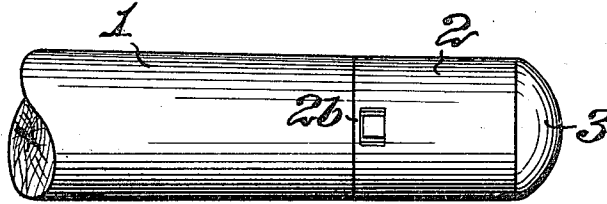


E. E. FOURNIER.
CUE TIP HOLDER.
APPLICATION FILED APR. 4, 1919.

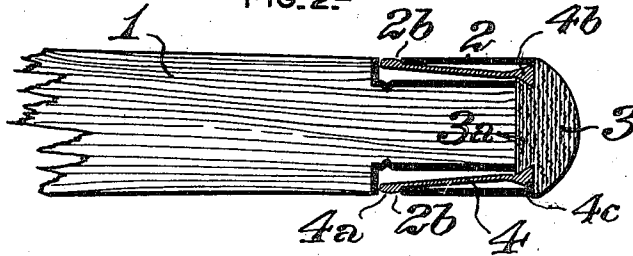
1,322,684.

Patented Nov. 25, 1919.

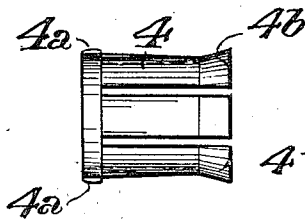
-FIG. 1-



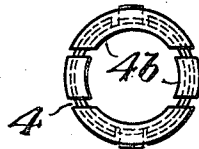
-FIG. 2-



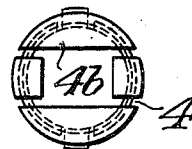
-FIG. 5-



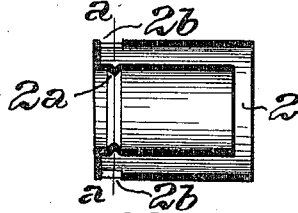
-FIG. 6-



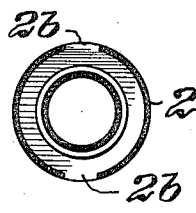
-FIG. 7-



-FIG. 3-



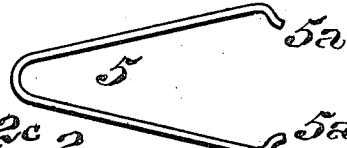
-FIG. 4-



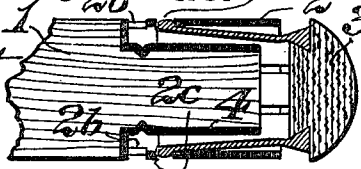
-FIG. 9-



-FIG. 10-



-FIG. 8-



WITNESSES

E. A. Wright
S. R. Bell.

INVENTOR

Edmond E. Fournier,
by *Stranden Bell,*
att'y

UNITED STATES PATENT OFFICE.

EDMOND E. FOURNIER, OF FALL RIVER, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO
ARTHUR C. BODEAU, OF BROOKLYN, NEW YORK.

CUE-TIP HOLDER.

1,322,684.

Specification of Letters Patent.

Patented Nov. 25, 1919.

Application filed April 4, 1919. Serial No. 287,480.

To all whom it may concern:

Be it known that I, EDMOND E. FOURNIER, of Fall River, in the county of Bristol and State of Massachusetts, have invented a certain new and useful Improvement in Cue-Tip Holders, of which improvement the following is a specification.

My invention relates to means for detachably connecting tips to billiard and other cues, of the class or type exemplified in Letters Patent of the United States No. 1,182,160, granted and issued to me under date of May 9, 1916, upon the construction set forth in which patent my present invention is an improvement. The object of my invention is to provide a cue tip holder which will embody the features of practical advantage of that set forth in my Letters Patent No. 1,182,160 aforesaid, and, in addition thereto, those of simplification of structure, increase of strength of the cue end, and reduction in cost of manufacture.

The improvement claimed is hereinafter fully set forth.

In the accompanying drawings: Figure 1 is a side view, in elevation, of a portion of a billiard cue, adjoining its tip end, and an attached tip, in connection with which my invention is applied; Fig. 2, a longitudinal central section, through the same; Fig. 3, a similar section through the ferrule; Fig. 4, a transverse section through the ferrule, on the line *a a* of Fig. 3; Fig. 5, a side view, in elevation, of the clamping spring; Fig. 6, an end view of the same, as seen from the right; Fig. 7, a similar view, illustrating a structural modification; Fig. 8, a longitudinal central section, illustrating a structural modification of the ferrule; Fig. 9, a side view of the tip; and, Fig. 10, a similar view of a spring releasing key.

In the practice of my invention, referring descriptively to the specific embodiment thereof which is herein exemplified, the cue, 1, is turned down at and adjoining its end to which the tip is to be attached, and a ferrule, 2, is fitted on the reduced portion of the cue, and engaged therewith by internal projections, 2^a, near its inner end. The ferrule, 2, comprises an inner and an outer shell, which shells are concentric and are connected at the inner end of the ferrule, which abuts against the shoulder formed on the cue by turning it down. The inner shell, 55 which is open at both ends, does not exceed,

in length, the reduced portion of the cue, in order to permit the inner end of the tip, 3, which is reduced in diameter, and is in the form of an outwardly tapering or conical projection, 3^a, to abut truly against the outer end thereof. It will be seen that by reason of the peripheral inclosure of the reduced end portion of the cue, by the inner shell of the ferrule, the end portion of the cue is substantially strengthened, and the objectionable splitting thereof, which frequently occurs in prior constructions, will be effectually prevented. The outer shell of the ferrule is open at its outer end, and is of sufficiently greater length than the inner shell to extend nearly to the unreduced portion of the tip, or to even touch the same without exerting bearing thereon. Opposite lateral openings, 2^b, are formed in the outer shell of the ferrule, adjacent to the inner end thereof.

The tip is detachably connected to the ferrule by a clamping spring, 4, which is in the form of an open ended sleeve of resilient material, which is of longitudinally tapered or conical form, and is longitudinally split or divided, except at and adjoining one of its ends, at which it is provided with opposite circumferential tongues or projections, 4^a, adapted to engage the openings, 2^b, of the ferrule. The opposite ends of the longitudinally separated portions of the clamping spring are provided with inwardly projecting prongs or teeth, 4^b, adapted to engage the conical projection, 3^a, of the tip, and with outwardly tapering prongs, 4^c, adapted to bear on the outer shell of the ferrule. As shown in Fig. 6, the faces of the prongs, 4^b, are curved concentrically with the ferrule and tip, and in Fig. 7, they are flat, extending parallel with diametral lines of the clamping spring. In the latter case, the projection, 3^a, of the tip is correspondingly flattened, and relative rotatory movement of the clamping spring and tip is positively prevented.

In attaching the tip to the cue, the projection, 3^a, of the tip, is fitted into the clamping spring between the prongs, 4^b, thereof, by which it is held. The clamping spring, with the tip thus attached, is then inserted in the ferrule, the tongues, 4^a, being moved in line longitudinally with the lateral openings, 2^b, thereof, until they reach said openings. Pressure is then applied to the outer

end of the tip, thereby causing the tongues, 4^a, to engage the openings, 2^b, and the prongs, 4^b, of the spring are forced into the tip by the bearing of the outside tapering prongs, 4^c, of the spring on the wall of the ferrule. The tip is then firmly locked in position for use, in which position it will be seen that it seats and bears longitudinally only on the outer end of the reduced portion of the cue.

The tip may be readily detached whenever desired, by the use of a spring key, 5, of the character shown in Fig. 10, this being a plate of resilient material, bent into V form, and having inwardly turned pressing feet, 5^a, on its ends. By inserting the pressing feet into the lateral openings, 2^b, of the ferrule, and pressing the arms of the spring key inwardly, the tongues, 4^a, of the clamping spring are released from the openings, and the spring and attached tip can be withdrawn through the open outer end of the ferrule. The tip can then be easily pulled out of the clamping spring.

Fig. 8 illustrates a structural modification of the ferrule, by the application of which the tip may be attached to, or detached from, the cue, without removing the clamping spring from the ferrule. To this end, two supplemental opposite openings, 2^c, adapted to receive the tongues, 4^a, of the clamping spring, are formed in the outer shell of the ferrule, sufficiently far from the primary openings, 2^b, to permit the clamping spring, after having been compressed by the key, to be drawn out far enough to cause the outer end of the spring to project outwardly from the ferrule. When so moved, the tongues, 4^a, of the spring, will engage the supplemental openings, 2^c, and the grip of the prongs, 4^b, on the projection, 3^a, of

the tip, will be sufficiently released to enable the tip to be easily detached from the spring. The latter will be firmly held while a tip is being attached or detached, so that it will not drop from the hand of the operator, and the spring can be pushed back into normal fastening position, without necessitating care on the part of the operator, in alining the tongues with the primary openings.

I claim as my invention and desire to secure by Letters Patent:

1. The combination of a cue; a double shelled ferrule fixed thereon; a clamping spring interposed between the shells of the ferrule and detachably engaging the outer shell; and a tip, abutting directly on the end of the cue and detachably connected to the clamping spring.

2. The combination of a cue; a ferrule having an inner shell, fixed on the cue, and a connected outer shell; a longitudinally divided sleeve clamping spring, interposed between the shells of the ferrule, and detachably engaging the outer shell; and a tip, abutting directly on the end of the cue, and detachably connected to the clamping spring.

3. A ferrule for cue and tip connection, comprising an inner shell which is open at both ends and adapted to be fitted on a cue; and an encircling outer shell, which is open at one end, and connected, at the other, to the inner shell, and is provided with lateral openings adjacent to the connecting portion, said shells being spaced apart for the reception of a clamping spring.

EDMOND E. FOURNIER.

Witnesses:

THOMAS F. HIGGINS,
JOHN H. LUKEY.