

(No Model.)

J. A. ELLARD.
DENTAL REGULATOR.

No. 487,726.

Patented Dec. 13, 1892.

Fig. 1.

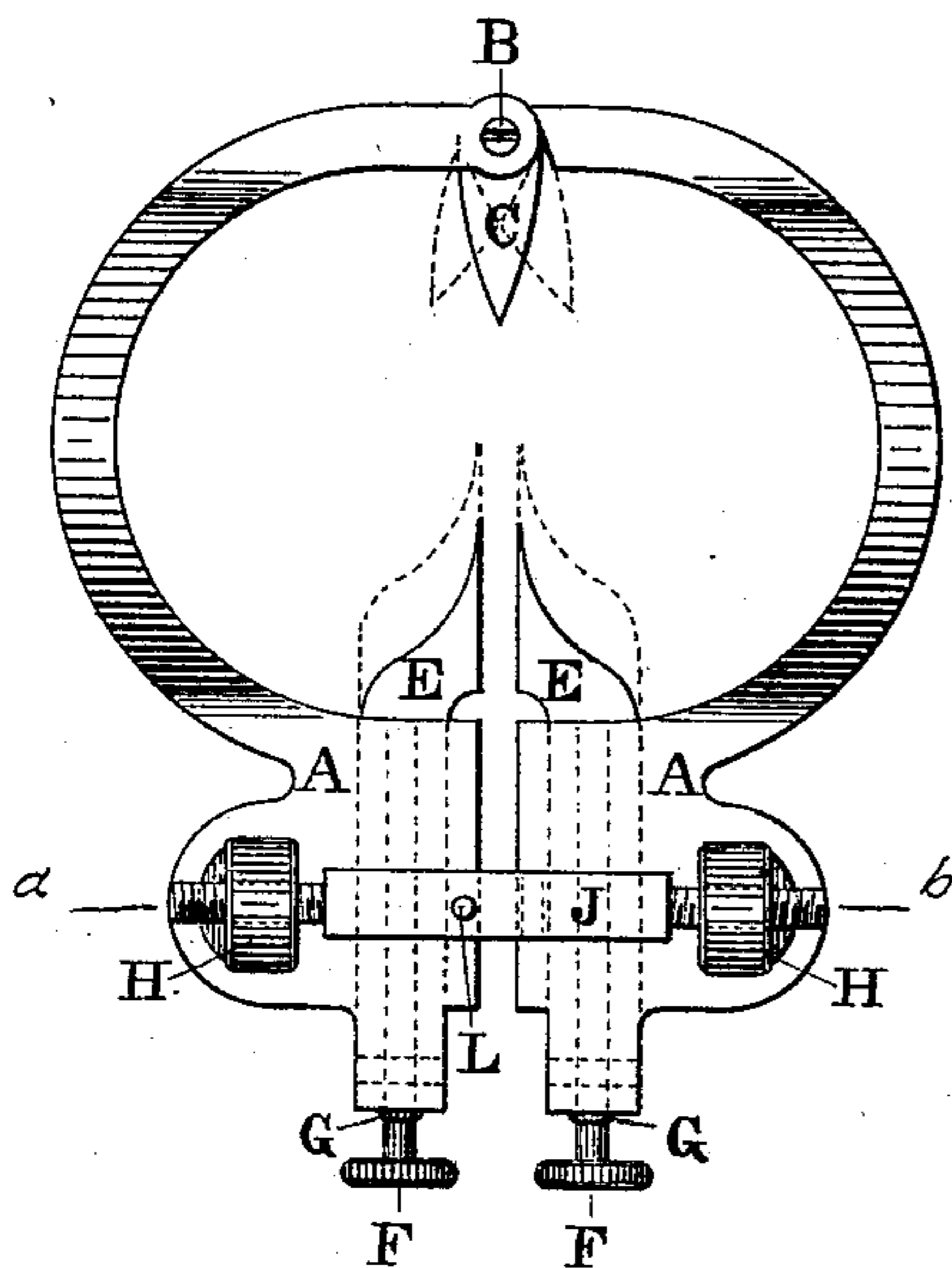


Fig. 2.

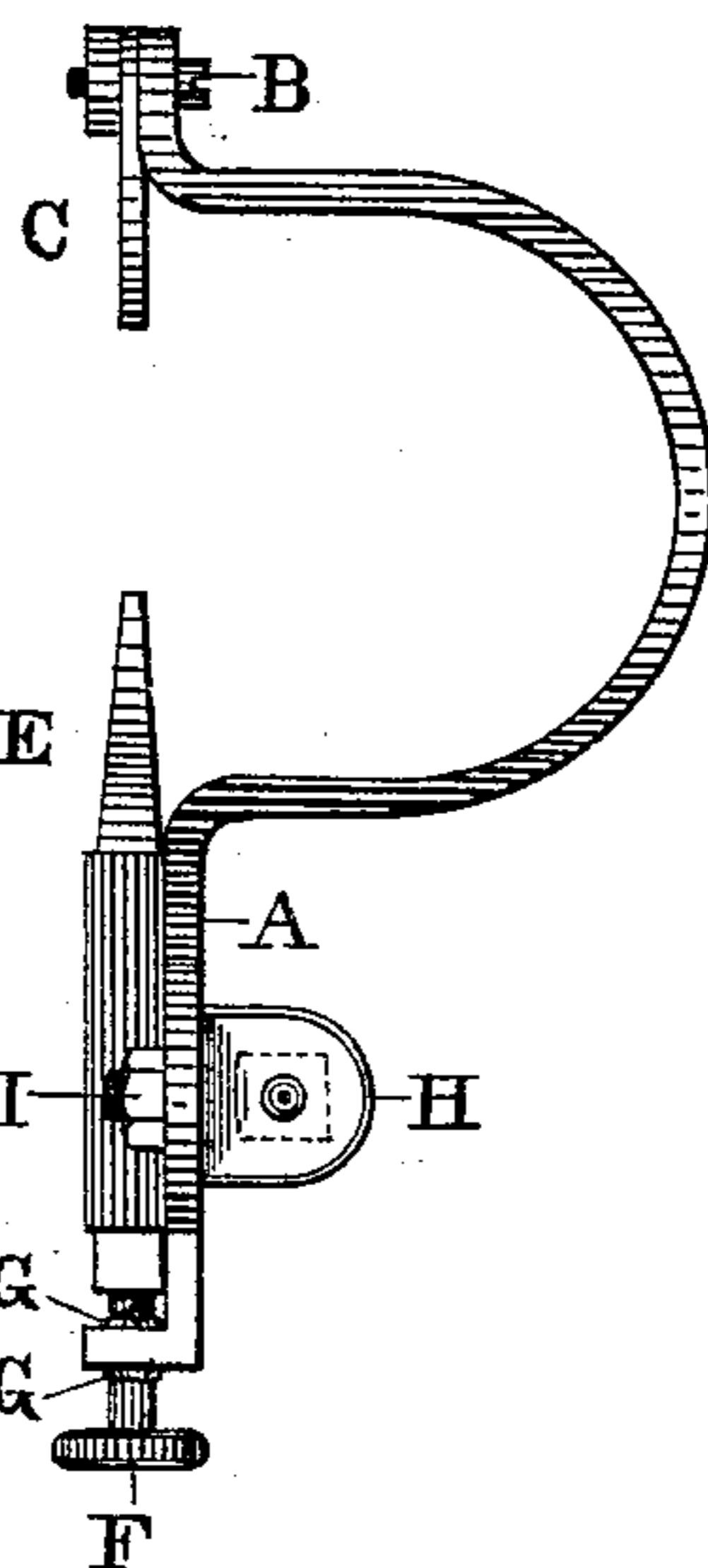


Fig. 3.

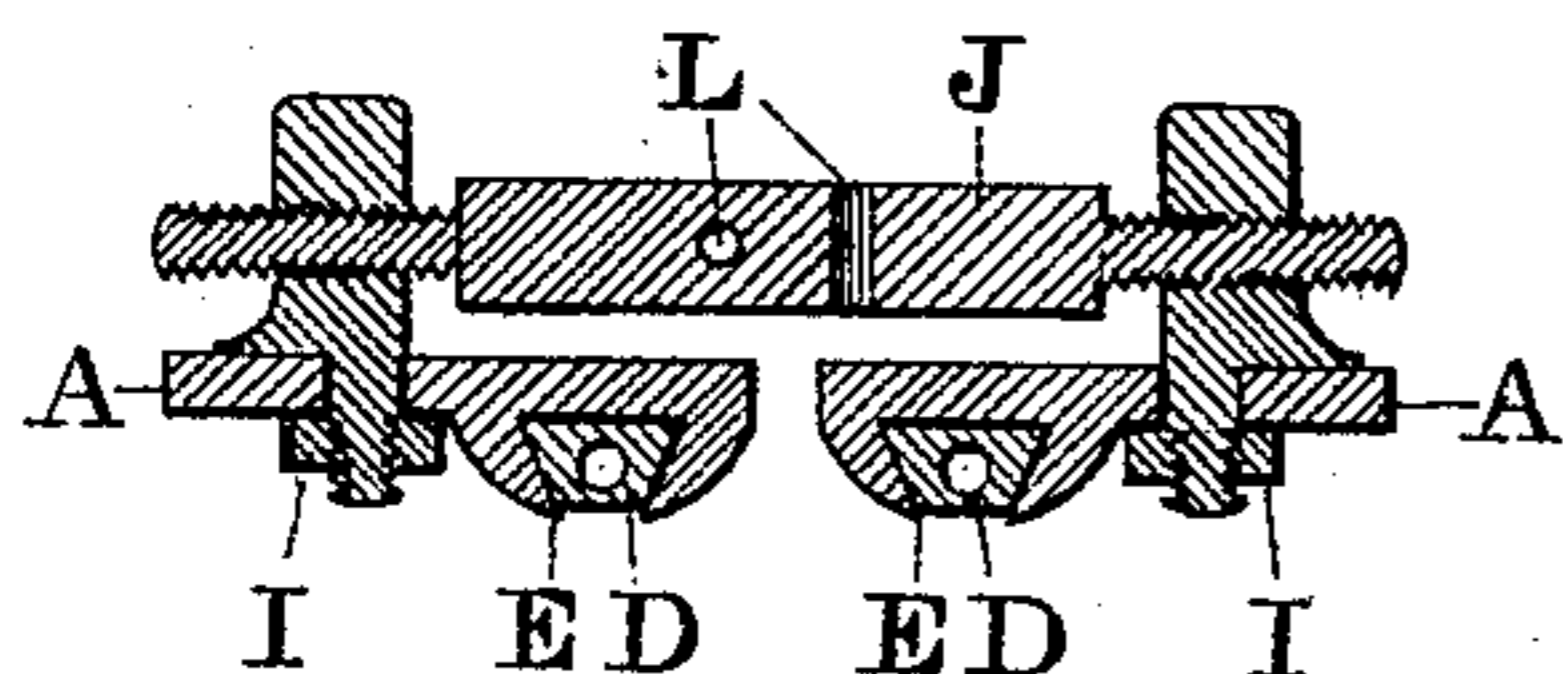
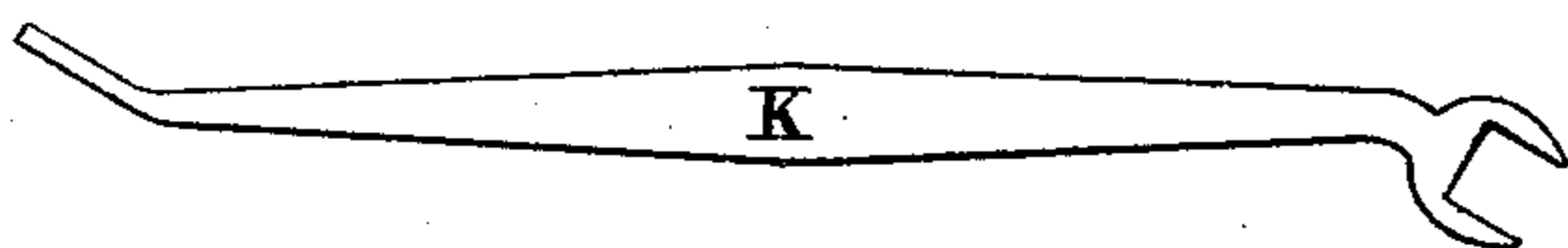


Fig. 4.



Fig. 5.



Witnesses

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JONATHAN ALLEN ELLARD, OF BIRMINGHAM, ALABAMA.

DENTAL REGULATOR.

SPECIFICATION forming part of Letters Patent No. 487,726, dated December 13, 1892.

Application filed April 15, 1892. Serial No. 429,248. (No model.)

To all whom it may concern:

Be it known that I, JONATHAN ALLEN ELLARD, a citizen of the United States, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented certain new and useful Improvements in Tooth-Separators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in that class of instruments called "separators," and are used to separate or force the teeth apart for dental purposes; and the objects of improvements are, first, to provide an instrument simple and cheap in construction and of sufficient strength and power to easily perform the operation required and that will not occupy a large amount of space in the mouth and to have all the operating parts of the device on the outside of the teeth convenient to get at; second, to afford facilities for the proper adjustment of the instrument, so that it can be easily and quickly adjusted to fit the teeth in any part of the mouth, and also to fit all teeth regardless of their size or inequalities in shape. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an enlarged plan view of the entire instrument, and Fig. 2 is a side view of the same. Fig. 3 is a vertical section of a part of the instrument on the line *a b*, Fig. 1. Fig. 4 is a plan view of one of the wedges used in the instrument. Fig. 5 is a plan view of the wrench to operate the extending bar.

Similar letters refer to similar parts throughout the several views.

The frame A A is made of steel or other metallic substance in two parts and secured together by the screw B, on which they form a hinge to freely open. Inserted in a recess formed between the folds of the hinge are placed the steel or metallic wedge C, having a sufficient amount of side play to adjust itself to any inequalities of the teeth, and the wedge is held securely in place between the folds of the hinge by the screw B. The said wedge can be made of different sizes and shapes and can be changed in the instrument

by removing the screw B and replacing the screw again when the change is made.

On the under parts of the frame A A are formed two grooved recesses D D with beveled edges to form a dovetail in which are snugly fitted the wedges E E, made of steel or other metallic substance and freely sliding in the said grooves. The said wedges are fitted in their ends with thumb-screws F F, threaded with a screw-thread and working in a similar screw-thread formed on the inside of the wedges. On the shank of the thumb-screws are double collars G G, and when the screws are inserted in the slot formed in the end of the frame the collars rest against both sides of the said frame and holds the screws to place, and when the screws are turned forward they will draw the wedges E E backward, and when turned in the reverse direction will reverse the motion of the wedges.

On the upper side of the frames A A, on extensions formed on the sides, are placed the posts H H, having pintles formed on the lower ends, the said pintles extending through holes in the frames A A and secured on the under side with the nuts I I, but not sufficiently tight to prevent the posts swiveling on the pintles. In the said posts are inserted the extension-bar J with right and left hand threads formed on its opposite ends. In the posts are formed corresponding screw-threads, and when the said extension-bar is inserted in the posts by turning it in one direction the posts are drawn together and by turning it in the opposite direction the posts are forced apart, thereby opening the frame on its hinge and drawing the points of the wedges apart. The said extension-bar is operated by the wrench K, which can be used with its large end on the square bar or its pointed end inserted in the holes L L, provided for that purpose in the extension-bar.

The operation and advantages of my invention will be readily understood by those skilled in the art to which it appertains. When it is desired to use the instrument, the thumb-screws F F are turned to draw the wedges E E back into the frame, the wedge C, selected to conform best to the shape of the teeth, placed and secured in the instrument, and the extension-bar turned to close

the frame together. The instrument is then inserted in the mouth to be operated on and the wedge C brought to bear between the teeth on the inside. The wedges E E are then brought to place by the operation of the thumb-screws F F until they are brought to bear evenly and firmly between the teeth on the outside, and as each acts independently of the other and can be extended more or less it will be easily seen they can be brought to bear evenly against the teeth, no matter how irregular the shape. The extension-bar J is then worked by the wrench K to force the frame apart, and the points of the wedges E E draw or separate the teeth as far apart as may be required.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a tooth-separator, the combination of a metallic frame made in two pieces with hinge and a wedge-shaped piece between the folds of the hinge, all secured together with a screw, the said frame having two dovetail grooves on the under sides and pieces with pointed ends sliding in the said grooves and operated with thumb-screws, substantially as shown and described.

2. In a tooth-separator, the combination of a metallic frame made in two pieces with hinge and a wedge-shaped piece between the folds of the hinge, all secured together with a screw, the said frame having two dovetail

grooves on the under side and pieces with pointed ends operated by thumb-screws sliding in the grooves and on the upper side of the frame having two posts pivoted in holes and connected together with a bar having right and left hand screw-threads on its ends and corresponding screw-threads in the posts, substantially as shown, for the purpose specified.

3. In a tooth-separator, the combination of a metallic frame made in two pieces, having a hinge and wedge-shaped piece between the folds of the hinge, the said folds having a recess formed between them to allow a limited amount of side play to the wedge, the point of the said wedge projecting inwardly in the frame, both parts of the frame and the wedge secured together by a screw, the said frame having two half-wedges sliding in grooves in the frame, forming when closed together a wedge with the point projecting inwardly in the frame and adjustable forward or backward independent of each other, the said frame and wedges being opened or operated by a bar with right and left hand screw-threads, substantially as described.

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

JONATHAN ALLEN ELLARD.

Witnesses:

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JAS. B. WOOD,