

G. ZITTEL.  
Fastening Tips upon Billiard Cues.  
No. 239,913.  
Patented April 5, 1881.

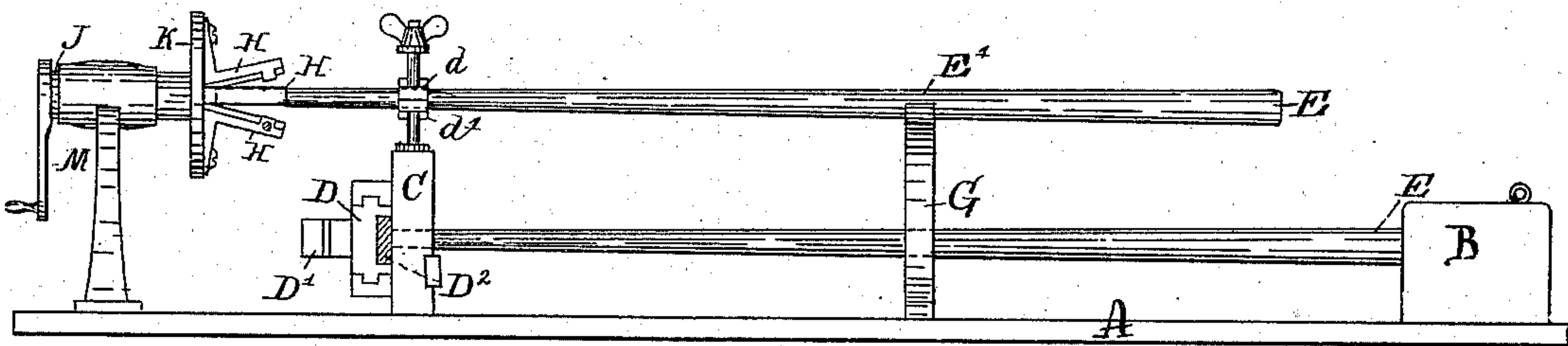


Fig. 1.

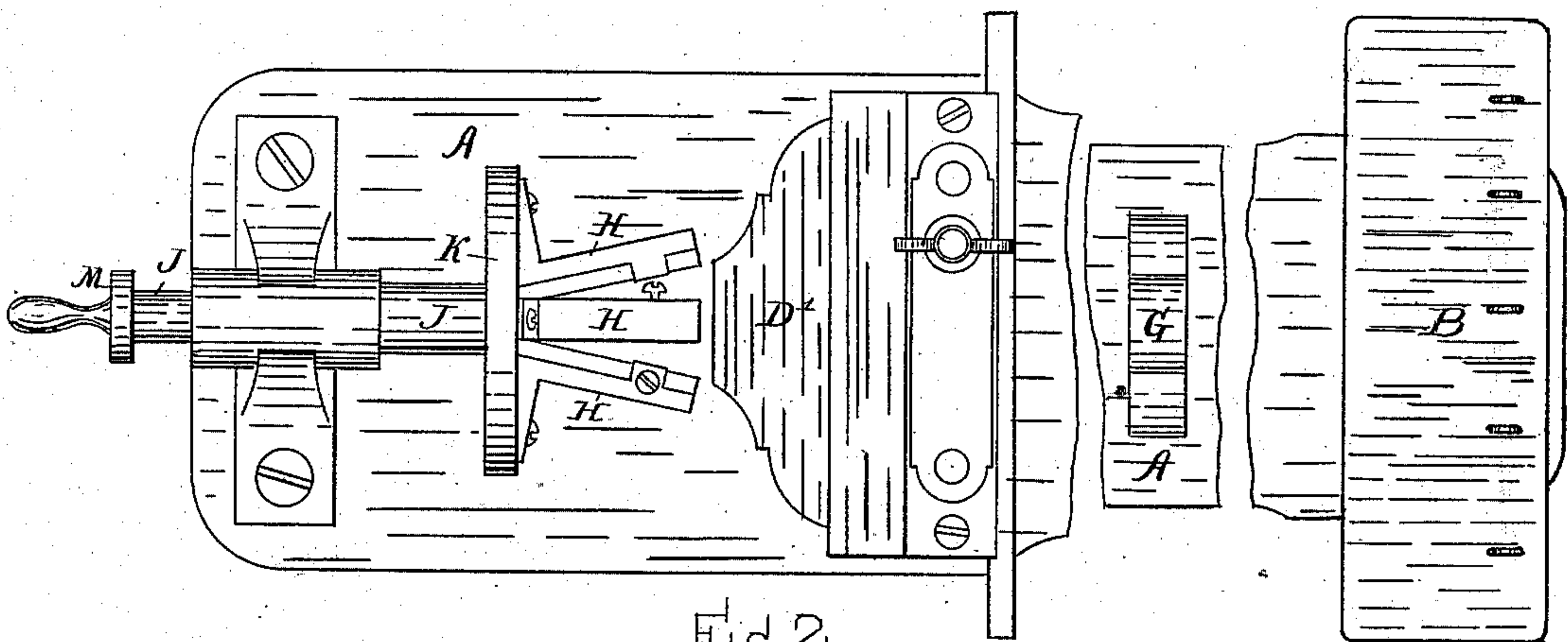


Fig. 2.

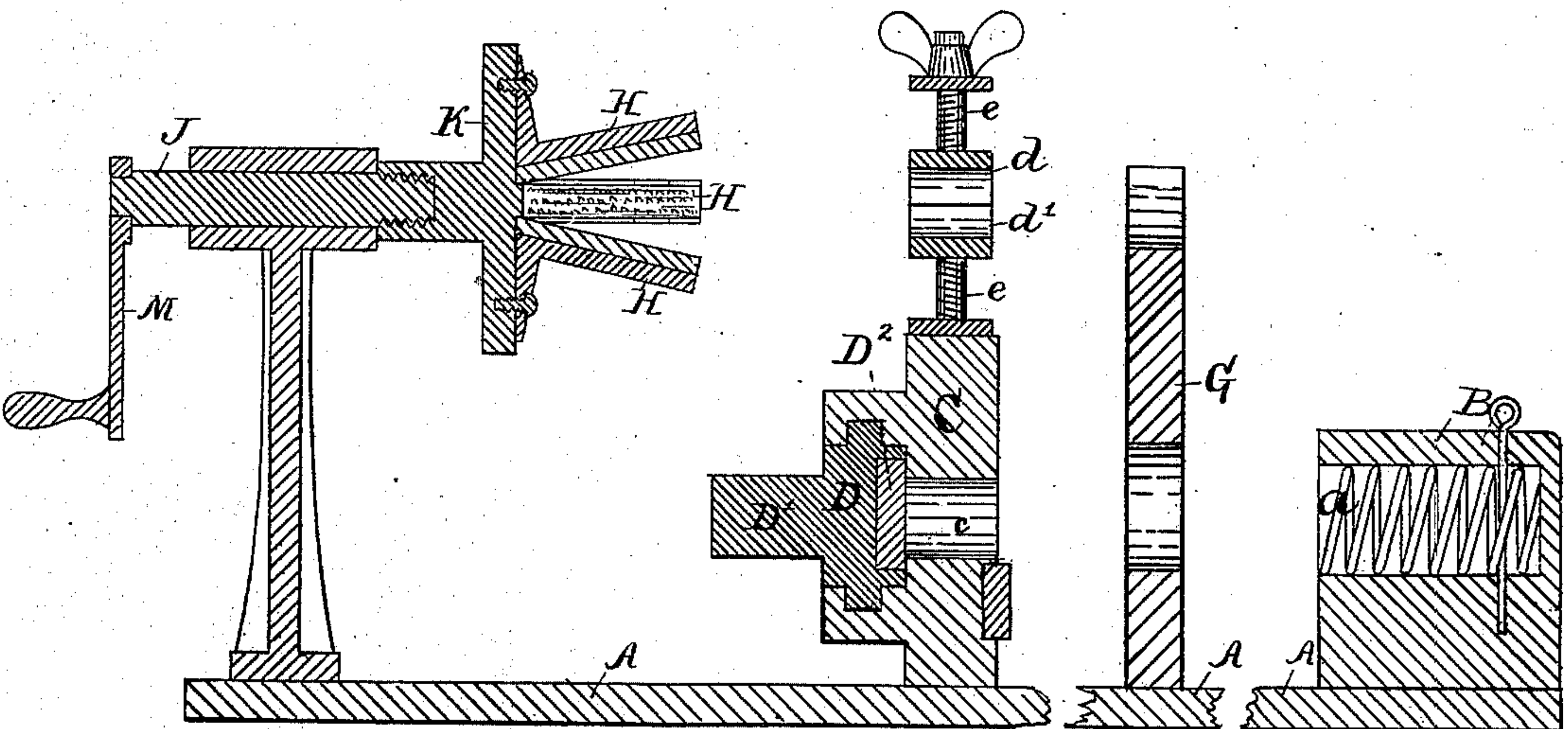


Fig. 3.

Witnesses.  
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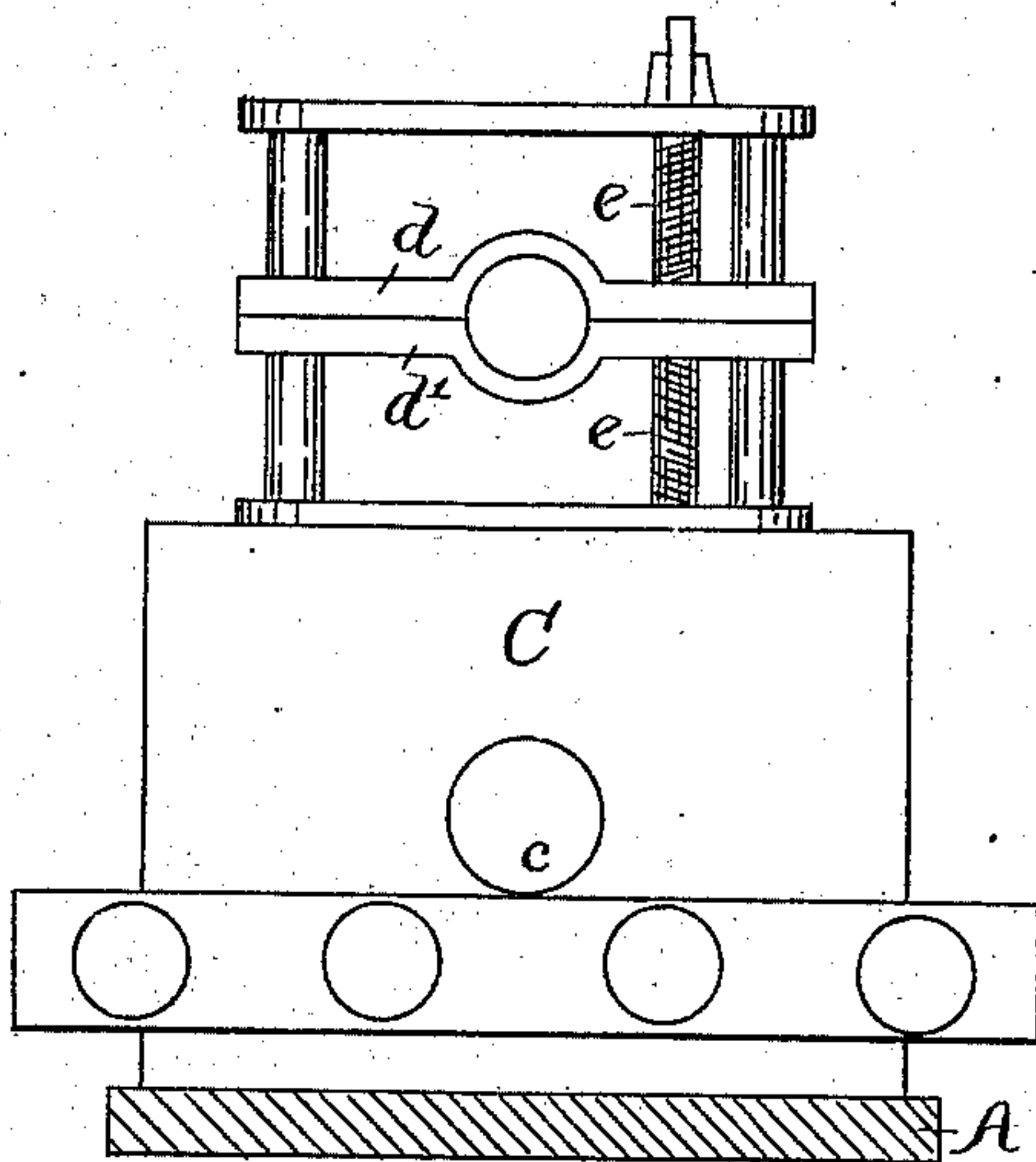


Fig. 4.

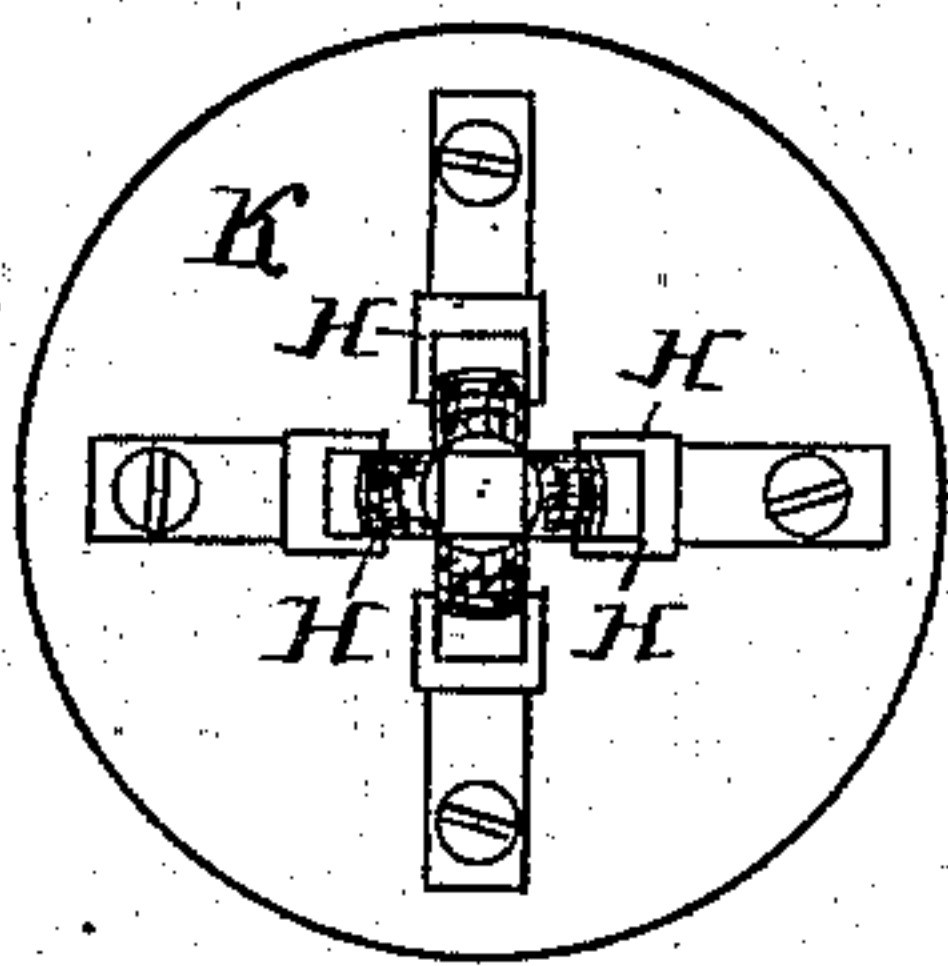


Fig. 5.

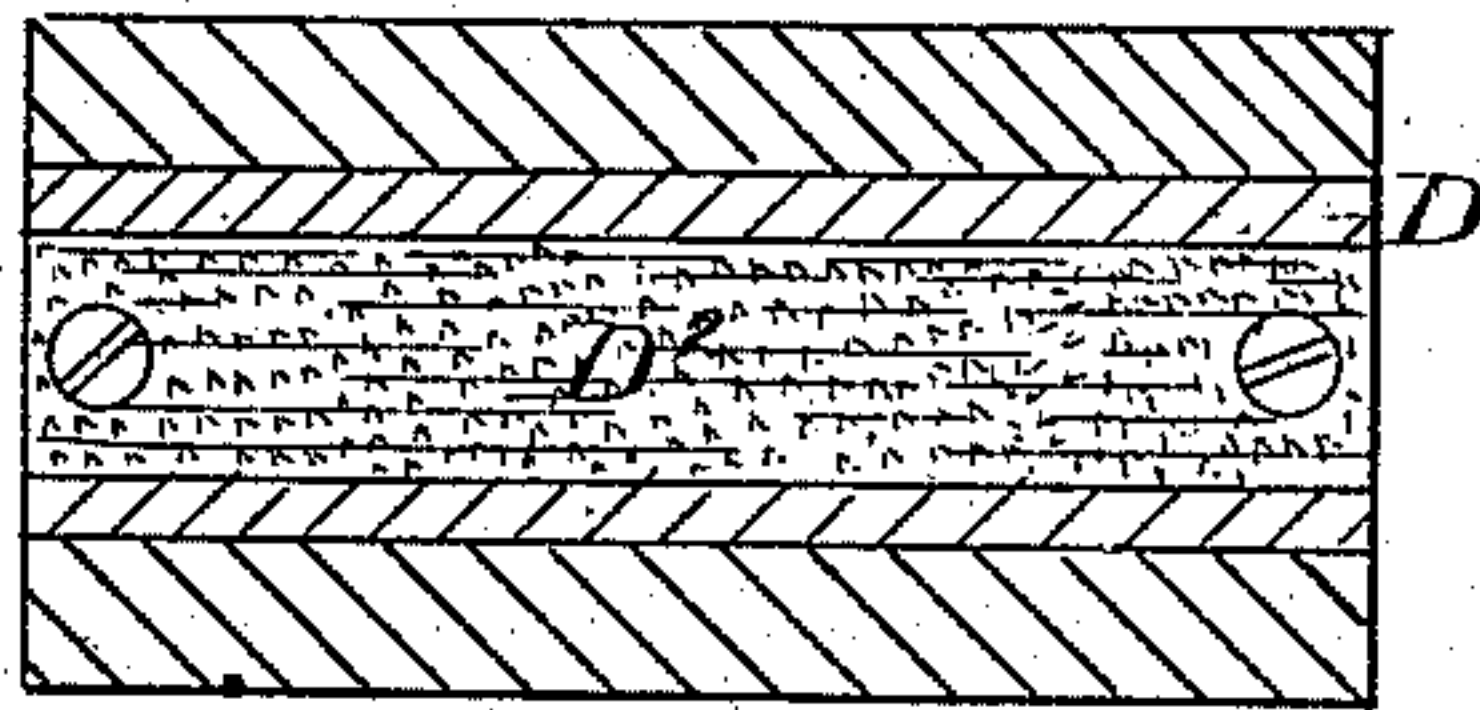


Fig. 6.

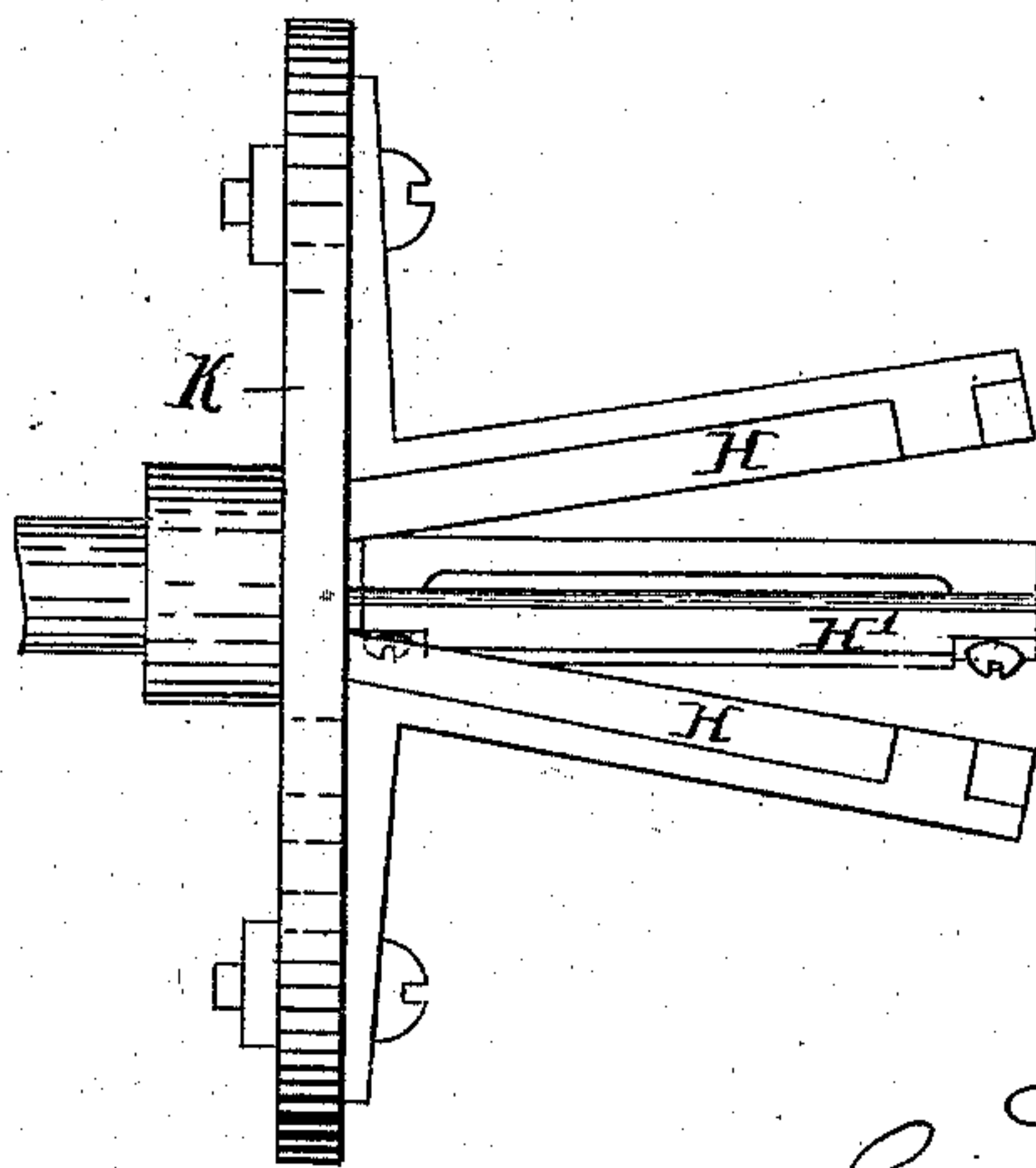


Fig. 7.

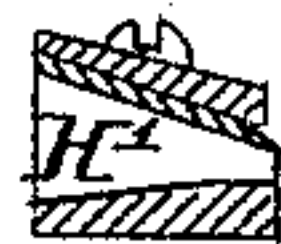


Fig. 8.

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# UNITED STATES PATENT OFFICE.

GEORGE ZITTEL, OF BOSTON, MASSACHUSETTS.

## FASTENING TIPS UPON BILLIARD-CUES.

SPECIFICATION forming part of Letters Patent No. 239,913, dated April 5, 1881.

Application filed January 9, 1880.

*To all whom it may concern:*

Be it known that I, GEORGE ZITTEL, of Boston, in the county of Suffolk, and State of Massachusetts, have invented certain new and useful Improvements in the Matter of Fastening Tips Upon Billiard-Cues; which improvements are set forth in the following specification and accompanying drawings.

The first part of my invention relates to squaring and roughening the end of a cue to receive the tip.

The second part relates to trimming the tip after it has been glued on.

In the drawings, Figure 1 is a side view of my apparatus, showing the position of the cues in the two operations. Fig. 2 is a plan. Fig. 3 is a section. Fig. 4 shows the guides for the ends of the cues. Fig. 5 shows a view of the trimming device. Fig. 6 shows a view of the roughening and squaring device. Fig. 7 shows the trimming device, and Fig. 8 a section of a form of cutter used with that device.

A is a board, extending more than the length of the cue, and having upon it at one end a box, B, fitted with a spring, *a*. Near the other end of the board is a standard, C, to which is attached a slide, D, said slide being provided with a handle, D', by which it can be given a reciprocating motion. The slide D has upon its inner surface an abrading material, D<sup>2</sup>, preferably a file.

To operate this part of my invention the butt of a cue, E, is pressed against the spring *a*, forcing it back until the cue-point can be passed through the opening *c* in the standard C, and then come in contact with the abrading material D<sup>2</sup>, upon which it is pressed by the spring *a*. Then by reciprocating the slide D the point of the cue will be squared and roughened ready for receiving the glue upon the tip and holding it; but it would be better during this reciprocating motion that the cue should be turned occasionally, so that the lines of abrasion should cross one another.

In order to give an equable pressure of the cue against the abrading-surface the spring *a* is desirable, and the box B, containing it, should be made adjustable to the varying sizes of cues, and this is the best method known to me; but a good result can be accomplished by resting the cue upon the support G, and pressing it by hand against the abrading-surface, the object of so resting it being to support the cue as nearly as possi-

ble in a level position, so that the point may be properly squared. After the cue is thus squared and roughened it is ready for the tip, which can be glued on firmly because of said roughening.

The tips are usually greater in diameter than the squared surface of the point of the cue, and project over the sides of the cue more or less unequally, according to the care with which they have been put on. After the glue has dried I trim those portions of the tip which project over the sides of the cue by means of revolving trimmers set angularly, as shown, to accommodate the various diameters of the tips.

The standard C is provided with a clasp, *d d'*, made in two parts, one to rise and the other to fall by means of the right and left screw *e*, so that the clasp will fit all sizes of cues, and hold them firmly, and center them for the operation of the trimmers.

The trimmers H H' are mounted upon a shaft, J, and a head, K, which are revolved by means of a crank, M. The cutters H are files, and the cutters H' are made in the form of planes, as shown in Fig. 7, and in section in Fig. 8.

The sides of the tips are trimmed by placing the cue upon the top of the support G, as shown at E' in Fig. 1, and passing it through the clasp *d d'* until it comes in contact with the trimmers, which, being revolved, remove the superfluous parts of the tip, the clasp holding the cue against the operation of the trimmers.

I am aware that English Patent No. 2,025 of 1877 shows a clamp for holding the cue and rotary cutters for trimming it; but this I disclaim in this connection.

I claim as my invention—

1. In an apparatus for fastening tips upon billiard-cues, the combination, with board A, of the standard C', having slide D, with abrading material D<sup>2</sup> attached thereto, with box B, having a spring, *a*, to hold the cue against the abrading material, as and for the purpose specified.

2. The combination of the board A, support G, standard C, adjustable clasp *d d'*, and screw *e*, files H, and planes H', constructed and operated as and for the purpose specified.

Witnesses: GEORGE ZITTEL.  
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