May 24, 1932. O. W. BLANCHARD ET AL 1,859,284

BOWLING ALLEY

Filed Jan. 8, 1930

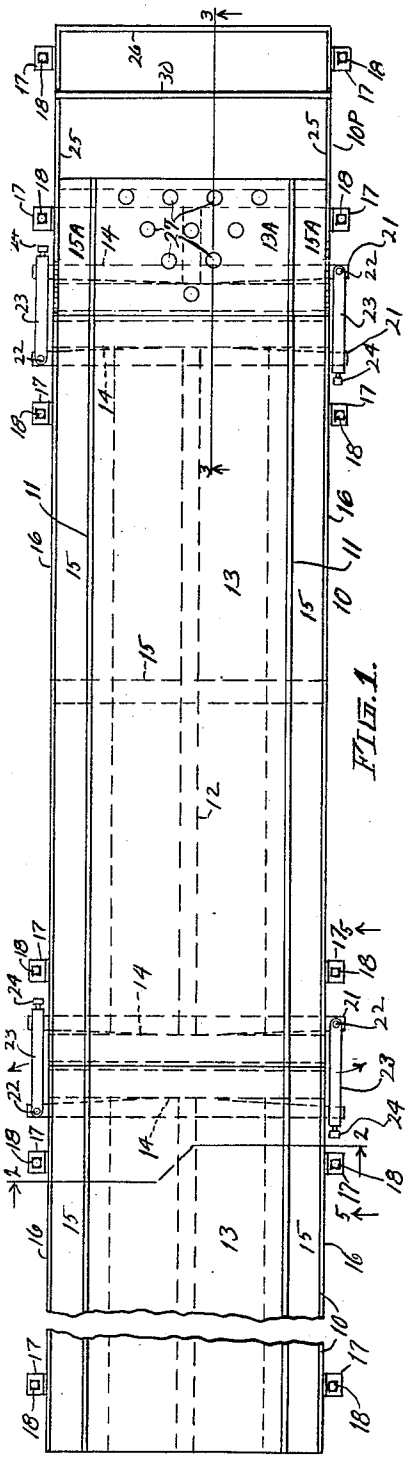


FIG. 1.

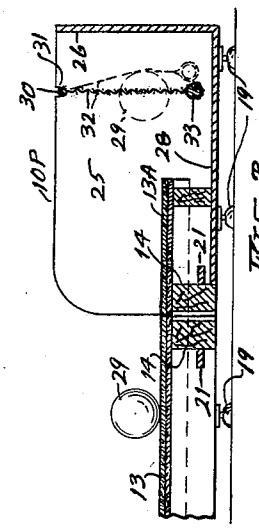


FIG. 3.

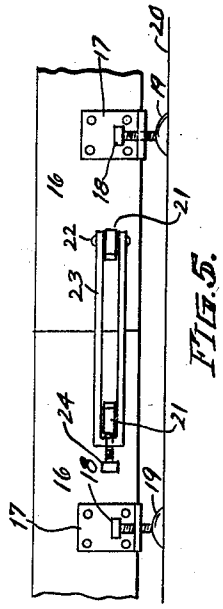


FIG. 5.

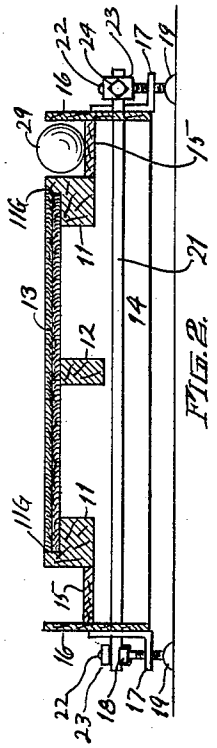


FIG. 2.

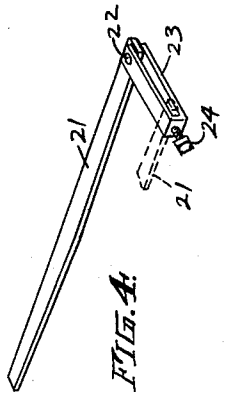


FIG. 4.

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UNITED STATES PATENT OFFICE

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BOWLING ALLEY

Application filed January 8, 1930. Serial No. 419,311.

Our invention relates generally to bowling alleys, and particularly to a portable, sectional bowling alley preferably smaller than the standard size of such devices and having certain features of construction. The object is to provide a bowling alley of the class described having all the features and advantages of a regulation alley and adapted to be set on a floor, with means for readily aligning and leveling the device and further advantageous features hereinafter fully set forth and as illustrated in the accompanying drawings, in which,—

Fig. 1 is a plan view of our improved bowling alley assembled and in position for use.

Fig. 2 is an enlarged cross sectional elevation of an alley section, near one end, as on line 2—2 in Fig. 1.

Fig. 3 is a longitudinal sectional elevation through the ball receiving pit and part of the adjacent alley section, as on line 3—3 in Fig. 1.

Fig. 4 is a perspective view of one of the devices used in pairs to connect abutting parts of the bowling alley sections.

Fig. 5 is an enlarged detail side view of the connected parts of two alley sections, said view being as between the arrows 5—5 of Fig. 1.

Referring to the drawings by reference numerals, the alley proper comprises a number of alined like sections 10 and at the head of which is the pit section 10P. Each alley section comprises two parallel main beams 11, between which may be also one or more inner beams 12, the former grooved inwardly and upwardly as at 12G and the latter in a plane to support the ball rolling floor 13 consisting of a pressed laminated fibrous board, of which the top layer is of harder material.

The layers of said board may be glued or otherwise secured together to provide one solid piece which constitutes the ball rolling floor, said board being suitably fixed to the beams 11—12 and between the upright part of the opposite grooves of beams 11.

The opposite ends of each alley section must be cut exactly square to properly aline the sections when assembling the device for use.

Near each end of each alley section is provided a cross truss 14, and 15 represents one or more intermediate cross trusses, all longer than the width of the floor described and suitably connected with the longitudinal members 11—12, the opposite ends of said cross-trusses extending equi-distant from both sides of the floor but on a lower level on which is fixed the floor board 15 of a ball-return gutter. 16 are side boards fixed to the outer edges of said boards and the truss ends, extending above floor 15 in parallel relation to the adjacent outer side of beam 11 between which parts the balls are rolled on floor 15 back to the players from the pit section 10P.

Near each of the four corners of each alley section we provide an L-shaped metal bracket 17 fixed on the outer side of members 15 and projecting outwardly therefrom, the horizontal arm of each bracket provided with a threaded hole to receive an adjusting screw 18, the lower end of which is rotatably fixed in a downwardly opening so-called vacuum cup 19 which contacts with the floor 20.

It will now be readily seen that with the alley sections first properly alined they are held rigidly in said position by the gripping action of the vacuum cups 19 and by adjusting of the screws 18 the sections may be quickly set in a common horizontal plane throughout the entire length of the alley. By the means just described it is obvious that the alley is readily and quickly put together and adjusted to proper level, a particularly desirable feature being that the floor surface or ball rolling surface of the device is quite near the floor level and permits playing bowling games under conditions approxi-

mately the same as on a full size standard bowling alley. The vacuum cup mounting described prevents longitudinal creeping or side movement of the alley sections. However for the purpose of securely connecting the abutting ends of the alley sections we have provided clamping means as follows:—

Each clamp comprises a pair of elongated bars 21 on one end part of each of which is pivoted at 22 the ends of an elongated U-shaped yoke 23. 24 is an adjustment screw in the closed end of the yoke and adjustable into the yoke, the latter member being swingable in a horizontal plane. Each bar 21 is insertible crosswise of the alley through slits provided in the side members 16 and adjacent to the side of a truss 14 furthest from the end of the alley section, the bar when in operative position protruding from both sides of the alley. The bar of the adjacent alley section is likewise inserted but from the opposite side so there will be a yoke 23 exteriorly of each side of the alley for each pair of bars.

The said yokes are swung on their axis to straddle the adjacent projecting bar, being both at this time parallel to the side of the alley and the abutting edges of the alley between said pair of bars is held closely together by simply adjusting the screws 24 inwardly, thus drawing the bars 21 toward each other. Said bars are preferably of flat bar stock and may be tapered toward their ends at their sides contacting with the trusses 14 so that the clamping action is effective mainly at the central part of the trusses and equalizing the clamping pressure of the abutting parts.

Our improved alley comprises further as stated a ball-pit 10P with side walls 25 and a rear wall 26 in U-shape formation, the walls 25 being in alinement with the side members 16 of the main alley. Between the front parts of said side walls is fixed a floor 13A adapted to be alined with the adjacent alley section 13 and at the sides may be ball-return gutters 15A corresponding to the gutters of the main alley. This floor 13A is comparatively short and may have the usual pin-setting marks 27 in proper position. The said floor is supported by a truss 14 near its front edge and which is clamped toward the truss 14 of the adjacent alley section in the same manner and by the same means above described for clamping the alley sections together, the pit section being also further supported by the adjustable vacuum-cup means above described.

28 is a floor in the bottom part of the pit frame on which the bowling balls 29 come to a stop until picked up and returned to the player at the opposite end of the device. The bowling-pins (not shown) are prevented from flying about promiscuously by the side walls 25 and rear walls 26 and falling between same are readily reached and picked up to be reset in their proper places.

30 is a transverse rod resting in notches 31 or equivalent means in the upper edge parts of the side walls 25 of the pit and near the rear wall 26, 32 is a curtain of strong woven fabric (preferred) suspended from said bar 30 in a plane parallel to the rear wall 26 and forward of it, the lower part of said curtain being weighted as with a heavy metal bar 33 normally just above the floor 28. The center part of this curtain is exposed to direct contact with the bowling balls rolling into the pit usually with considerable momentum, the curtain yielding rearwardly and noiselessly when struck by a ball as indicated in dotted lines in Fig. 3.

The features of our improved bowling alley have now been fully disclosed. A number of modifications may be embodied without departing from the scope of the invention. As far as we are aware the bowling floor 13 whether of single thickness or laminated pressed material such as fibre, is believed to be new. An advantage is that this floor can readily be removed and replaced at less expense than resurfacing, planing and polishing or otherwise finishing the bowling surfaces of alleys as hitherto constructed. Another feature desired to be stressed is the solid mounting on a floor with means such that the bowling surface is on on the lowest possible level near the floor, all the means for mounting and adjustment, clamping, etc., being accessible at the sides and exteriorly of the alley and pit sections, The setting of the bowling surface near the floor provides as previously implied an alley on which a regulation bowling game can be played as near as possible to the conditions under which a regulation game is played on permanent alleys.

The type of bowling floor described provides a surface on which bowling is also comparatively noiseless.

We claim:

1. In a bowling alley comprising a number of detachably connected track sections and a ball receiving pit section likewise securable to one of the track sections; each said track section comprising an elongated quadrangular frame comprising parallel bowling floor supporting beams, gutter members outwardly of the outer floor beams, transverse truss members connected to and supporting the said floor beams and gutter members, two of said trusses of each section in fixed transverse position, one near each floor end of the section, removable parallel bar means engaging two of said trusses and projecting outwardly from opposite sides of the alley at the abutting ends of the track sections and adjustable toward each other to clamp the transverse parts of the abutting parts toward each other and further means secured on the ex-

terior side parts of all the sections for adjusting vertically the connected alley sections with their floor surfaces to a desired common plane.

2. The structure specified in claim 1 in which said pit section comprises a box-like structure with walls arranged in U-shape and opening toward the first alley section, a fixed short floor section in the open forward part of said pit and adapted to be adjusted to a common level with the other floor sections, a lower floor in said pit section rearwardly of said short floor, a transversely arranged curtain provided with an upper rod, and suspended removably in said pit by said rod, a weight rod in the lower part of the said curtain, the area of said curtain between its suspension rod and the weight being arranged in the path of bowling balls as shown and for the purpose set forth.

3. In a bowling alley comprising a number of detachably connected track sections and a ball receiving pit section likewise securable to one of the track sections; each said track section comprising an elongated quadrangular frame comprising parallel bowling floor supporting beams, gutter members outwardly of the outer bowling floor beams, transverse truss members connected to and supporting the said floor beams and gutter members, two of said trusses of each section in fixed transverse position, one near each floor end of the section, removable parallel bar means engaging two of said trusses at the abutting ends of the track sections and adjustable exteriorly of the alley sides to clamp the transverse parts of the abutting parts toward each other and further means secured on the exterior parts of all the sections for adjusting vertically the connected alley sections with their floor surfaces to a desired common plane, said floor of all the alined bowling alley sections comprising for each section a single board of laminated fibrous pressed board, the top layer of said board comprising material of comparatively harder surface than the other layers.

4. The structure specified in claim 1 in which said means for clamping the abutting alley sections together comprises a pair of transversely arranged bars removably insertible through the alley sections to protrude from both sides thereof, each bar to bear against an inner face of one of the transverse trusses near the said abutting end, a yoke pivotally mounted on an outer end of each said bar and adapted to be swung in a plane to straddle the protruding end of the other bar of the pair, an adjustment screw in the outer end of each yoke adapted to be adjusted inwardly to engage the last described protruding bar end to clamp the two bars toward each other and press the abutting alley section ends frictionally and rigidly together.

5. The structure specified in claim 1 in which said vertical adjustment means comprise a number of L-shaped brackets fixed with their vertical arms to the exterior of the alley sections, vertical adjustment screws threaded into and extending downwardly below the horizontal arms of said brackets, downwardly opening flexible vacuum cup members, rotatably fixed one to the lower end of each of said adjustment screws to engage a floor or other surface as shown and described.

In testimony whereof we affix our signatures.

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