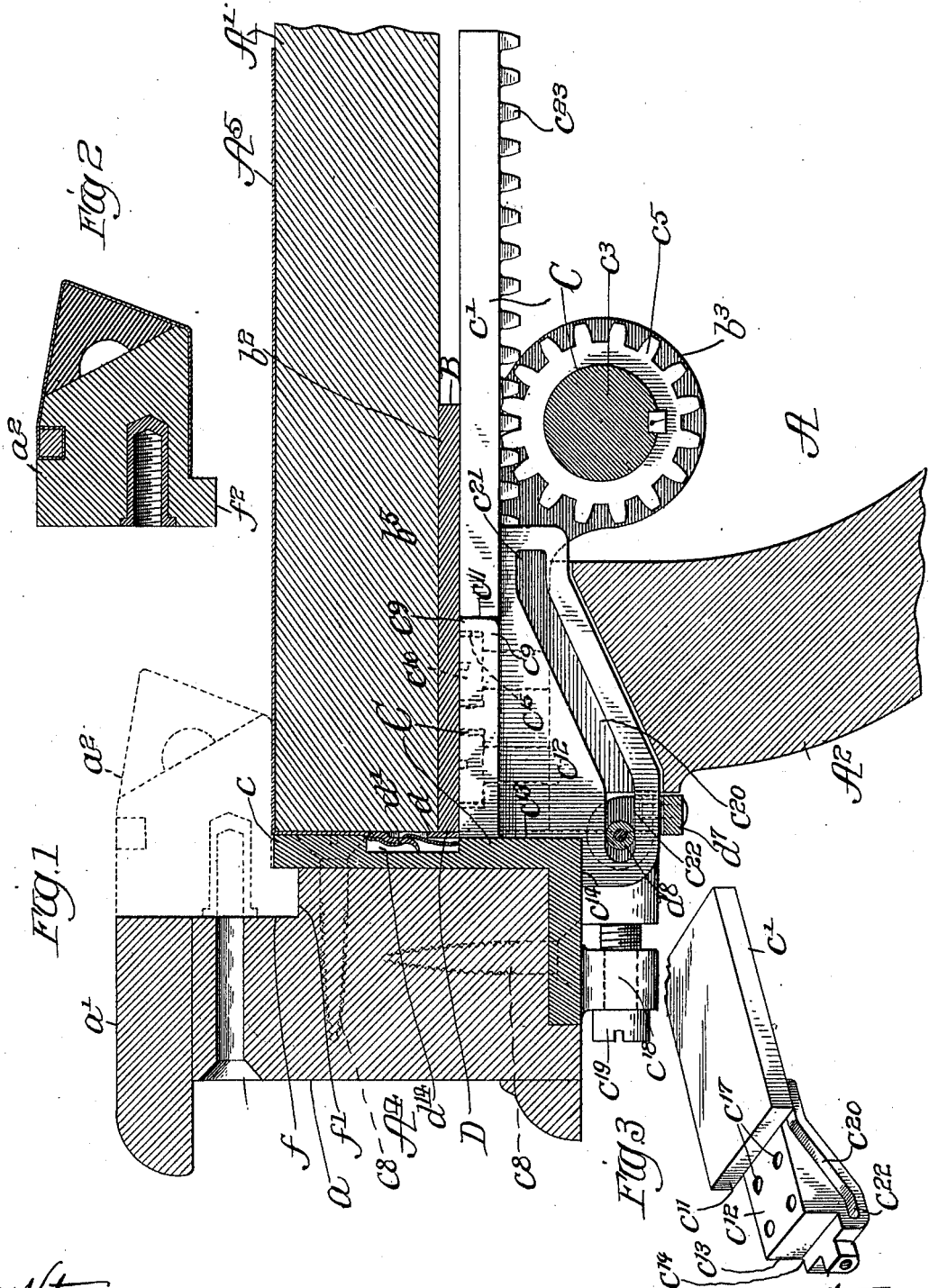


H. G. BARRETT.
 BILLIARD TABLE, POOL TABLE, &c.
 APPLICATION FILED JAN. 8, 1908.

945,150.

Patented Jan. 4, 1910.

5 SHEETS—SHEET 1.



Witnesses:
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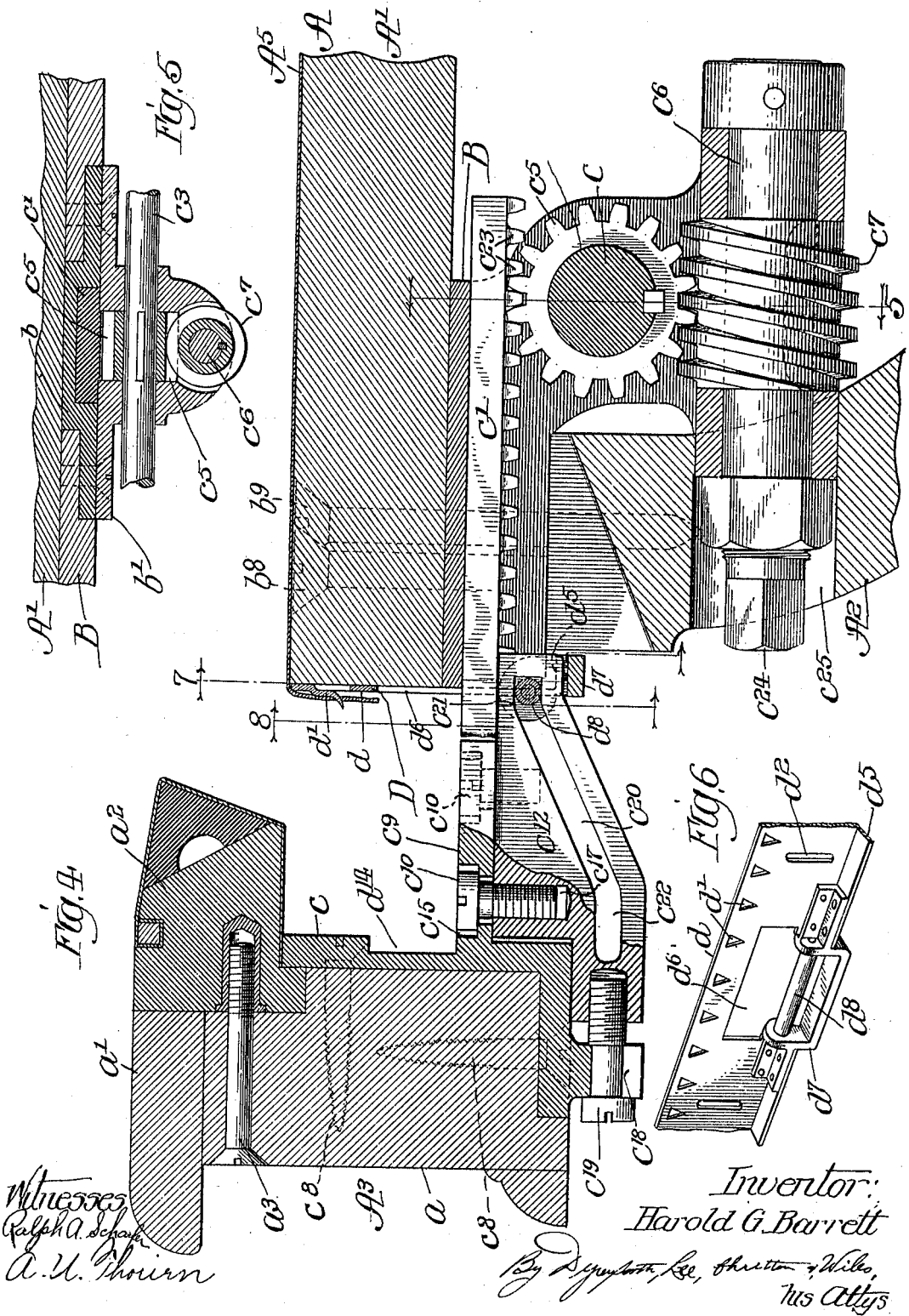
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6 SHEETS—SHEET 3.

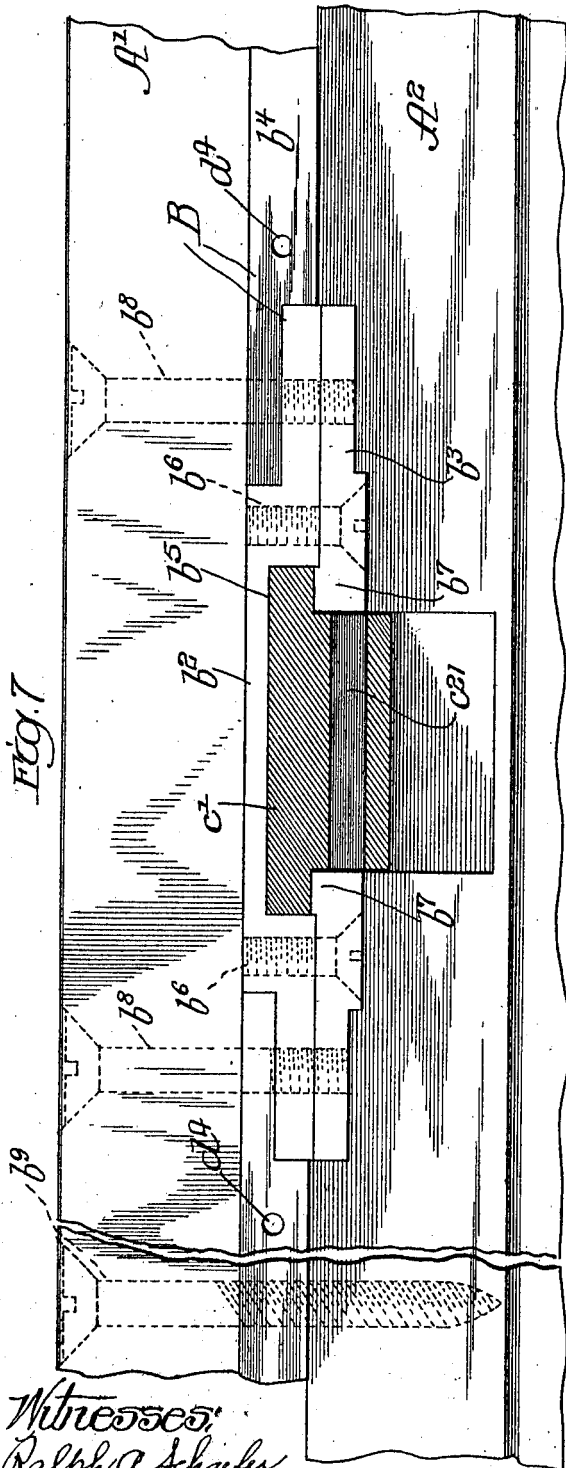


Fig. 7

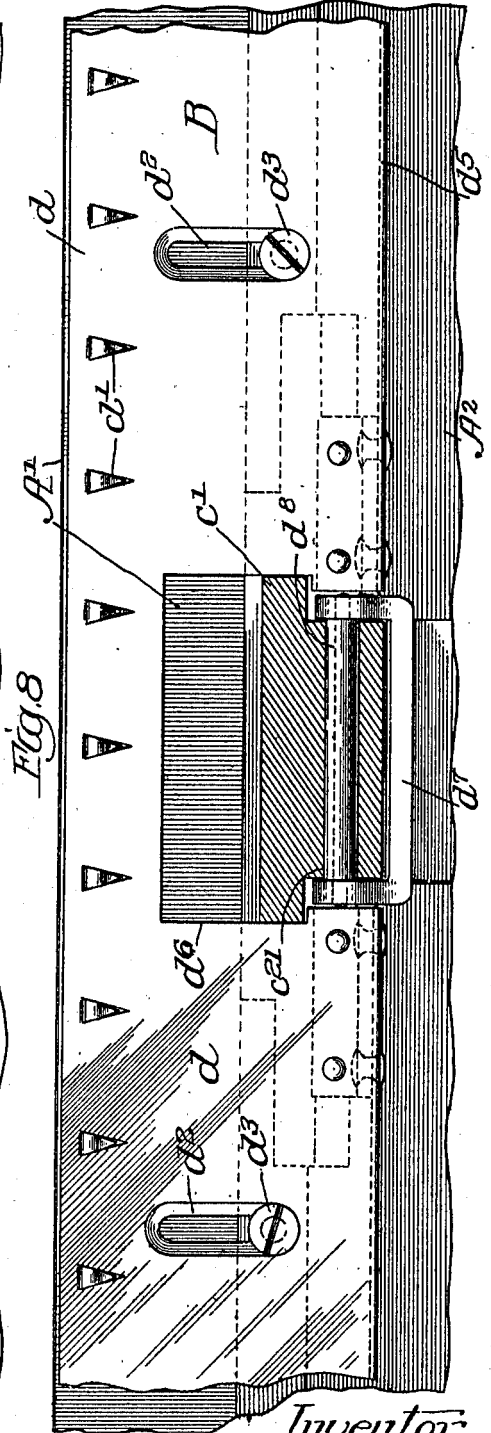


Fig. 8

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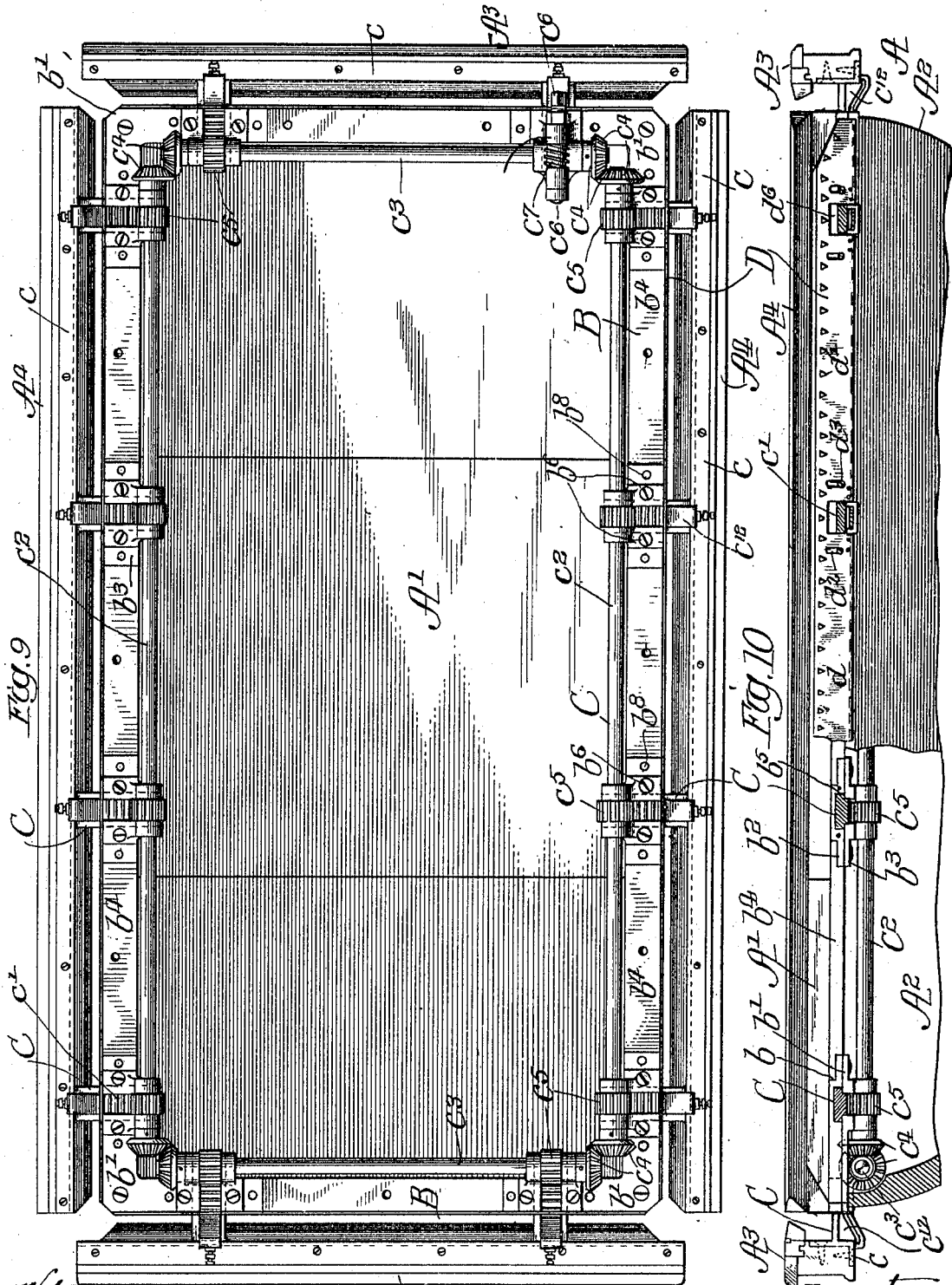
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5 SHEETS—SHEET 5.

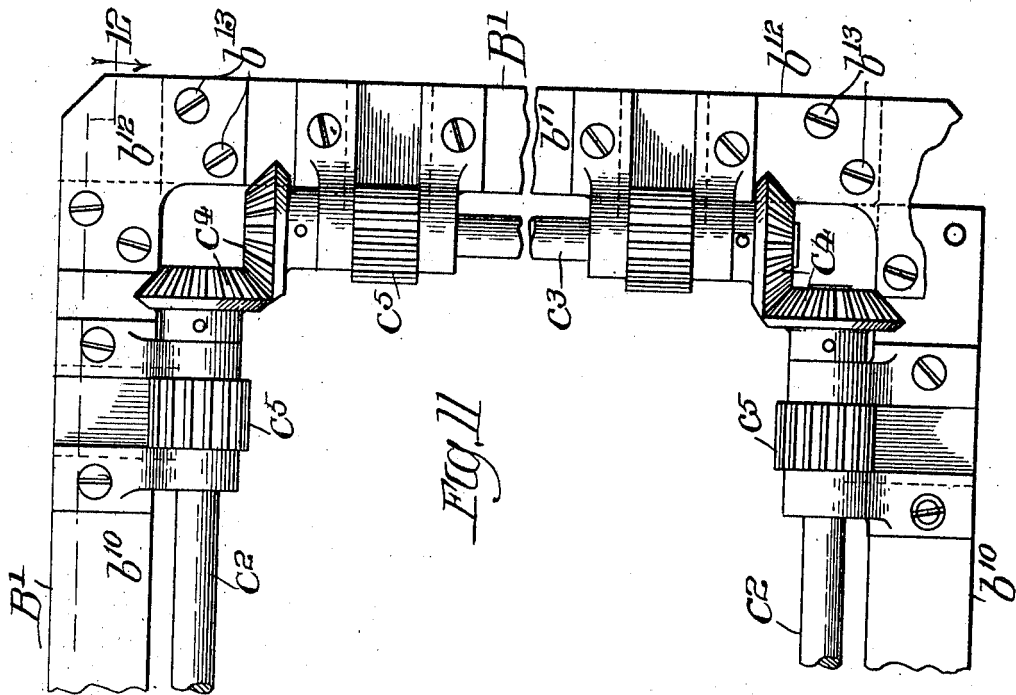


FIG. 11

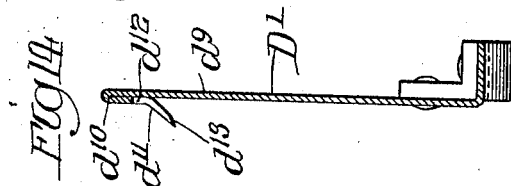


FIG. 14

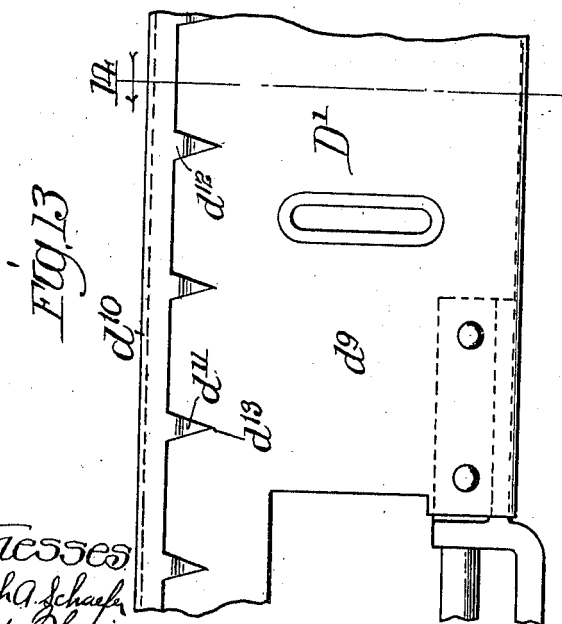


FIG. 13

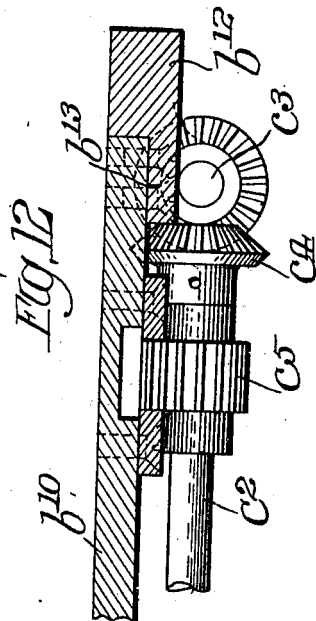


FIG. 12

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UNITED STATES PATENT OFFICE.

HAROLD G. BARRETT, OF WILMETTE, ILLINOIS, ASSIGNOR TO JOHN H. LEE, OF CHICAGO, ILLINOIS.

BILLIARD-TABLE, POOL-TABLE, &c.

945,150.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed January 8, 1908. Serial No. 409,866.

To all whom it may concern:

Be it known that I, HAROLD G. BARRETT, a citizen of the United States, residing at Wilmette, in the county of Cook and State of Illinois, have invented new and useful Improvements in Billiard-Tables, Pool-Tables, &c., of which the following is a specification.

This invention relates particularly to the construction of game tables, such as billiard and pool tables; and my primary object is to provide improved means for facilitating the renewal of cloths on tables of that character. To that end, there is provided, in the preferred embodiment of the invention, mechanism for simultaneously retracting the edge-rails of the table combined with means actuated by said mechanism for simultaneously relieving the tension of the cloth to facilitate the disengagement of the cloth from the cloth-adjusting means, said mechanism serving also, in a reverse movement, to tighten the new cloth and restore the rails to their normal position in close relation to the edges of the table-top.

The invention is illustrated in its preferred embodiment in the accompanying drawings, in which—

Figure 1 represents a broken vertical sectional view of a table constructed in accordance with this invention, the cushion-rail being shown in dotted lines; Fig. 2, a sectional view of the cushion-rail; Fig. 3, a perspective view of a rack-bar forming a part of the rail-actuating mechanism; Fig. 4, a vertical sectional view showing a rail in a retracted position; Fig. 5, a broken section taken as indicated at line 5 of Fig. 4; Fig. 6 a broken perspective view of one of the toothed cloth-securing bars or metallic rim members which lie adjacent to the edges of the table-top or slab (usually of slate); Fig. 7, a broken sectional view taken as indicated at line 7 of Fig. 4; Fig. 8, a broken sectional view taken as indicated at line 8 of Fig. 4; Fig. 9, a bottom view of the table-top with the rails and the actuating mechanism therefor applied, the rails being shown in the retracted position; Fig. 10, a broken side view, partly in section and partly in elevation, the near rail being removed and the rack-bars which carry it being shown in section; Fig. 11, a broken bottom view showing a modification of the frame which is adapted to be applied to the bottom side of the table-

top to afford guides for the rack-bars of the rails and to support the shafts which serve to actuate the rails through the medium of said rack-bars; Fig. 12, a broken sectional view taken as indicated at line 12 of Fig. 11; Fig. 13, a broken outer side view of a toothed cloth-securing bar of modified form; and Fig. 14, a section taken as indicated at line 14 of Fig. 13.

In the construction shown, A represents a billiard table comprising the usual bed A^1 , (commonly of slate), body A^2 , end rails A^3 , side rails A^4 , and bed-plate covering or cloth A^5 ; B, a rectangular frame interposed between the upper edge of the body and the table-top or bed and forming a substitute for the commonly employed tacking-strip usual in this class of construction at the present time, the frame B affording guides for the bars or arms which support the movable edge-rails of the table and serving also to support the mechanism which actuates said edge-rails through the medium of said bars or arms; C, mechanism for actuating the rails; and D, cloth-attaching or securing means automatically actuated by the rail-moving mechanism, whereby the tension upon the cloth will be relieved when the rails are retracted or moved outwardly and tension will be applied to the cloth when the rails are moved inwardly to their normal position adjacent the edges of the table-top.

The body of the table may be of any approved construction and design, the construction illustrated being most commonly employed. The table-top commonly is of slate, three transverse slabs being usually employed to form the table-top. The edge portions of the slate project slightly past the body of the table, as shown. The edge-rails are preferably formed of wooden strips a to which are applied finished top pieces a^1 and cushion-rails a^2 removably secured to the main strips by screws a^3 .

The frame B, according to the construction shown in the main views of the drawings, comprises corner guide-members b, b^1 ; intermediate guide-members b^2, b^3 ; and connecting strips or bars b^4 . The guide-members are of metal, and the connecting members b^4 may be either of wood or metal. The guide-members b, b^2 have their lower sides provided with transverse channels b^5 , and the plates or members b^1, b^3 are detachably connected with the members b, b^2 , by screws

b^6 . The construction is such as to provide projections b^7 (Fig. 7) forming supports for the arms or rack-bars connected with the edge-rails. The frame B may be removably connected with the slate, as by screws or bolts b^8 , as shown in Fig. 7. When the frame is applied to the table-body, it may be secured thereto by screws or bolts b^9 passing through the slate, through the frame B, and into the body, as indicated in Fig. 7.

The mechanism C by means of which the rails are supported and moved preferably comprises metallic bars c applied to the rails and equipped with rack-bars c^1 which extend inwardly through the guides provided therefor in the frame B; a pair of longitudinal shafts c^2 supported in bearings carried by the side members of the frame B; a pair of end-shafts c^3 supported in bearings carried by the end members of the frame B; bevel gears c^4 applied to the ends of said shafts c^2 , c^3 and meshing with each other; pinions c^5 on said shafts meshing with the teeth of the rack-bars; and a transverse crank-shaft or key-shaft c^6 equipped with a worm c^7 meshing with one of the pinions c^5 . The bars c are of angle form and are secured to the inner vertical surfaces and lower surfaces of the wooden members a , by means of screws c^8 . The bars are preferably formed with inwardly projecting lugs or shanks c^9 of rectangular form, to which the rack-bars c^1 are secured by means of screws c^{10} . As shown in Fig. 3, each rack-bar c^1 is provided with a vertical shoulder c^{11} adapted to abut against the inner end of the shank c^9 , with a horizontal surface c^{12} adapted to bear against the lower surface of the shank c^9 , with a vertical shoulder c^{13} adapted to bear against the vertical portion of the bar c beneath the shank c^9 and with a horizontal surface c^{14} adapted to bear against the lower surface of the bar c . The shank c^9 is provided with slots c^{15} through which extend the screws c^{16} which screw into perforations c^{17} in the shank of the rack-bar c^1 . The bars c are provided with lugs c^{18} having perforations or slots therein through which extend adjusting-screws c^{19} which screw into adjacent ends of the shanks of the rack-bars c^1 . The purpose of this adjustment is to provide for accurate alinement of the rail with relation to the edge of the table-top. The shank of each rack-bar is provided with a cam-slot having an inclined portion c^{20} and horizontal portions c^{21} , c^{22} at the end thereof. These cams serve in the actuation of the cloth-securing means D. As shown in Figs 1 and 7, the rack-bars c^1 fit into the guides with which the frame B is provided, said rack-bars being provided with toothed portions c^{23} of less width than the bars themselves. As shown in Figs. 1, 4, 9 and 10, the guide-members b^1 and b^3 of the frame B are equipped with lugs in which

the shafts c^2 , c^3 are journaled; and, as shown in Fig. 4, one of said guide-members is equipped with a bearing for the shaft c^6 . The shaft c^6 has a reduced portion c^{24} which projects through an opening c^{25} in the table-body, and is shaped to receive a crank or key.

The automatically adjustable cloth-securing means D comprises preferably sheet metal bars, or rim-members d which lie adjacent to the edges of the table-top or slab A^1 . Each of these bars is equipped on its outer side with downwardly extending outwardly projecting teeth d^1 , these teeth preferably being formed integral with the sheet metal bars by a punching operation. The bars d are provided with vertical slots d^2 through which pass screws d^3 (Fig. 8), which screw into openings d^4 (Fig. 7) in the frame B. The connection thus provided enables the toothed bars or rim-members d to move vertically. As shown in Figs. 4 and 6, each bar d is provided at its lower portion with an inturned flange d^5 . Each bar d is provided at intervals with openings d^6 formed by cutting away the horizontal flange and a portion of the vertical flange of the bar, as shown in Fig. 6, to accommodate the corresponding rack-bar. At each opening, the bar is equipped with a bracket d^7 which carries a pin or roller d^8 adapted to work in the cam-slot of the corresponding rack-bar. Each bar d extends the full length, or approximately the full length, of the edge of the table-top A^1 adjacent to which it lies.

In the construction illustrated in Figs. 11 and 12, B^1 represents a modification of the frame B. In the modified construction, there are employed longitudinal bars b^{10} extending approximately the length of the table; transverse bars b^{11} extending approximately the width of the table; and corner-connecting members b^{12} shouldered to receive the adjacent ends of the bars b^{10} , b^{11} , the bars being connected with the corner-members by screws b^{13} . The bars are equipped with lugs in which are journaled the shafts c^2 , c^3 . In practice the shafts may be inserted in their bearings and equipped with their pinions, so that in assembling the frame B and applying it to the table-top the beveled pinions will mesh with each other properly. This construction enables the work of assembling to be performed with facility after shipment.

In the construction illustrated in Figs. 13 and 14, D^1 represents a modification of the cloth-attaching means. In this construction, there is employed a sheet metal bar d^9 of angular form whose upper edge portion is bent over upon itself, as indicated at d^{10} , the teeth d^{11} being formed from the bent over portion. This construction facilitates the formation of perfectly sharp teeth by a punching operation, which is an important

consideration in providing an economical construction. As shown in Fig. 14, each tooth d^{11} has a body portion d^{12} which lies closely adjacent to the vertical flange of the bar, and an outwardly inclined point-portion d^{13} . The body or base-portion d^{12} of the tooth is adapted to clamp the cloth after it has been impaled on the tooth. The feature of folding the metal upon itself at the upper edge-portion of the bar adds to the rigidity and strength of the bar. As clearly shown in Figs. 1 and 4, the bars c are recessed on their inner surfaces, as indicated at d^{14} to accommodate the teeth of the cloth-securing bars.

As appears from Figs. 1 and 2, each rail-member a is longitudinally recessed at its inner upper portion, as indicated at f , thus providing a shoulder f^1 , above which the edge of the adjacent bar c projects, thus affording a socket for the projection f with which the cushion-rail a^2 is provided at its outer lower corner. When the cushion-rail is in place and the screw-bolts a^3 inserted, a secure connection is provided. When desired, the cushion rail a^2 may be removed and substitute cushion-rails applied. The old cushion-rails may then be sent to the factory for renewal of the cushions.

The operation of the improved mechanism may be readily understood from the foregoing detailed description. When a cloth is to be applied to the table, the rails are retracted through the medium of the mechanism C, which is accomplished by turning the crank-shaft or key-shaft c^6 , which operates to turn the shafts c^2 , c^3 and operate the rack bars c^1 which carry the edge-rails of the table. In this operation, the cams connected with the rack-bars serve to elevate the cloth-securing bars. When the table is in this condition, which condition is indicated in Figs. 4 and 9, the cloth A^5 is applied, its edge portion being hooked over the teeth d^1 of the bars d . The shaft c^6 is then turned in a direction to move the edge-rails of the table inwardly, in which operation the cams connected with the rack-bars serve to depress the rim-members d and stretch the cloth. During the final portion of the inward movement of the rack-bars c^1 , the cam-rollers d^8 move in the horizontal portions c^{22} of the cam-slots, so that there is no movement of the rim-members d during the final portion of the inward movement of the edge-rails of the table. In the outward movement of the edge-rails, the cam-pins move in the horizontal portions c^{21} of the cam-slots, so that there is no vertical movement of the rim-members d until after the edge-rails of the table have moved slightly away from the edges of the table-top.

It will be understood that the foregoing detailed description has been given for clearness of understanding only, and that no un-

due limitation is to be understood therefrom. The particular mechanism shown for actuating the edge-rails of the table and for automatically tightening or loosening the cloth, according to desire, is the construction preferred, but it is recognized that undue importance should not be attached to the particular form of mechanism employed.

What I regard as new, and desire to secure by Letters Patent, is—

1. The combination with a table, of edge-rails therefor horizontally movable with relation thereto, inwardly extending rack-equipped arms connected at their outer ends to said edge rails, interconnected gear-actuated shafts carrying pinions engaging said arms, and operating means connected with one of said shafts whereby the simultaneous movement of the edge-rails is effected.

2. The combination with a table, of edge-rails therefor horizontally movable with relation thereto, inwardly extending rack-equipped arms connected at their outer ends to said rails, interconnected gear-actuated shafts carrying pinions engaging said arms, and an actuating shaft extending transversely of and geared to one of said interconnected shafts whereby said shafts are actuated to effect the simultaneous movement of the edge-rails.

3. In a table of the character set forth, the combination of a table-body provided with an opening, a table-top, horizontally movable edge-rails equipped with inwardly projecting arms, interconnected shafts connected with said arms, and a transverse actuating shaft connected with one of said interconnected shafts and extending through the opening in said table-body, whereby means may be applied to the end of said transverse shaft to rotate the same to effect the rotation of the series of interconnected shafts and the simultaneous movement of the edge rails.

4. The combination with a table-top, of movable cloth-attaching means therefor, movable edge-rails for said table-top, and mechanism common to both the cloth-attaching means and the edge-rails for actuating the same.

5. The combination with a table-top, of retractable edge-rails therefor, movable cloth-attaching means, rail-actuating means, and connections between the cloth-attaching means and said rail-actuating means whereby the former is actuated in the movement of the latter.

6. In a table, the combination with a table-top, of retractable edge-rails therefor provided with inwardly extending arms, a frame applied to the lower surface of said table-top and having transverse guide-channels therein, removable guide members applied to the lower side of said frame and having portions extending beyond the sides of said guide-channels whereby said guide-

channels are adapted to receive and support the arms of the edge-rails and to permit of their movement therein.

7. The combination with a table-top, of retractable edge-rails therefor, vertically movable cloth-attaching means, mechanism for retracting the edge-rails, and cam connections between said rail-moving mechanism and said cloth-attaching means whereby the latter is actuated by the movement of the former.

8. The combination with a table-top, of horizontally movable rails, rail-actuating means, vertically movable tooth-equipped cloth-securing members located between said rails and table-top, and means for actuating said cloth-securing members in the movement of the table-rails.

9. The combination with a table-top, vertically movable cloth-attaching members at the edges thereof, horizontally movable rails between which and the edges of the table top said cloth-attaching members are confined, mechanism for actuating the movable rails of the table-top, and means carried by said mechanism for actuating said cloth-attaching members.

10. The combination with a table-top, of edge-rails provided with inwardly projecting arms, mechanism for actuating said

edge-rails through the medium of said arms, cloth-attaching rim-members confined between the edge-rails and table-top, cams carried by said arms having inclined cam surfaces and horizontal cam surfaces at the extremities thereof, and cam-engaging means carried by said rim-members.

11. The combination with a table-top, of vertically movable cloth-attaching members at the edges thereof, horizontally movable edge rails for said table-top, mechanism for actuating said edge rails, and means carried by said mechanism to elevate said cloth-attaching members in the outward movement of said edge-rails, and to depress said cloth-attaching members in the inward movement of said edge-rails, whereby the cloth on the table-top is loosened in the first movement and stretched in the latter movement of said edge-rails.

12. In a table of the character set forth a cloth-attaching rim-member, comprising a sheet metal bar having teeth formed at its upper edge, the bar being bent upon itself to cause said teeth to project downwardly and laterally, for the purpose set forth.

HAROLD G. BARRETT.

In presence of—

RALPH G. SCHAEFER,

A. U. THORIEN.