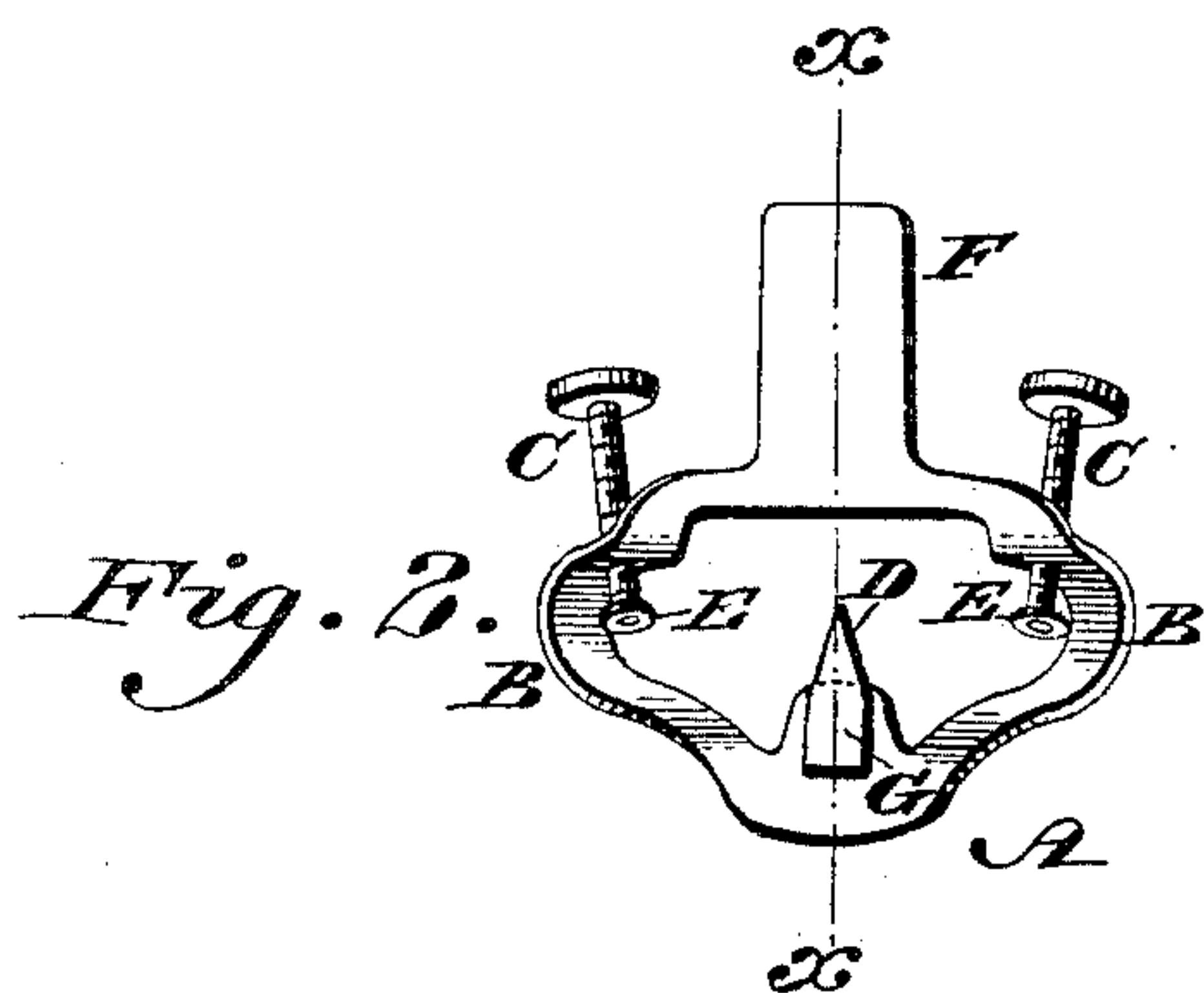
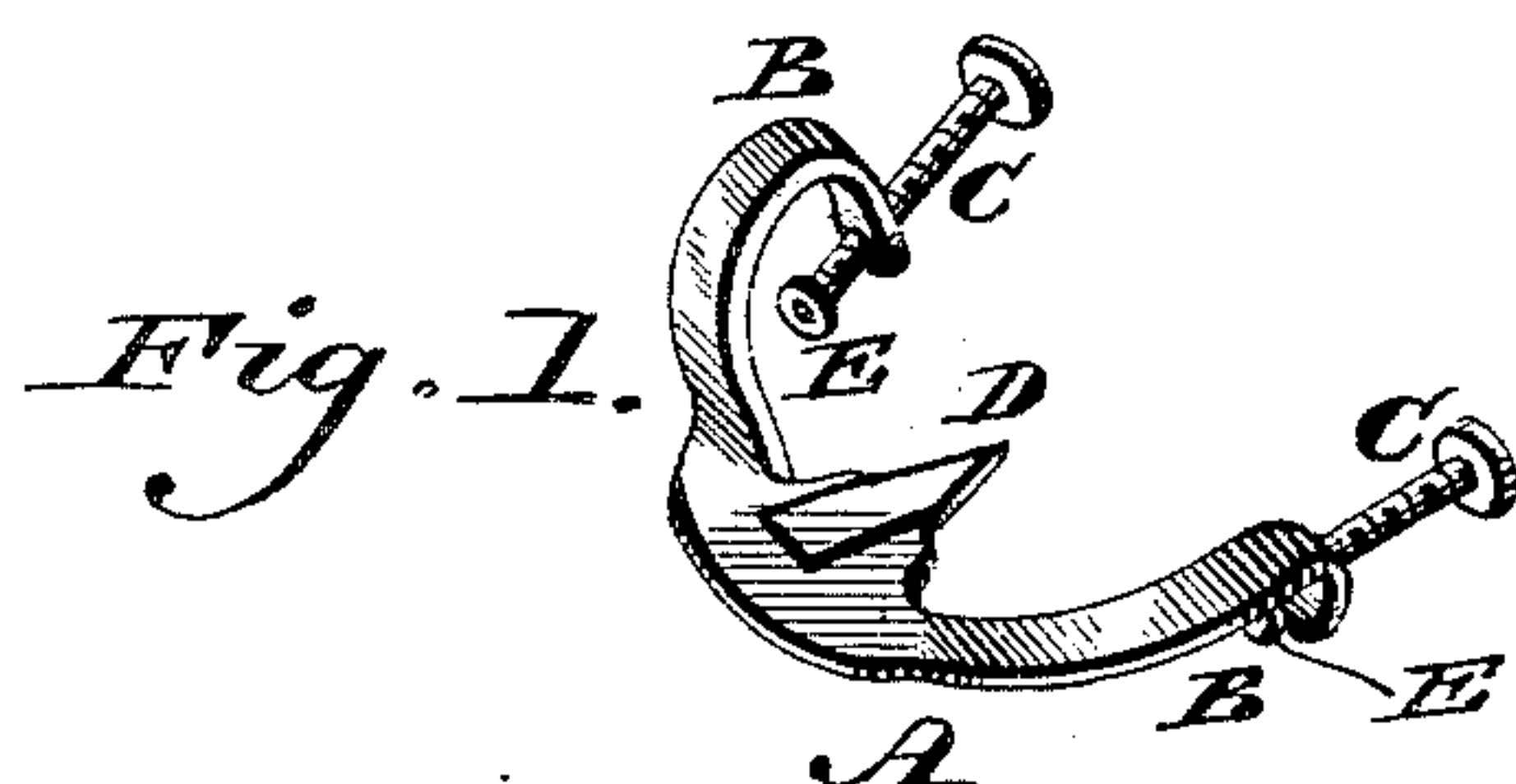


(No Model.)

J. W. IVORY.
TOOTH SEPARATOR.

No. 450,825.

Patented Apr. 21, 1891.



WITNESSES:

L. Douville,
Robt. Aiton

INVENTOR
James W. Ivory.
BY *John A. Dierckheim*
ATTORNEY.

UNITED STATES PATENT OFFICE.

JAMES W. IVORY, OF PHILADELPHIA, PENNSYLVANIA.

TOOTH-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 450,825, dated April 21, 1891.

Application filed August 2, 1890. Serial No. 360,751. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. IVORY, a subject of the Queen of Great Britain, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Dental Teeth-Separators, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a dental tooth-separator consisting of a bow or frame having a point at or about the center thereof and screws at the ends of said frame, whereby by the operation of the screws the point may be readily forced between adjacent teeth, or against a desired tooth, the two screws admitting of the ready adjustment of the device and regulation of the force exerted at either end of the frame.

It also consists in providing the frame with a handle for readily locating and removing the device.

It also consists in rendering the point removable from the frame for purposes of repairs, renewing, &c.

Figure 1 represents a perspective view of a tooth-separator embodying my invention. Fig. 2 represents a face view thereof. Fig. 3 represents a section on line $x x$, Fig. 2.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates an arched frame whose ends B are bowed or arched, so as to be readily set over the teeth, and having screws C fitted to the same. To the crown of the frame is attached a point D, which projects from the inner side thereof in a direction toward the heads of the screws C, the inner ends of the latter being provided with rollers or washers E, which are adapted to bear against the teeth when in position.

The operation is as follows: The device is applied to the teeth so that the point D and inner ends of the screws are on opposite sides thereof, the point D being so located as to enter between contiguous teeth to be separated, or bear against a desired tooth. The screws C are now rotated, whereby they tighten against the teeth, and the point D is thus advanced so as to exert a wedging action between the contiguous teeth, or forced

against a desired tooth, and thus a separating action is effected in a reliable and powerful manner, it being noticed that as there is a screw at each end of the frame provision is made for nicely adjusting the device in position, and exerting different pressures at the ends of the frame, so as to produce the best results in the action of the point D.

When the screws are properly operated, the device may be readily removed from the teeth.

For convenient manipulation of the device during the application and removal of the same I provide a handle F, as in Figs. 2 and 3, the same being connected with or continuous of the ends of the frame A, and projecting therefrom so as to be readily grasped, as is evident.

The point D is made removable from the frame A, for which purpose it is bifurcated, as at G, so as to straddle the relative portion of the frame, whereby it firmly retains its hold on the frame when in position, and may be disconnected therefrom, when so required, for purposes of sharpening, repairing, renewing, &c.

It will be noticed that the point or wedge D acts from within, or on the inner surface of the teeth, the arched shape of the teeth offering no resistance, unlike the devices heretofore in use, where an outer point acts in conjunction with an inner point and meets the natural resistance of the outside arch of the teeth, where the teeth are forced against each other, thus hindering the separation, it being also noticed that an outer point or wedge is dispensed with, such point or wedge always offering a certain amount of obstruction to a dental operation from in front, which does not occur with the point or wedge D, which, as has been stated, is operated from within.

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

1. A tooth-separator consisting of a frame formed with arches, and having a point located between said arches, and a screw in each arch, substantially as described.

2. A tooth-separator consisting of a frame having arches and a handle, a point between

said arches, and screws in said arches, substantially as described.

3. A tooth-separator consisting of a frame,
a point removably attached to said frame,
5 and screws fitted in said frame, and having
their inner ends provided with rollers or wash-
ers, the said point projecting in the direction

of the heads of the screws, said parts being
combined substantially as described.

JAMES W. IVORY.

Witnesses:

JOHN A. WIEDERSHEIM,

A. P. JENNINGS.