No. 711,789. Patented Oct. 21, 1902.

P. J. RIDDELL.

BOWLING ALLEY BALL RETURNWAY.

(Application filed Mar. 26, 1902.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1,

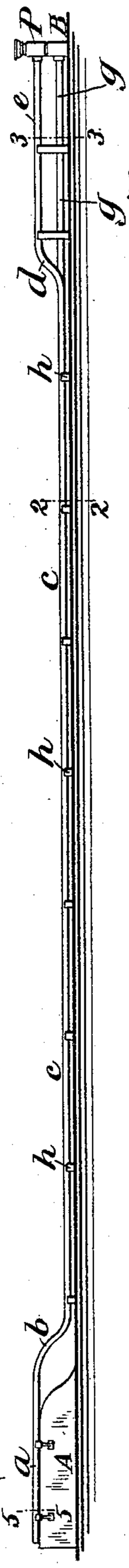


Fig. 7,

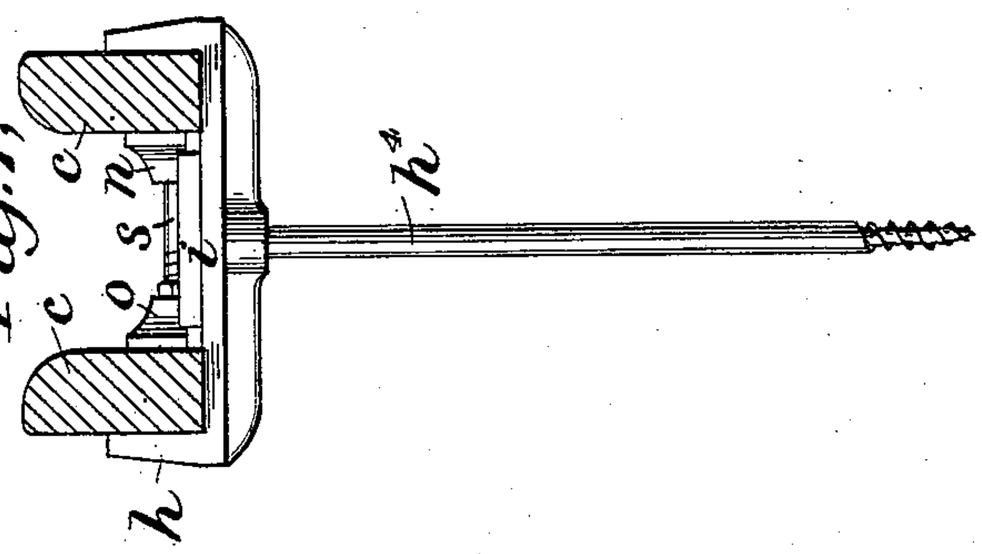
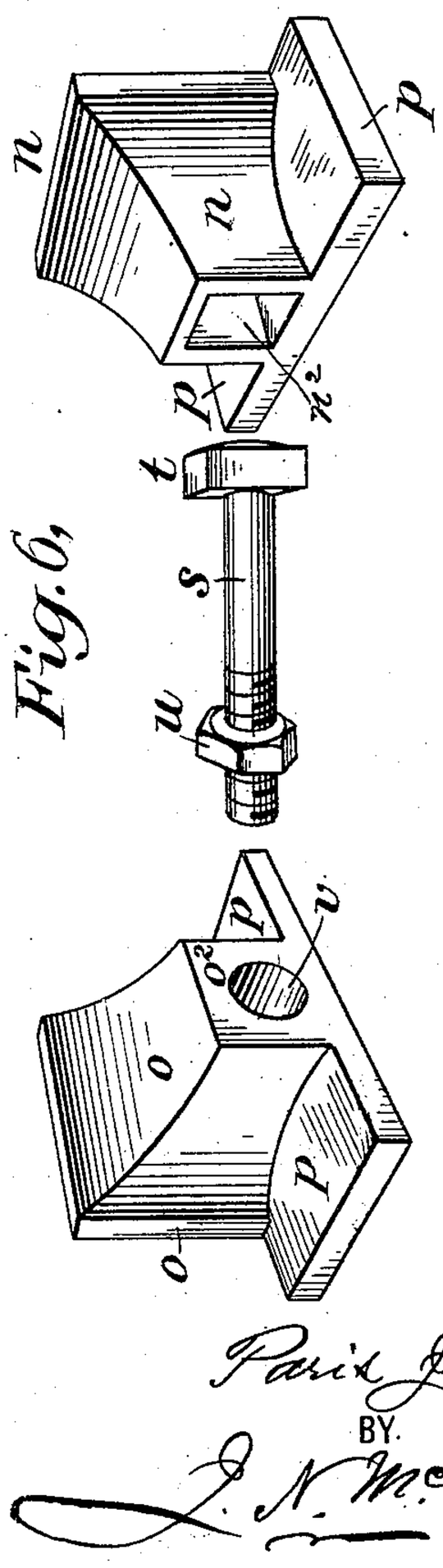


Fig. 6,



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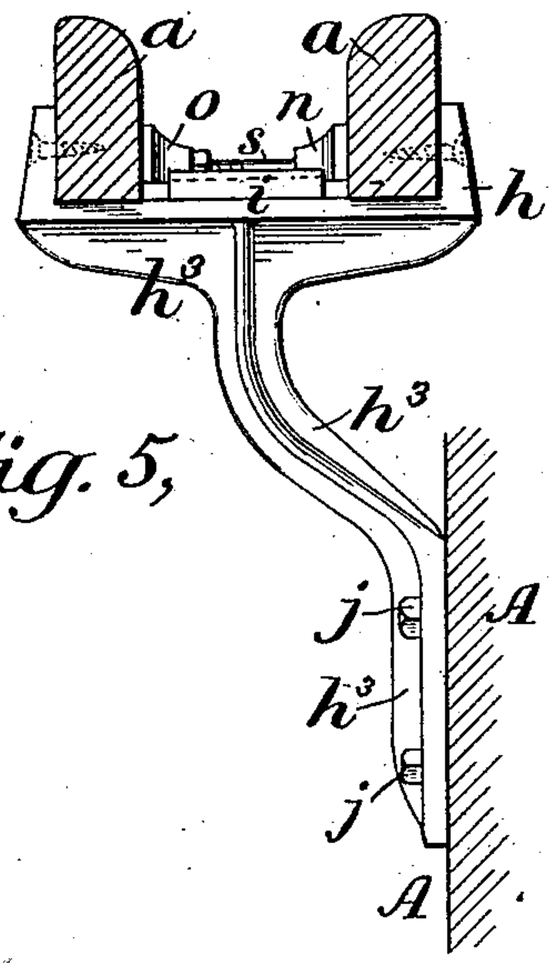


Fig. 5,

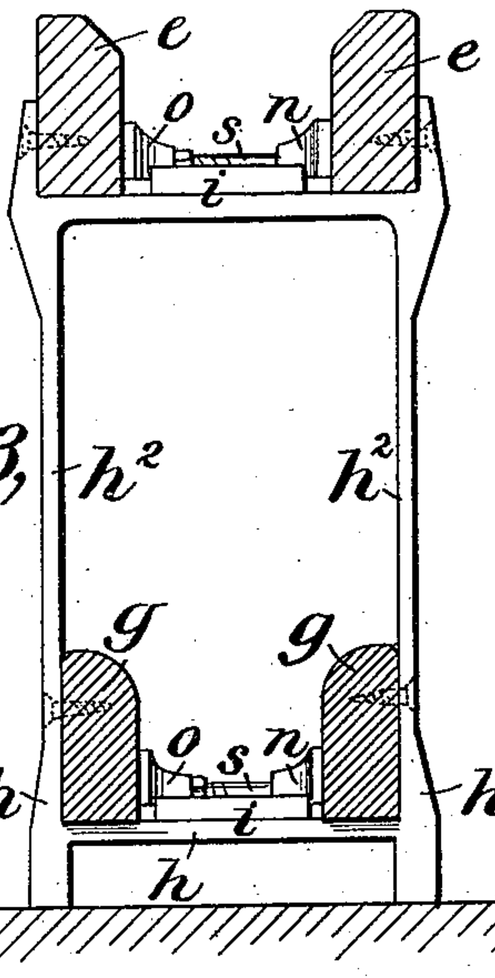
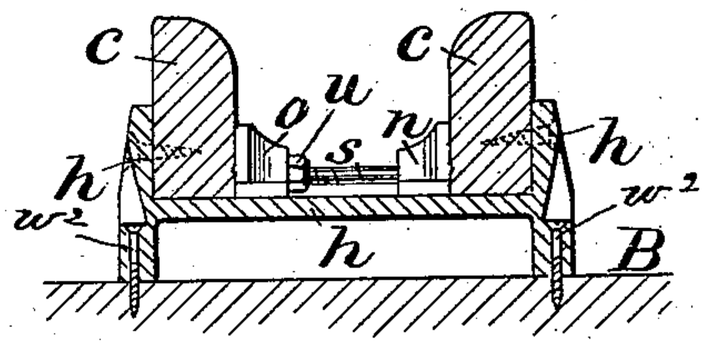


Fig. 3,

Fig. 2,



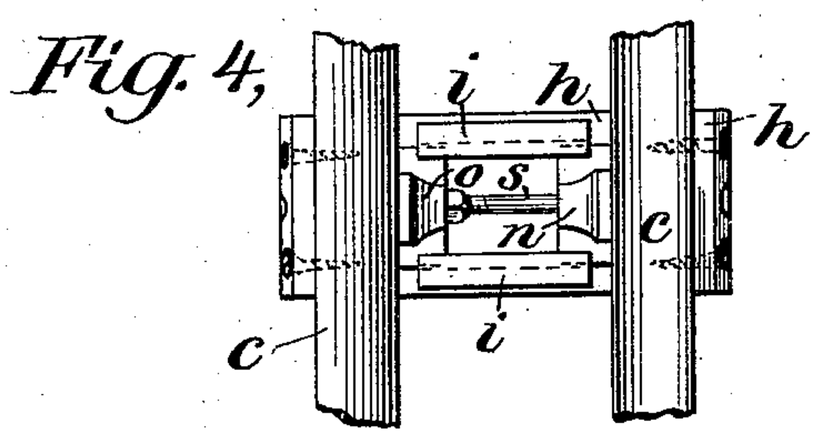


Fig. 4,

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UNITED STATES PATENT OFFICE.

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BOWLING-ALLEY BALL RETURN-WAY.

SPECIFICATION forming part of Letters Patent No. 711,789, dated October 21, 1902.

Application filed March 26, 1902. Serial No. 99,996. (No model.)

To all whom it may concern:

Be it known that I, PARIS J. RIDDELL, of the city of New York, borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Bowling-Alley Ball Return-Ways; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

My invention, though as to some of its features is applicable to the old-fashioned style of ball return-way and to some other peculiar forms, is more especially adapted as to all its structural features to that particular type or construction of return-way now well known all over the country as the "Reisky" ball return-way, which was patented to Emil Reisky February 22, 1898, and which is composed of an elevated portion at the pit end that descends rapidly into a lower horizontal portion running to the vicinity of the players' end, where it suddenly ascends, with the upper part of its upgrade portion merging into an elevated players' end portion, or "terminal," as it is called, where the balls for use by the players congregate.

In the manufacture or building of all return-ways for bowling-alleys, and, in fact, in the putting up of all other parts of alleys, the business in this country has grown to one of great magnitude, and all the parts of the bowling-alley or for any series of alleys to be put up or built at any place are manufactured or "gotten out," so to speak, all as nearly as possible of the exact sizes and in the precise conditions in which from a mere assemblage and securement together of these parts (shipped from the factory to any desired locality) one or more complete bowling-alleys may be "put up," ready for use, by skilled workmen sent from the factory to the locality to which the manufactured parts shall have been shipped.

Many improvements have been made of late years in the getting out or preparation of the different parts, both wooden and metallic, of the bowling-alley, with the object of attaining in the most eminent degree this great desideratum of being able to put up an alley or series of alleys of the finest quality at a minimum cost, on account of the greatest possible amount of the work being done (in the way of manufacturing the parts) at the factory and a minimum amount of work being required to be done by hand at the place of setting up the alleys.

My present improvements relate to novel means by which, through the medium of metallic securing devices manufactured beforehand and capable of very ready application to the wooden parts in the construction of the return-way, the latter, composed of the wooden parts gotten out at the factory, of exact sizes and proportions, and the metallic parts for securing the wooden track-rails perfectly and durably in place, may be accomplished at much less expense than it was heretofore possible to do this part of the bowling-alley building.

To enable those skilled in the art to which my improvements relate to make and use the same, I will now proceed to describe my invention, referring by letters of reference to the accompanying drawings, which form part of this specification, and in which the several parts wherever visible in the different figures will be found always designated by the same letters of reference.

In the drawings, Figure 1 is a side elevation, drawn on a comparatively small scale, of what is known as the "Reisky" ball return-way put up according to my invention, or, in other words, having the rails of its ball return-way securely fastened in exactly their proper positions by means of the novel devices which I have made for the purpose. Fig. 2 is a vertical cross-section taken in a plane indicated by the dotted line 2 2 of Fig. 1, but drawn on a very much larger scale than is said figure. Fig. 3 is a similar vertical section on the same scale as Fig. 2, taken in a plane indicated by the dotted line 3 3 of Fig. 1. Fig. 4 is a partial top view of the ball return-way, or, in other words, that portion of the ball-track seen in section at Fig. 2. Fig. 5 is a vertical section of the return-way, showing part of one of the side buffers of the alley,

taken in a plane indicated by the dotted line 5 5 at Fig. 1. Fig. 6 is a view on a very much more enlarged scale of three of the parts (drawn separately or separated from each other) that constitute a clamping device for the ball-rails to be presently described. Fig. 7 is a detail vertical sectional view of the ball-track and a modified form of metallic holder device and supporting contrivance adapted to be used where it may be desired to have the lowermost horizontal portion of the return-way ranged at a higher elevation than that of a Reisky return-way, such as shown on the small-scale drawing at Fig. 1.

In the several figures, *a* represents the highermost pit-end portion of the ball track or return-way; *b*, its pit-end descending portion or "sweep;" *c*, its long low-down portion; *d*, its ascending part or upgrade located at the players' end, and *e* the terminal portion of the track on which rest the balls used in bowling, while *g* is a lower ball-rack, which in the case shown is actually a continuation to the newel-post P of the low-down main portion *c* of the return-way. As shown, the extreme rear ends of both this low-down rack *g* and the upper ball rack or terminal *e* abut against and are securely fastened to the usual newel-post P by means of metal shoe-pieces, which are formed with socket-like parts or shoe-pieces and which are secured by wood-screws to the newel-post P.

Instead of the means heretofore usually employed for vertically supporting the long low-down portion *c* of the two track-rails I have devised the metallic rail clamping and supporting devices herein shown, which consist of a series of metallic contrivances, (seen at *h*, Fig. 1,) the construction and operation of each of which will be easily understood by reference particularly to Figs. 2 and 4, in which I have drawn the parts on a so much larger scale as to make them all visually plain, and by a visual inspection now of these figures it will be seen that the metallic stand or casting *h*, made of the form clearly illustrated at Figs. 2 and 4, is placed in exactly the proper position on the floor or beam surface on which the return-way is to be mounted and is securely fastened thereto by the wooden screws w^2 w^2, which are screwed down through the leg-like portions of the castings into the wooden beam or floor surface B.

c c, it will be seen, are the two wooden beams constituting the ball-track, that are placed within the upwardly-projecting side or end portions of the casting *h*, where they are held in place partially by two wood-screws entering them, respectively, about horizontally from the said upward side projections of the casting, but are securely but removably held in place by a clamping mechanism, which I will now explain. As will be observed, the casting *h* is formed at points intermediate of the wooden rails *c c* with inwardly-projecting lip-like portions *i i*, (see Fig. 4,) beneath which projections *i i* are located the bottom portions of two clamping-jaws, (lettered, respectively, *n* and *o*,) the precise shape and the functions of which, to be presently explained, will be best seen by reference to Fig. 8, where these two clamping-jaws are drawn on a very large scale and shown in perspective.

s (see Figs. 2, 4, and 8) is a spreading-bolt used in connection with the two castings *n* and *o* in a manner to be presently explained, said spreading-bolt being formed with an integral head *t*, adapted to fit into the rectangular cavity or housing n^2 of the casting *n*, being provided also with an ordinary nut *u* and having its threaded end, on which said nut is placed and works, adapted to fit into the cylindrical cavity or housing *v* of the casting *o*, all as clearly illustrated by Fig. 8, where these parts are shown separately on a very large scale, and by Figs. 2 and 4, where they are shown on a much smaller scale and are assembled in the condition in which they are when operating to clamp the ball-rails *c c* securely in position. In order to assemble these parts as shown at Figs. 2 and 4, the alley-builder in putting up the stuff of the return-way, after having secured in position the series of metallic rail-holders *h*, first places in the proper position the rail *c* at one side of the ball-track, and then, inserting from the opposite end of the supporting-casting the clamping-jaw device *o*, with its base-flanges *p p* passed beneath the overhanging lips *i i* of the casting, pushes said casting *o* into contact with the positioned rail *c*, and then, after having inserted the threaded end of the spreader-bolt *s* into the cylindrical cavity *v* of the casting *o*, with the nut *u* screwed well up toward the root or beginning of the bolt's thread, starts from the same direction and in the same manner with its base-flanges *p p* passing beneath the lips *i i* and the casting *n* until the head *t* of the spreader-bolt shall have entered as far as possible into the cavity n^2 of said casting *n*, in which condition of the thus-assembled parts the outer or vertical surface of the casting *n* will be far enough away from the inner surface of that upwardly-projecting portion of casting *h* against which the other wooden rail *c* is to be placed. Then, inserting in proper position this second or other one of the wooden rails *c*, he begins to turn off or unscrew the nut *u* of the spreader-bolt and turns it until by the pressure of its contacting side or surface with the surface o^2 of the casting *o* the head *t* of said spreader-bolt shall be forced hard or seated against the "bottom," so to speak, of the square cavity n^2 of the casting *n*, and by forcibly turning this nut *u* it will be understood that the two castings *o* and *n* will necessarily be forced farther apart or away until they shall have clamped the rails *c c*, respectively, against the two outer or end upward projections of the casting *h*, whereby the rails will be held very firmly and lastingly in exactly their proper positions. At the same time it will be observed that by reason of this con-

struction or the use of this means for thus clamping the rails securely in place they cannot only be adjusted with great nicety to exactly their proper positions lengthwise in putting up the track, but in case of the necessity to either remove for repairs or to slightly adjust any one of the pieces or rails *c c* such adjustment or removal of the rail can be easily effectuated and its resecurement firmly accomplished without any trouble by any one of ordinary mechanical judgment.

Of course the entire metallic contrivance can be manufactured in great quantity and can all be exactly alike, so that by simply shipping to any particular job a sufficient quantity of these devices no possible delay can occur in putting up this part of the return-way, and, besides, it will be put up in a more satisfactory condition than it has been possible to build this portion of the return-way by the means and in the manner heretofore employed.

To provide for the proper securement in place of the terminal rails *e e* in substantially the same manner and by the same easily-managed and reliable securing and supporting devices, I have devised the duplex rail supporting and clamping contrivance clearly illustrated at Fig. 3, which, it will be seen, comprises simply a duplicate of what is shown at Fig. 2, with the upward extensions at each side of the casting *h* simply extended upwardly, as seen at h^2, and made with an upper duplicate clamping mechanism operating in precisely the same manner as just above explained to support and clamp in position the two sets of rails seen at the players' end of the return-way at Fig. 1, marked, respectively, *g g* and *e e*. (Clearly shown properly assembled at Fig. 3.)

As in the usual construction and arrangement of the Reisky return-way the pit end and most elevated portions of the ball-track *a* (see Fig. 1) are so much higher from the floor that the clamping device above described cannot be conveniently used to support this part of the return-way, I have shown at Fig. 1 two modified forms of my clamping device, one of which is shown in connection with the combined parts on a larger scale at Fig. 5, where it will be seen that the clamping mechanism *per se*, together with the pit-end portions *a a* of the ball-track, are made and operated together in precisely the same way as are the corresponding parts heretofore described, but that the casting *h* is formed on its lower side simply with strengthening-flanges and a downwardly-projecting arm h^3, the lowermost vertical and plate-like portion of which fits up against the outer vertical surface of one of the side buffers A, (see Figs. 1 and 5,) to which it is securely bolted by ordinary bolts *j j*. (Clearly shown at Fig. 5.)

Thus by the modification shown at Fig. 5 the pit end and elevated portion of the rails of the return-way are securely held in place and may be as easily removed and replaced, either for repair or readjustment, as can the rail-pieces of the other portions of the ball track or return-way.

At Fig. 7 I have shown another modification of the clamping and supporting device or mechanism, which differs only from those hereinbefore described in the particular that the bottom portion of the casting *h* is strengthened at its side by a flange or web and has combined with it a simple round bar or leg h^4, the upper end of which is in any suitable way securely fastened to the base of the casting *h* at its center or middle, and the lower end of which is preferably threaded, so that it may easily be screwed into a beam or the alley-floor whenever it may be required (as sometimes happens) to have the long horizontal portion *c* of the ball-track located at a considerably higher elevation than as indicated at Fig. 1 and as is usually adopted.

Of course as to the precise shapes and special arrangements of the various parts of the contrivances shown and described modifications may be made without departing from the spirit of my invention.

Having now so fully described my improvements that those skilled in the art may make and use the same, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with the long low-down portion of the ball-track, of a series of metallic devices, or contrivances, for vertically supporting and holding securely in place, sidewise, the rails of said ball-track, composed each of a metallic stand on which the side wooden rails are seated, and a pair of clamping-jaws, or pieces adapted to contact with the inner vertical surfaces of said rails, and provided with a spreader shaft, or bolt, by means of which, and the turning of a nut on said bolt, the said clamping, or jaw-like, devices may be forced hard against the inner sides of the wooden rails, and secure them firmly, but removably, in place; all as hereinbefore set forth.

2. In a ball return-way of the type shown and described, the combination, with the terminal and lower ball-tracks, located, as usual, at the players' end, of the track-rail supporting and securing devices, each consisting of a casting provided with seats for the upper and lower track-rails, respectively, and having two sets of clamping-jaws arranged intermediately of the two sets of rails, each set provided with a spreading bolt or shaft; the whole arranged and operating to firmly support and secure in place, laterally, in a removable manner, the said two sets of ball-track rails, all substantially as hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 25th day of March, 1902.

PARIS J. RIDDELL.

In presence of—
THOS. A. DWYER,
J. N. MCINTIRE.