(No Model.)

J. D. O'CONNOR.

BILLIARD CUSHION.

No. 383,005. Patented May 15, 1888.

FIG. 1.

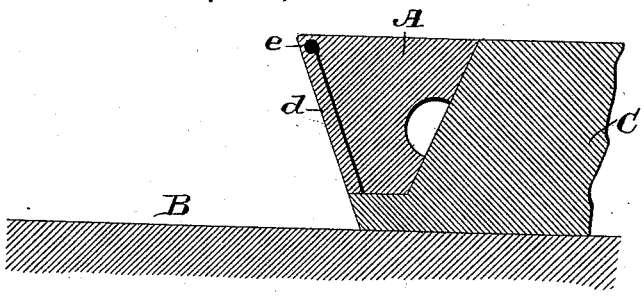


FIG. 2.

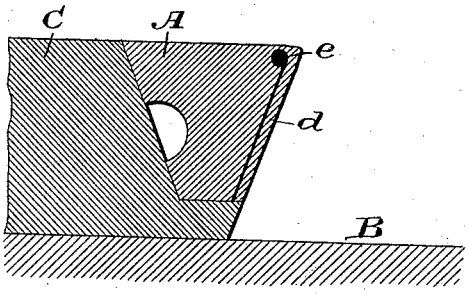


FIG. 4.

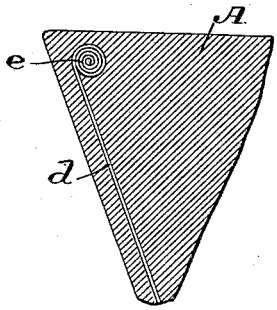
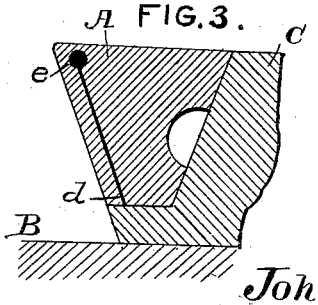


FIG. 3.



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BILLIARD-CUSHION.

SPECIFICATION forming part of Letters Patent No. 383,005, dated May 15, 1888.

Application filed January 18, 1888. Serial No. 261,113. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. O'CONNOR, of New York, in the county of New York and State of New York, have invented a new and useful Improvement in Billiard-Cushions; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Previous to my invention it has been customary in the manufacture of vulcanized-rubber billiard-cushion strips to incorporate within the strip and near its working-face various devices or combinations of devices for giving the proper degree of hardness to the face of the cushion, especially at the vicinity of the line of the working-face, at which the middle portions of the spherical balls mostly come in contact, and for also preventing any undue rise or lift vertically of the upper working-edge of the cushion-face, which might render the balls liable to "jump the cushion," as it is technically expressed.

Among other devices combined with the rubber strip for the purpose mentioned a single and also a series of strips of canvas or other woven material have been incorporated in the cushion-strip, and in combination with these have also been used a variety of stiffening devices located, preferably, near the upper edge of the cushion and composed of metal and various other hard substances. Such rubber cushion-strips have also had incorporated in them cords of various materials—such as catgut, &c.—located in close proximity to the upper edge or angle (in cross-section) of the cushion, and in some cases such edge-stiffening cords have been tied down by one means or another to the lower portion or root of the cushion.

My invention consists in the combination, with the usual rubber cushion-strip, of a strip of canvas or other textile fabric extending from near the root or base of the cushion-strip and parallel with the face of the cushion to a considerable distance therefrom and upwardly to the vicinity of the top edge or corner of the cushion-strip, at which locality the said strip of canvas is wound or otherwise formed into a cord, or, in other words, presents an appearance and condition analogous to that of a strip of textile fabric having a corded edge.

To enable those skilled in the art to which my improvement relates to make and use cushion-strips embodying my invention, I will now proceed to describe the latter, referring by letter to the accompanying drawings, which form part of this specification, and in which I have illustrated my invention carried out in substantially those forms in which I have so far successfully practiced it.

In the drawings, Figure 1 is a cross-sectional view of a cushion-strip made according to my invention, and showing in section a portion of the cushion-rail and the plane surface or bed of the billiard-table. Fig. 2 is a similar view, but showing a slight modification in the form and arrangement of the incorporated corded edged strip of canvas. Fig. 3 is a similar view showing still another slight modification. Fig. 4 is a partial sectional view of what is seen at Fig. 2, but showing only a part of the cushion-strip and a portion of the face-hardening device, drawn on an exaggerated scale, so as to better illustrate the structural peculiarities of the cushion-strip.

In the several figures the same parts will be found designated by the same letters of reference.

A is a cushion-strip composed of vulcanized rubber of the usual approved compound and quality, while C represents a portion of the ordinary cushion-rail, to which the cushion-strip is attached before the usual cloth covering is applied to the cushion-rail; and B represents simply the plane or working face of the billiard-table bed.

d is the plane or apron like portion of the canvas strip, the upper edge of which, as shown, is rolled or otherwise formed into a small compact cord or cylinder, *e*, from which the single-ply or apron-like portion *d* of the textile fabric extends downwardly in a plane about parallel with the outer surface of the cushion-strip and down to or nearly to the base or root of the said strip, all as clearly shown in the drawings.

With reference to the precise relative arrangement of the descending apron-like portion of the canvas strip *d* to its upper rounded or cord-like edge, *e*, variations may be made, as indicated, respectively, at Figs. 1 and 2, in the first of which figures the portion *d* is shown as departing tangentially from the inner peripheral portion of the cord-like part *e*, while

at Fig. 2 it is shown as extending downwardly tangentially from the outer portion of the periphery of the cord *e*. In lieu of either of these precise arrangements, the plane or apron-like portion *d* of the face hardening and regulating device might extend downwardly in a plane which would bisect the axial line or center of the cord-like portion *e*, as shown at Fig. 3.

Under any precise relative arrangement of the plane portion *d* with the corded upper edge, *e*, I deem it preferable to have the plane in which the portion *d* lies about parallel with the plane of the oblique face of the cushion-strip A, mainly because this is the most practical and convenient relative arrangement of the portion *d* with the face of the rubber cushion-strip, since in the usual and preferable mode of manufacture of rubber cushion-strips with incorporated face-hardening devices analogous to that herein shown and described the strip of canvas *d* and the main body portion of the rubber strip A have to be placed in juxtaposition, and one or more thin layers of rubber, to form the outer face of the cushion-strip, have then to be placed in contact with the outer surface of the strip of canvas, after which the assembled parts are placed within the vulcanizing-mold, within which, during the operation of vulcanization, the separate pieces of rubber and canvas become properly united, so that in the completed cushion-strip the textile fabric is properly incorporated within the rubber mass.

By reference to Fig. 4, in which the sizes of the parts are largely exaggerated, a perfectly clear understanding will be obtained of the fact that the upper corded edge, *e*, of the face-hardening device of the cushion is produced by winding up or rolling on itself, prior to the incorporation of the device within the rubber, of the upper edge or portion of the strip of canvas, *e*, that extends the whole length of the cushion-strip.

In the drawings, in which Figs. 1, 2, and 3 are drawn on about the scale of full size, I have shown, substantially, the preferable relative position of the cord *e* and the upper edge or working-angle of the cushion-strip; but the precise relative arrangement of these parts is not of course of great importance, so long as the cord be located at the proper elevation from the bed of the table to give the necessary rigidity and resiliency to the upper working-edge of the cushion-strip at a line having an elevation above the working-bed of the table about equal to the radius of the ivory spheres of the standard size, and designed to be used on the billiard-table to which the cushion-strip may be applied.

I have found in practice that with my improved construction of cushion-strip not only are the most desirable and approved results attained with reference to the degree and accuracy of the rebound of the ball from the cushion, but that the latter may be made perceptibly lower without danger of the ball jumping the cushion than it has heretofore been possible to make billiard-table cushions, which, of course, it will be understood by any billiard-player to be of very great importance, since the lower the top surface of the billiard-table cushion can be made relatively to the uppermost portion of the billiard-ball lying in contact with the cushion the more readily can the player reach and manipulate a ball lying adjacent to the cushion in the execution of various shots on a billiard-table.

In practicing my invention so far I have used the ordinary canvas known to the market for fabricated materials; but of course any sort of textile fabric of sufficient durability and strength to give the proper degree of hardness and resiliency to the working-face line of the cushion may be used in carrying my invention into effect, the pith of which, it will be understood, rests in the idea of a rubber cushion-strip of the ordinary material and form, having properly incorporated within it and in proper relationship to its working-face the extremely simple but very efficient face-hardening device constituted, as shown and described, of a single piece of fabricated material wound or rolled on itself at its upper portion to produce a cord-like edge that will give to the working-face line of the cushion the proper and the most desirable degree of hardness and resiliency, and which will at the same time, as I have hereinbefore stated, render the cushion strip, as an entirety, capable of producing the most desirable effects, while it may be made somewhat lower than cushions have been heretofore made for the purpose, and with the advantage herein-before explained.

Having now so fully explained the character and operation of my improved billiard-cushion strip that those skilled in the art can make and use the same, and wishing it to be understood that modifications may of course be made with reference to the precise character of the woven or textile fabric, and with reference to the precise relative arrangement of the parts shown and the particular size of the corded edge produced at the upper portion of the canvas strip, what I claim as my invention, and desire to secure by Letters Patent, is—

A cushion-strip composed of vulcanized rubber or other allied gum, and having incorporated within it and near its outer face a strip of canvas wound or rolled on itself to form an upper cord-like edge, as specified, and extending from said cord-like edge downwardly toward the base or root of the cushion, all in substantially the manner and for the purpose set forth.

In witness whereof I have hereunto set my hand this 13th day of January, 1888.

JOHN D. O'CONNOR.

In presence of—
WM. H. MYER,
A. M. WILLIAMSON.