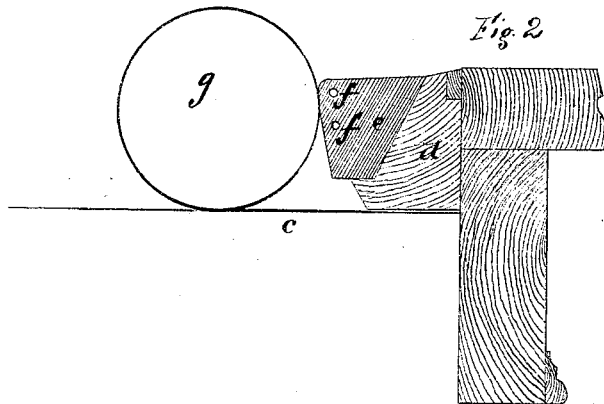
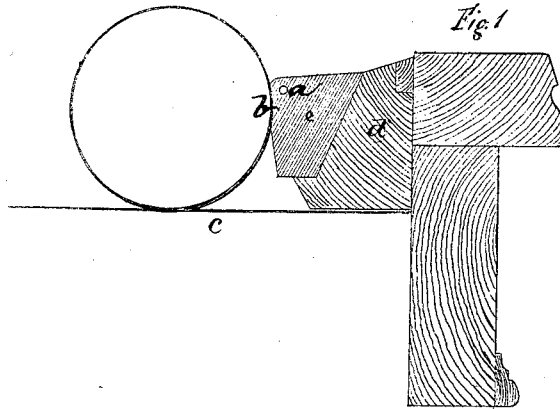


H. W. COLLENDER.

Improvement in Billiard-Table Cushions.

No. 114,410.

Patented May 2, 1871.



Witnesses,
J. P. Bennett.
W. H. Fisher

Hugh W. Colender

UNITED STATES PATENT OFFICE.

HUGH W. COLLENDER, OF NEW YORK, N. Y.

IMPROVEMENT IN BILLIARD-TABLE CUSHIONS.

Specification forming part of Letters Patent No. 114,410, dated May 2, 1871.

To all whom it may concern:

Be it known that I, HUGH W. COLLENDER, of the city, county, and State of New York, have invented a new and useful Improvement in Billiard-Table Cushions; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making part of this specification, in which—

Figure 1 is a vertical section of a billiard-table cushion as heretofore made, and Fig. 2 represents a like section of a cushion on my improved plan.

India-rubber cushions have heretofore been made with a single wire or cord embedded in the india-rubber near the upper part of the cushion, and a short distance within the face, as represented at *a*, Fig. 1, of the accompanying drawing.

The object of using a wire or cord so embedded in the india-rubber is to prevent the balls, when striking, from becoming too much embedded in the cushion, and hence to increase the elastic force and the accuracy of the rebound, particularly when the balls strike the cushion with considerable force, and at an angle less than a right angle; but in the use, thus, of a single cord or wire, it has been found necessary to place said wire at such an elevation as to be struck by the ball at a point slightly above the axis of the latter, (to prevent the jumping of the ball;) and it has been demonstrated by practice that the wire thus placed has induced to a more rapid destruction of the cloth of the bed by the increased concussions of the ball on the bed as it is wedged between the latter and the resisting wire, and the consequent formation of "gutters" in the cloth, as illustrated in an exaggerated form at the line *b*, Fig. 1 of the drawing; and as it is customary to continue the use of billiard-balls even after they have been slightly reduced in diameter to "true them up," this evil increases as the use of the balls and tables is continued.

The object of my invention is to avoid the bad effect above pointed out; and to this end

my said invention consists in combining with vulcanized india-rubber cushions for billiard-tables two parallel wires or cords embedded within the india-rubber, one a short distance below the other, and at such elevation from the surface of the bed of the table that the balls shall strike the face of the cushion between the two wires or cords, so that any tendency of the upper one to force or wedge the balls down against the surface of the bed of the table, shall be counteracted by the lower wire or cord, while at the same time the two shall increase the elastic force of the cushion, and prevent the balls becoming so much embedded in the cushions as when made of india-rubber alone.

In Fig. 2 of the accompanying drawing, *c* represents a part of the bed of a billiard-table; *d*, the wood part of a cushion; and *e*, the cushion, made of vulcanized india-rubber.

The two parallel cords *ff* I prefer to have embedded in the india-rubber while it is in the green or plastic state—that is, before vulcanization.

The ends of the wires or cords may be secured at the ends in any suitable manner; but I have found that, without fastening the ends, the india-rubber holds them in place with sufficient force.

A ball, *g*, is represented in Fig. 2, and it will be seen that the two wires or cords concur in preventing it from becoming too much embedded in the cushion, and that any tendency of the upper wire or cord to wedge it down against the surface of the bed of the table is counteracted by the lower wire or cord, while at the same time the upper wire or cord effectually prevents it from hopping.

I prefer to use steel wire for this purpose, although other substances can be used; and, although I prefer to have the wires or cords so far embedded as to have the india-rubber extend over them, they may extend to and form part of the face of the cushion, and be covered only by the cloth; and, although I have above described and represented, by

preference, the use of two wires or cords, having found in practice that they will effect the desired result, yet I do not wish to be understood as limiting myself thereto, as more than two, and even a continuous series of, wires or cords may be employed without materially changing the character of my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of two or more parallel wires or cords with india-rubber cushions for billiard-tables, substantially as and for the purpose specified.

HUGH W. COLLENDER.

Witnesses:

WM. H. BISHOP,
J. PLUNKETT.