A. Bassford,

Billiard Cushion,

No. 23,340, Patented Mar. 29, 1859.

Fig. 1.

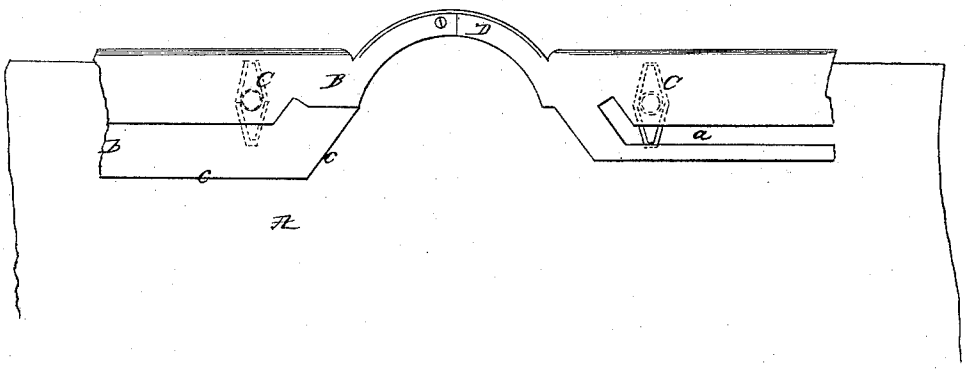


Fig. 2.

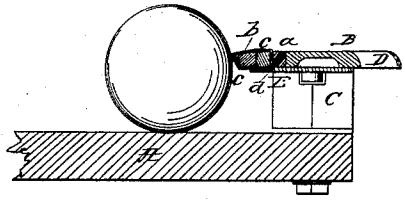
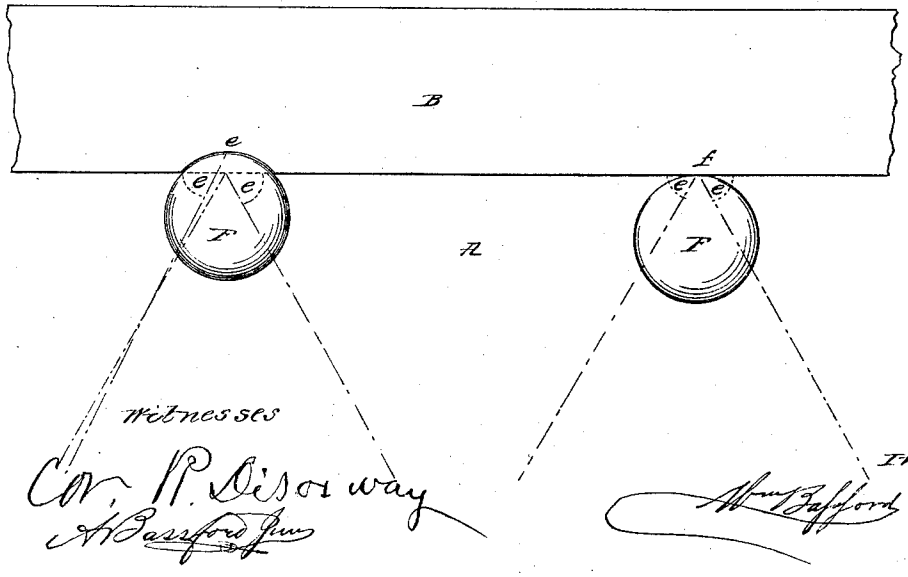


Fig. 3



Witnesses

Cor. P. Dickerman

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Inventor

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UNITED STATES PATENT OFFICE.

ABRAHAM BASSFORD, OF NEW YORK, N. Y.

CUSHION FOR BILLIARD-TABLES.

Specification of Letters Patent No. 23,340, dated March 29, 1859.

To all whom it may concern:

Be it known that I, ABRAHAM BASSFORD, of the city, county, and State of New York, have invented a new and Improved Cushion for Billiard-Tables; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, represents a plan or top view of part of a billiard table with my improved cushion. Fig. 2, is a transverse vertical section of ditto. Fig. 3, is a diagram representing the influence on the direction of a ball of the old cushion and of a cushion constructed according to my invention.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to construct a cushion for a billiard table, which will give a true angle to the ball thrown against it. In order to perfectly effect this object it would be necessary to have a cushion consisting of a perfectly hard and elastic substance, such as ivory, for instance, and if such a cushion were otherwise practicable it would be perfectly true; but such a cushion is impracticable because it would injure the balls, and because balls thrown against it at a very obtuse angle would slide on the edge instead of being reflected. The softer the cushion, that is, the greater the impression which the ball when thrown against it, makes on the same, the more influence it has on the angle of reflection. A cushion, therefore, constructed of a perfectly hard substance, but so arranged that it does not injure the balls and that the balls do not slide on its surface, will make the most perfect cushion in existence; and my invention consists in making or constructing the cushion of a metallic plate, the edge of which is covered with a thin strip of india rubber or other soft but elastic substance of the correct thickness in order to give perfectly true angles from any force of propulsion given to the ball, also to prevent the balls from becoming injured by coming in contact with the metal plate, but not sufficiently thick to cause a false reflection of the ball when played at the cushion.

To enable others skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A, represents part of a billiard table to which a metal plate B, is attached by means of studs C, so that the edge of the plate projects sufficiently beyond the studs to prevent the balls from coming in contact with the same. The metal plate B, may however be attached to the bed in various ways, and it will answer my purpose just as well if the same be screwed down on the upper edge of the regular wooden rail. I prefer however this method of attaching the same as it gives me advantages which I have explained elsewhere.

The metal plate B, is put on in several parts which are jointed at the pocket bows, D, so that these bows are made of the same piece of metal which constitutes the rail, and a slot A, is made in the plate B, near to its front edge, and extending all the way along the same, and a short distance up into those parts where the pocket bows are made. The edge of the plate B, is protected by a strip of india rubber *b*, as clearly represented in Fig. 2, which is supported by a metal plate E, which is placed under the rail B, and which is attached to the same by means of the studs C, and the strip of india rubber is confined to its place by a strip of cloth *c*, which is turned over the same, and both ends of which are confined in the slot *a*, by means of a wooden wedge *d*, which is firmly driven in the same. The edge of the plate E, projects but very little beyond the edge of the rail B, just enough to prevent the strip of india rubber from sinking down.

For the purpose of protecting the edge of the rail, any other elastic substance may be used, instead of india rubber, provided the same be soft enough and sufficiently elastic so as not to injure the balls, and the strip *b*, is made only just thick enough to prevent the balls from getting injured by coming in contact with the edge of the rail B.

The influence of the embedment of a ball in a soft substance on the direction of the same, is represented clearly in Fig. 3. The ball F, makes an impression *e*, into the cushion, if thrown against it under an angle ϕ, and instead of running off under the same angle, the influence of the embedment is such that the angle of reflection ψ in running off is larger than the ϕ, under which the ball struck the cushion, and the difference depends on the distance of the ball from the point on which it strikes, and on the force of the blow. With my rail on the other hand the embedment is so small that it has no conceivable influence on the reflec-

tion of the ball as represented at *f*, and the embedment is in proportion to the force of the blow given, but yet not enough to cause a false reflection, as the metallic or hard construction of the back prevents the ball from sinking too deep from a hard stroke and the spring from the rail then regulates the speed of the ball. If it is found necessary to obtain a still more elastic cushion I place under the studs C, washers of india rubber or other elastic substance.

By giving the rubber the shape represented in the drawing and in combination with the metal plate, I have a cushion which will give the correct quantity of elasticity to act on the ball under a light or a heavy stroke, and yet counteracting the too great indentation of the ball. By this method I get a cushion which will give nearer true angles throwing the ball from 1 to 40 feet, which I know can not be accomplished with any other cushion extant.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is—

Constructing the cushion of a billiard table of a metal plate B, the edge of which is protected by a thin strip of india-rubber or other suitable substance substantially as and for the purpose set forth.

ABM. BASSFORD.

Witnesses:

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