

(No Model.)

M. BENSINGER.  
BILLIARD CUSHION.

No. 481,387.

Patented Aug. 23, 1892.

Fig. 1.

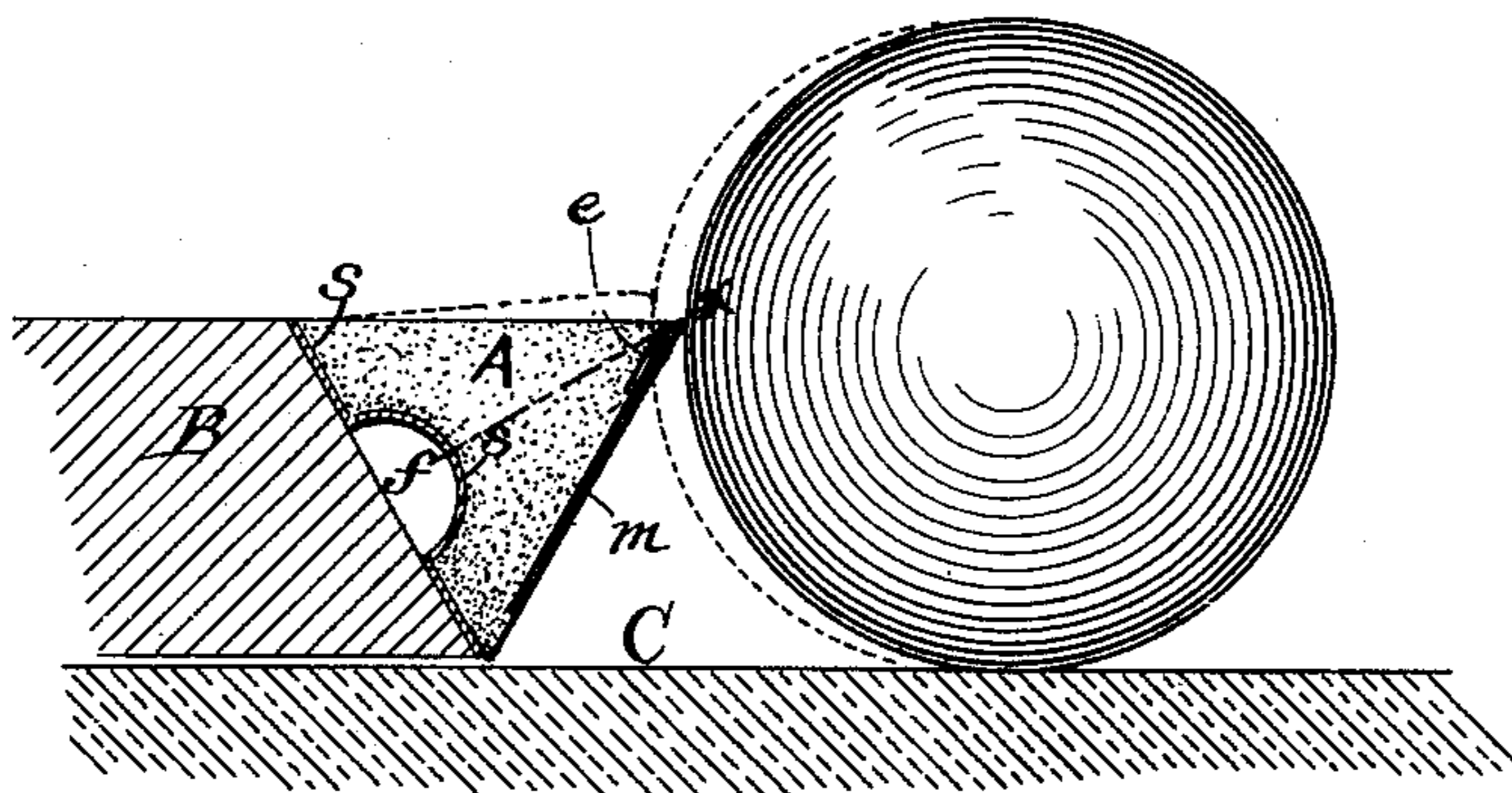
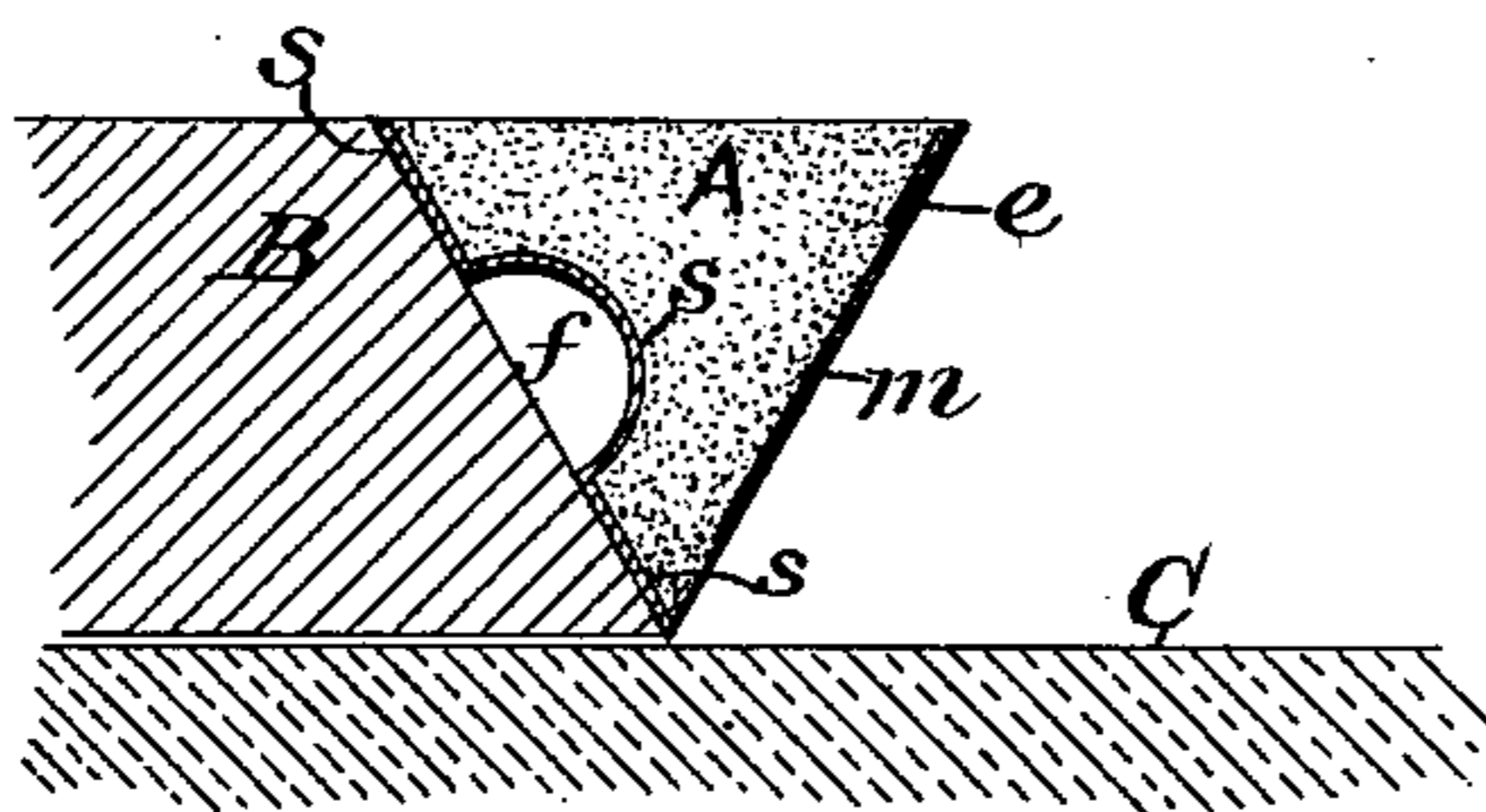


Fig. 2.

ATTEST:  
*J. A. Hindle*  
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By  
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Attorney

# UNITED STATES PATENT OFFICE.

MOSES BENSINGER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE BRUNSWICK-BALKE-COLLENDER COMPANY, OF SAME PLACE.

## BILLIARD-CUSHION.

SPECIFICATION forming part of Letters Patent No. 481,387, dated August 23, 1892.

Application filed April 27, 1892. Serial No. 430,868. (No model.)

*To all whom it may concern:*

Be it known that I, MOSES BENSINGER, of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Cushions 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 accompanying drawings, forming part of this specification.

My invention has for its main objects to provide for use a cushion-strip for billiard-tables, which, while it shall be equally as economic of manufacture as or possibly cheaper than the most approved cushion-strips now made, will be as durable and efficient as any heretofore manufactured and capable of repelling the balls played against it with a greater reactive force than the cushions now in use. In other words, I propose to provide for use a cushion which shall be "faster" than those now made, so that the billiard-player can make the cue-ball take more cushions or a given number of cushions with more ease, while at the same time the cushion of improved action as to speed will be equally accurate (as to the angles of incidence and reflection) with and as durable and economic of manufacture as the best cushions now in use.

To these main ends and objects my invention may be said to consist, essentially, in a cushion-strip composed, mainly, of the usual rubber compound, with a suitably-hardened face or ball-reflecting surface, and of about the usual triangular shape in cross-section, but with a comparatively large depression in its back side, and provided with a canvas or analogous backing made fast to said rear side, all as will be hereinafter more fully explained, and as will be most particularly pointed out in the claim of this specification.

To enable those skilled in the art to which my improvement relates to fully understand and practice the same, I will now proceed to more fully describe it, referring by letters to the accompanying drawings, which make part of this specification, and in which I have shown my said invention carried out in the precise form 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 applied in the ordinary way to the cushion-rail and bed of a billiard-table. Fig. 2 is a diagrammatical sectional view illustrating the action of the cushion under the impact of a ball played against it.

In both figures the same part will be found designated by the same letter of reference.

A is the cushion, B the rail-strip to which the rubber cushion is fastened, and C a portion of the table-bed of a billiard-table of approved pattern and supplied with my improved cushion-strips.

As usual, the cushion-strip is composed, mainly, of vulcanized rubber compound, having molded in or incorporated with it a suitable face-hardening device, which in the case shown comprises a narrow strip *e*, of hard-rubber compound or other suitable material, enveloped or incased within the upper folded-over portion of a broad strip *m*, of canvas or other suitable woven and inelastic fabric, which extends downward toward the base or root of the cushion and operates to prevent any undue lifting of the strip *e* when the upper front-edge portion of the cushion is struck by the ball, all in a manner well understood by those familiar with the manufacture and practical working of billiard-table cushions.

The shape of the cushion A, it will be observed, is substantially the same as that of cushions now in use—i. e., triangular in cross-section—except that running along the back side of the rubber strip is a centrally-located recess (or cut-out) *f*, which is of a substantially semicircular shape in cross-section and of unusually large size.

*s* is a backing of canvas or other fabric of an inelastic or non-stretchable nature, but with meshes or interstices sufficiently large to insure its perfect and permanent union with the rubber of the strip A, with which said back *s* is united during the process of vulcanization of the said strip.

The semi-cylindrical recess or longitudinal depression *f* in the back side of the rubber strip A, it will be seen, is not only located about centrally of the back side of the said strip, but is arranged so that a line drawn from the angle *x* of the cushion-strip through the middle of its back side will pass diamet-

rically through the semicircular recess  $f$ , as illustrated by the dotted line at Fig. 2. By this arrangement of the unusually large rear depression  $f$  in the triangular strip A, in connection with the device of a backing  $s$  of some fabric firmly united with the rubber throughout its entire back surface and not capable of stretching, I am enabled to get a somewhat new mode of action of the cushion when struck by a ball, and one which results in giving more "life" to the cushion or in throwing the ball off with more force than is exercised by cushions as heretofore made in repelling the ball under the same stroke from the cue of the player.

I attribute the fact of my improved cushion being faster than usual to the novel action due to the presence of the semicircular recess  $f$  and the canvas backing  $s$ , combined therewith and with the flat portions of the back side of the strip, as shown, and, as I understand it, the action of the thus-formed rubber strip, with its entire back surface provided with the partially-incorporated or superficially-anchored non-stretchable backing  $s$ , is about as follows, having reference particularly now to Fig. 2: When the ball strikes the cushion in the usual manner, the mass of rubber compound in rear of the face-hardening device has its particles displaced, so that the strip is changed from its normal shape to about that illustrated by the dotted lines, and a greater resistance than usual is offered by the cushion, (and operates to throw off the ball with more repellent force,) because this enforced change of shape in the incompressible but mobile rubber mass is strongly opposed at the vicinity of the canvas-backed curved recess  $f$ , (which is the only part of the back of the strip not immovably made fast to the wooden cushion-bar B,) and hence there is a greater displacement of the rubber particles at the vicinity of the top side of the strip A, which causes the cushion to act with

great effectiveness on the ball when the rubber mass reacts and assumes its normal shape. Furthermore, I believe that by reason of the ball enforcing a greater bulge in or upward displacement of the rubber at the vicinity of the top side of the cushion-strip there is less jumping tendency arising in the ball, and therefore in leaving the first cushion or in being thrown off by the first cushion struck the action of the cushion on the ball is more effective of speed in the latter. At any rate, whether my rationale of the action of this special form of strip provided with the surface-binding canvas backing be strictly correct, the fact is that the improved strip shown and described throws off the ball with more force under a given stroke than cushions heretofore made, while at the same time the accuracy of the angles is not perceptibly impaired. Of course some variation may be made in the size and shape of the recess  $f$  without departing from my invention, the pith of which lies in having this depression in the strip located about as shown and large enough to change the action of the strip when distorted by the blow of the ball, so as to act in substantially the manner set forth.

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

A billiard cushion-strip composed of the usual rubber compound, provided with a suitable face-hardening device and formed with a comparatively large recess  $f$ , located about centrally of the back side of the strip, the flat and recessed portions of said back side of the strip being backed with canvas or its equivalent, all substantially as and for the purposes set forth.

In witness whereof I have hereunto set my hand this 18th day of April, 1892.

MOSES BENSINGER.

In presence of—

CHAS. P. S. MILLER,  
H. F. DAVENPORT.