

C. RANSOM.
BILLIARD CUE.
APPLICATION FILED MAY 28, 1909.

Patented Mar. 8, 1910.

951,453.

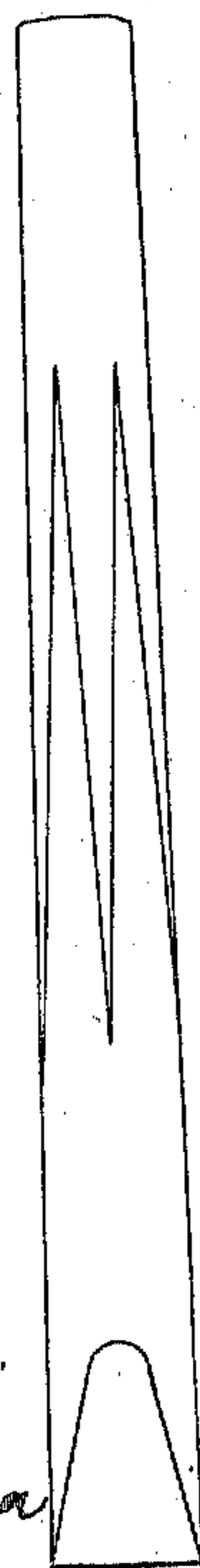
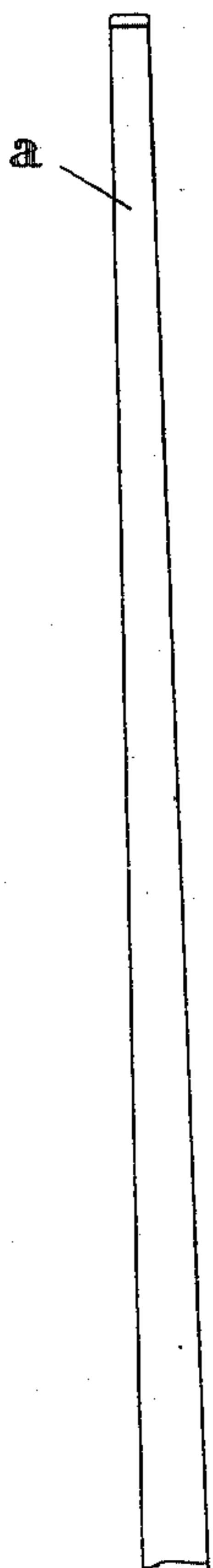


Fig 1

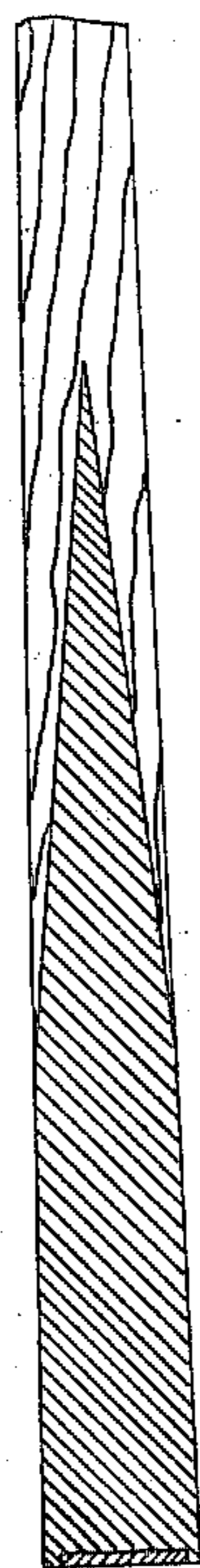
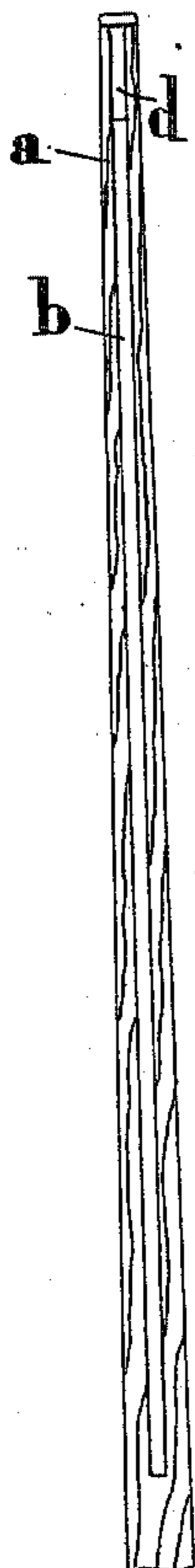


Fig 2

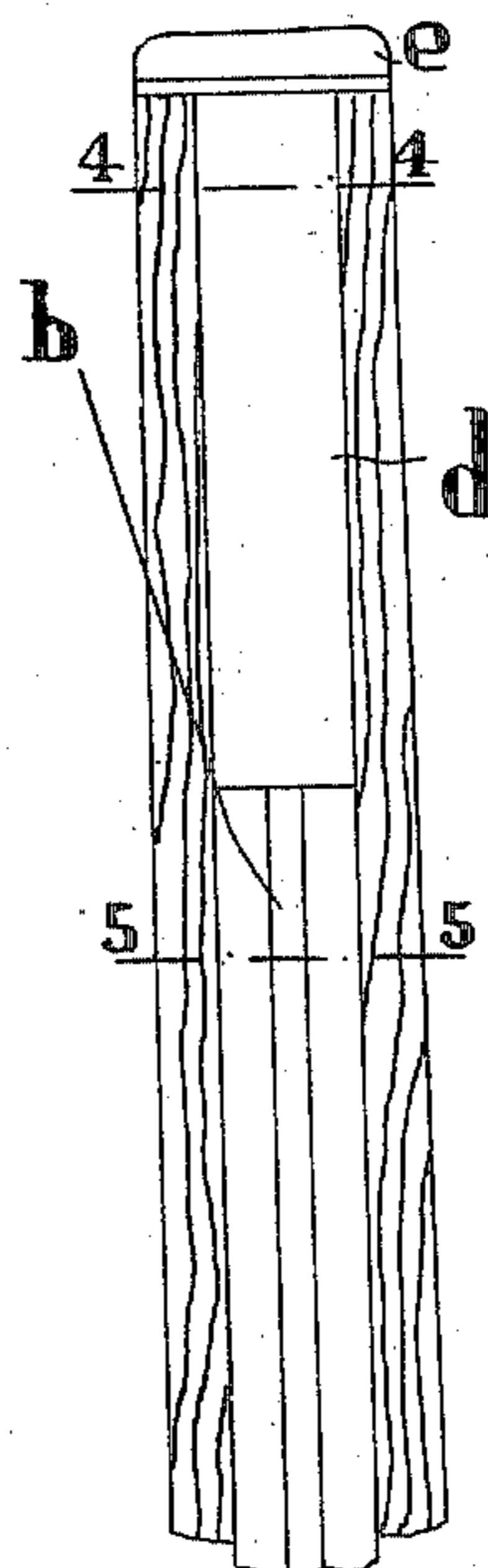


Fig 3.

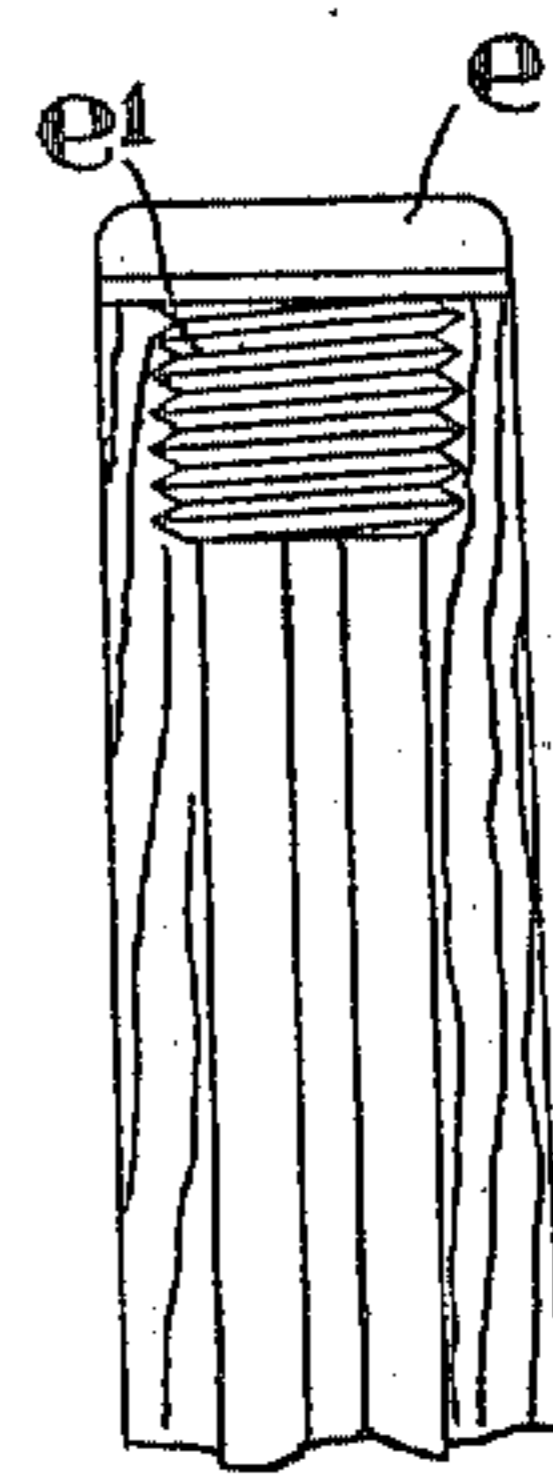


Fig 9

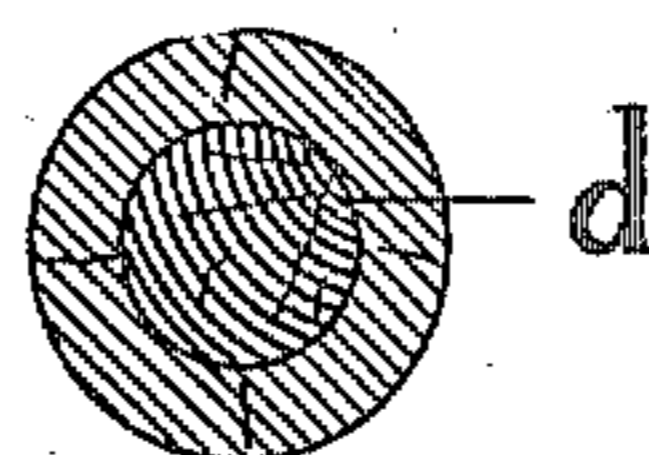


Fig 4

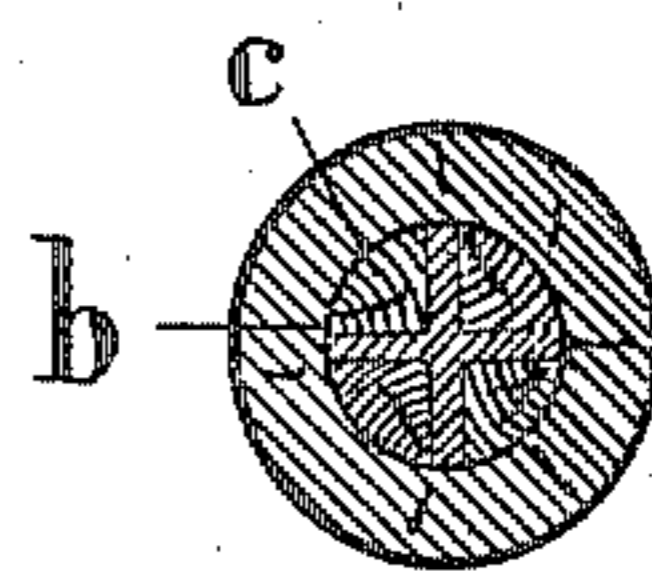


Fig 5

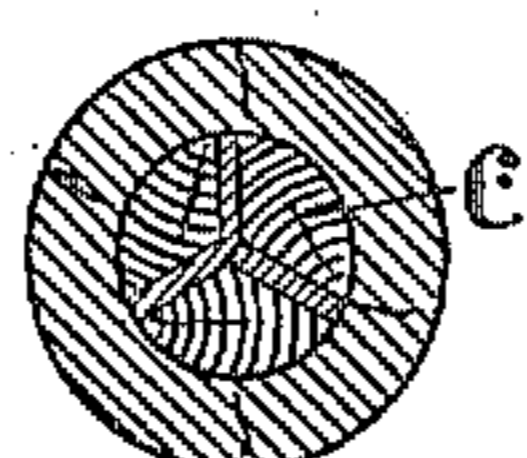


Fig 6

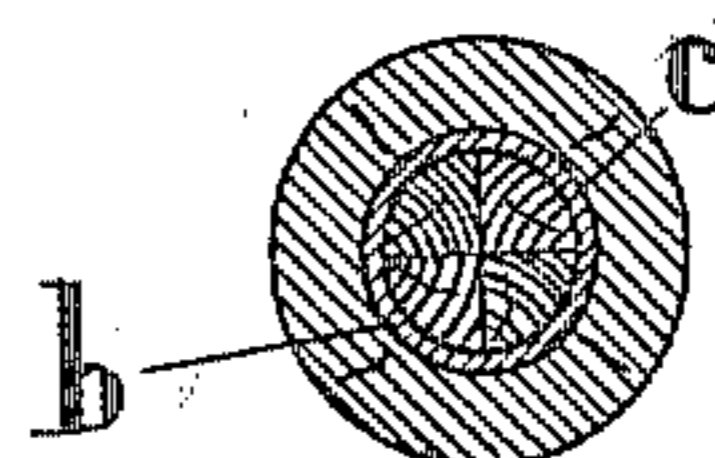


Fig 7

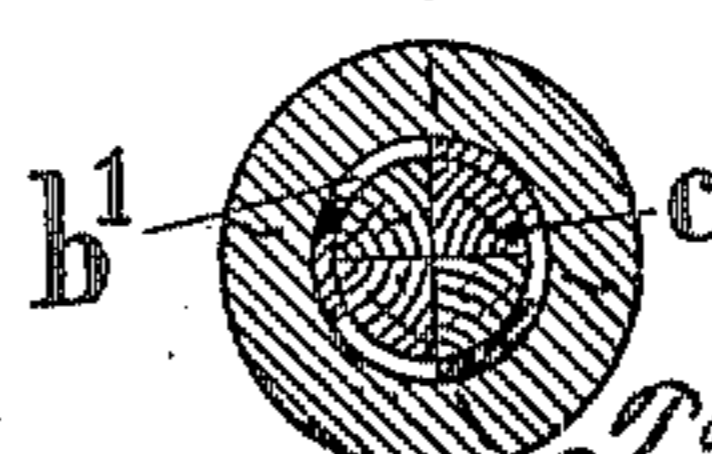


Fig 8

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UNITED STATES PATENT OFFICE.

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BILLIARD-CUE.

951,453.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES RANSOM, engineer, a subject of the King of England, and residing at Meadow View, Cavendish Road, Merton, in the county of Surrey, England, have invented certain new and useful Improvements in Billiard-Cues, of which the following is a specification.

This invention has reference to the construction of billiard cues for use in billiards and the like games.

The ordinary form of billiard cue even when made of seasoned wood is liable to warp at the narrow end from atmospheric or other causes and the cue is then no longer alined. It has already been proposed to form a composite cue consisting of built up longitudinal strips of material arranged around a central tapered core of hard wood or metal tube extending from end to end of the cue. Such construction is, however, comparatively expensive to make and liable to split and the provision of the hard core throughout the full length of the cue is open to objection.

According to the present invention I insert in an ordinary cue which is otherwise of the usual external appearance of a cue, a central metallic core for a portion of the length of the cue extending rearward from the narrow or tip end thereof, this core being arranged only at that portion of the cue which is liable to warp or become deflected. The core is rectilinear and is packed or secured in position within the cue in any suitable manner so as to be incapable of rattling or movement.

The invention is hereafter described with reference to the accompanying drawings, in which:—

Figure 1 is an elevation of the cue, which does not differ in external appearance from any ordinary cue. Fig. 2 is a sectional elevation. Fig. 3 is a sectional elevation on a larger scale of the tip end of the improved cue. Figs. 4 and 5 are cross sections on lines 4—4 and 5—5 of Fig. 3. Figs. 6, 7 and 8 are cross sections of cues showing modified forms of core. Fig. 9 shows the end of a cue constructed according to this invention, fitted with a cue tip having a shank to enter the bore of the cue.

The cue *a* is drilled out or otherwise bored out centrally and longitudinally at the narrower end for part of the length of

the cue and a core *b* then inserted in this hollow part. The core is inserted as a tight fit in this hollow part and the length of the hollow bore is such that the core extends through the length of the whippy part of the cue, that is to say that portion of the cue which is particularly liable to become deflected or "out of truth" by warping or otherwise. The core *b* is shown of cylindrical section in Fig. 2, of X or cruciform section in Figs. 3 and 5, and of three-armed section in Fig. 6, but it may be of any other desired sectional shape. It may be made of spring metal, steel tube or other suitable material. The core is secured within the hollow bore of the cue and is packed with strips of bamboo *c* or other filling and it may be further secured by means of suitable adhesive or solution such, for example, as dextrin. The tubular core *b* may be made with perforations or side passages *b'* through which adhesive or other filling may pass from the interior of the tubular core *b* to hold the tube firmly in place.

A suitable length of metallic core for a 4' 10½" cue is a tube about 16" long and of quarter-inch diameter leaving a space of an inch at the extremity of the cue to be plugged with wood as shown at *d*. Such arrangement is illustrated in Fig. 3. In this case the cue tip can be fastened to the end of the cue in the ordinary way, the top of the plug *d* being flush with the annular extremity of the cue. The core *b* may, however, extend to the extremity of the narrow end of the cue or it may just stop short thereof leaving say a space of a quarter of an inch for the insertion of the shank of a tip of the known kind, adapted to fit in such recessed extremity, as shown in Fig. 9.

The bamboo strips *c* are arranged between the arms of the core and the external wooden wall of the cue or within the tubular core in the case of a hollow core. It will be noticed in Figs. 5 and 6 that the filling strips *c* extend from the body of the core *b* to the wall of the cue.

The tip provided upon the annular end of the bored out cue may be of any desired pattern. In Fig. 3 I have shown a plain leather tip *e* of the usual construction, and in Fig. 9 a tip of a well known type having a shank *e'* which plugs the bore.

The butt end of the cue may be constructed and attached to the stick in any manner

common in this art and finished off in any desired manner. The rectilinear core seated in the hollow stick portion of the cue is not visible and the cue itself presents the appearance of an ordinary one. Nevertheless the provision of the stiffening core for that portion of the length of the cue most liable to warping or deflection renders the cue substantially inflexible in use.

10 This cue also possesses extraordinary driving power which is an immense advantage in playing what are known as forcing strokes.

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

1. A billiard cue tapered toward the tip end, said cue being hollowed out centrally and longitudinally from the tip end for part of the length of the said cue and having a metallic core inserted in said hollowed part, the hollowed out portion of the cue being of one piece and means for packing the core in position within the wall of the cue.

2. A billiard cue tapered from the butt end to the tip end and bored out centrally at the tip end, said bored out portion being formed of a single piece and cue having a metal core fitted in said bore at the tip end and means for securing said core firmly in position within the wall of the cue.

3. A billiard cue tapered from the butt end to the tip end and bored out centrally at the tip end for part of the length of the cue, and having a metal core inserted in said bored out portion, said bored out portion being seamless and a wooden filling forming a packing to hold the core against rattling or movement.

4. A billiard cue tapered from the butt end to the tip end, said cue bored out centrally at the tip end for part of the length of the cue, said bored out portion being devoid of seams, a rectilinear metal core inserted in said bore, means for packing the core in place, a plug to said bore to hold said core firmly in place and a cue tip to cover said plug and the annular end of the cue.

5. A billiard cue tapered from the butt end to the tip end and bored out centrally at the tip end for part of the length of the cue, said bored out portion being formed of a single piece, a rectilinear metal core fitted in said bore, wooden filling within said bore, adhesive for said filling, and a cue tip for the annular end of said cue.

6. A billiard cue tapered from the butt end to the tip end and bored out centrally

at the tip end for part of the length of the cue, a ribbed metal core inserted in said bore, filling material arranged between the ribs of said core, said core being firmly secured in place within the cue, and a tip at the annular end of said cue.

7. A billiard cue tapered from the butt end to the tip end and bored out centrally at the tip end for part of the length of the cue, a ribbed metal core inserted in said bore, strips of bamboo arranged between the ribs of said core as packing between the body of said core and the wall of the cue to hold said core securely in place, and a tip affixed upon the annular end of said cue.

8. A billiard cue having an internal metal core inserted in a hollow part of the narrower end of the cue, filling strips and adhesive for securing the core in place, said core and filling strips being inclosed within the ordinary seamless wooden stick portion of the cue.

9. A billiard cue having a seamless stick portion provided with a hollow bore which opens through the tip and extends rearward for part of the length of the stick portion, said bore having a metal core secured therein, and a plug to close said bore, said plug adapted to maintain the core in place and to afford a flush surface for the cue tip.

10. An improved billiard cue having a seamless stick portion containing a metallic core for part of its length at the narrower end, and a filling composed of strips of bamboo, said cue having the external appearance of an ordinary cue.

11. A billiard cue comprising a stick portion, said stick being tapered from the butt end to the tip end, a longitudinal central bore in the narrower seamless end of the cue stick and opening through the tip end, a metal core inserted in said bore and packed within the bore so as to be firmly secured therein, and a cue tip extending across the annular end of said cue stick.

12. A billiard cue comprising a stick portion, said stick having a butt end and a narrowed tip end, a longitudinal central bore in the narrower end of the cue stick, a metal core of cruciform section fitted in said bore, strips of bamboo inserted as packing between the arms of said core and the wall of the cue to hold said core firmly in place, and a cue tip covering the cored end of said cue.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES RANSOM.

Witnesses:

VICTOR F. FEENY,
CYRIL J. FEENY.