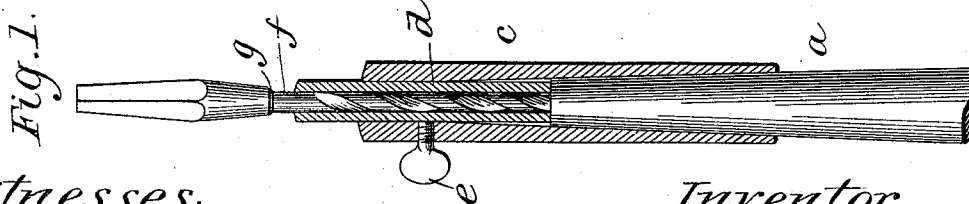
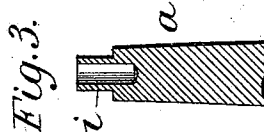
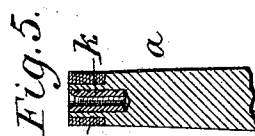
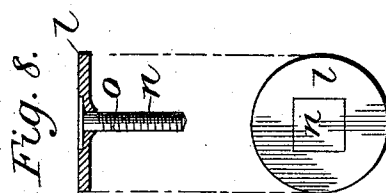
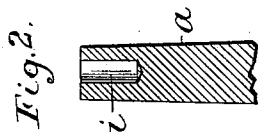
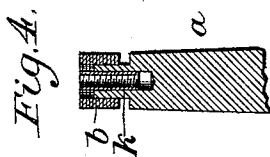
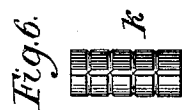
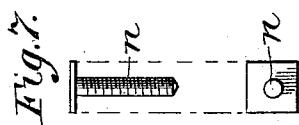
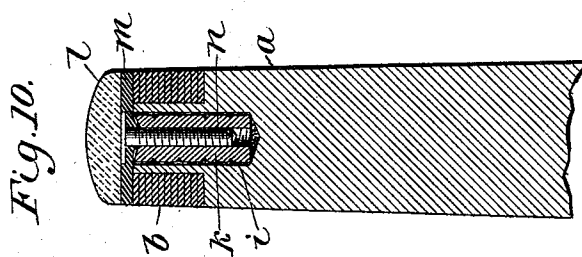
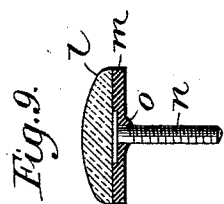


(No Model.)

N. BOSMANN.
BILLIARD CUE.

No. 536,596.

Patented Apr. 2, 1895.



Witnesses:

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Alberta Adamick.

Inventor.

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UNITED STATES PATENT OFFICE.

NICOLAS BOSMANN, OF CHICAGO, ILLINOIS, ASSIGNOR TO GEORGE M. STERNE, OF SAME PLACE.

BILLIARD-CUE.

SPECIFICATION forming part of Letters Patent No. 536,596, dated April 2, 1895.

Application filed August 2, 1894. Serial No. 519,311. (No model.)

To all whom it may concern:

Be it known that I, NICOLAS BOSMANN, a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Billiard-Cues, of which the following is hereby declared to be a full, clear, and exact description, sufficient to enable others to practice said invention.

The invention designs to furnish a billiard cue with an elastic "point" which consists of a series of perforated raw-hide disks or annuli firmly compacted and united together and mounted about the end-dowel of the cue. The raw-hide "point" is set upon the dowel while it is still wet with glue, and adheres thereto not only by reason of the glue but because of the shrinkage of the "point" which occurs in drying. The "point" thus stoutly clasps the cue and is highly effective to prevent the cracks, splintering or battering of the cue-end which otherwise is most apt to ensue. The set disks swell when wet and admit the glue readily to the pores and as well, allow the glue to coalesce with the films between the disk layers. Loose disks of any sort fail to afford the elastic quality peculiar to an ivory point, and are irregular in action and soon flatten out and become mis-shapen. The improved raw-hide point resembles the ivory in its elastic quality; is wholly free from tendency to crack or split and because it is shrunk to the cue possesses the notable advantages in which the ivory point is lacking.

Another object of the invention is to improve the structure of the cue in such wise that a removable tip can be applied in conjunction with a cue "point" of the character stated.

The exact nature of the improvements will appear from the description and be more particularly specified by claims at the conclusion thereof.

In the drawings which form a part of the specification like features of structure have like designation throughout.

Figure 1 is a sectional view of an implement conveniently used in making a true bore of proper depth at the center of the end-dowel; the cue and the bit being shown in place at opposite ends; Figs. 2 and 3, detail sections to show the fashioning of the central dowel on the

cue end; Figs. 4 and 5, section details to exhibit the seating of the "point" and threaded bushing; Fig. 6, an external view of the bushing; Fig. 7, views of the screw-bolt for the tip; Fig. 8, views of screw-bolt and its attached washer; Fig. 9, a sectional view of cue-tip, washer and screw-bolt fastened together; Fig. 10, a sectional view of the complete cue.

The disks for the cue-point *a* are cut from raw-hide which possesses sufficient elasticity and is yet of marked durability under percussive strains. The disks have a central hole of size to snugly inclose the end-dowel over which they are to be set. A number of the disks after being stamped out of the hide are coated on adjacent faces with some of the glue familiar to billiard cue makers and are then strung together over a suitable rod, and subjected to high compression by which expedient they are firmly united and reduced to a compact state although still possessed of the even, responsive elasticity which characterizes an ivory cue-point. On removal from the rod, after drying, the disks appear as a long roll which can be cut into lengths suited to that of the end-dowels over which the "points" are to be set.

If the dowel is not made in turning the cue, it can be conveniently formed by use of the simple apparatus as shown by Fig. 1. The terminal of the cue *b* is thrust snugly home within the taper-end of the chuck *c* and the gage *d* moved to position against the cue and there held by set-screw *e*. The bit *f* is operated to bore a hole which will always be of uniform depth as determined by contact of shoulder *g* on the bit with the end of gage *d*. On withdrawing the cue, the hole *i* thus made in its end (Fig. 2) serves to position a center-boring bit which is next applied to reduce the cue terminal and so form the dowel (Fig. 3). A proper length of the raw-hide disk-roll sufficient to incase the dowel is then cut, and applied thereto after being coated with glue along the central hole. At the same time the threaded bushing *k*, likewise coated with glue on its outer surface is set within the dowel-hole, and both disk-point and bushing stoutly driven home, mutually acting to sustain the wall of the dowel between them. When seated in place the parts are left to dry, the coating

of glue on bushing *k* distributing itself along the vertical and cross channels (Fig. 7) so as to firmly lock the bushing in its socket against either rotation or end play. To insure thorough coating of the plug *k* the socket for the bushing can be filled with glue before the bushing is driven in.

The bushing *k* usually extends the full depth of its socket so as to secure a firm bearing at the bottom against the body of the cue. At its opposite or outer end, the bushing *k* may have a reaming tool applied with advantage, to form a counter-seat. If otherwise, the bushing contacts prematurely with the adjacent part of the cue-tip and so far obstructs the tip from effecting a true seat over the confronting face of the "point."

In usual practice, the cue is furnished with a replaceable tip which consists of the ordinary leather head *l* united by gluing to a raw-hide disk-washer *m* which latter affords a seat for the crown of the screw-bolt *n*. The crown is made angular, and rather large but is sufficiently thin to smoothly embed itself in the washer when driven down. A hole in the washer admits the shank of the bolt, and being somewhat smaller, clings to the shank and may form a bulge *o* which comes neatly within the counter-seat on the end of plug *k*. The head *l* and washer *m* are smooth and level at their meeting faces and after gluing are firmly compressed to insure perfect union. In drying, the washer *m* being of raw-hide shrinks slightly and because of its durable, unyielding character keeps the head *l* of the tip firmly in place and shape at the meeting face between them and so far prolongs the life of the head.

The end of the "point" which is to resist the thrust of the cue-tip is carefully dressed, by sand-papering or like expedient, to render the surface level and at even bearing throughout with the cue-tip that is to rest thereon.

Care must be taken to prevent any premature contact of the end of the dowel or bushing with the tip such as would obstruct the firm contact between point and tip as desired. The bushing and dowel may be reamed out to insure this, if necessary.

If the cue-tip as applied to the improved cue-point is of the replaceable sort, a touch of glue between confronting faces of tip and point will hold the two firmly together, on screwing the tip down to position. The outer face of the point can be dressed and polished and if the raw-hide disks be stained, presents an attractive finish.

The central dowel over which the disks are set supports these against breaking cross-strains which otherwise ensue if a smart rap be given at the side of the point. The presence of the bushing supplements the action of the dowel wall in this regard.

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

1. A billiard cue having an end-dowel, the usual head or tip and an interposed elastic point consisting of raw-hide disks or annuli compressed and united together and glue-shrunk about the dowel, substantially as described.

2. The combination with the billiard cue having a hollow end-dowel, of the united set of compressed elastic disks incasing said dowel to constitute the "point," the threaded bushing secured within the dowel, the screw-bolt engaged by the bushing, the washer extended over the disk-point, dowel and bushing and having the bolt-head seated therein and the cue-tip fastened in place above the washer, substantially as described.

NICOLAS BOSMANN.

Witnesses:

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