

F. L. DETHLOFF.
 BILLIARD CUE TIP.
 APPLICATION FILED SEPT. 12, 1910.

1,018,744.

Patented Feb. 27, 1912.

Fig. 1.

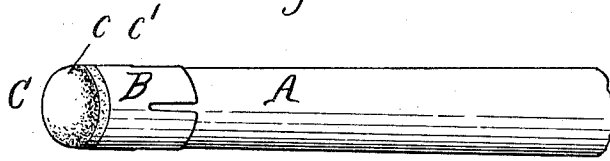


Fig. 2.

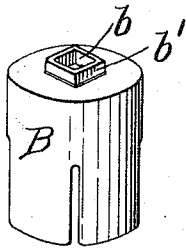


Fig. 3.

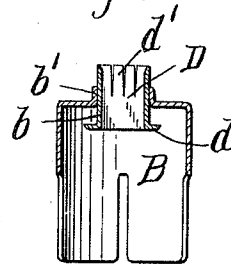


Fig. 4.

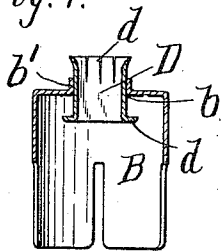


Fig. 5.

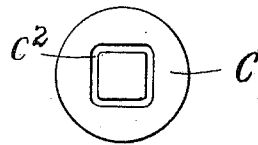


Fig. 6.

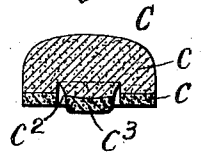
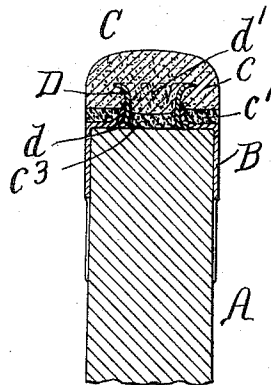


Fig. 7.



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BILLIARD-CUE TIP.

1,018,744.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FREDERICK L. DETHLOFF, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Billiard-Cue Tips, of which the following is a specification.

This invention relates to improvements in detachable ends or tips for billiard cues of that kind in which the resilient or leather tip is permanently secured to a ferrule which is removably retained on the end of the cue. In devices of this sort heretofore made, the leather tips frequently become loosened or detached from the ferrules owing to the fact that they are subjected to twisting strains in securing the ferrules on the ends of the cues and on account of the lateral blows and strains to which they are subjected in ordinary use.

The objects of this invention are to secure the leather or resilient tip to the ferrule in such a way that it will effectually withstand these twisting and lateral strains and cannot be readily loosened or detached; and also to construct the device so that the central portion of the tip as well as the edge portions thereof will have a solid backing or bearing on the cue and will not be reduced in thickness, thereby preserving the form of the tip and affording the maximum resilience.

In the accompanying drawings: Figure 1 is a fragmentary perspective view of a billiard cue provided with an end or tip embodying the invention. Fig. 2 is a perspective view of the ferrule. Fig. 3 is a longitudinal sectional elevation of the ferrule with a rivet in place thereon. Fig. 4 is a similar view showing the outer end of the rivet slightly flared or spread. Fig. 5 is a bottom plan view of the leather tip. Fig. 6 is a section thereof. Fig. 7 is a longitudinal section of the end of the billiard cue, showing the end or tip in place thereon.

Like reference characters refer to like parts in the several figures.

A represents the small or tip-end of a billiard cue, B the ferrule which is adapted to be attached to the end of the cue, and C the resilient or leather tip which is retained on the ferrule by means of a rivet D.

The ferrule B is preferably of substan-

tially cylindrical form, having a flat end provided near its center with a hole *b*, surrounded by an outwardly bent flange or lip *b'*, which extends substantially perpendicularly to the end wall of the ferrule. The inner end portion of the ferrule is split to form spring tongues which grip the end of the cue to retain the ferrule thereon.

The tip C preferably consists, as usual, of an upper or outer piece *c* of soft leather with which the ball is struck, and a lower or inner piece or disk *c'* of hard leather which is cemented or otherwise secured to the upper piece.

*c*² represents a groove which is pressed into the base portion of the tip by a tool or punch which is of such shape that it does not cut away or remove any of the leather but compresses or forces outwardly the central portion of the tip inside of the groove, as shown at *c*³, Fig. 6. The groove *c*² in the leather tip is made of the same shape as the flange or lip *b'* on the end of the ferrule and the flange or lip is adapted to enter the groove. The groove and flange are shown in the drawing as being substantially square in shape, but they may be of elliptical, polygonal or any other shape that will prevent the turning of the tip on the end of the ferrule.

The rivet or securing device D is made hollow and of substantially the same shape as the hole in the end of the ferrule. The rivet has a flange *d* at its inner end which is adapted to bear against the inner face of the end of the ferrule to hold the rivet in place in the hole, and the outer portion of the rivet is slotted longitudinally, forming prongs *d'*, which are adapted to be driven into the leather of the tip and thus secure the tip to the ferrule.

In securing the tip on the ferrule, the rivet D is first inserted into the hole in the ferrule, as shown in Fig. 3, after which the outer ends of the prongs are bent slightly outward, as shown in Fig. 4. The tip is then placed in position on the ferrule so that the flange *b'* on the end of the ferrule and the end of the rivet occupy the groove *c*² in the tip, whereupon the prongs of the rivet are forced into the leather tip by a press or any other suitable means. By first bending the ends of the rivet prongs slightly outward, and by beveling them and making the

inner end of the inner wall of the groove c^2 to diverge outwardly, as shown in Fig. 6, the prongs of the rivet are caused to spread or bend outwardly as they are forced into the tip, and to assume substantially the shape shown in Fig. 7, thus clenching the tip securely on the ferrule. The rivet holds the tip firmly in place on the ferrule, and as it is of square or non-circular shape and fits in a correspondingly shaped hole in the end of the ferrule, it acts to prevent the tip from being turned on the ferrule, but the rivet alone is not relied upon for this purpose. The integral square or non-circular flange or lip b' of the ferrule projecting into the correspondingly shaped groove c^2 of the tip around the rivet positively prevents the tip from being twisted around the rivet. The prongs of the rivet are therefore prevented from being broken or from cutting the tip and the tip cannot be loosened by twisting or lateral strains, as in some prior constructions. The described construction is therefore stronger than such prior constructions and the life of the tip is greatly prolonged.

By pressing outwardly the portion of the tip inside of the groove c^2 , as described, the central portion c^3 of the tip will bear on the end of the cue, as shown in Fig. 7. In pressing the rivet into the tip, the lower flange of the rivet will be forced tightly against the thin end of the ferrule and will indent the ferrule to such an extent that the lower surfaces of the ferrule, rivet, and of the central portion c^3 of the leather tip will all be substantially flush and will all bear directly on the end of the cue. This is a very desirable feature, since all the parts mentioned will then be backed up by the end of the cue and will be able to resist the severe blows to which they are subjected in use without becoming injured. Furthermore, by the described construction the central portion of the tip is not cut away or reduced in thickness so that the resiliency of the tip is not impaired and there is no tendency for the central portion of the tip to become flattened or sunken.

I claim as my invention:

1. The combination of a ferrule adapted to embrace the end of a billiard cue and having an end wall provided with an outwardly projecting integral flange, a tip at the end of said ferrule having a groove into which said flange extends, said flange and groove being of non-circular shape to prevent the tip from turning on the ferrule, and means for securing said tip on the ferrule, substantially as set forth.
2. The combination of a ferrule adapted to embrace the end of a billiard cue and having an end wall provided with a hole and an outwardly projecting flange surrounding said hole, a tip at the end of said ferrule having a groove into which said

flange extends, said flange and groove being shaped to prevent the tip from turning on the ferrule, and means passing through said hole for securing the tip to the ferrule, substantially as set forth.

3. The combination of a ferrule adapted to embrace the end of a billiard cue and having an end wall provided with a non-circular hole and an outwardly projecting flange bounding said hole, a tip having a groove of substantially the same shape as said flange and into which said flange extends, whereby twisting strains between the tip and the ferrule are resisted by parts of said flange bearing against portions of said tip, and means which are held from turning in said hole for securing the tip to the ferrule, substantially as set forth.

4. The combination of a ferrule adapted to embrace the end of a billiard cue and having an end wall provided with a hole surrounded by an outwardly bent flange, a tip having a groove into which said flange projects, and a hollow rivet which extends through said hole in the end of the ferrule and has prongs which are adapted to be driven into said tip and to bend in the tip to clench the tip to the ferrule, substantially as set forth.

5. The combination of a ferrule adapted to be attached to the end of a billiard cue and having a non-circular hole in the end thereof surrounded by an outwardly bent flange of corresponding shape, a tip having a groove into which said flange extends, and a hollow rivet of substantially the same shape as and extending through said hole and provided at its inner end with a flange for retaining it on the ferrule and at its outer end with prongs which are driven into the tip and secure the tip to the ferrule, substantially as set forth.

6. The combination of a ferrule adapted to be attached to the end of a billiard cue and having a hole in the end thereof surrounded by an outwardly bent flange, a tip having a groove in the base portion thereof into which said flange extends, and a hollow rivet extending through said hole and having one end secured in a depression in the inner face of the end of said ferrule and the other end extending into said tip for securing said tip on said ferrule, the central portion of said tip extending through said hollow rivet and being adapted to bear against the end of the billiard cue, substantially as set forth.

7. The combination of a part adapted to be secured to the end of a billiard cue and having a non-circular hole in the end thereof surrounded by an outwardly bent non-circular flange, a tip having a groove into which said flange extends, and a rivet of substantially the same shape as said hole and which is held from turning therein and

is provided with parts which are secured in the tip and fasten the tip on said part, substantially as set forth.

8. The combination of a ferrule adapted
5 to embrace the end of a billiard cue and having an outer wall provided with a non-circular hole, a tip at the end of said ferrule, and a rivet which passes through said hole and secures the tip to the ferrule, said rivet
10 having substantially the same shape as said hole, whereby the turning of the tip on the ferrule is prevented, substantially as set forth.

9. The combination of a ferrule adapted
15 to embrace the end of a billiard cue and having an outer wall provided with a non-circular hole, a tip at the end of said ferrule, and a hollow rivet which passes through said hole and which has prongs which are
20 adapted to be forced into said tip and which diverge on entering said tip, said rivet hav-

ing substantially the same shape as said hole, whereby the turning of the tip on the ferrule is prevented, substantially as set forth.

10. The combination of a ferrule adapted to embrace the end of a billiard cue and having an outer wall provided with a non-circular hole, a tip at the end of said ferrule having a groove, and a hollow rivet having
30 substantially the same shape as said hole, said rivet passing through said hole in the ferrule and through said groove and securing said tip to said ferrule, substantially as set forth.

Witness my hand, this 8th day of September, 1910.

FREDERICK L. DETHLOFF.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."