No. 824,149. PATENTED JUNE 26, 1906.

R. U. & W. RUDDELL.

CUE HOLDER.

APPLICATION FILED DEC. 16, 1903.

FIG. 2.

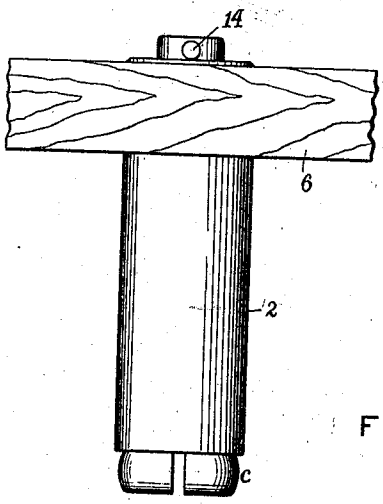


FIG. 1.

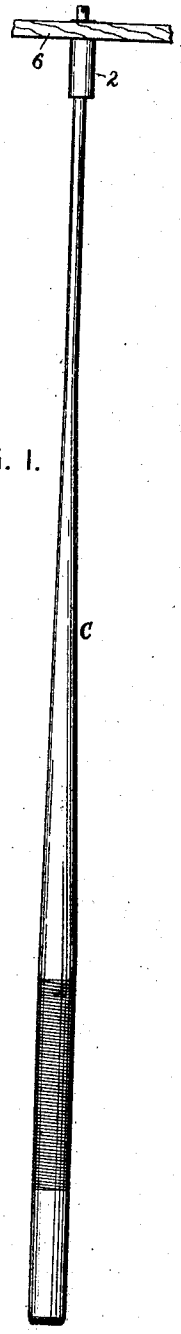


FIG. 3.

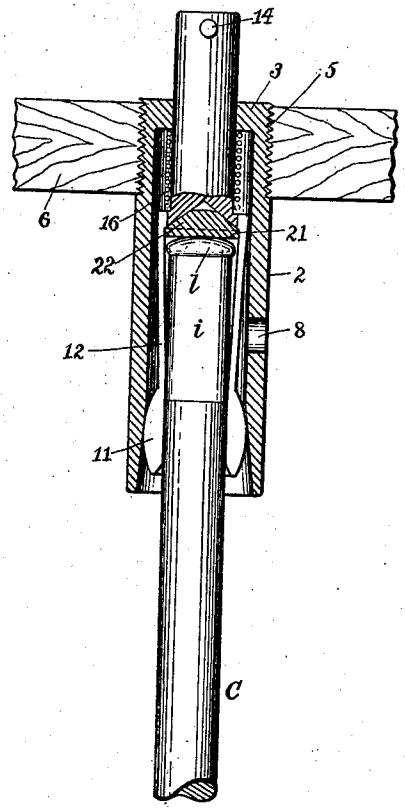


FIG 4.

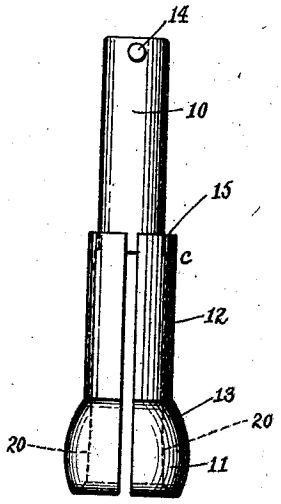
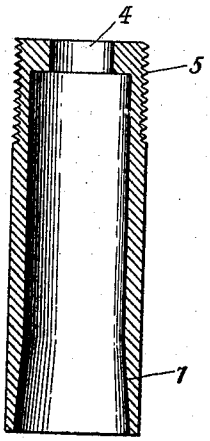


FIG. 5.



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UNITED STATES PATENT OFFICE.

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CUE-HOLDER.

No. 824,149. Specification of Letters Patent. Patented June 26, 1906.

Application filed December 16, 1903. Serial No. 185,337.

To all whom it may concern:

Be it known that we, ROBERT U. RUDDELL, of Hartford, Hartford county, Connecticut, and WILLIAM RUDDELL, of New York, New York county, New York, citizens of the United States, have invented a certain new and useful Cue-Holder, of which the following is a specification.

The principal object of this invention is to maintain the straightness of a perfect cue for use in the games of billiards, pool, &c.

A secondary object of the invention is to straighten cues which have become crooked or warped through neglect or otherwise.

It is well known that in such games of skill as billiards, pool, &c., it is impossible for the player to make a good score, no matter how skilful he may be, unles sboth the balls and the cues are in proper condition, and if the balls are not exactly round and the cue perfectly straight the ball when struck will not traverse the course calculated by the player. Straightness of the cue is, if possible, of even greater importance than the roundness of the ball, because an imperfect ball may follow the path desired if struck by a perfect cue, whereas a perfect ball struck by a crooked cue is not struck in the manner—that is to say, at the angle—intended by the player and is certain to deviate from the path calculated by the player for a straight cue. Many attempts have been made to maintain the straightness of cues, particularly high-grade cues used by expert billiard and pool players; but so far as we are aware these attempts up to the present time have been unsuccessful. The principal reason for this, we believe, is that in previous attempts to maintain the straightness of such cues no means has been employed for holding the cues tensioned in the direction of their length, and the principal feature of this invention is a cue-holder capable of holding a cue tensioned in the direction of its longitudinal axis and preferably in such a manner as to permit the cue to be readily fastened in place without in any way marring the cue itself.

The preferred means employed by us for keeping a perfect cue straight and also for restoring a crooked or warped cue to its original straightness is a cue-holder having a split or expansible chuck adapted to receive one end of the cue, preferably the tip thereof, and to be actuated by the cue itself to grip the cue to hold the same tensioned in the direction of its longitudinal axis until the cue is to be used, when the chuck will be released by the cue as soon as a slight withdrawing pull is exerted on the cue and will be expanded to the limit of its movement by an actuator independent of the power exerted by the player in withdrawing the cue from the holder.

In the drawings accompanying this specification and forming part of the present application, Figure 1 is an elevation of a cue held in place by our cue-tensioning holder. Fig. 2 is a full-sized side elevation of our cue-holder, showing the parts in their normal positions with the chuck expanded. Fig. 3 is a substantially central longitudinal section of the cue-holder, showing the cue clamped therein with the chuck closed. Fig. 4 is a side elevation of the chuck for holding the cue. Fig. 5 is a central longitudinal section of a chuck-support in which the chuck works.

Similar characters designate like parts in all the figures of the drawings.

According to our invention the cue-holder may be of any suitable type and construction capable of putting the cue under tension in the direction of its longitudinal axis and holding the cue securely in place without injuring it. The preferred mode of putting the cue under tension is to suspend the cue from its tip end, so that a tensioning or stretching force will be exerted at all points in the length of the cue, and particularly at all points at the tip or reduced end of the cue from a point at or near the opposite end, this force being the weight of the heavy butt-end of the cue. We have found that the weight of such butt-end of the cue is sufficient when the cue is suspended from its tip in the direction of gravitation to maintain the straightness of a perfect cue and also sufficient to restore the straightness of one that has become crooked or warped as a result of uneven exposure to different temperatures by supporting it at an angle to the perpendicular with its weight unevenly distributed or otherwise. The cue-holder will not only be operative for tensioning the cue in the direction of the longitudinal axis thereof, but will embody suitable means for engaging and releasing a cue, preferably at its tip end, the

cue engaging or clamping means being controlled by the insertion of the cue in the holder and the release of the cue from the clamping means or chuck being accomplished partly by the withdrawal of the cue and partly by an actuator forming a part of the cue-holder. In the preferred construction the cue-holder will not only engage the tip end of the cue, but will also be of sufficient length to receive the ivory tip and hold the cue by engagement with the wood portion of the tip, to which the ivory tip is secured, this being desirable because of the greater strength of the wood portion of the cue.

It will be evident that any device of this kind to be practical should be so constructed that the cue may be readily inserted in place and removed without any unnecessary movement of operating parts, and in our preferred construction shown herein the cue is inserted in place and clamped by a single movement and unclamped and withdrawn by another movement, thus reducing to a minimum the work necessary to be done by the player or the attendant in getting a cue from a holder or putting it back again.

Our improved cue-holder, considered with respect to the details of its construction, consists of only three main parts, one of which is the device which receives the cue and engages or releases the same and is preferably a split or expansible chuck, another of which is a chuck-support, preferably having a bore in which the chuck works, and the third of which is an actuator, preferably a releasing-spring, by means of which the chuck may be released from the cue by an independent source of power the moment a releasing pull is exerted on the cue. The chuck-support may be of any suitable construction, but is preferably a tubular cylindrical member, such as 2, having an end wall 3 bored at 4 to permit the stem of the chuck to slide therein and constituting at its inner side a stop-wall for one end of the releasing-spring. This support is preferably threaded at its upper end, as indicated at 5, to permit it to be screwed into a board, such as 6, which may be the upper board or shelf of a cue-rack. In inserting the tubular support 2 in place care should be taken to have its longitudinal axis exactly perpendicular—that is to say, in the direction of gravitation. At its lower open end this tubular support 2 may have suitable faces for coacting with the chuck to close the chuck-sections when the chuck is forced into the tubular support 2. Preferably the inner wall of this tubular support is beveled at 7 to form a conical wall converging toward the upper end of the support for the purpose of closing the chuck jaws or sections, and the chuck-jaws themselves may also have cam-faces adapted to coact with the wall 7 to assure the proper closing and opening of the chuck when the chuck enters or emerges from the support 2. Any suitable means may be provided for screwing the tubular support 2 into the board 6, said support preferably having an opening 8, into which a pin or rod may be inserted for turning the tubular member.

The cue-engaging means preferably consists in this case of a split or expansible chuck (designated in a general way by *c*) and preferably having a solid upper end or stem 10 and a bored or tubular lower end of larger diameter properly slotted in intersecting planes to form arms terminating in chuck-jaws, such as 11. The support 2 will usually be made of iron or steel, and the chuck *c*, which is intended to slide therein, will be of brass or some similar metal, preferably bronze, in order that when the tubular portion of the chuck is split spring-arms, such as 12, will be formed, which will be sufficiently resilient to assure the automatic spreading of the chuck-jaws 11 and the consequent release of the cue or tip when the chuck is drawn or forced outward from the support 2. Four such spring-arms are formed, in this case by milling two longitudinal slots in the chuck at right angles to each other, only one of such slots being shown in full lines. The chuck-jaws 11 are of considerable thickness in order that they may hold the cue properly; but the arms proper, which are indicated at 12, are relatively thin in order to assure sufficient resilience. Moreover, the chuck-jaws are preferably of considerably greater diameter, even when closed, than the section of the chuck from which the spring-arms 12 are formed, as will be evident from Figs. 3 and 4, and the outer surface of each chuck-jaw is preferably shaped, as indicated at 13, to form a cam-face of the proper contour for permitting the chuck to be closed or spread, according as it is moved inward or outward in the tubular support 2. The cam-faces 7 and 13 serve when the cue is in place as stop-faces to limit the inward movement of the chuck, and the movement of said chuck in the other direction may be limited by a stop-pin, such as 14, carried by the stem 10 of the chuck, which pin strikes against the outer end of the head 3 of the tubular support when the parts are in their normal positions, as shown in Fig. 2.

The stem portion and the spring-armed portion of the chuck are of different diameters and form between them a stop-wall 15, against which the lower end of the actuator or releasing-spring 16 rests. This spring is preferably a helical spring encircling the stem 10 and confined between the stop-wall 15 and the inner wall of the head 3 and normally tends to force the chuck outward. In Fig. 3 it is shown under compression.

The inner walls of the chuck-jaws and the spring-arms 12, of which they constitute extensions, are preferably disposed at such angles to each other as to clear the cue quickly on the initial movement of withdrawal, while

permitting practically the whole inner face of each chuck-jaw to clamp the cue or cue-tip when the cue is in place, as shown in Fig. 3. In the normal position thereof the inner walls of the spring-arms 12 are parallel and the inner walls 20 of the chuck-jaws depart from parallelism and diverge from each other about three degrees. The arms 12 are of such length that the jaws do not make contact with any portion of the ivory tip *i* of the cue C, but only engage the wood portion thereof, and owing to the long holding-surface of the jaws there is no danger of marring even the wood tip of the cue.

The working stroke of the chuck is controlled directly by the cue itself, and hence in this movement thereof the chuck is cue-actuated. When the cue is to be placed in the holder, it is inserted in the chuck and the leather tip 1 comes in contact with the inner end wall 21 before the chuck-jaws begin to close onto the cue. The upward thrust on the cue serves to force the chuck upward and put the spring 16 under compression, and this upward movement continues until the cam-face 7, coacting with the cam-faces 13, forces the chuck-jaws into clamping engagement with the wood portion of the cue-tip and also clamps the chuck in place by a wedging action between the cam-faces sufficient to prevent the release of the chuck by the spring or by the combined force of the spring and of the weight of the cue. When the cue is to be removed and the chuck released, a slight pull on the cue is sufficient to overcome the wedging action between the cam-faces 7 and 13, whereupon the spring 16 will immediately become effective to force the chuck practically instantaneously to the position shown in Fig. 2, and thus quickly release the chuck-jaws from the tip before there is any longitudinal movement of the cue relative to the chuck. Thus in withdrawing, also, there is no danger of marring or scratching the cue with the clamping-faces of the chuck-jaws. A cushioning device of suitable material, such as rubber, may be employed to guard against possible injury to the leather tip. One example of such an injury is a change in the ideal shape of the tip, which may result if the end wall of the bore in the chuck is not the right shape and no cushion is used, owing to the fact that a cue is frequently held in one position for months at a time. The leather tip may also be injured by chemical reaction if held for long periods of time in contact with the wall of the bronze chuck. To prevent any such injury, we prefer to provide a rubber cushion, such as 22, of sufficient size to maintain its position at the end of the bore in the chuck.

What we claim is—

1. A cue-tensioning holder provided with means for suspending the holder from a support and embodying a chuck which is provided with expansible means for clamping a cue, said means being operated by the insertion of the cue into the chuck, and means for normally opening said chuck.

2. A cue-tensioning holder provided with means for suspending the holder and embodying a chuck which is provided with expansible means for clamping a cue and is movable in the direction of its longitudinal axis relatively to said holder, said holder also embodying fixed means for supporting said chuck and for closing the same on the movement of said chuck in the direction of its longitudinal axis.

3. A cue-tensioning holder provided with means for suspending the holder and embodying a chuck which is provided with expansible means for clamping a cue and is movable in the direction of its longitudinal axis relatively to said holder, said holder also embodying fixed means for supporting said chuck and for closing the same on the movement of said chuck in the direction of its longitudinal axis, and means for normally opening said chuck.

4. A cue-tensioning holder provided with means for suspending the holder and embodying a chuck which is provided with expansible means for clamping a cue and is movable in the direction of its longitudinal axis relatively to said holder, said chuck having gripping-walls which are clear of the cue during all relative longitudinal movement of said parts in either direction.

5. A cue-tensioning holder provided with means for suspending the holder and embodying a chuck which is provided with expansible means for gripping the cue at a point near the tip thereof and is movable in the direction of its longitudinal axis relatively to said support, said chuck having gripping-walls which are clear of the cue during all relative longitudinal movement of said parts in either direction.

6. A cue holding and releasing device provided with means for suspending the device and embodying a chuck-support, an actuator, and a chuck provided with expansible means for clamping a cue, said means including walls which form with the coacting walls of the chuck-support an angle less than the wedging-angle, said means having an initial cue-releasing and opening movement controlled by the withdrawal of the cue and also having a main opening movement controlled by said actuator.

7. A cue holding and releasing device provided with means for suspending the device and embodying a chuck-support, an actuator, and a spring-armed chuck for clamping a cue, said chuck having walls which form with the coacting walls of the chuck-support an angle less than the wedging-angle, said means hav-

ing an initial cue-releasing and opening movement controlled by the withdrawal of the cue and also having a main opening movement controlled by said actuator.

8. A cue holding and releasing device provided with means for suspending the device and embodying a chuck-support, a releasing-spring, and a chuck provided with expansible means for clamping a cue, said means including walls which form with the coacting walls of the chuck-support an angle less than the wedging-angle, said means having an initial cue-releasing and opening movement controlled by the withdrawal of the cue and also having a main opening movement controlled by said releasing-spring.

9. A cue holding and releasing device provided with means for suspending the device and embodying a chuck-support, an actuator, and a chuck provided with means for clamping and releasing a cue, said means including gripping-walls which are clear of the cue during all relative longitudinal movement of said parts in either direction, the clamping movement of said means being controlled by the insertion of the cue in the chuck, the initial portion of the cue-releasing and opening movement being controlled by the withdrawal of the cue and the main opening movement being controlled by said actuator.

10. A cue holding and releasing device provided with means for suspending the device and embodying a chuck-support, a releasing-spring, and a chuck provided with means for clamping and releasing a cue, said means including gripping-walls which are clear of the cue during all relative longitudinal movement of said parts in either direction, the clamping movement of said means being controlled by the insertion of the cue in the chuck and controlling the tensioning of said spring, the initial portion of the cue-releasing and opening movement being controlled by the withdrawal of the cue and the main opening movement being controlled by said spring.

11. A cue holding and releasing device provided with means for suspending the device and embodying a bored chuck-support, a chuck-releasing actuator, and a chuck mounted to work in the bore of said support and provided with expansible means for clamping and releasing a cue said means including gripping-walls which are clear of the cue during all relative longitudinal movement of said parts in either direction and having a working stroke and a closing movement controlled conjointly by the insertion of a cue and by the walls of said bore and also having a return stroke and a cue-releasing movement the initial portion of which is controlled by the withdrawal of the cue and the remainder of which is controlled by said actuator.

12. A cue holding and releasing device provided with means for suspending the device and embodying a tubular chuck-support, a chuck-releasing spring within said tubular support, and an expansible cue-engaging chuck mounted in said support and formed with cam-faces coacting with the inner wall of said support and having a working stroke and a closing movement controlled conjointly by the insertion of a cue and the inner wall of said support and also having a return stroke and a cue-releasing movement the initial portion of each of which is controlled by the initial movement of withdrawal of the cue and the remainder of which is controlled by said spring, said chuck also having gripping-walls which are clear of the cue during all relative longitudinal movement of said parts in either direction.

13. A cue-tensioning holder provided with means for suspending the holder and embodying a chuck provided with expansible means for clamping a cue and is movable in the direction of its longitudinal axis relatively to said holder, said chuck having closing and opening movements controlled respectively by the insertion and removal of the cue, and having gripping-walls which are clear of the cue during all relative longitudinal movement of said parts in either direction, and a cushioning device in said chuck for receiving and cushioning the blow of the leather tip of the cue.

14. A cue-tensioning holder provided with means for suspending the holder and embodying a chuck-support and an expansible chuck having coacting faces one of which is tapering and one of which is convex in the direction of the longitudinal axis of the chuck.

15. A cue-tensioning holder provided with means for suspending the holder and embodying a chuck-support and an expansible chuck having coacting faces one of which is tapering and one of which is convex in the direction of the longitudinal axis of the chuck, the point at which such faces make contact being substantially at the longitudinal center of the chuck-jaws.

16. A cue-tensioning holder provided with means for suspending the holder and embodying a chuck-support and an expansible chuck having coacting chuck-closing faces said chuck having rigid chuck-jaws movably connected with the body of the chuck to maintain their gripping-walls in parallelism with the chuck-axis when in engagement with the cue for cues of different diameters.

17. A cue-tensioning holder provided with means for suspending the holder and embodying a chuck-support and an expansible chuck having coacting chuck-closing faces said chuck having rigid chuck-jaws secured to spring-arms and movable to maintain their gripping-walls in parallelism with the

chuck-axis when in engagement with the cue for cues of different diameters.

18. A cue-tensioning holder provided with means for suspending the holder and embodying a chuck-support and an expansible chuck having coacting faces one of which is tapering and one of which is convex in the direction of the longitudinal axis of the chuck, said chuck having rigid chuck-jaws movably connected with the body of the chuck to maintain their gripping-walls in parallelism with the chuck-axis when in engagement with the cue for cues of different diameters.

Signed at Hartford, in the county of Hartford and State of Connecticut, this 7th day of December, 1903.

ROBERT U. RUDDELL.

Witnesses:
EDWARD A. MOYER,
GEORGE D. HAYDEN.

Signed at New York, in the county and State of New York, this 12th day of December, 1903.

WILLIAM RUDDELL.

Witnesses:
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R. CHAMPION.