(No Model.)

S. DE GAETANO.

BILLIARD AND POOL TABLE.

No. 562,818. Patented June 30, 1896.

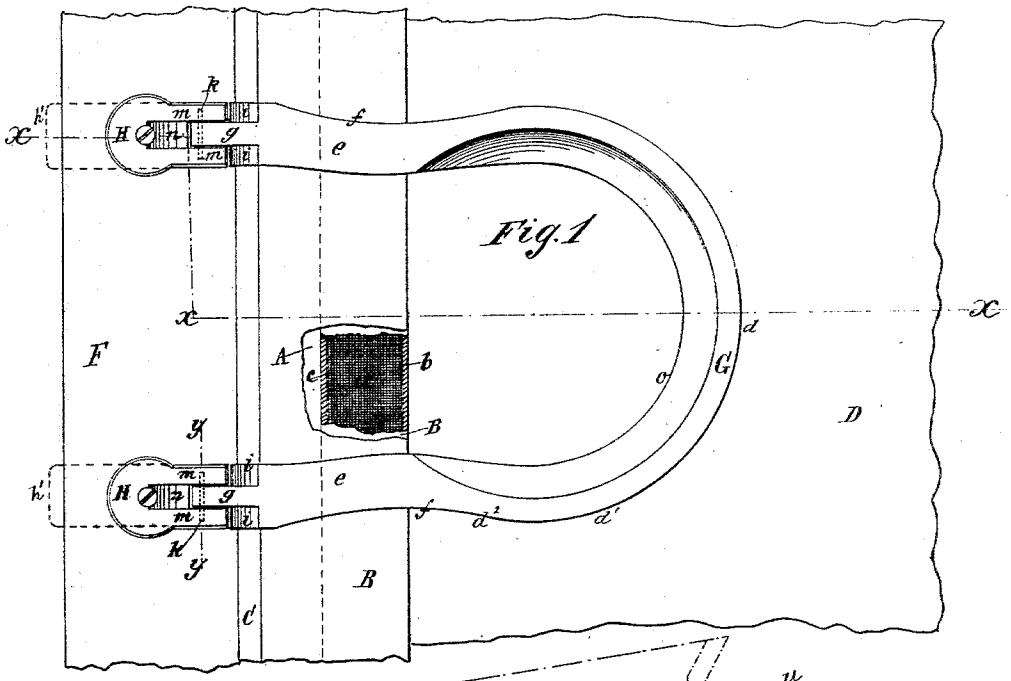

Fig. 1

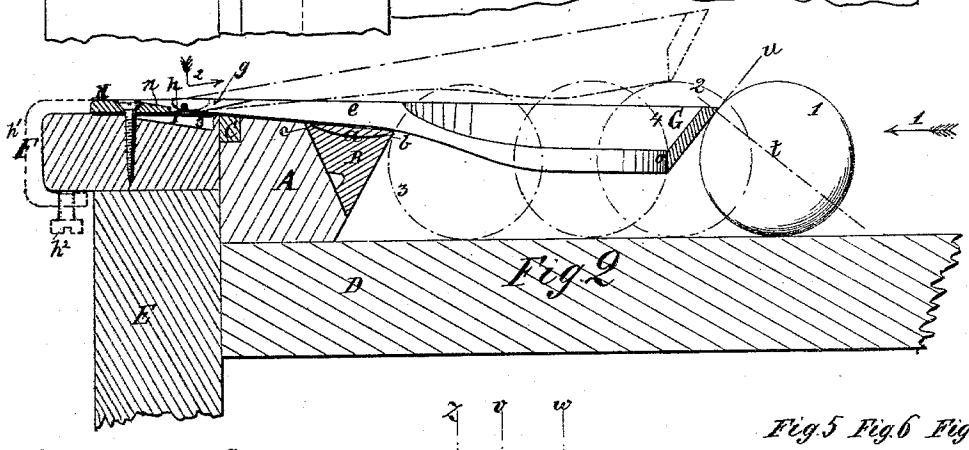

Fig. 2

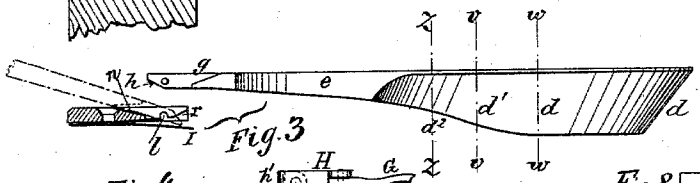

Fig. 3

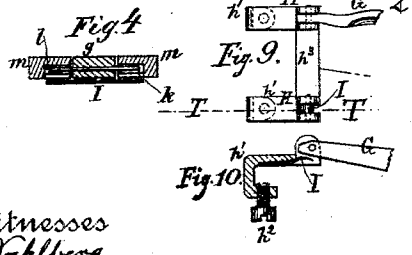

Fig. 4

Fig. 9.

Fig. 10

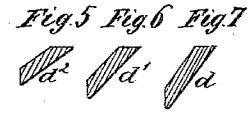

Fig. 5 Fig. 6 Fig. 7

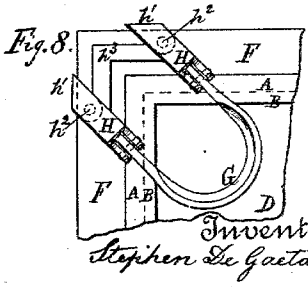

Fig. 8.

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UNITED STATES PATENT OFFICE.

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BILLIARD AND POOL TABLE.

SPECIFICATION forming part of Letters Patent No. 562,818, dated June 30, 1896.

Application filed June 1, 1894. Serial No. 513,184. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN DE GAETANO, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Billiard and Pool Tables, of which the following is a specification.

My invention comprises the combination, with the billiard-frame and the elastic cushion, of a readily attachable and detachable ball-trap of specific construction, serving as a substitute for the ordinary pocket (which thus may be dispensed with) and adapting the billiard-table also to the game of pool, which will be hereinafter described and specifically claimed, reference being had to the accompanying drawings, wherein—

Figure 1 represents a top view of a portion of a table provided with my present improvements, the rubber being partly broken away. Fig. 2 is a cross-section of the same on the broken line *x x x* of Fig. 1. Fig. 3 is a side view of the ball-trap detached from its hinging plates or buttons and a central section of the latter, also taken on line *x* of Fig. 1. Fig. 4 is a cross-section, on *y y* of Fig. 1, of the said hinging-plate, drawn to a larger scale than in the previous figures. Figs. 5, 6, and 7 are cross-sections of the trap, taken on the lines Z Z, *v v*, and *w w* of Fig. 3, respectively. Figs. 8 and 9 are top views showing a modification of the hinging-plate of a corner trap and side trap, respectively; and Fig. 10 is a section on line T T of Fig. 9.

I am aware that a substitute for a pocket has been made consisting of a frame permanently pivoted to a bracket secured upon the billiard-frame and carrying a circularly-bent wire, upon which latter are hinged a series of pendent flaps arranged to swing out of the way of an entering ball and then resume their normal position and act as stops to prevent the exit of the ball when rebounding, and those devices are not of my present claim to invention.

Referring to the drawings, A designates the wooden rail of the cushion-frame; B, the usual triangular rubber strip, which is the cushion proper; C, strip securing the edge of the cloth covering; D, part of the slate table; E, side rail of table-frame, and F top rail of table-frame.

a is an elastic strip of one or more thicknesses of hair-cloth embedded in the cushion B just beneath the upper surface of the latter; but, that strip being considered a separate and distinct invention, I have to reserve the description and claim thereof for a separate application.

The ball-trap consists of a circular-faced U-shaped frame or rim beveled at an angle of about fifty degrees at *d*, gradually becoming more acute, about forty-five degrees at *d'*, and about thirty degrees at d^2. The legs *e* of the U-frame are curved inward slightly at *f* toward each other to prevent the balls from glancing off (but causing it to raise and enter the trap) when striking the U-frame closely to the cushion, and have at their ends a tongue *g* beveled upon its under side at *h* (for easy insertion in and removal from the jaw, where it is temporarily pivoted to fold back upon the cushion; for instance, to throw back the side trap when playing a ball along the cushion to the corner-trap) and bevels *i* on the upper surface on both sides at the root of said tongue, so as to fold down sufficiently low, as shown in dotted lines in Fig. 3, to not interfere with the convenience of aiming and shooting. A pin *k*, secured through the tongue *g* near the lower end of bevel *h*, is the pivot on which it is hinged in corresponding notches or grooves *l* in the under surface of the lateral extensions *m*, which form the jaw in which the tongue *g* enters for pivoting it to the plate or button H, of which said extensions are integral parts.

The plate or button H is fastened by a screw to the top rail F, as seen in Figs. 1 and 2; is beveled on its upper surface back of the jaw at *n* to allow of the low folding aforesaid, as in Fig. 3, and has underneath a flat spring I, free to deflect into a suitable slot *s* in the top rail F, but which spring normally closes upon the under side of the button H. The ends of the extensions *m* are beveled beneath at *r*.

In order to attach the traps for playing pool, it is only necessary to insert the tongues *g* between the bevels *r* and springs I until the pins *k* lodge in the notches *l*, the said springs normally tending always to keep the frame G down when on either side of the vertical, and to detach the traps for playing "carambol" (now generally called "billiards") it is only neces-

sary to depress the spring I by the tongues *g* and pull the latter, with their pins *k*, out from the notches *l* and from between the jaws *m m* and springs I, as indicated by arrow 2, and put the traps aside until the next time needed for pool-playing.

The operation of the ball-trap, when playing pool, is readily understood with reference to Fig. 2.

When the trap is in its normal position, (shown in full lines,) its inner edge *o*, which is flat, is vertical and its central elevation coincides with or is slightly below that of the horizontal diameter of the ball. Assume the ball to enter in the direction of arrow 1 and strike the trap when in the position of the circle drawn in full lines and marked 1, in which position the point of intersection between the face-line *u* of the trap and the diameter *t* of the ball, at right angles to said face-line, is considerably above the horizontal diameter of the ball. The ball will then rise and enter the trap. When in the position of the dotted circle, (marked 2,) it will have raised the trap in its dotted position. When in position of circle 3 it strikes the cushion, the trap has dropped again into its normal position, and when having rebounded to the position of circle 4 it strikes the vertical inner edge *o* of the trap and is thus stopped and retained in it.

The strength of the spring I and its proximity to the tongue *g* of the trap G are so adjusted that the spring offers little or no resistance to the rise of the trap until the latter is high enough for the ball to enter, but at that instant it acts with sudden and powerful resistance for the purpose of causing the trap to drop again with sufficient rapidity to entrap the ball and prevent its exit on rebounding from the cushion.

Instead of securing the hinging-plates H by a screw through the upper surface of the top rail F, they may be provided with extensions *h'*, (shown in dotted lines in Figs. 1 and 2 and in full lines in Figs. 8, 9, and 10,) bent so as to adapt them to embrace the projecting edge of the top rail F and be clamped to the latter by tightening a set-screw h^2 from underneath. In this modification the plates H H of each pair are connected by a solid bar h^3 to always keep them in their proper relative position apart. By simply unturning the set-screws h^3 a little the clamping-plates H can be readily removed without even unhinging from them the ball-traps, thus leaving the surface of the top rail entirely smooth when playing billiards.

Having thus described my invention, I claim—

1. In a billiard or pool table, a circular **U**-shaped ball-trap G pivoted to the top rail of said table and beveled on its edge of impact with the balls at angles gradually decreasing from *d* to *d'* and d^2 and presenting its inner edge *o* as a stop against exit of the balls at about the horizontal diameter of the latter, substantially as set forth.

2. In a billiard or pool table, a circular **U**-shaped ball-trap G pivoted to the top rail of said table and beveled on its edge of impact with the balls at angles gradually decreasing from *d* to *d'* and d^2 and presenting its inner edge *o* as a stop against exit of the balls at about the horizontal diameter of the latter, the legs *e* of the trap being curved inward or toward each other slightly at *f*, for the purpose set forth.

3. In a billiard or pool table, the combination of: a circular **U**-shaped ball-trap G having under-beveled tongues *g* and pivoting-pins *k* through the same, with plates or buttons H securable to the top rail and having under-beveled jaws *m* with notches *l* in the under side thereof, springs I subjacent to said buttons, and recesses *s* in the top rail to allow for deflection of said springs, for admitting of the pivotal attaching and detaching of said ball-traps, substantially as specified.

4. In a billiard or pool table the combination of a circular **U**-shaped ball-trap G beveled on its edge of impact with the balls at angles gradually decreasing from *d* to *d'* and d^2 and presenting its inner edge *o* as a stop against exit of the balls, with a hinging-plate H having extension *h'* adapted to embrace the edge of the top rail and provided with set-screws h^2, as specified.

Signed at Bloomfield, in the county of Essex and State of New Jersey, this 11th day of May, A. D. 1894.

STEPHEN DE GAETANO.

Witnesses:
A. W. ALINQVIST,
T. E. HAYES.