the objects of my invention is to provide a vibration-deadening support for bowling-alleys, machine-platforms, and the like. Further objects will appear from the detailed description to follow and from the appended claims.

In the drawings, in which one embodiment of my invention is shown—

Figure 1 is a vertical transverse section on the line 1—1 of Fig. 2;

Fig. 2 is a vertical longitudinal section on the line 2—2 of Fig. 1; and

Fig. 3 is a perspective view showing the rear end of the bowling-alley.

Referring to the drawings in detail, the bowling-alley construction shown comprises several beds 10 extending parallel to each other, on which the balls are rolled, gutters 11 located at the sides of the beds 10 into which the balls drop if they roll off the beds 10; a ball-return 12 along which the balls 13 are returned, a pit 14 at the rear end of the alley, into which the balls drop from the beds 10, and a bowling-alley foundation comprising vibration-deadening supporting means 15 for supporting the beds 10, gutters 11, ball-return 12, and pit 14. The beds 10, gutters 11 and ball-return 12 form parts of a unitary structure supported by the vibration-deadening supports 15. The beds 10, gutters 11 and ball-return 12 are supported by transversely-extending stringers 16 which in turn rest on longitudinally-extending stringers 17. Each stringer 17 rests on and is supported by a plurality of spaced cushioning supports 18, which in turn rest on longitudinally-extending stringers 19. Each of the stringers 19 rests on and is supported by a plurality of cushioning supports 20, which may be embedded in cement mounds 21 on the floor 22.

Each of the supports 18 comprises a cushion or pad 23 which embraces the lower edge of the stringer 17, and a metal retaining and supporting member 24 which embraces the cushioning pad 23 and rests on the stringer 19. Each of the supports 20 comprises a cushioning pad 25, which embraces the stringer 19, and a metal retaining and supporting member 26, which embraces the cushioning pad 25 and has its lower portion embedded in the cement mound 21. The cushioning pads 23 and 25 may be of any suitable material, such as cattle hair, sea grass, or the like.

The floor of the pit 14 rests on stringers 27 which in turn rest on cushioning supports 28 similar to the supports 20.

For preventing the transmission of sound and vibration across the space between the beds 10 and the floor 22, this space is filled with a dry, cellular, fireproof aggregate, such as dry cinders, screened through a screen of suitable mesh. This prevents the space between the beds 10 and the floor from acting as a resonating chamber to produce what is known as a "drum effect."

In order to prevent the dry cinders from escaping laterally from underneath the beds 10, gutters 11 and ball-return 12, a downwardly-extending skirt or barrier 29 is secured adjacent the edge of the ball-return 12, and an upwardly-extending barrier 30 is put in position adjacent the barrier 29 and extends upwardly to coöperate with the barrier 29 to prevent the escape of the cinders. The skirt 29 may also be provided with suitable flanges 31, 32 to still further insure against the escape of the cinders.

The beds 10 may be formed of wood strips 33 placed on edge and resting on cross-beams 34, which in turn rest on the stringers 16. The beds 10, gutters 11, and ball-return 12 form parts of a unitary cushion-supported structure having no connection with the floor 22 except through the cushioning supports 15. This prevents the transmission of noise and vibration to adjoining rooms, thus preventing annoyance to other tenants or occupants of the building.

I claim as new and desire to secure by Letters Patent of the United States:

1. A vibration-deadening floor compris-

ing in combination a plurality of substantially parallel, horizontally-extending nailing strips beneath said floor, to which it is secured, a plurality of spaced cushioning supports under each nailing strip, a second plurality of substantially horizontally-extending nailing strips beneath said cushioning supports and on which said supports rest, a second plurality of cushioning supports under said second plurality of nailing strips, and a foundation, to which said second plurality of supports is attached, whereby continuous physical connection between said floor and said foundation is obtained solely through said cushioning supports.

2. A vibration-deadening platform comprising in combination a plurality of substantially parallel horizontally-extending nailing strips beneath said platform, to which said platform is secured, a plurality of spaced cushioning supports under each nailing strip, a second plurality of substantially horizontally-extending nailing strips beneath said cushioning supports and on which said supports rest, a second plurality of cushioning supports under said second plurality of strips, a foundation to which said second plurality of supports is attached, whereby continuous physical connection between said platform and said foundation is obtained solely through said cushioning supports, and a filling of dry cellular aggregate between the upper platform and the lower foundation.

3. A vibration-deadening platform comprising in combination a plurality of substantially parallel horizontally-extending nailing strips beneath said platform and to which said platform is secured, a plurality of spaced cushioning supports under each nailing strip, a second plurality of substantially horizontally-extending strips beneath said cushioning supports and on which said supports rest, a plurality of spaced cushioning supports under each said strip, and a foundation to which said second plurality of cushioning supports is secured, whereby vibrations from the upper platform are insulated from the lower-floor foundation by two series of vibration-absorbing cushions interconnected by non-vibration-absorbing solid supports and continuous physical connection between said platform and said foundation is obtained solely through said cushioning supports.

4. A bowling-alley construction including a unitary structure comprising a floor, a set of stringers extending parallel to said bed underneath said unitary structure for supporting it, a set of spaced cushioning supports underneath said stringers for supporting them, a second set of stringers underneath said cushioning supports for supporting said cushioning supports, a second set of spaced cushioning supports underneath said second set of stringers for supporting them, and a foundation to which said second set of supports is secured, whereby continuous physical connection between said floor and said foundation is obtained solely through said cushioning supports.

5. A bowling-alley construction including a unitary structure comprising a floor, a set of stringers extending parallel to said floor underneath said unitary structure for supporting it, a set of spaced cushioning supports underneath said stringers for supporting them, a second set of stringers underneath said cushioning supports for supporting said cushioning stringers, a second set of spaced cushioning supports underneath said second set of stringers for supporting them, a foundation for supporting said second set of spaced cushioning supports, whereby continuous physical connection between said floor and said foundation through the weight-supporting members is obtained solely through said spaced cushioning supports, and a filling of dry cellular aggregate in the space between said floor and foundation.

6. A bowling-alley construction including a unitary structure comprising a floor, a set of stringers extending parallel to said floor underneath said unitary structure for supporting it, a set of spaced cushioning supports underneath said stringers for supporting them, a second set of stringers underneath said cushioning supports for supporting said cushioning supports, a second set of spaced cushioning supports underneath said second set of stringers for supporting them, a foundation for supporting said second set of spaced cushioning supports, whereby continuous physical connection between said floor and said foundation, through the weight-supporting members is obtained only through said cushioning supports, a filling of dry cellular aggregate in the space between said floor and foundation, and means for preventing said filling from escaping laterally beneath said structure, said means establishing no direct physical contact between said floor and said foundation.

7. In a vibration-deadening support, the combination with an upper floor, and a lower floor, of a supporting means between said floors comprising weight-supporting members and a plurality of sets of cushioning pads, the said sets of pads being serially interposed between said floors, whereby continuous physical connection between said floors through the weight-supporting members is obtained only through said serially-interposed pads.

8. In a vibration-deadening support, the combination with an upper floor, and a

lower floor, of a supporting means between said floors comprising a plurality of sets of supporting members and a plurality of sets of cushioning pads, the said sets of supporting members and sets of pads being serially interposed between said floors, whereby continuous physical connection between said floors through the weight-supporting members is obtained only through said serially-interposed pads, and a filling of dry, cellular aggregate interposed between said upper and lower floors.

In witness whereof I have hereunto subscribed my name.

CHARLES WHITNEY STEVENS.