A spring loaded pool or billiard cue, or the like, is provided which includes an elongated tubular housing and rod slidably mounted in the housing, the rod being biased by a power spring within the housing to a position in which it protrudes out one end of the housing. To load the cue, the rod is pushed back into the housing against the bias of the power spring, and it is locked at any desired position with respect to the housing by one or more locking washers. These locking washers are resiliently biased to a tilted position to perform their locking function. The rod is released by a trigger mechanism which causes the washers to assume an upright position with respect to the rod.

4 Claims, 2 Drawing Figures
SPRING LOADED CUE

RELATED PATENT APPLICATION

Application Ser. No. 143,855, filed May 17, 1971, for Clyde E. Fox, et al., now abandoned.

BACKGROUND OF THE INVENTION

The present invention is concerned with the mechanical type of pool or billiard cue, in which a spring loaded rod is released from a tubular housing and caused to strike against the ball as the game is played. The cue, in one of its embodiments, is fabricated to simulate a usual pool or billiard cue, with a trigger handle extending from one side of the cue so as to release the internal rod when a shot is to be made. In a second embodiment, the pool cue is shaped to have a pistol-like configuration, so that "shots" are made by the player actually shooting the pistol.

In both embodiments of the invention, as will be described, the cue has the feature in that it is inherently simple in its concept, so that it may be made inexpensively and yet be rugged and capable of trouble-free operation over a long period of time. In addition, the cue constructed in accordance with the concepts of the invention has a feature of an inherently simple trigger mechanism, the trigger mechanism being constructed to permit the actuating rod to be moved back into the supporting housing to any desired position and to achieve any desired compressional force on the power spring. This permits each player to gage the force at which the individual shots are to be made, and constitutes an improvement over the usual prior art construction which depends on a ratchet arrangement with a small number of definite locking positions, as compared with the infinite number of locking positions of the mechanism of the invention, so as to result in less accurate control of the desired force in the prior art arrangements.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a side section of a billiard or pool cue constructed in accordance with one embodiment of the invention; and

FIG. 2 is a side section of a billiard or pool cue constructed in accordance with the concepts of the invention, and representative of a second embodiment whereby the cue itself simulates a pistol.

DETAILED DESCRIPTION OF THE ILLUSTRATED EMBODIMENT

At the outset, it should be pointed out that although the structure of the present invention is described as a billiard or pool cue, it will be apparent as the description proceeds that the cue of the invention may be used in a variety of games in which it is desired not only to propel billiard balls as in a game of pool or billiards, but in which any other object is to be propelled.

In the embodiment of FIG. 1, the cue mechanism includes a tubular housing 10 having an elongated configuration and simulating, for example, a usual billiard cue, insofar as its outward appearance is concerned. The housing 10 may be formed of metal, plastic, wood or any other desired material.

A rod or shaft 12 is slidable within the tubular housing 10. The shaft 12 is held in coaxial relationship within the housing by means, for example, of a block 14. The rod 12, likewise, may be composed of metal, plastic, wood or any other suitable material. A power spring 16 is mounted on the rod 12. One end of the spring 16 bears against the forward end of the block 14, and the other end bears against a retainer member 18 mounted on the rod or shaft 12. The power spring 16 serves to bias the rod 12 towards the left in FIG. 1, and to a "fired" position in which the end of the rod 12 protrudes out from the end of the housing 10. A tip assembly 20 is mounted on the extremity of the rod 12, as shown.

In the assembly of FIG. 1, the rod 12 is shown in its "loaded" position, in which it is retracted fully into the housing 10. It is held in that position by means of a series of washers including a first actuator washer 22 which is mounted in the housing 10 coaxially with the rod 12. The washer 22 extends into a slot in the block 14, and its diametrically opposite side supports a trigger handle 24 which extends externally of the housing 10.

A plurality of additional washers 26 are mounted in the housing coaxially with the rod 12, and the latter washers being adjacent the face of the actuator washer 22. The washers 26 are spring biased by a trigger spring 28 which bears against the block 14. The trigger spring 28 resiliently urges the washers 26 against the actuator washer 22, and also biases the washers to the illustrated inclined position in which they lock the rod 12 in its illustrated "loaded" condition within the housing 10.

To actuate the assembly of FIG. 1, the trigger member 24 is pressed down towards the housing 10, and this causes all the washers 22 and 26 to be turned against the pressure of the spring 28 to an upright position with respect to the shaft 12. This permits the shaft 12 to slide freely under the action of the power spring 16 to the left of FIG. 1, and causes the tip assembly 20 to be driven against the object to be propelled by the mechanism.

A buffer spring 30 is mounted on the right-hand end of the rod 12 by means, for example, of a retainer 32. The shock of the rod assembly 12 as it reaches the end of its travel is minimized by the buffer spring.

To reload the mechanism of FIG. 1, it is merely necessary to push the tip 20 towards the end of the housing 10, so that the rod 12 will move back against the pressure of the power spring 16, causing the washers 22 and 26 to assume an upright position as the rod is so pushed. It is clear that the rod may be pushed back into the housing to any desired position, and that upon release, the washers 22 and 26 will immediately lock the rod in that position. This means that the player can set his cue to any desired tension, merely by pushing the rod 12 back into the housing until the desired tension has been attained, and then by releasing the pressure on the tip. Any further movement of the rod 12 is then prevented by the washers 22 and 26, until the trigger mechanism has been actuated by actuation of the trigger member 24.

The embodiment of FIG. 2 is generally similar to the embodiment of FIG. 1, and similar elements have been designated by the same numbers.

In the latter embodiment, a pistol grip 10a is formed on the housing 10, and the trigger member, designated 24a extends from a slot in the housing 10 as an extension of the actuator washer 22a. In the latter embodiment, the block 14 is made integral with the housing 10. The trigger washers 26, as before, bear against the face of the actuator washer 22a, and all the washers are
biased to their inclined position by a spring 28a which, in the embodiment of FIG. 2, is a leaf spring, as shown.

The invention provides, therefore, an improved spring loaded cue, which is simple and economical in its construction, and yet which is superior in its operation to the usual prior art device of the same general type.

It should be understood, of course, that although particular embodiments of the invention have been shown and described, modifications may be made. It is intended in the following claims to cover all modifications which come within the spirit and scope of the invention.

What is claimed is:

1. A spring-loaded pool or billiard cue, or the like, comprising: an elongated tubular housing; a rod having substantially the same length as said housing coaxially mounted in said housing for longitudinal movement with respect thereto between a loaded position in which the rod is retracted into the housing and a released position in which a first end of the rod protrudes from one end of the housing; an apertured block mounted at an intermediate position within said tubular housing and having a central aperture therein through which said rod extends, said block having a length short as compared with the length of the housing and serving to maintain said rod in coaxial relationship with said housing; a first retainer mounted on said rod at an intermediate position thereon; a power spring mounted in said housing coaxially encompassing said rod and having one end engaging said retainer and the other end engaging said block for resiliently biasing said rod towards said released position in which the first end of said rod protrudes from the end of said tubular housing; a trigger mechanism mounted in said housing including an actuator washer supported in a slot in said block coaxial with said rod and tiltable in said slot between an upright release position and an inclined lock position with respect to said rod, at least one trigger washer freely mounted on said rod adjacent said actuator washer and coacting with said actuator washer on the side thereof remote from said first end of said rod; a trigger member attached to said actuator washer at a point thereon diametrically opposite said slot, said trigger member extending externally of said tubular housing and actuable to tilt said actuator washer to said release position; and a trigger spring mounted in said block and engaging said trigger washer on the side thereof remote from said actuator washer and adjacent said diametrically opposite point thereon to exert a force against said trigger washer and bias said trigger washer and said actuator washer to said inclined lock position.

2. The combination defined in claim 1, and which includes a buffer spring mounted at the end of said rod remote from said first end and coaxially encompassing said rod, said buffer spring being spaced axially from said block when said rod is in said loaded position to bear against the block when the rod is released.

3. The combination defined in claim 1, and which includes a tip assembly mounted on said first end of said rod and having an outer diameter greater than the inner diameter of the housing.

4. The combination defined in claim 1, and which includes a pistol grip mounted on said housing, said pistol grip including a handle member affixed to the housing at an intermediate position thereon and extending radially from the housing adjacent said trigger member.

* * * * *

3,858,882