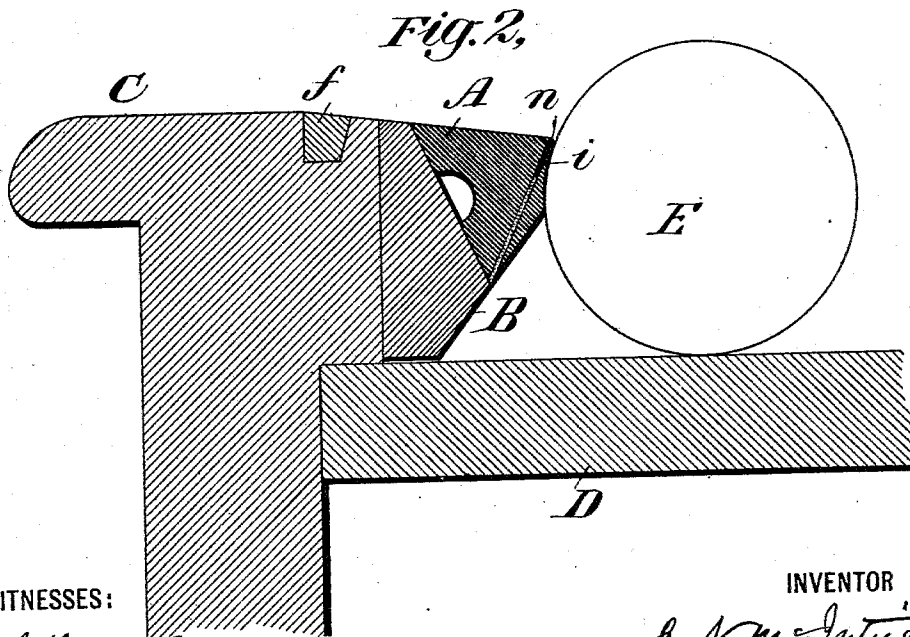
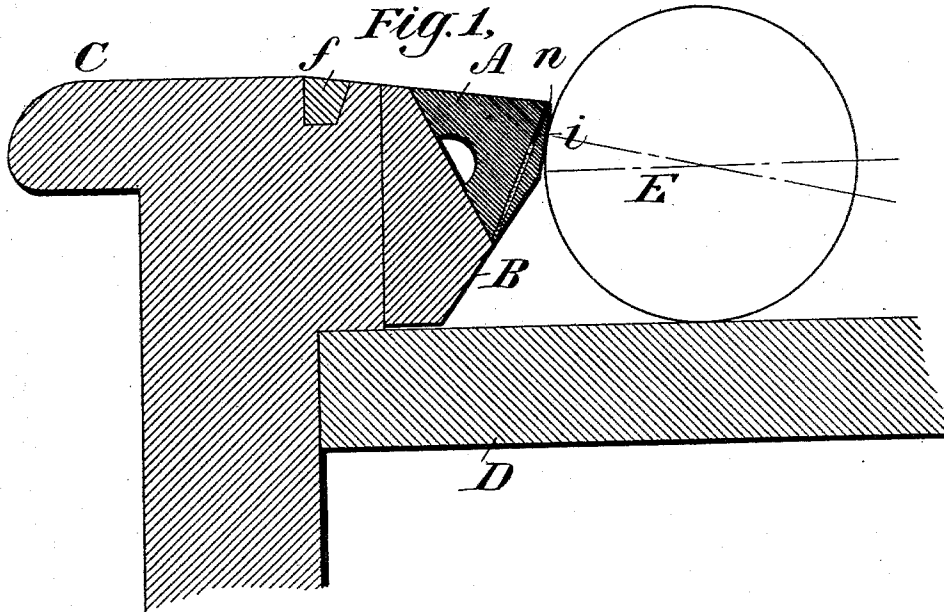


(No Model.)

J. N. MCINTIRE.
BILLIARD TABLE CUSHION.

No. 561,911.

Patented June 9, 1896.



WITNESSES:

A. H. Maybrook
M. Rath.

INVENTOR

J. N. McIntire

UNITED STATES PATENT OFFICE.

JACOB N. MCINTIRE, OF NEW YORK, N. Y., ASSIGNOR TO THE BRUNSWICK-BALKE-COLLENDER COMPANY, OF SAME PLACE.

BILLIARD-TABLE CUSHION.

SPECIFICATION forming part of Letters Patent No. 561,911, dated June 9, 1896.

Application filed April 15, 1896. Serial No. 587,590. (No model.)

To all whom it may concern:

Be it known that I, JACOB N. MCINTIRE, a citizen of the United States, residing at New York, in the county of New York and State
5 of New York, have invented a certain new and useful Improvement in Billiard-Table Cushions, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming
10 part of this specification.

My invention relates to cushions for billiard-tables, and has for its main objects to provide for use a billiard-table cushion which will be faster than those now in general use,
15 on which the "English" (in making twisting shots) will be very effectual, which will not cause the ball to wear or "gutter" the bed-cloth so badly, and which shall be exceedingly efficient, durable, and desirable in action,
20 while costing little, if any, more than the kind of cushion now manufactured.

In another application of mine, Serial No. 566,428, now pending in the United States Patent Office, I have shown and described
25 and claimed generically the novel features of my improved cushion, and in said application I have also claimed one species of the genus shown and described. This application is designed to cover another species of the broad
30 idea or invention. Therefore my invention in this case may be said to consist in a rubber cushion-strip having a soft working face (or ball-contacting surface) that is located in a plane slightly oblique to the perpendicular,
35 and so that the ball will first contact therewith at a point slightly below the upper edge. The said cushion-strip, having an interiorly-arranged face-hardening strip of some suitable strong and resilient material, extends
40 from a point close to the upper edge of the cushion-strip downwardly and rearwardly, so as to lie in a plane divergent from the plane of the working face of the cushion-strip, all as will be hereinafter more fully explained,
45 and as will be most particularly pointed out in the claim of this specification.

To enable those skilled in the art to which my invention relates to make and use cushions comprising my said invention, I will now
50 proceed to more fully describe the latter, referring by letters to the accompanying draw-

ings, which form part of this specification, and in which I have shown my said invention carried into effect in precisely that form of cushion-strip which I have so far made and
55 successfully used, although such variations in the form, proportions, and precise arrangement of the parts as may be made without materially changing the action of the cushion may of course be made without departing
60 from my invention.

In the drawings, Figure 1 is a vertical section of so much of a billiard-table with a ball resting on the bed thereof and barely in contact with the cushion as is necessary to be
65 shown to illustrate my invention. Fig. 2 is a similar view, but showing the ball in such forcible contact with the working face of the cushion that its surface touches the entire working face of the cushion-strip in a vertical
70 direction.

In the several figures the same parts will be found always designated by the same reference-letter.

A is the cushion-strip constructed according
75 to my invention, composed of any compound or material suitable for the purposes of a billiard-cushion and securely fixed, in about the usual manner, to the wooden "lining" B of the cushion-rail C, although it is not
80 essential, of course, to my invention that the said cushion-strip be secured to the cushion-rail in this usual manner so long as it be properly held in place with its working face in substantially the relationship to the bed
85 D of the table that I have shown it in.

As usual, the cushion-rail is securely but removably attached to the bed of the table and the finished cushion is covered with green cloth, tacked at its lowermost portion
90 to the bottom of the wooden lining B, stretching thence upward over the cushion-strip and having its upper rear edge wrapped around the inserted retaining-strip F, after the fashion familiar to the billiard-table manufacturer.
95 I have, however, omitted this cloth covering of the cushion, as well as the bed-cloth, in order that the drawings may be made to more distinctly show (without a confusion of lines) the more important parts of cushion
100 proper.

E is a billiard-ball, which, however, is shown

placed a little differently relatively to the cushion in the respective figures, as will be presently described.

In the case shown my improved cushion-strip is molded with a small semicylindrical longitudinal recess *a*, running along the middle of its back side, and in practice, so far, I have made the strip with a canvas backing in a well-known manner; but these particulars of the cushion-strip shown are not at all material to my invention, nor is it essential that the shape and size of the rubber below the working face thereof be just as I have shown them to be. Indeed, I have contemplated variations in these particulars, which, however, would not change the principle of construction and mode of operation peculiar to my invention. I have shown all the parts drawn full sized, so that those skilled in the art and seeking to practice my invention can successfully carry out the latter by simply following exactly the said drawings.

Preferably the extreme upper front edge of the rubberstrip *A* is made slightly rounded, as seen at *n*, instead of perfectly angular or sharp, simply to render this upper corner less destructive of the green cloth covering by a frictional wear of the leather. This special form of this part has been shown in practice, with cushion-strips heretofore in use, to be desirable for the reason just above stated. The rounded upper edge of the strip, however, comes into active operation only when the ball *E* is played very hard against the cushion, though even with a comparatively light stroke the uppermost part of the stock of strip *A*, necessary to the formation of the rounded corner *n*, operates as a reinforce to the main portion of the said stock and thus influences the action of the working face of the cushion.

By reference now particularly to Fig. 1 it will be seen that the line representing the working face of strip *A* is only inclined backward very slightly from the vertical, as it extends downwardly from the rounded upper edge *n*, and that therefore the said line is tangential to the circle indicating the ball *E* at a point about three-sixteenths of an inch only above the level of the center of said ball. I have drawn two dotted radial lines at Fig. 1 to illustrate the above explanation; and it will be understood that while the ball is prevented from "jumping" by thus having its initial point of contact above its center and on an oblique (or cut-under) working face, the degree of obliquity is so slight that the repellent action of the ball in the slightly-downward direction does not cause any appreciable portion of said force to be expended in driving the ball downward (against the bed of the table) at the expense of the "legs" of the ball when making a stroke. As, however, it is in making comparatively hard strokes that, in the "diamond-shaped" cushion now almost universally employed, the wedging-

down action of the ball is most objectionable, both on account of detracting from the legs of the ball (or lessening the rebound thereof) and on account of the "guttering" of the bed-cloth by the pounding thereon of the balls, a most important novel feature of my improved cushion lies in this viz: that as soon as the ball *E* shall have been forced into contact with the entire extent of the working face, (vertically,) so that the latter is made to conform to the curved surface of the ball, as shown, for instance, at Fig. 2, then the repellent force of the strip *A* acts on the ball not only at a point coincident with the level of its center, but furthermore acts on the ball below a horizontal line passing through its center, and hence the cushion will in its effort to resume its normal condition throw the ball off with little or no appreciable downward force on the ball. Furthermore, inasmuch as that portion of the working face lying above the initial point of contact yields a little more readily under the impact of the ball (as the latter forces the face into the shape shown at Fig. 2) than does that portion below said point, it follows that that portion of the cushion-face acting at and below the level of the ball's center will exert a greater repellent force proportionately to extent than the part acting on the ball above its center, thus rendering the cushion competent to exercise a great repellent power on the ball and mainly in a horizontal action.

I need hardly add that the reason why the upper part of the working face acts less powerfully on the ball than the lower is because the rubber which backs up the former can yield to the impress of the ball more easily on account of the freedom of the top surface of the strip *A* to bulge upward, while the lower part of the working face is backed up by stock so disposed as to present more impediment to the forcing backwardly of this part of the said face. To prevent the upper edge of the working face, however, from yielding backwardly too readily, I arrange the face-hardening strip *i*, which operates to increase the resiliency of the cushion *A*, in a plane running divergently to the working face of the cushion, as clearly seen in the drawings; or, in other words, I arrange this strip so that while its upper edge is as near as practicable to the upper corner or edge of the working face of the cushion its lower edge is located some distance in rear of said working face, thus affording to the compressive action of the ball a face which is, in one sense, gradually more and more yielding from its upper edge downward, on account of the backing-up or face-hardening strip being located farther and farther away from the face of the cushion as the plane of the said strip descends from the upper edge of the cushion. By this peculiar arrangement of the face-hardening strip my improved cushion is rendered more desirable in action, especially for

certain kinds of strokes, than if the said strip were arranged parallel with the face of the cushion-strip.

5 In my improved cushion it will be seen that with the ball either a little larger or a little smaller than the standard size the point of initial contact is always on a plane that bears practically the same relationship to the circle (or circumference) of the ball E, because of
10 the working face having so slight a degree of obliquity and extending in all cases above the point of initial contact.

15 Having now so fully explained my invention that those skilled in the art can make and use cushions embodying it, in either the precise form in which I have so far practiced it or under some mere modification thereof, what I claim as new, and desire to secure by Letters Patent, is—

The combination, with a cushion-strip of 20 rubber compound, having a soft, flat, working face that is slightly oblique to a vertical plane, and that is located, relatively to the table-bed, so that the ball first contacts, at a point below the top edge thereof and above 25 the level of ball's center, of a face-hardening strip molded therein with its upper edge located as near as practicable to the upper edge of said face and extending, thence, downwardly and rearwardly, or in a plane divergent from that of said face; all in the manner 30 and for the purpose set forth.

In witness whereof I have hereunto set my hand this 8th day of April, 1896.

J. N. MCINTIRE.

In presence of—

M. RATH,

L. F. SILVA.