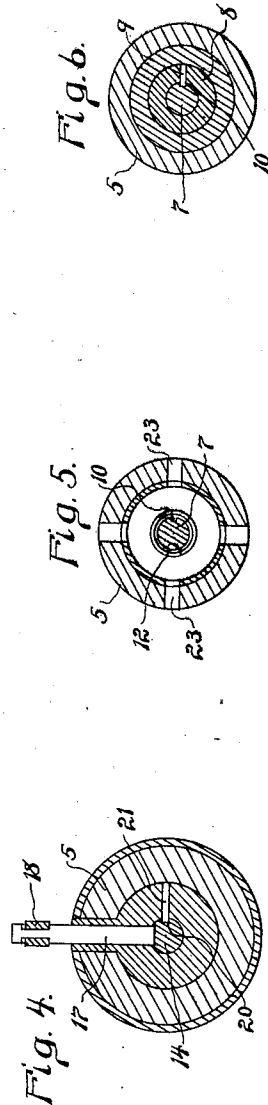
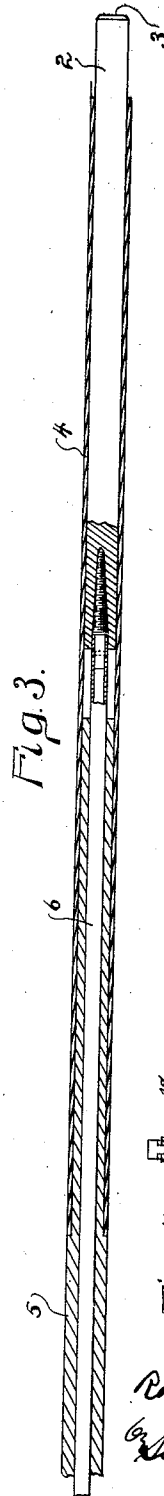
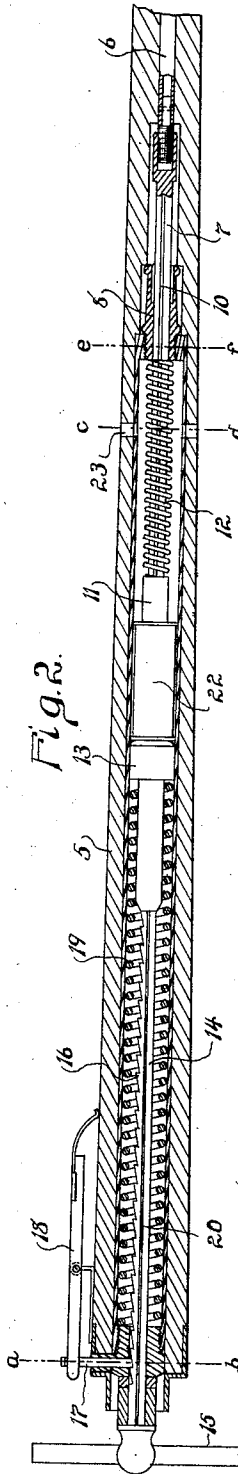
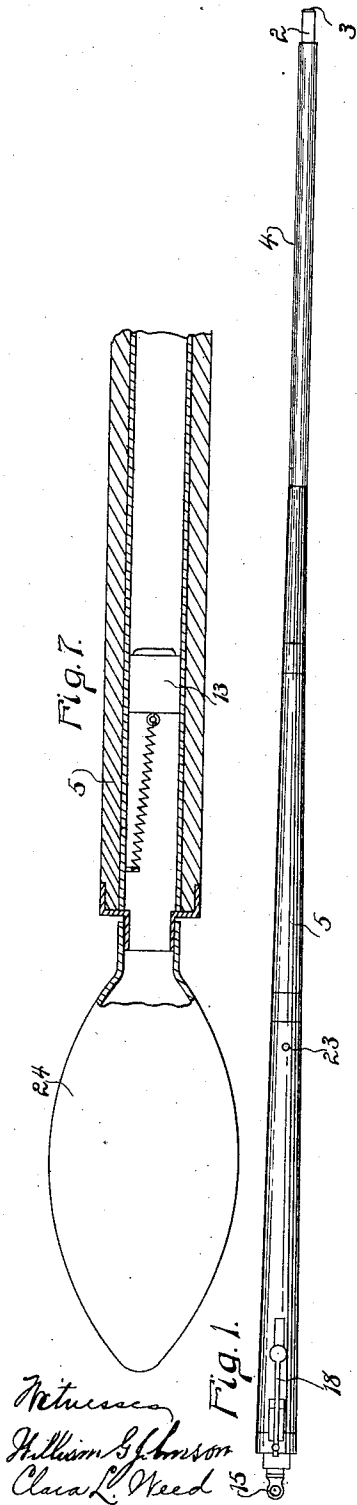


R. F. BURWELL.  
BILLIARD CUE.  
APPLICATION FILED AUG. 5, 1912.

1,062,816.

Patented May 27, 1913.



Robert F. Burwell  
Inventor  
Higginson & Earle  
Attys

# UNITED STATES PATENT OFFICE.

ROBERT F. BURWELL, OF NEW HAVEN, CONNECTICUT.

BILLIARD-CUE.

1,062,816.

Specification of Letters Patent.

Patented May 27, 1913.

Application filed August 5, 1912. Serial No. 713,458.

*To all whom it may concern:*

Be it known that I, ROBERT F. BURWELL, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Billiard-Cues; and I do hereby declare the following, when taken in connection with the accompanying drawings and the characters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this application, and represent, in—

Figure 1 a plan view of a billiard cue constructed in accordance with my invention. Fig. 2 a longitudinal sectional view of a portion of the cue on a larger scale. Fig. 3 a sectional view completing Fig. 2. Fig. 4 a sectional view on the line *a—b* of Fig. 2. Fig. 5 a sectional view on the line *c—d* of Fig. 2. Fig. 6 a sectional view on the line *e—f* of Fig. 2. Fig. 7 a broken sectional view illustrating the modified means for operating the plunger.

This invention relates to an improvement in billiard cues, the object being to provide means for moving the outer end of the cue without moving the butt or handle portion, and so that in making fine shots the cue tip may be placed against the cue ball and then the device operated to project the end of the cue forward to move the ball; and the invention consists in the construction herein-after described and particularly recited in the claims.

In carrying out my invention, I employ a cue end 2 provided with the usual cue tip 3. This cue end slides in a thin sleeve 4 preferably formed of aluminum and connected with the tubular body 5 of the cue together forming a cue of substantially usual form. Coupled with the inner end of the cue end 2 is a coupling piece 6, the inner end of the coupling-piece being connected with a longitudinal slide 7 which passes through a retaining-bearing 8 in which it is held against rotation by a pin or key 9 entering a key way 10 in the slide. The inner end of the slide carries a head 11, and around the slide between the head and the bearing 8 is a spring 12 the tendency of which is to draw the cue end rearward.

Mounted in the rear end of the body of the cue is a plunger 13 having a long spindle 14 which extends through the butt of the cue where it is provided with an operating

handle 15. One edge of the spindle is also provided with teeth 16 adapted to be engaged by a latch 17 operated by a spring lever 18, and around the spindle and bearing against the plunger and tending to force it forward is a coiled spring 19. To prevent the spindle 14 from turning, it is provided with a key-way 20 for the reception of a key or pin 21.

Within the cue body and between the plunger 13 and head 11 is a hammer 22. By employing a loose or independently formed hammer, the spring 12 may be a light spring as little, if any power is necessary to retire the hammer and bring and hold the tip back after a shot has been made. Preferably and as herein shown, vent openings 23 will be provided in the cue forward of the hammer 22.

As before stated, the cue may be used as an ordinary billiard cue, but in case it is desirable to make a fine shot, the operating handle 15 will be drawn outward to move the plunger 13 backward and compress the spring 19, and this may be drawn outward to the desired extent, and when drawn outward will be held in an extended position by the latch 17. At this time the cue end will be drawn rearward by the light spring 12. The tip of the cue is then placed close to or against the cue ball and the operating lever 18 moved to lift the latch 17 out of engagement with the spindle 14, allowing that spindle under the action of the spring 19 to jump forward against the hammer 22 which contacts with the head 11 and forces the cue end forward, the force of the blow being determined by the extent to which the plunger 13 is drawn rearward. As the hammer 22 moves forward, the air in the body of the cue forward of the hammer will escape through the vents 23, and by closing those, or part of them by the hand an air cushion is formed which will to a certain extent modify the blow imparted to the ball. By the employment of a loose or flying hammer it is permitted free movement beyond the limit of the forward movement of the plunger; that is, as the plunger moves forward it strikes the hammer and forces the hammer forward in giving the cue tip a quick blow, and at the same time permits the cue tip to immediately draw back under the action of a comparatively light spring and so that the effect of the draw shot is obtained; whereas, if the hammer was fixed

to the forward end of the plunger, the stroke, instead of being a quick, sharp, forward stroke, would be a continuous forward push making it impossible to make a draw shot.

It is apparent, and as shown in Fig. 7 of the drawings, that instead of operating the hammer by a spring plunger, compressed air might be employed. For this purpose the spindle 14 would be omitted and the spring 19 replaced by a comparatively light spring acting to move the plunger rearward. The force of air applied by a bulb 24 or otherwise, would drive the plunger 13 forward and operate the hammer in the manner above described.

I claim:—

1. In a billiard cue, the combination with a tubular body, of a cue end longitudinally movable in said body, a follower, means for forcing the follower forward, and a loose

hammer located between the cue end and follower and adapted to be forced forward by the forward movement of the follower.

2. The herein described billiard cue comprising a cue body, a cue end longitudinally movable in said body, a spring to draw the cue end rearward, a slide coupled with said cue end, a plunger, means for forcing the plunger forward, and a loose hammer located between the plunger and slide and not connected with either and adapted when forced forward by the plunger to project the cue end.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

ROBERT F. BURWELL.

Witnesses:

WALTER LEIGH,  
FREDERIC C. EARLE.

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