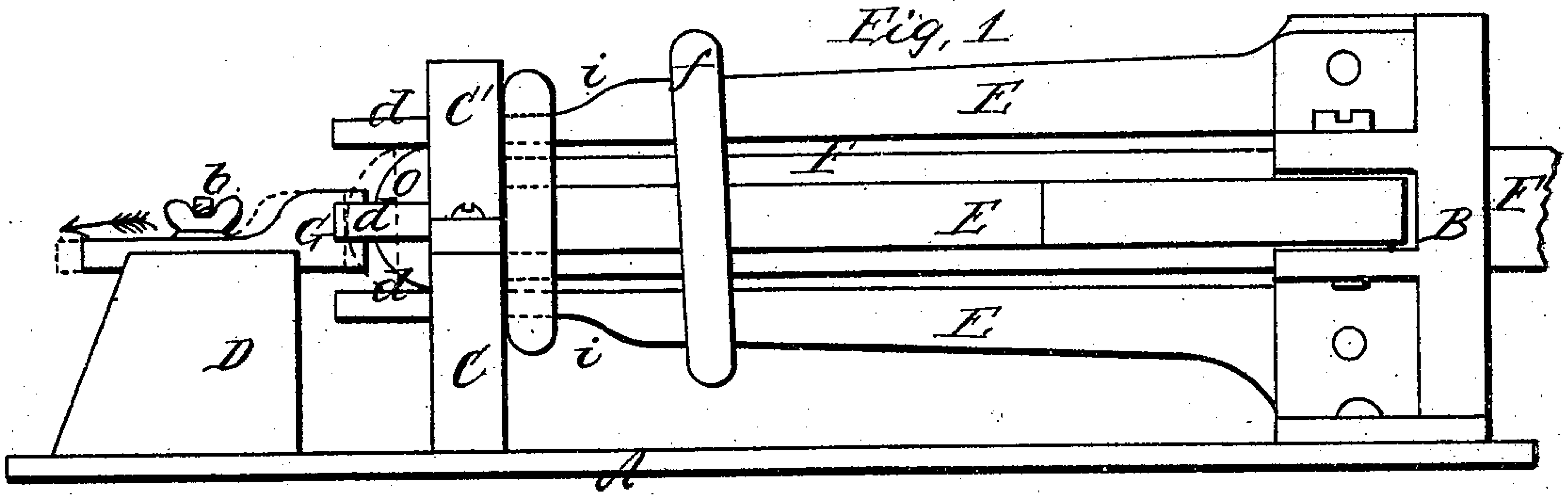
J. E. Boyle.

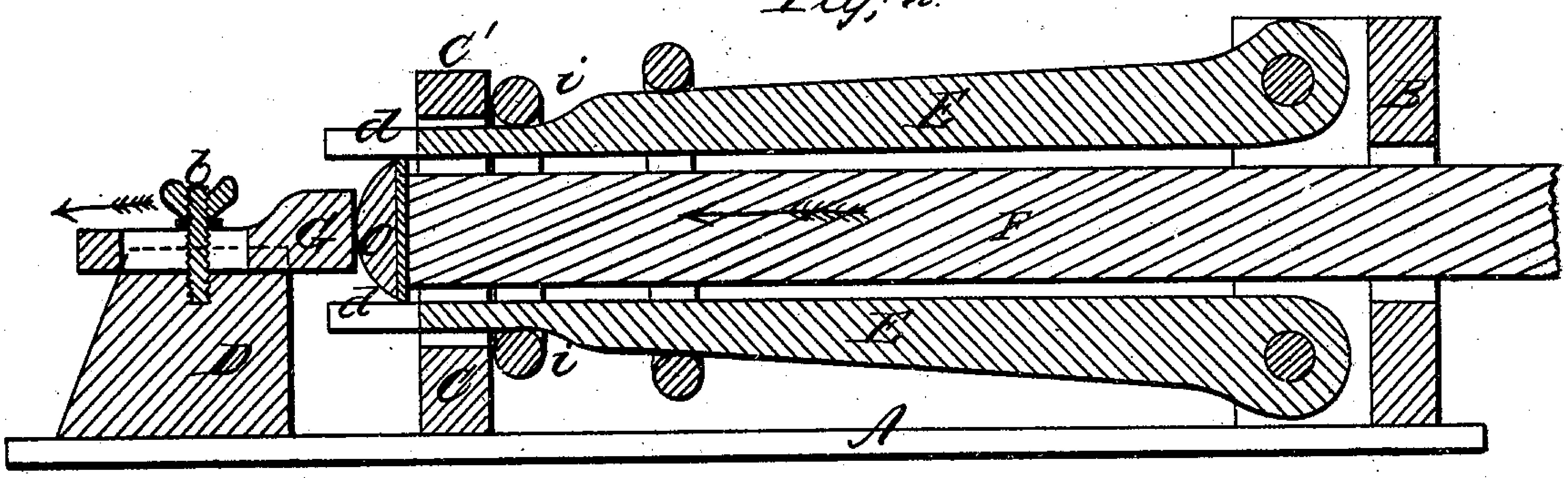
Trimming Cue Leathers.

No. 89,624. Patented May 4, 1869.

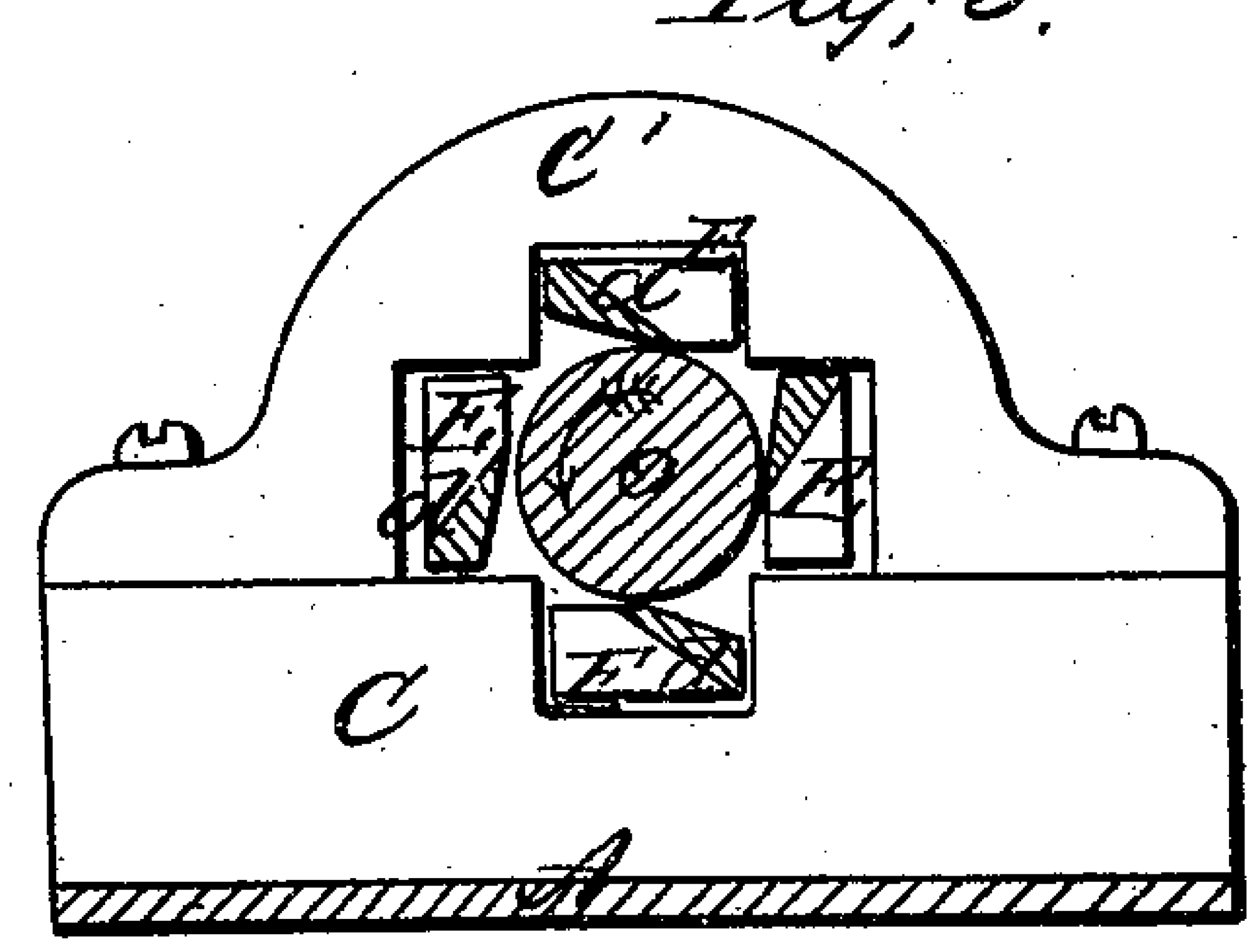
Fig, 1



Fig; 2.



Fig; 3.



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Letters Patent No. 89,624, *dated May* 4, 1869.

IMPROVED MACHINE FOR TRIMMING CUE-LEATHERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JAMES E. BOYLE, of New York city, of New York county, in the State of New York, have invented certain new and useful Machines for Trimming Cue-Leathers; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this application.

My invention relates to a new and useful machine or contrivance for trimming off the leather tips of billiard-cues.

In the preparation of billiard-cues a leather "tip" is glued on to the end of the stick or cue, generally by means of an adhesive material or "wafer," which forms part of the tip as supplied by the manufacturer or importer. These "tips" or cue-leathers are always larger in diameter than the end of the cues, and, after having been glued on, and becoming fast, they are cut away, or "trimmed" down to about the diameter of the cue, and are then sand-papered and finished up into shape to suit the players.

It has been customary previous to my invention to thus trim or cut down the leathers by hand with an ordinary knife, as is well known to billiard-room keepers and others, and where there is any considerable number of cues to be tipped and trimmed, this cutting of the leathers is a very laborious and time-consuming operation.

This process of trimming the tips by hand with a knife is not only tedious, and requires much time, but in the practice of it, it is almost impossible to trim the leathers to a perfect circle, conforming to the diameter of the cue, and have them in good shape.

To overcome the difficulties encountered, and provide some economic and efficient means of trimming off the leathers after they have been glued to the sticks, has long been looked upon as a great desideratum, and it has been suggested to perform this "trimming" operation by means of a device something after the fashion of a pencil-sharpener; but in practice it has been found that with any such devices as have been tried, the leathers are torn off from the cues by the strain and pressure of the cutters.

My invention has for its objects to provide a means for efficiently cutting the leathers down to the diameter of the stick to which they are secured, and one by which this operation may be expeditiously performed without severing or loosening the tip; and to these ends

My invention consists in a machine or apparatus which is composed of a suitable device for exerting a pressure upon the tip, to hold it fast on the stick, and knives or cutters for trimming away the circumference of the tip while it is so held, as will be hereinafter more fully described.

To enable those skilled in the art to make and use my invention, I will proceed to describe more fully the construction and operation of a machine embodying my invention, referring by letters to the accompanying drawings, in which—

Figure 1 is a side view, or elevation of a machine, made according to my invention.

Figure 2 is a vertical longitudinal section of the same; and

Figure 3, a cross-section at *x x*, fig. 2.

In the several figures the same parts are designated by the same letter of reference.

A represents the bed or base of the machine, which I propose to make of cast-iron, and in which are formed or secured three stands, B, C, and D, in the first of which, B, are pivoted the vibratory cutter and guiding-arms E, and which is formed with a hole sufficiently large to permit the ready insertion and withdrawal of the cue F, and which acts as a guide to the latter, as clearly seen at fig. 2.

The stand C is provided with a cap, *c'*, and said stand and cap are cut out, (as seen at fig. 3,) so as to allow the passage of the cue-end, and so as to form slots or guides, in which are arranged and work the cutter-ends of the bars or arms E, and on the stand D is arranged an adjustable and removable or pressure-bar, G, which is held in place when adjusted by a thumb-screw, *b*, as and for purposes to be presently explained.

At the vibratory end of each of the arms E is formed or properly secured a knife-edge or cutter-blade, *d*, as clearly shown, and around the said arms E is arranged a rubber band, or collar, as seen at *f*, which serves to clasp and force toward each other the said arms with a strong spring pressure.

These arms E are pivoted on bolts *m* in the housings formed in the stand B, as clearly shown, and are so formed, (see fig. 2,) that where the rubber spring-collar *f* is forced up over them, as seen, they will be forced toward each other, and consequently the knives *d*, forced against the tip *o*, introduced between them.

When the machine is not in operation the spring-collar *f* is moved along into the position shown in red in the drawings, that is, beyond the shoulder *i*, and the pressure on the arms thus taken off, and the collar relieved of tension or strain.

The operation of cutting or trimming the tip with the described apparatus may be thus explained:

The cue, with its leather glued on in the usual manner, is inserted by the operative through the hole in stand B, and along between the four arms E, until the tip comes between the knives *d* and but up against the stop or mandrel, as clearly shown in the drawings. The rubber collar being adjusted so as to exert its full pressure on the arms E, the operative forces and holds the cue endwise hard up against the stop, and at the same time turns or rotates it in the direction indicated by the arrow in fig. 3. As the cue and its tip are thus moved, the cutters or knives *d* penetrate and turn or

cut off the leather tip, while by the pressure of the cue endwise, as described in the direction indicated by the arrow at fig. 2, the tip is firmly held and clamped between the ends of the stick (to which it is glued) and the stop G. The apex of the leather or tip being convex, and the bearing surface of the stop being flat and smooth, there is no tendency created practically to displace the leather from the cue, and the clamping or pressure exerted on the leather between the stick-end and said stop, tends to and does effectually insure the retention of the leather on the cue while being cut away on its circumference by the knives *d*.

I have thoroughly tested and worked a machine constructed according to my invention, and have found that a man can trim down into much better shape and condition the same number of cue-tips in one hour than he could imperfectly trim in the customary way in a whole day.

The knives *d* may, of course, be made removable, and of fine steel, while the arms are made of baser metal.

It will be understood that when the cue with its tip is introduced into the machine, the arms E are spread apart, and also the knives *d*, and that when the tip has been cut down to the exact diameter of the cue, the arms E, near the cutters *d*, come into contact with the wood, and act as stops, so that the knives cannot cut further. By this means it will be seen the leather will be always cut down to the size of the cue, no matter what may be the diameter of the latter, and no matter whether the diameter of the tip exceeds much or little, to start with, the diameter of the stick.

The object and advantage of having the stop G adjustable, are that it may be set back in the direction indicated by arrows, as one portion of the edges of the knives wears away, so as to bring another portion into use by allowing the tip to be in a different position, as indicated by the red dotted lines at fig. 1.

By this means, and having the cutting-faces or edges of knives *d* pretty long, it will be seen the latter will last a long time before requiring sharpening. By making the stop removable, a ready means is afforded for extricating a tip in the event of one coming off and lodging between the cutters, which, however, will seldom occur, though it is apt to in case the tip is not properly fastened to the stick.

In lieu of the four arms and knives, as shown, a different number may of course be used without departing from the spirit of my invention, and instead of making the knives stationary and turning the cue, the inverse of this operation may be adopted, or the knives may be arranged around and connected to the stop or mandrel.

It will be understood that a great variety of changes may be made in the details of construction and arrangement of the devices, and various modifications adopted, all involving, however, the gist of my invention, which rests in the idea of combining with the cutting-devices or mechanism, a means for clamping the leather endwise on the cue while being cut, as I have hereinbefore explained.

Having fully explained my invention, and described the mode in which I propose to carry it out, and in which I have very successfully practised it,

What I claim as new, and desire to secure by Letters Patent, is—

The employment, in combination with a cutting-mechanism or device, adapted to cut or shave around the circumference of the leather, of a rest or stop-surface, against which the leather may be forced and held to insure its retention on the cue while being revolved, substantially as set forth.

In testimony whereof, I have hereunto set my hand and seal, this 14th day of April, 1869.

J. E. BOYLE. [L. S.]

Witnesses:

CHAS. A. SCOTT,

J. N. MCINTIRE.