

Dec. 11, 1928.

1,694,375

C. DARMIS

BILLIARD CUE TIP HOLDER

Filed Dec. 1, 1926

FIG. 1 -

FIG. 2 -

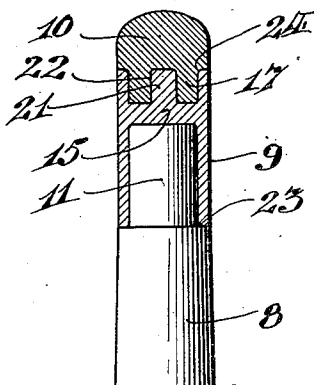
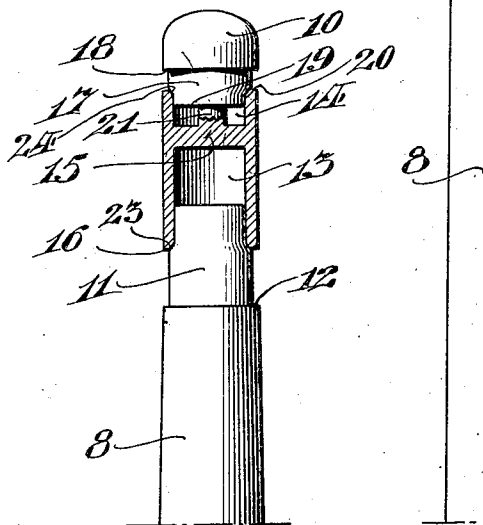


FIG. 3 -



WITNESSES:

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FIG. 4 -

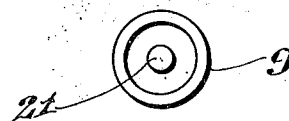


FIG. 5 -

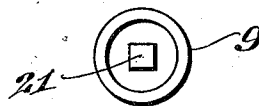


FIG. 6 -

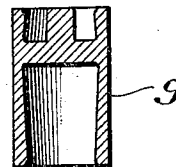
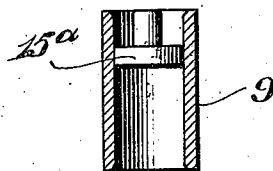


FIG. 7 -



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BILLIARD-CUE-TIP HOLDER.

Application filed December 1, 1926. Serial No. 151,873.

My invention relates to billiard cues and more particularly to billiard cue tip holders of the type described in my application for Letters Patent, Serial No. 128,366, filed Aug. 10, 1926.

The usual methods of securing the tip holder to the end of a cue are by using glue, pins, screws, clamps and other special securing parts, all of which added to the expense of manufacturing the cues.

The usual methods of securing the tip to the holder is by gluing, giving the holder special shapes to grip the tip, by adding extra parts to effect clamping the tip in the holder, or by making the tip of special shape whereby it could be secured to the holder. These methods add to the expense of manufacturing and further cause much difficulty and inconvenience to the user in renewing the tip.

The objects of my invention are to provide a single piece tip holder of plain and comparatively simple construction; which may be readily manufactured with a minimum of machine operations; which may be quickly secured to the cue without the use of glue, pins, screws or other clamping or securing parts; to which the tip may be quickly and firmly secured without the use of special securing means; which will firmly hold the tip in position until completely worn, and from which the tip may be easily removed.

These objects, and other advantageous ends which will be described hereinafter, I attain in the following manner, reference being had to the accompanying drawings in which—

Figure 1 is a fragmentary view of a cue to which the tip is secured by one of my improved holders,

Figure 2 a fragmentary view of a cue to which the tip is secured by one of my improved holders; the holder and tip being shown in cross section,

Figure 3 a view similar to Figure 1 but showing the parts partially assembled; the tip holder being shown in section,

Figure 4 a top plan view of one of my improved holders,

Figure 5 a top plan view of another of my improved holders,

Figure 6 a longitudinal view in cross-section, showing a modified form, and

Figure 7 a view similar to Figure 6 but showing another modified form.

Referring now in detail to the drawings, 8 indicates the stick of a cue, 9 a tip holder secured on the end of the stick, and 10 a tip secured in the holder.

The stick is reduced at its end 11 to form a shoulder 12 against which the end of the tip holder 9 abuts, so that its outer face will be flush with the periphery of the stick. This reduced end 11 is adapted to be forced into tip holder 10.

The tip holder is cylindrical and may be readily made by simple turning operations or by die casting; it has a socket 13 of uniform cross-section in one end and a cup 14 of uniform cross-section in the other end. The diameter of socket 13 is less than the diameter of reduced end 11. Owing to this, reduced end 11, when forced into socket 13, will be compressed radially by the walls of the socket and thus frictionally held therein. The tip holder 9 is so proportioned that, when reduced end 11 is forced into socket 13 to such a depth that it abuts the diaphragm 15 separating the socket from the tip, its shoulder 12 abuts the edge 16 of the socket. The outer diameter of the socket is made the same as the diameter of stick 8, to impart a continuous appearing surface at the juncture of the socket and the stick.

Tip 10 has a shank 17 reduced to provide a shoulder 18 against which the brim 20 of cup 14 abuts, so that its outer surface will be flush with the outer surface of the cup. The shank has a greater diameter than the internal diameter of cup 14 and, when forced into cup 14, it will be compressed radially by the walls of the cup and will be thus frictionally held in the cup. The length of the shank is such that its end 19 will abut the diaphragm 15 and its shoulder 18 will abut the brim 20 of the cup. The diameter of the tip is made the same as the outer diameter of the cup to impart a continuous appearing surface at the juncture of the tip and the cup.

A pin 21 is inserted in, or formed integral with, diaphragm 15 and tip shank 17 is provided with a central bore 22 extending upwardly from its end 19, as shown in Figure 2. The pin 21 is shown in Figure 4 as being round and in Figure 5 as being square, however, any configuration may be

employed but it is desirable that the pin have shoulders or projections on its periphery as its function is to aid the socket 13 in preventing the tip from turning therein. The bore 22 is slightly smaller than the pin 21 so that, if the pin is round, its surface will frictionally engage the walls of the bore 22 and, if the pin is angular or irregular in cross-section, the corners or projections on the pin will cut into the walls of bore 22.

In assembling the cue, socket 13 is first forced over the reduced end 11 of the stick. To facilitate this action, the edges 16 of the socket are slightly curved or beveled as shown at 23 to enable the reduced end to easily slip into the socket. As socket 13 is forced over the reduced end, (see Figure 3) the walls of the socket will compress said end owing to it being made of wood which is compressible. After the socket is forced on, with the reduced end against the diaphragm 15 and shoulder 12 against its edges 16, the tip holder will be firmly held on the end of the stick and, during the life of the cue, is not liable to become loose, due to the compressed reduced end of the stick frictionally engaging the inner wall of the socket. The tip is then forced into cup 14 until the end of its shank abuts the diaphragm 15 and the shoulder 18 abuts the edges of the cup. To facilitate forcing the tip into the cup, its edges 20 are beveled or curved similar to the edges 16, as indicated at 24, to permit shank 17 to readily slip into the cup. As the shank is forced into the cup (see Figure 3), the walls thereof will compress it radially owing to it being made of leather which is compressible. The tip thus secured in the cup will not become loose by the impacts received when striking billiard balls, because the compressed shank of the tip will always be in frictional engagement with the inner wall of the cup and pin 21 in engagement with the walls of bore 22.

In use, when striking a billiard ball the force of the impact received at the tip is transmitted directly to the stick, owing to the end of the tip abutting the bottom of the cup, and the end of the stick abutting the bottom of the socket. This also prevents the tip from being distorted at shoulder 18 by the edge 20 of the cup, which would tend to rupture the tip at the shoulder if the force of the impact was taken by this edge instead of by the bottom of the cup. This arrangement also prevents the edges 16 of the socket

from cutting into shoulder 12 of the stick, because the force of the impact, instead of being transmitted to the stick, through the edges 16 and the shoulder 12, is transmitted through the diaphragm 15 to the reduced end of the stick.

In Figure 6, the socket and cup are shown as being of slightly greater diameter at their bottoms than at the ends of the tip holder. With this type of bore, the cue end and tip shank are allowed to expand and form a wedging action against removal.

The tip holder shown in Figure 7 is identical to the one shown in Figures 1 to 5 with the exception that diaphragm 15^a is slidable in the shell, which may be made from a plain piece of tubing.

A cue made as above set forth, requires a minimum of machine operations because the parts are plain and may be readily produced by simple turning operations. The cue may be quickly assembled by merely forcing the tip holder on the stick and the tip into the tip holder. During use, the tip will remain firmly in the cup until it is completely worn out, after which it may be renewed by simply removing the tip with a pointed instrument and inserting a new tip into the cup no gluing or special securing parts being required to effect such renewal of the tip.

While I have described my invention as taking a particular form, it will be understood that various modifications may be made without departing from the spirit thereof, and hence I do not limit myself to the precise construction set forth, but consider that I am at liberty to make such changes and alterations as fairly come within the scope of the appended claim.

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

A billiard cue tip holder comprising a body part having a socket in one end and a cup in the other, a diaphragm separating the socket and cup, a pin on the diaphragm, and chamfered edges on the cup; both the socket and cup being of greater diameter at the diaphragm than at their openings and having their walls tapering uniformly, whereby a tip forced into the cup and a cue forced into the socket will be allowed to expand at their inner ends and held against unintentional removal.

In testimony whereof I have signed my name to this specification.

COSMAS DARMIS.