July 11, 1939. W. B. SAWYER 2,165,875

RETURN-BALL EQUIPMENT FOR BILLIARD TABLES AND THE LIKE

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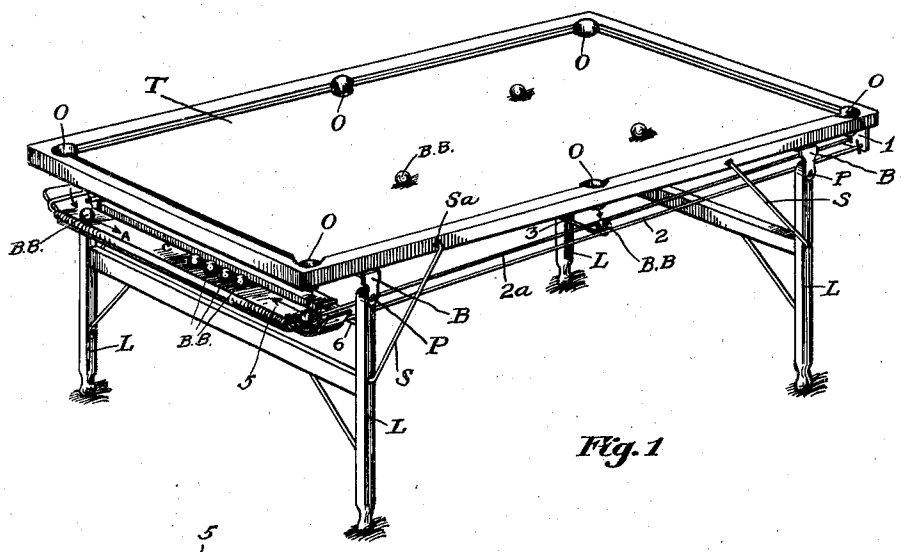


Fig. 1

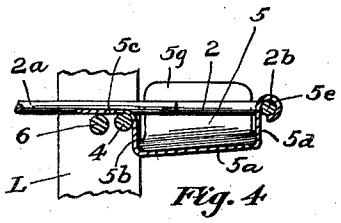


Fig. 4

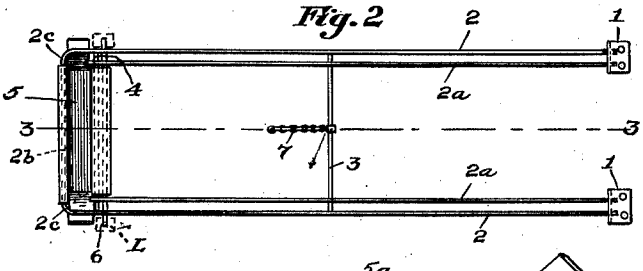


Fig. 2

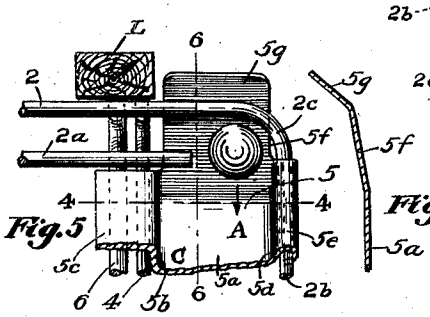


Fig. 5

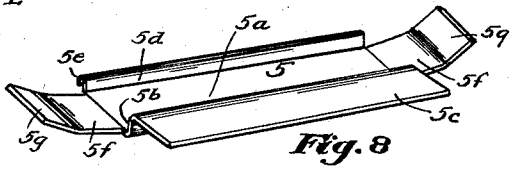


Fig. 8

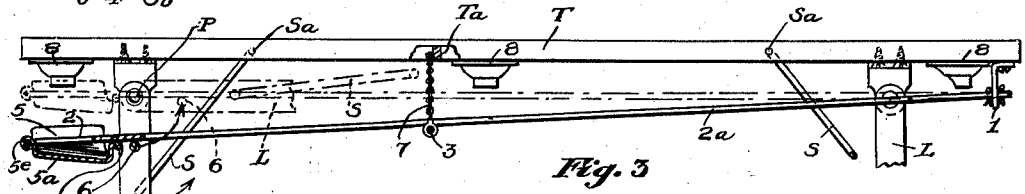


Fig. 3

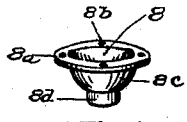


Fig. 7

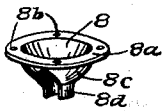


Fig. 9

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RETURN-BALL EQUIPMENT FOR BILLIARD TABLES AND THE LIKE

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Application September 11, 1933, Serial No. 688,892

13 Claims. (Cl. 273—11)

This invention relates to billiard and pool table equipment and deals particularly with apparatus by means of which the billiard balls are assembled, during the progress of the game, in a common receptacle.

My present concept I consider an improvement in an apparatus designed for a similar purpose and for which I have a co-pending application in the United States Patent Office, Ser. No. 682,805, which has eventuated in Patent No. 1,992,507, Feb. 26, 1935.

In my present invention I have sought to simplify and condense the structure by eliminating or discarding much of the structure embodied in my former apparatus, retaining those elements only which are essential in procuring a workable and efficient combination.

To this end I have been enabled to greatly reduce the cost of production, to overcome certain inherent faults in my former device, to largely reduce the weight of the structure and to otherwise improve the apparatus as will appear as the description of the equipment proceeds.

Briefly stated, I have in my present conception, fabricated the ball-runways into a completely formed structure capable of being mounted on or demounted from the billiard table as a unitary structure.

I have improved on the form of the pockets to make possible a more direct and accurate engagement of the balls with the run-ways as they drop thereonto.

There is also a very important object connected with the form of the ball-receiving receptacle or pan, this feature being embodied in the particular shape in which it is made, requiring but a comparatively small structure but providing means whereby the balls already in the pan do not obstruct the incoming ball in its passage to the receptacle.

While my apparatus is capable of use on stationary leg billiard tables, the present disclosure is made in its particular adaptation for tables equipped with the folding type of leg.

It is, therefore, a further object of my invention to provide means whereby the apparatus may be compactly housed in comparatively close contiguity with the table when it is desired to fold the legs thereof, this operation being accomplished automatically as the legs are swung into folded position.

Other objects and advantages will be apparent when reference is had to the description found in the following specification, taken in connection with the accompanying drawing in which a preferred embodiment of the invention is illustratively disclosed.

In the drawing, in which similar reference characters are employed to identify like parts in all the different views—

Fig. 1 is a perspective view, representing either a billiard or pool table, with my apparatus mounted thereon;

Fig. 2 is a plan view of the equipment;

Fig. 3 is a side elevation, partly in section, of the apparatus, shown mounted on a table;

Fig. 4 is a section on line 4—4, Fig. 5;

Fig. 5 is a fragmentary plan view of the ball-receiving pan end of the apparatus;

Fig. 6 is a section on line 6—6, Fig. 5;

Fig. 7 is a perspective view of one of the metal ball-receiving pockets;

Fig. 8 is a perspective view of the ball-receiving pan, and

Fig. 9 shows a slight modification in the construction of the ball-receiving pocket.

Referring to the drawing, T represents any table on which a game of billiards or a game of pool might be played, and L are the table legs which in the folding type make connection with the table by means of the brackets B and the pivoting pins P. The braces S hold the legs in their normal, extended positions, but these may be disconnected from the table by disengaging their ends from the sockets S*a*, after which the legs can be swung into folded positions, as shown in dot and dash lines, Fig. 3.

Disposed beneath and secured to one end of the table T are two brackets 1, extending from each of which to the opposite end of the table is a billiard ball-runway, preferably made of two horizontally and transversely spaced rods 2 and 2*a*, respectively.

The ends of these rods are loosely connected to the brackets 1 and to maintain proper spacing of the rods in each run-way and also to tie the two run-ways together the cross members 3 and 4 are provided, these being electrically welded to the run-way rods.

Interconnecting the two outside rods 2 of the run-ways is a transverse rod 2*b*, the three portions forming a U shape structure. At the corners 2*c* the rods are curved so as to properly change the direction of movement of a billiard ball B. B., passing off the run-way.

By observing Figs. 2 and 5 it will be noted that the members 2*a* do not extend to the full length of the outer members 2 of the run-ways, the inner ones being shortened to permit the balls falling off the run-ways.

Mounted on the transversely connected ends of the run-ways is a billiard ball-receiving receptacle made in the form of a pan and identified in the drawing and in its entirety by the numeral 5. The pan comprises a bottom 5*a* the surface of which slightly declines toward the opposite end of the table, an inwardly positioned vertical side wall 5*b* the upper end of which is bent to form a horizontal shelf portion 5*c*, and a vertical outer wall 5*d* which terminates in a curved portion 5*e* and encloses the transverse member 2*b*.

The bottom part of the pan, or the portion 5*a*, extends outwardly at each end in a slightly rising portion 5*f*, and from the ends of these portions, 5*f*, the pan terminates in a somewhat abrupt angle in the guards 5*g*, which latter engage the under side of the outer run-way members 2.

The object of inclining the portion 5*f* is to give an impetus to the movement of the ball as it drops on to this surface, this acceleration in movement carrying the ball along the path designated as A until the speed acquired is spent and the ball finally lands against the wall 5*b*, or in the path C, due to the inward decline of the surface 5*a* of the pan.

The positions of the balls after coming to rest in the pan and the positions of the balls just entering it are clearly shown in Fig. 1. The balls after entering the pan arrange themselves so as to be out of the path of the incoming ball so that no obstruction is presented to the latter while advancing into the pan.

The inclined surfaces 5*f* further serve to keep the balls, as they are assembled on the pan bottom, from encroaching on the surface on which the balls fall when coming off the run-ways.

Interconnecting the two legs L of the table, on the ball-receiving pan end thereof, is a rod 6 which supports the run-ways and pan in their normal, operating positions. This rod also serves to draw the run-way members closer to the table when the legs are folded, as it swings on an arc struck from the pivotal point P of the leg, the two positions of the run-ways being shown in Fig. 3.

The run-ways decline from their points of connection with the brackets 1 toward the pan end of the apparatus, and due to their length and slender proportions it is desirable, if indeed not essential to provide support for their intermediate portions.

I accomplish this by securing a chain 7 to the cross member 3 and the cross sill T*a* of the table, the chain being extended when the run-ways are in operating position and hanging loosely when they are brought into close relation to the table top.

At each of the four corners and at midway positions adjacent each side rail of the table are the usual openings O for entrance of the balls into the metal pocket elements 8, one of which latter is secured to the table directly beneath each of the openings O. A detailed representation of one of these pockets is shown in Fig. 7. It comprises an attaching flange 8*a* in which are holes 8*b* for screws with which to secure the pocket to the under side of the table T, a semi-spherical portion 8*c* and a cylindrical part 8*d* on the bottom end. While I prefer metal pockets they may be made of any inflexible material.

The inside diameter of the cylindrical lower portion 8*d* of the ball-receiving pocket element is but slightly larger in diameter than the billiard ball itself; for this reason a more accurate landing of the billiard ball on to the run-way, as it drops from the pocket, is assured.

If reference be had to Fig. 5 it will be observed that the outer rods 2 of the run-ways are located, respectively, in close relation to the inner faces of the legs L of the table. Transverse movement and disalignment of the run-ways with the pockets are thus prevented.

The corner pockets adjacent the higher ends of the run-ways have their openings for exit of the ball somewhat elongated by cutting away a portion of their side walls. This is for the purpose of enabling the balls to pass outwardly on to the run-ways which at this location are positioned in more or less close relation to the pockets, as shown in Fig. 3. These two pockets, however, retain the accurate aligning feature embodied in the other four pockets which are constructed with full cylindrical bottom portions. The side-opening pocket is illustrated in Fig. 9.

As the pan is secured to and made an integral part of the run-ways, the whole apparatus may be installed on a table as a unitary structure by inserting the ends of the rods 2 and 2*a* in the holes in the brackets 1, and subsequently securing the chain 7 to the table.

Thus is evolved a simple, compact and low cost integrated structure adapted for and efficiently fulfilling the requirement of a return-ball apparatus for billiard tables.

What I claim is:

1. A device of the character described adapted for use on a billiard table or the like having foldable legs, comprising an integrated ball-return and ball-receptacle structure, said structure embodying two inclined ball run-ways, a ball-receiving pan secured on and at the lower ends of said run-ways, pivoting means whereby said structure may swing from its higher end on its pivoting point, and means in common for supporting the pan-equipped end of said structure and for retracting it to a position adjacent the under side of said table when said legs are folded, said retraction being accomplished automatically.

2. A return-ball equipment for billiard tables having a plurality of openings in its top comprising an inclined ball run-way structure embodying a single U-shape rod, a straight rod disposed inwardly of and transversely spaced from each branch of said U-shape rod and of shorter length than said branches, a plurality of cross-tie members interconnecting said run-way rods, a ball receptacle made integral with and disposed on one end of said run-way structure, brackets depending from said table, adapted to provide means for swingingly connecting the opposite ends of said run-way structure thereto, means tc support said run-ways intermediate their lengths, and a plurality of inflexible ball-aligning pockets disposed, respectively, beneath the openings in said table and superjacent said run-ways.

3. A return-ball equipment for billiard tables having folding legs comprising two inclined ball run-ways extending integrally the full length of said table and swingingly connected at their higher ends to said table, a ball-receiving pan secured to and at the lower ends of said run-ways and extending transversely from one to the other thereof, and means to support the lower ends of said run-ways whereby they may be brought automatically into closer relation with said table when said legs are swung into folded positions.

4. In apparatus of the class described adapted to be mounted on a billiard table or the like having folding legs and a plurality of openings in the

top thereof comprising in a unitary structure two inclined ball run-ways extending for the full length of said table, a ball-receiving receptacle forming an integral part of said run-ways disposed at their lower ends and extending transversely from one to the other thereof, means to swingingly secure the higher ends of said run-ways to said table, a plurality of inflexible ball-receiving pockets disposed, respectively, beneath said openings in said table and aligning with said run-ways, and means to automatically force said run-ways toward said table when folding said legs.

5. A return-ball equipment for billiard tables having foldable legs, comprising an integrated structure adapted to be mounted on and demounted from said table as a unit, said structure embodying two double-rod ball run-ways each thereof extending for the full length of the table, a ball receptacle fixedly secured on said run-ways, adapted to receive the balls as they pass off said run-ways, pivoting means for one end of said structure, and a swinging rod adapted to support the opposite end of said structure in operative and in retracted positions, the retraction of said structure being accomplished automatically when folding the said legs.

6. A device of the character described adapted to be mounted as a unitary structure on a billiard table having foldable legs comprising an inclined double ball run-way, one branch of which being disposed beneath and on each side of said table and extending integrally for the full length thereof, a ball-receiving pan interconnecting the lower ends of said branches, adapted to receive the balls as they drop off said branches, a swinging support for the pan end of said structure adapted to automatically hold it in operative and in retracted positions by the swinging of said legs into extended and into folded positions, respectively, and pivoting means for the opposite end of said structure whereby it swings from its pivotal point when moving from operative to retracted positions.

7. A return-ball equipment for a billiard table having folding legs comprising two inclined billiard ball run-ways, one on each side of said table and extending for the full length thereof, each of said run-ways embodying two transversely spaced rods swingingly connected at their higher ends to said table, the outwardly disposed rods in the respective run-ways being integral with a transverse portion, forming a U-shape member, the lower ends of the inside rods in the two run-ways being spaced from the transverse portion of the U-shape member, a transverse rod secured to said run-ways, providing means to hold the inner and outer rods therein in correct spaced relation, a ball-receiving pan having an inwardly and downwardly sloping bottom, means to secure said pan to the transverse portions of said run-ways, and a rod interconnecting said legs adapted to support the pan equipped ends of said run-ways.

8. A return-ball equipment for billiard tables and the like, comprising in combination with the top and legs for said table, a ball run-way inclinedly disposed beneath and on each side of said table and extending for substantially the full length thereof, each of said run-ways embodying two transversely spaced rods over which a billiard ball is adapted to travel, the outside rods in the two run-ways disposed, respectively, in close relation to the inside faces of said legs, two brackets, to which, respectively, the higher ends of said run-ways are swingingly connected, secured to the underside of said table top, a ball-receiving pan joining the lower ends of said run-ways, and a rod interconnecting the two legs of said table, adapted to support said run-ways in their normal, operative positions and to serve automatically to bring said run-ways and said pan into closer relation to said table top when said legs are swung into folded positions.

9. A return-ball equipment for a billiard table having folding legs comprising two inclined ball run-ways each pivotally connected at their higher ends to said table, each of said run-ways including two transversely spaced rods, a transverse rod integral with and forming a part of the outer rods in said run-ways, a cross-tie member fixed to the four rods in the two said run-ways adapted to maintain correct relative spacing therebetween, a ball-receiving pan mounted on the transverse members interconnecting said run-ways at their lower ends, said pan embodying a bottom portion declining from the horizontal toward the pivotally connected ends of said run-ways, a sloping portion extending outwardly and upwardly from each end of the said declining centrally disposed bottom portion, said sloping portions constituting impacting surfaces for the billiard balls as they drop from said run-ways into said pan, a guard portion extending outwardly and upwardly from each of said sloping portions adapted to impinge of the underside of the outer rods in said run-ways, a shelf portion on said pan overlying said cross-tie member, and a turned-over upright portion rising from the bottom of said pan and enclosing the transverse portion of the outer members in said run-ways.

10. A return-ball equipment for billiard tables having folding legs, comprising two inclined ball runways extending integrally the full length of said table and swingingly connected at their higher ends to said table, a ball-receiving pan secured to and at the lower ends of said runways and extending transversely from one to the other thereof, means to support the lower ends of said runways whereby they may be brought automatically into closer relation with said table when said legs are swung into folded positions, and means for hingedly supporting the legs on the table at a distance below the bed thereof whereby space for the runway and receptacle is provided in the under-face of the table when the legs are in folded position.

11. A return-ball equipment for billiard tables having folding legs, comprising two inclined ball runways extending integrally the full length of said table and swingingly connected at their higher ends to said table, a ball-receiving pan secured to and at the lower ends of said runways and extending transversely from one to the other thereof, means to support the lower ends of said runways whereby they may be brought automatically into closer relation with said table when said legs are swung into folded positions, said swinging connection comprising a stirrup mounted on the under-face of the table, and members on the run-ways contacting opposite faces of the stirrup.

12. A return-ball equipment for billiard tables having folding legs, comprising two inclined ball runways extending integrally the full length of said table and swingingly connected at their higher ends to said table, a ball-receiving pan secured to and at the lower ends of said runways and extending transversely from one to the other thereof, means to support the lower ends of said runways whereby they may be brought auto-

matically into closer relation with said table when said legs are swung into folded positions, and means to secure the runways and ball-receiving pan against longitudinal movement beneath the table.

13. A return-ball equipment for billiard tables having folding legs, comprising two inclined ball runways extending integrally the full length of said table and swingingly connected at their higher ends to said table, a ball-receiving pan secured to and at the lower ends of said runways and extending transversely from one to the other thereof, means to support the lower ends of said run-ways whereby they may be brought automatically into closer relation with said table when said legs are swung into folded positions, and means for supporting the folding legs on the table, said means including downwardly depending brackets fastened to the under-face of the table, and pivot means at the lower end of the brackets for supporting the upper ends of the table legs.

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