

O. JOHANSON.
DENTIST'S BROACH.

No. 251,598.

Patented Dec. 27, 1881.

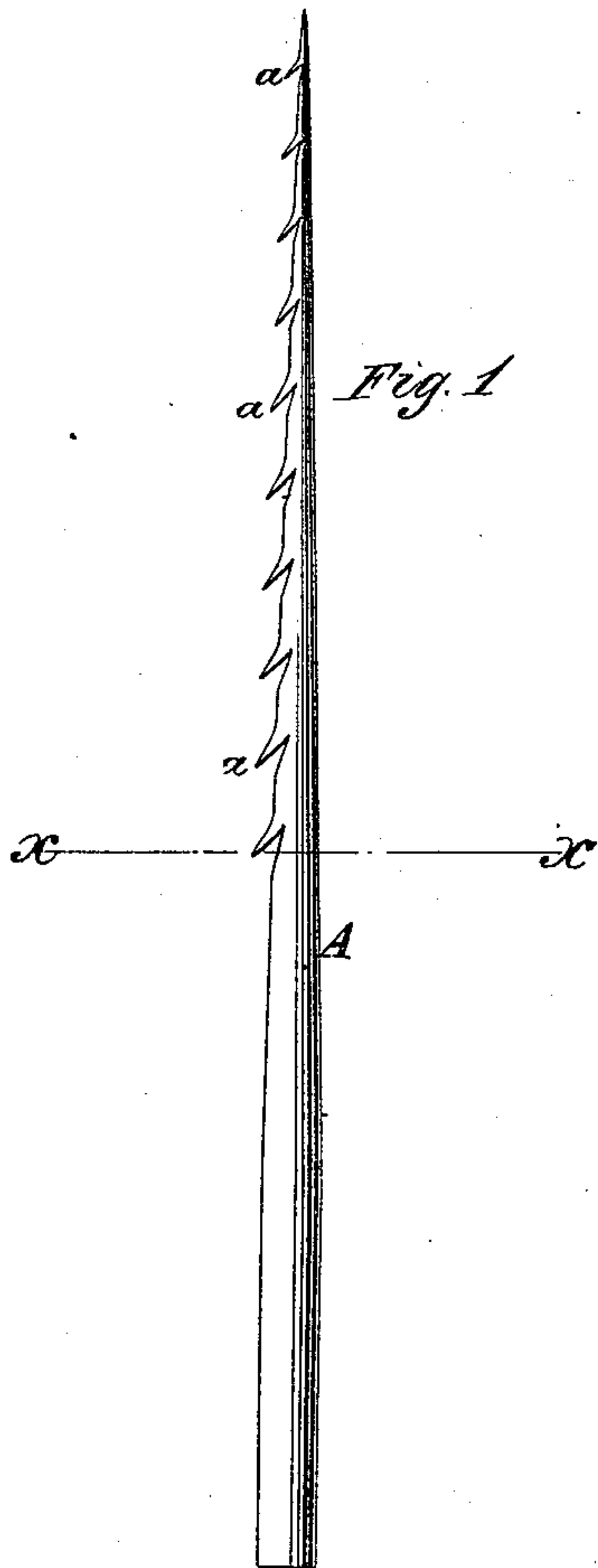


Fig. 2

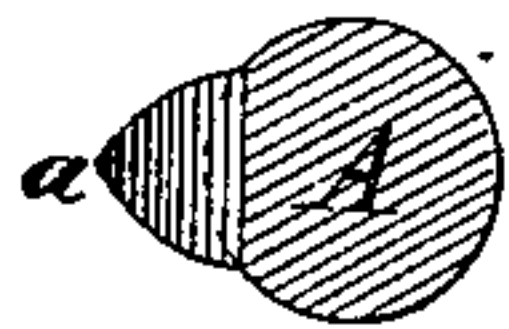


Fig. 3



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UNITED STATES PATENT OFFICE.

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DENTIST'S BROACH.

SPECIFICATION forming part of Letters Patent No. 251,598, dated December 27, 1881.

Application filed May 3, 1878.

To all whom it may concern:

Be it known that I, OLOF JOHANSON, of the city, county, and State of New York, have invented a new and useful Improvement in Dentists' Broaches, of which the following is a specification.

The object of my invention is to improve the construction of the ordinary dental broach for cleaning hollow teeth and extracting the nerves therefrom by rendering it equally flexible in all directions, so as to reach every part of a hollow tooth, and making it stronger, so that when revolved therein it shall be less liable to break than the ordinary broach, and providing it with barbs of improved shape, insuring greater strength and capacity for effectiveness than those of broaches heretofore made; and to these ends my invention consists in the peculiar construction of my dental broach and its barbs, as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 represents an enlarged side view of a dental broach constructed according to my invention. Fig. 2 is an enlarged cross-section of the same, taken in the line $x x$ of Fig. 1; and Fig. 3 is a similar cross-section of a broach of the old form as heretofore made.

Similar letters indicate like parts in the figures, in which—

A represents my improved broach, which is made of a fine round wire of the best steel tapered to a point and made of conical form. a represents a row of barbs cut along one side of the round tapering wire, for the purpose when inserted into a hollow tooth of catching its nerve in the usual manner.

In Fig. 3 I have shown a cross-section of the old form of broach as usually constructed, which is polygonal in cross-section, as shown, and tapers to a point, the barbs being cut along one of the polygonal edges of the broach. By this construction the flexibility of the broach is not uniform or alike in all directions, because the horizontal lines drawn through the broach vary in length, while in the round or conical form of broach, as in my construction, the flexibility of the broach is uniform or alike in all directions, the horizontal lines drawn through the center of a cross-section of the

broach being all diameters of the same circle, and therefore equal to each other. The flexibility of my form of broach is therefore alike in all directions, which is not the case in the ordinary broach. The area of the cross-section of the old form of broach is less, also, than that of the circle in which it is inscribed, and its strength is therefore proportionally less than the round form of the circumscribed circle, while the polygonal form of the broach in its revolution would occupy as much space in the hollow tooth as the round form of broach. The conical form of broach is therefore stronger than the polygonal form and would occupy no more space in its revolution.

The barbs of the old form of broach are necessarily triangular in shape and small at the base, and present no portion of working contact in cleaning out the hollow of a tooth except the point, and both barbs and broach frequently break and lodge in the cavity of the tooth causing annoyance to the dentist and severe pain to the patient before they can be removed. To remedy these defects I make my broach in the form of a cone, the cross-section of which is circular, as shown in Fig. 2. This insures uniform flexibility of the broach in all directions and greater strength, as shown above. The barbs a being cut on a round surface instead of on an edge of the broach, as in the old form, are much broader at their bases and consequently stronger. Moreover, the outline of the barb cut on the conical surface of my broach is outwardly curved, as shown in Fig. 2, which insures greater strength throughout and at the same time provides a much larger surface for working contact in the hollow of the tooth than in the old form of broach, when no such curved surface exists.

What I claim as my invention is—

As an improved article of manufacture, a conical dental broach, A, circular in cross-section, and provided with a series of barbs, a , on one side, having outwardly-curved sides, as herein set forth.

OLOF JOHANSON.

Witnesses:

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