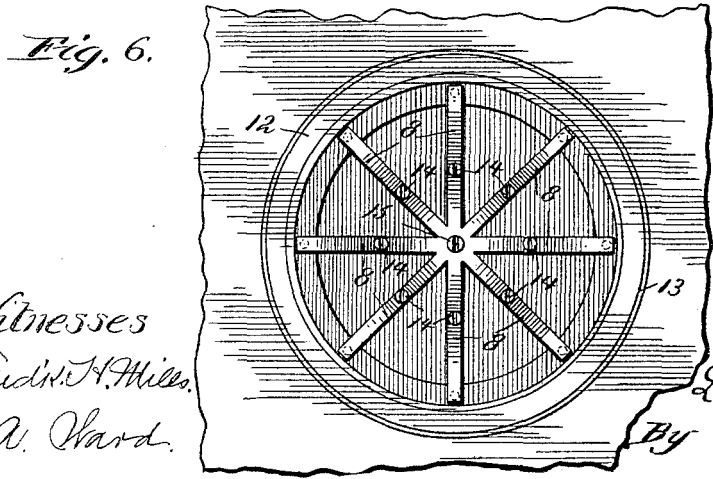
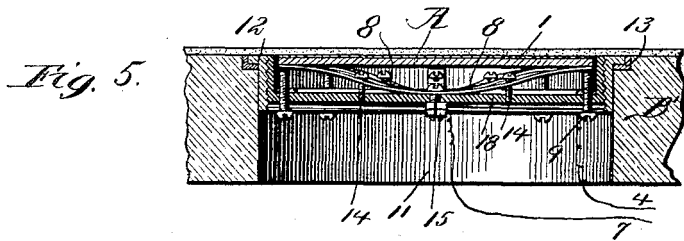
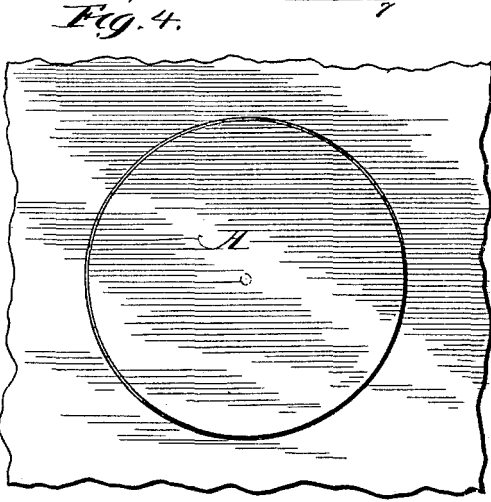
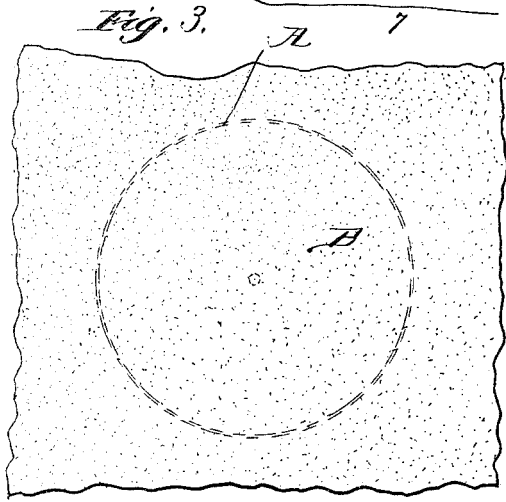
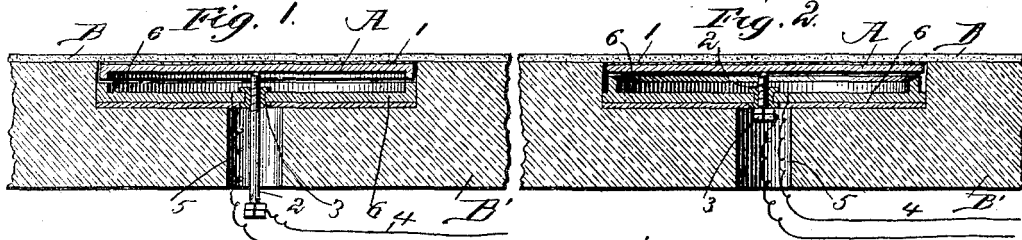


L. A. SPAULDING.
BILLIARD TABLE.

No. 453,674.

Patented June 9, 1891.



Witnesses
 Fred. H. Mills.
 A. Ward.

Inventor:
 Lyman A. Spaulding
 By Chas. G. Page
 Atty

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Fig. 7.

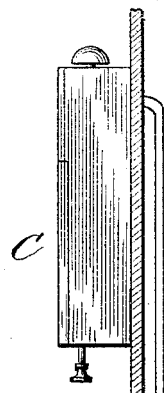
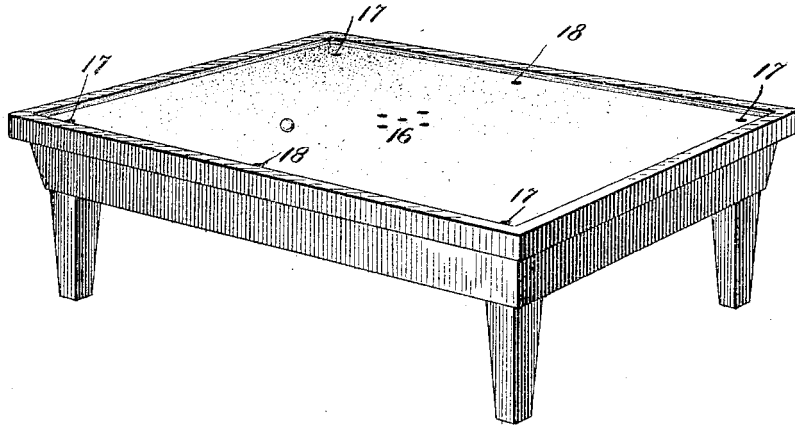


Fig. 8.

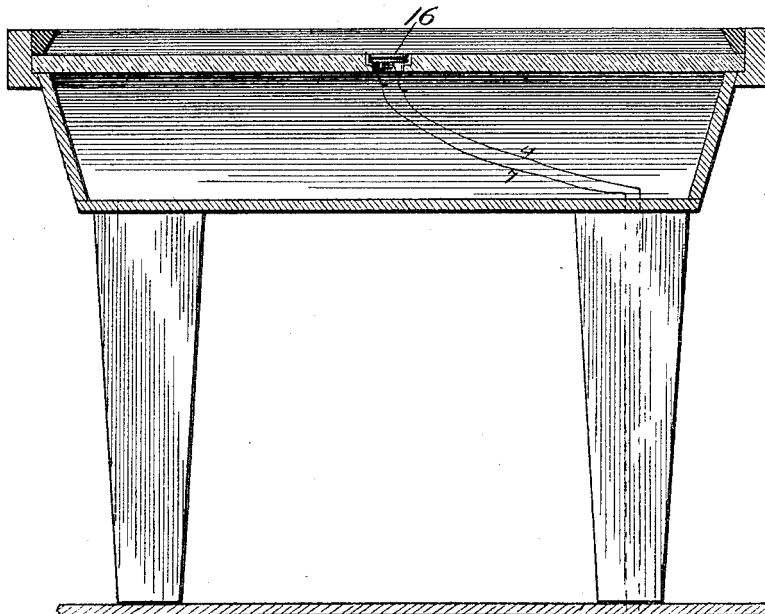
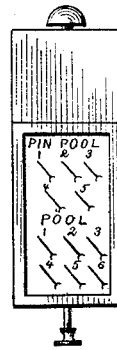


Fig. 9.



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UNITED STATES PATENT OFFICE.

LYMAN A. SPAULDING, OF CHICAGO, ILLINOIS.

BILLIARD-TABLE.

SPECIFICATION forming part of Letters Patent No. 453,674, dated June 9, 1891.

Application filed March 7, 1891. Serial No. 384,115. (No model.)

To all whom it may concern:

Be it known that I, LYMAN A. SPAULDING, a citizen of the United States, residing at Chicago, in the county of Cook, State of Illinois, have invented a new and useful Improvement in Pool and Billiard Tables, of which the following is a specification.

The object of my invention is to afford a novel and pleasing game of both pool and billiards; to permit the game of pin-pool to be played in effect without the use of pins, and hence without the labor of setting a set of pins; to permit the game of pocket-pool to be played in effect upon a carrom-table without pockets; to permit the game of pocket-billiards to be played in effect upon a carrom-table, and to permit various other games to be played upon pool or billiard tables either with or without pockets.

In carrying out my invention I provide in connection with a pool or billiard table an electric indicator of any desired construction and operate said indicator by the act of rolling a ball upon or over a certain spot or point on the table. To attain such end I provide the table with any desired number of electric "push-buttons," as I prefer to term them, and arrange said buttons in circuit with the indicator, so that when a ball is rolled upon or over a push-button it will respond to the pressure of the ball and cause the indicator or annunciator to register and desirably announce such fact. The push-buttons are received within the table-bed and are desirably arranged just under the cloth, which latter can be provided with spots or points where the push-buttons are located. The push-buttons could be used in conjunction with a normally-closed battery-circuit; but I prefer employing a normally-open circuit, since thereby the life of the battery is prolonged. The push-button can be constructed in various ways and arranged at various points. Thus, for example, I may arrange a push-button adjacent to each corner of the table, and thus provide a substitute for pockets. Again, the push-buttons can be grouped in the center of the table in correspondence with the arrangement of pins for pin-pool. It will also be observed that when a ball rolls over a push-button a record of such fact is made by the indicator, but that should the ball after strik-

ing the cushion roll over the push-button a second time and before the indicator has been reset no further indication will take place.

In the accompanying drawings, Figure 1 represents in section a portion of the table-bed and a vertical central section through a push-button embodying the principles of my invention. Fig. 2 is a like view with a slight variation in the construction of the push-button. Fig. 3 is a top plan of a portion of the cloth, and indicates in dotted lines a push-button below the same. Fig. 4 is a top plan of a portion of the bed and a push-button with the cloth removed. Fig. 5 is a view similar to Figs. 1 and 2, with a somewhat different construction of contacts for the push-button. Fig. 6 is a top plan of Fig. 5, with the cloth and the plate or push-button head removed. Fig. 7 illustrates the application of my invention to what is known as a "carrom-table." Fig. 8 is a cross-section through the table, and illustrates connection between one of the push-buttons and the annunciator or indicator. Fig. 9 illustrates the face of an annunciator or indicator.

The term "electric push-button," as herein used, comprehends a movable plate, ring, or analogous device, so arranged in connection with a circuit that when depressed by the weight of a ball it will either make or break a battery-circuit, as the case may be, for the purpose of causing an indication of the fact in an annunciator or indicator of any suitable or desired construction.

As a simple and efficient construction of push-buttons, I have herein provided a plate A, which, when used in connection with a pool, billiard, bagatelle, or other desired game-table having a cloth-covered bed, can be arranged just under the cloth B, as best illustrated in Figs. 1 and 2. In said two figures the plate is of metal or suitable conducting material, and a sheet I, of paper or other suitable material, is preferably laid between the plate and the under side of the cloth. The said plate or push-button A is centrally supported by the upper end of a binding post or pin 2, which is adjustably held in a threaded bearing 3, of suitable insulating material, the lower end of said post or pin being extended below said bearing, so as to connect with one

of the circuit-wires 4. The push-button is arranged within the upper portion of a recess 5 in the table-bed B', and is supported over and normally free from contact with a conducting-plate 6, which is arranged within the lower portion of said recess and properly insulated. The other circuit-wire 7 is connected with the conducting-plate 6, and hence when the plate or button A is tilted so as to come in contact with said conducting-plate 6 a circuit will be established and an action in the indicator or annunciator C, Figs. 8 and 9, be caused to take place. In Fig. 1 the disk or button A and the conducting-plate 6 are flanged, while in Fig. 2 the conducting-plate only is flanged. The conducting-plate serves as one of two contacts, while the button is provided with or adapted to form the other contact. Although the plate or button A is in Figs. 1 and 2 arranged to tilt, it still comes within the term "push-button" as herein broadly used, for the reason that when a ball is rolled upon the plate or button it will at one side be pushed down by the weight of the ball to an extent to close the contacts. By thus arranging the plate or button to tilt upon a central support it will be operated by a ball rolling upon it from any direction, and, also, when it is thus supported, a spring need not be employed, since the cloth will serve to maintain the tilting push-button or plate normally in a horizontal plane, it being observed that the cloth will, however, yield sufficiently to allow the device to tilt under the weight of the ball.

In practice the push-button will instantly respond to the weight of a ball, and by adjusting its central support the device can be rendered more or less sensitive to pressure. In the construction illustrated by Figs. 5 and 6 the plate or push-button A is arranged with reference to the cloth B, as in the preceding figures, but is spring-supported, and hence is in effect a spring push-button. The spring is arranged below the plate or button, and is desirably formed by a set of spring-arms 8, arranged to radiate and bend upwardly from a common center. With such an arrangement the buttons, or, as herein shown, the outer ends of the spring-arms, serve as the upper contacts, while the lower contacts are formed by a set of screws 9, which are arranged under the outer ends of the spring-arms. As a convenient way of supporting said contacts 9, they are adjustably held in a plate 10, which can in turn be held in any suitable way within an opening 11, formed in the table-bed B', or, as herein shown, said plate can be provided with an externally-threaded marginal flange which is screwed into a ring-holder 12. The ring-holder is fitted and held within the opening 11, and may, for example, have its upper edge flanged and seated on a filling 13, of cement or plaster-of-paris. The spring-arms allow the push-button to tilt when a ball is rolled thereon from any direction, and said arms can, when necessary,

be adjusted by screws 14. The circuit-wire 4 connects, for example, with one of the lower contacts 9, and in such case all of the said lower contacts 9 must be properly insulated from plate 10 or the latter made of some suitable insulating material. With this arrangement the wire 7 can connect with the inner end of the spring-arms by a screw 15, herein arranged to secure upon the plate 10 a central portion, from which the spring-arms radiate. When, therefore, the button is tilted so that one or more of the spring-arms shall come in contact with one or more of the screws or lower contacts 9, a circuit will be established through the spring.

From the foregoing it will be obvious that various forms of push-buttons consisting of rings or plates can be employed, and that various forms and arrangements of contacts can be provided, and hence for the broader purpose of my invention I do not limit myself to the particular construction herein shown.

I find in practice that the push-buttons can be made extremely sensitive, and that they can be made to operate with an exceedingly slight extent of movement, and hence that while they will instantly respond to the weight of a ball no obstruction will be offered to the free and true rolling of the ball over the table.

While I prefer covering the push-buttons with a cloth, they may on certain game-tables be left uncovered. When the push-buttons are arranged under the cloth, the points whereat they are severally located can be indicated by dark or other suitably-colored spots on the cloth. Thus in Fig. 7 I have shown at the center 16 of the table a group of spots arranged for pin-pool. As illustrative of another arrangement, I have shown spots 17 arranged at the angles or corners of the table in correspondence with corner pockets, and have also shown spots 18 arranged in correspondence with side pockets. Various other arrangements of push-buttons can be made in accordance with the game to be played—as, for example, the push-buttons and spots could be arranged for bagatelle, in which case a bagatelle-table may be fitted with my invention.

The annunciator or "indicator," as it can be generally termed, can be of any known or desired construction. It may have a bell which is sounded when a ball rolls onto a spot, and any suitable means for registering such fact, a desirable construction of indicator being such as is found in railway-car and hotel indicators, which register a call by the drop of an arm or index-hand. With such arrangement the indicator will have an arm or index-hand for each push-button on the table, and hence when any one of the push-buttons is operated by a ball its allotted indicator-arm or index-hand will drop and so remain until adjusted to its normal position. For certain games, however, a bell only may be sounded, or an indicator can be provided

which will automatically note each time a ball rolls over a spot. The wires can pass down through or alongside of the table-legs, as may be preferred, and the indicator can be arranged in any desired position, either away from or on the table, with the wires distributed accordingly.

With further reference to the centrally-supported tilting plate or push-button illustrated in Figs. 1 and 2 and the spring-supported plate or push-button shown in Fig. 5, it will be observed that in the last-mentioned figure the plate or push-button will tilt the instant a ball rolls over its edge portion. Of the two arrangements, however, I prefer the one illustrated in Figs. 1 and 2, wherein the plate or button is in effect supported to lie against the cloth, which latter normally holds the plate or push-button flush or substantially flush with the top surface of the table-bed. When the plate or push-button is depressed at any point along its edge portion, the cloth over its opposite edge portion will yield sufficiently to allow the push-button to tilt to an extent to close the circuit, but will act as a spring and restore the button to its normal position as soon as it is relieved from the pressure of the ball, and I find that with this arrangement I can make the push-button so sensitive that it can be operated by simply blowing upon the cloth at a point over the push-button. In both cases, however, Figs. 1, 2, 5, and 6, the tilting push-button is, broadly considered, subject to a spring formed in the one instance by the stretched cloth and in the other by spring-arms or other suitably-arranged springs.

What I claim as my invention is—

1. A game-table provided with one or more electric push-buttons arranged to respond to the weight of a ball, substantially as set forth.
2. A game-table provided with one or more

electric push-buttons arranged to respond to the weight of a ball, and an indicator to give notice of the action of a push-button, substantially as set forth.

3. In a game-table such as set forth, an electric push-button arranged below the cloth and responsive to the weight of a ball, substantially as described.

4. In a game-table such as set forth, an electric push-button arranged under the cloth and responsive to the weight of a ball, and an indicator to indicate the action of the push-button, substantially as described.

5. In a game-table such as set forth, a tilting electric push-button arranged within the table-bed in position to receive the weight of a ball rolling along the table, an indicator, and a circuit which is established by a depression or tilt on the part of the push-button, substantially as described.

6. In a game-table such as set forth, a tilting electric push-button arranged within a recess in the table-bed and normally held in a horizontal plane by spring resistance which yields and permits the push-button to yield to the weight of a ball, substantially as described.

7. In a game-table such as set forth, a centrally-supported tilting electric push-button arranged below and held against the cloth, substantially as set forth.

8. In a game-table, the combination of the push-button A, held within a recess in the bed and supported centrally, a plate 6, arranged under the push-button, an indicator, and the circuit-wires, respectively, in electric connection with the push-button A and the plate 6, substantially as described.

LYMAN A. SPAULDING.

Witnesses:

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FREDK. H. MILLS.