

No. 811,849.

PATENTED FEB. 6, 1906.

E. L. HUTCHINSON.
TEETH SEPARATOR.
APPLICATION FILED JUNE 3, 1905.

Fig. 1.

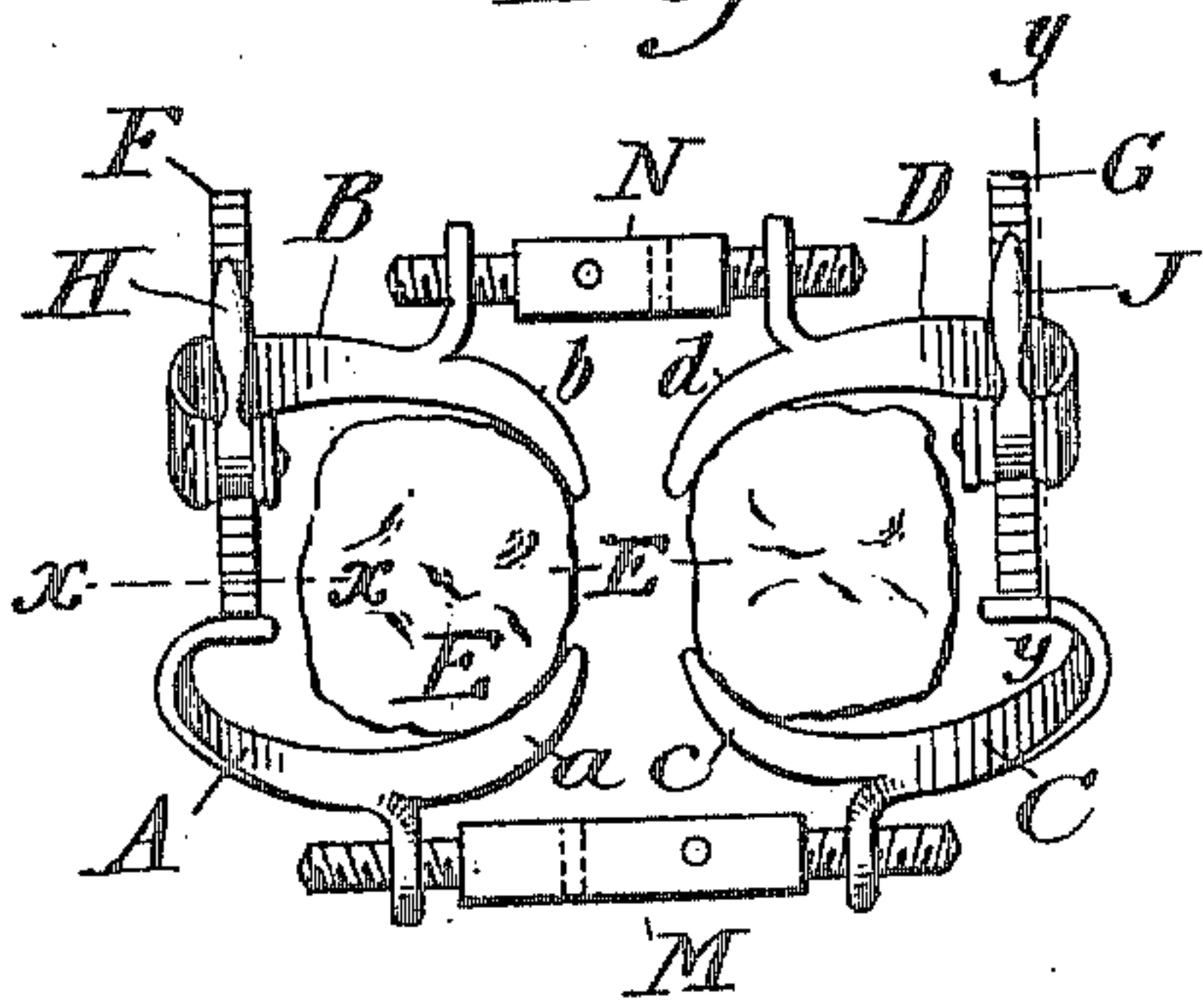


Fig. 3.

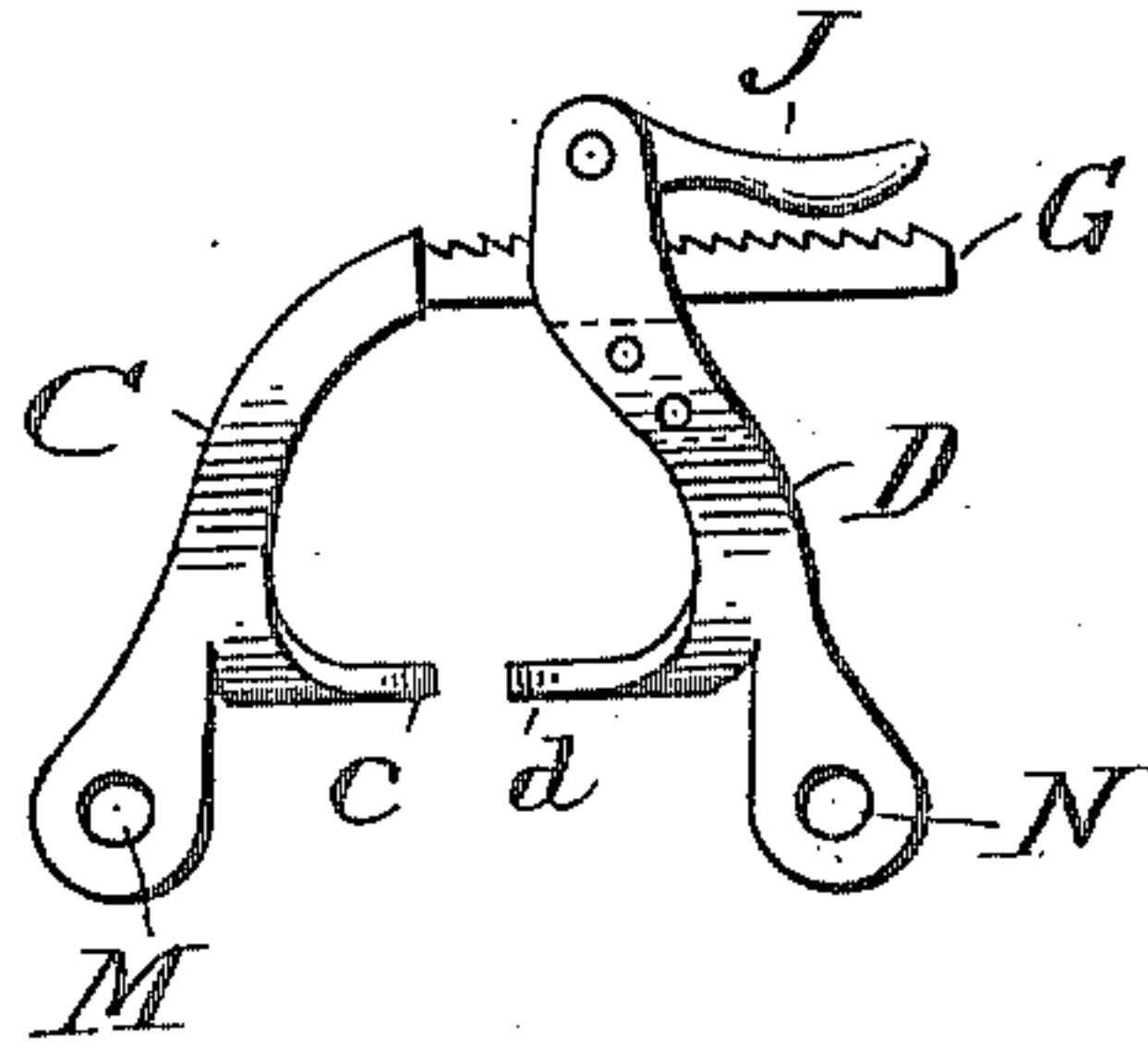


Fig. 2.

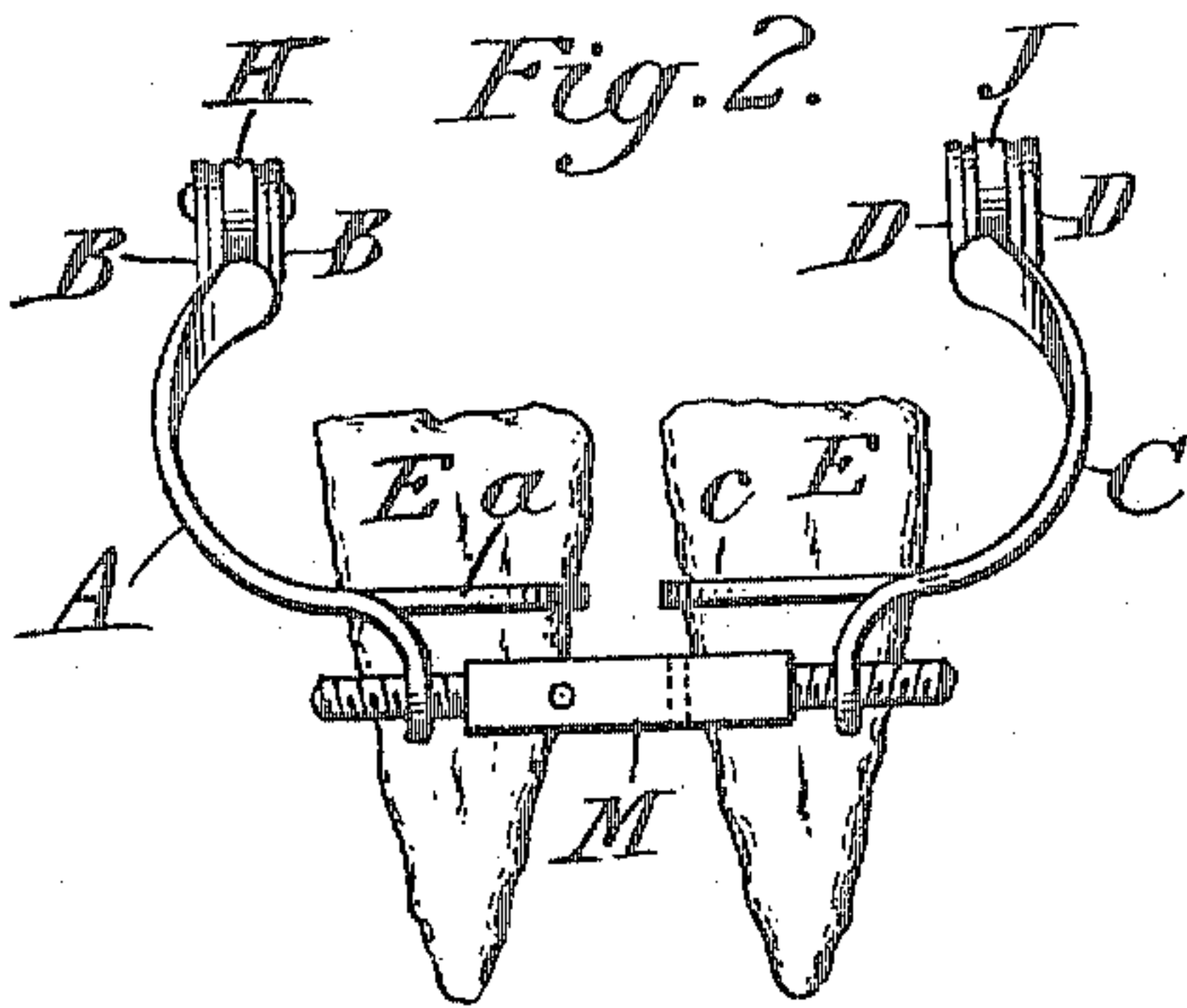


Fig. 6.

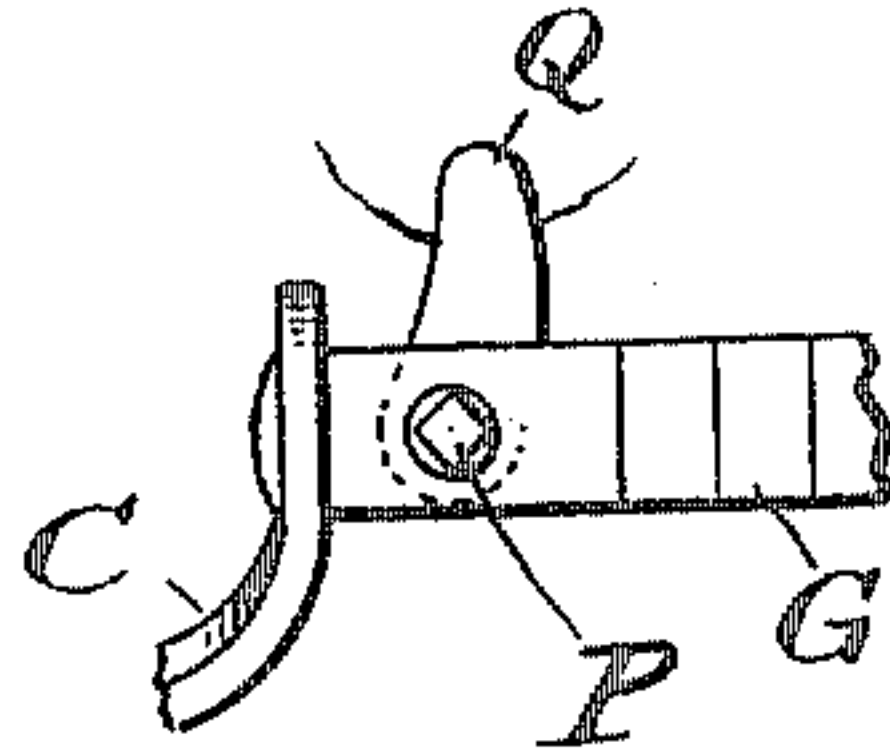


Fig. 7.

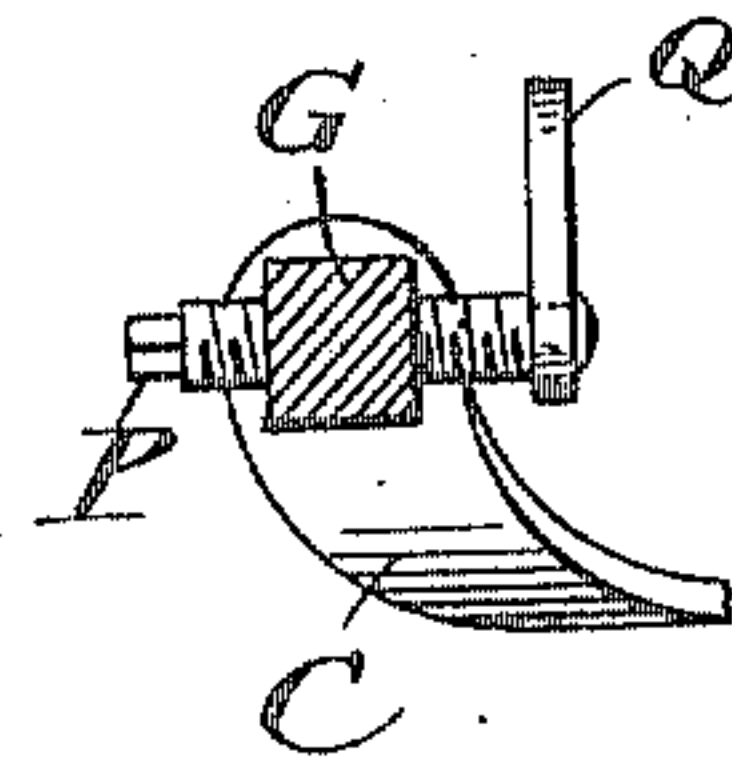


Fig. 4.

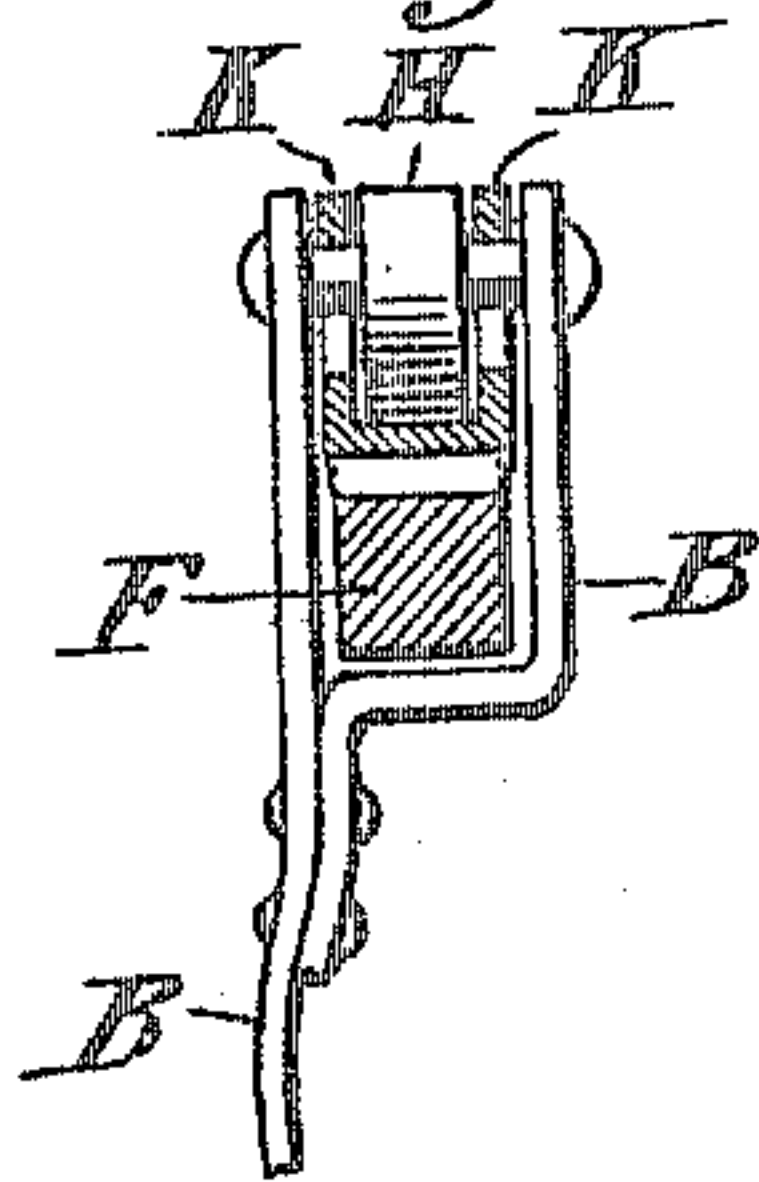
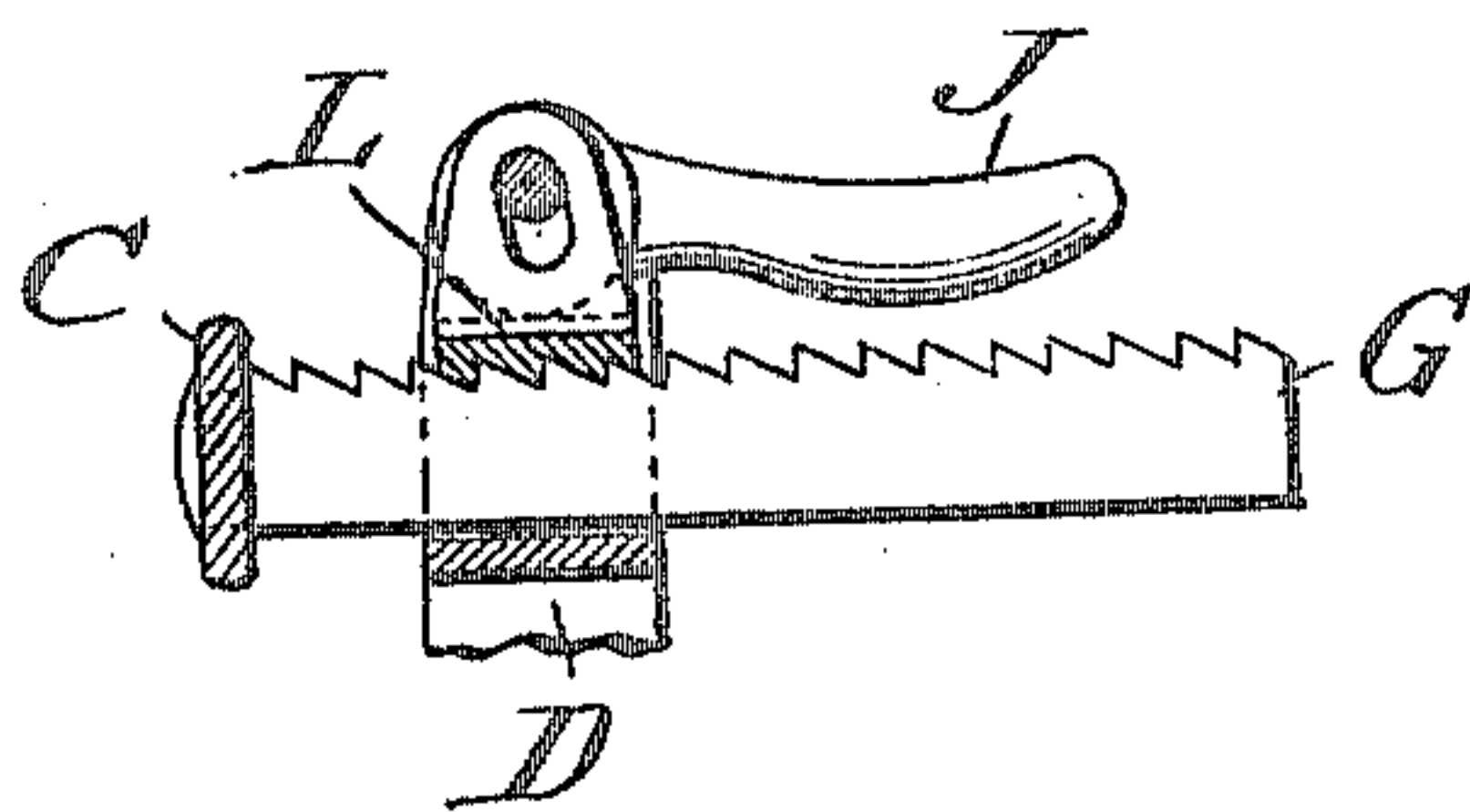


Fig. 5.



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UNITED STATES PATENT OFFICE.

EDSON LEWIS HUTCHINSON, OF HONOLULU, TERRITORY OF HAWAII.

TEETH-SEPARATOR.

No. 811,849.

Specification of Letters Patent.

Patented Feb. 6, 1906.

Application filed June 3, 1905. Serial No. 263,616.

To all whom it may concern:

Be it known that I, EDSON LEWIS HUTCHINSON, a citizen of the United States, residing at Honolulu, Island of Oahu, Territory of Hawaii, have invented new and useful Improvements in Teeth-Separators, of which the following is a specification.

My invention relates to improvements in separators employed by dentists for forcing proximal teeth apart, and thus increasing the space between same during the time of treatment or operations performed thereon.

Separators of the class to which my improvements relate are shown in United States Patent No. 366,025, granted to Safford G. Perry July 5, 1887, and in No. 513,016, granted to W. S. How January 16, 1894.

The object of my invention is to provide a separator having a wide range of adjustment and adapted for use upon proximal teeth in any location in the mouth, which can be more quickly applied than those heretofore employed, and which at the same time does not offer obstructions to the operator that would prevent free access to the proximal surfaces of the teeth and interfere with use of the emery tape, sandpaper disk, and other tools.

With these objects in view my invention consists in the construction, arrangement, and combination of parts, as will be hereinafter fully described.

In the accompanying drawings, Figure 1 represents a plan view of a separator embodying my improvements as applied to proximal teeth. Fig. 2 represents a front elevation of the same. Fig. 3 is a side elevation of the separator removed from the teeth. Figs. 4 and 5 represent, respectively, on a larger scale, sectional elevations of portions on the lines *x x* and *y y* of Fig. 1. Fig. 6 is a plan view, and Fig. 7 an elevation, of a portion of the separator, showing a modification.

The sectional bows A B and C D are each provided with curved separating-jaws *a b* and *c d*, respectively, for engaging proximal teeth, as E E, near the surface of the gum. The sectional bows are bent or curved upward and away from the separating-jaws, as shown. The bows are strongly made where curved, so as to prevent any undue springing. To the upper ends of the front bow-sections A and C are secured the bars F and G, respectively, serrated on their upper sides. The upper ends of the rear bow-sections B

and D are made bifurcated, pivoted in which are the cam-levers H and J, respectively. These ends may be made bifurcated by splitting the metal, or preferably by riveting on another piece, as shown in Fig. 4. The bars F G are adapted to slide in the bifurcated ends of the rear bow-sections B D below the cam-levers H J, respectively. These cam-levers are adapted to operate shoes K L, provided with serrations which engage and hold the bars F G when the cam-levers are thrown rearward, as shown, and which are released, so that the bars F G are free to slide in the bifurcated ends of the bow-sections B D when the cam-levers H J are thrown forward. The serrations can be made of any suitable shape, such as shown in Fig. 5, or be simply V-shaped notches. Any clamping or locking device similar to that shown may be employed, thus doing away with screw connections, which are slow of adjustment.

The lower outer ends of the sectional bows A B and C D are tapped and engaged by the screw-bars M and N, respectively, provided with right and left handed threads, by means of which the bows of the separator may be gradually forced apart or drawn toward each other, as in the Perry and How separators, which is a preferable construction.

In operation the separator is quickly adjusted upon any two proximal teeth desired. The sections of the bows are pushed together until the separating-jaws tightly engage the teeth, whereupon the levers H J are thrown rearward, thereby locking the sections A B and C D, respectively, to one another. The screw-bars M N are then turned by a pin or wrench, so as to gradually spread apart the teeth. The separator is quickly removed by turning the said screw-bars in the opposite direction and then throwing the levers H J forward, and thus releasing the device which locks the sections of each bow together.

In a modification shown in Figs. 6 and 7 the bars F G are each tapped to engage a screw P, provided at its lower end with a piece Q, swiveled to same. The screw P when turned in the bar F or G raises or lowers the piece Q, and by turning the piece Q about the end of the screw P the said piece Q can be made to engage the crown of one of the proximal teeth to be operated on or the crown of the tooth next adjacent thereto and the separating-jaws be thus prevented from possibly slipping downward on its tooth and

toward or into the gum. The separator can be used either with or without the screw P and piece Q, as they are easily removed from the bars F G.

5 It will now be noted that on account of its wide range of adjustment the device may be used for engaging and separating any proximal teeth, large or small, in any location in the mouth, that it can be more quickly ap-
10 plied than those heretofore employed, and that the construction does not offer obstructions to the operator.

Having thus described my invention, what I claim as new, and desire to secure by Let-
15 ters Patent, is—

1. In an apparatus for separating teeth, two bows, adjustable connections between the bows, each bow composed of two sections, each section provided with a separating-jaw,
20 one section of each bow provided with a bar adapted to slide in the end of the other section, and means for instantly clamping and releasing the sections, substantially as described.

25 2. In an apparatus for separating teeth, two bows, adjustably connected by right and left handed screws, each bow composed of two sections, each section provided with a separating-jaw, one section of each bow pro-
30 vided with a bar adapted to slide in the end of the other section, and means for instantly

clamping and releasing the sections, substantially as described.

3. In an apparatus for separating teeth, the combination of the sectional bows A C 35 provided with the jaws *a c* and the bars F G respectively, the sectional bows B D provided with the jaws *b d* and bifurcated ends in which the bars F G respectively are adapted to slide, and means for clamping said bars in va- 40 rious positions in said bifurcated ends.

4. In an apparatus for separating teeth, a sectional bow provided with a bar having a threaded hole to engage a screw P, and a piece Q swiveled on the end of said screw, for 45 the purpose described.

5. In combination, the sectional bows A C, connected by the screw-bar M, and provided with jaws *a c*, bars F G, screws P with pieces Q, and the sectional bows B D, connected by 50 the screw-bar N, and provided with the jaws *b d* and bifurcated ends in which are respectively pivoted the cam-levers H J and shoes K L, for the purpose and substantially as described. 55

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDSON LEWIS HUTCHINSON.

Witnesses:

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