

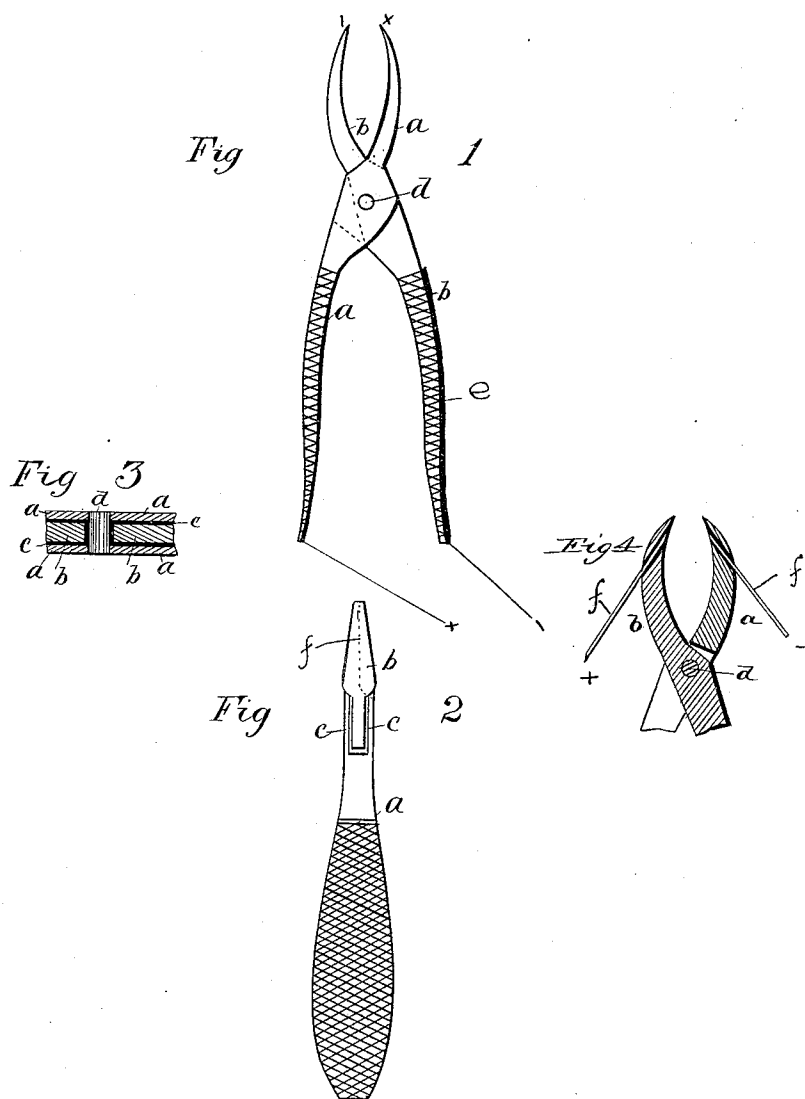
(No Model.)

J. BRANNAN & W. E. STONE.

ELECTRIC FORCEPS.

No. 371,664.

Patented Oct. 18, 1887.



WITNESSES:

*Saml. Biddle*  
*W. Morse*

INVENTOR

*John Brannan*  
*William E. Stone*

BY

*R. M. W. Dermoth*  
*Attorney*  
ATTORNEY

# UNITED STATES PATENT OFFICE.

JOHN BRANNAN AND WILLIAM E. STONE, OF DENVER, COLORADO.

## ELECTRIC FORCEPS.

SPECIFICATION forming part of Letters Patent No. 371,664, dated October 18, 1887.

Application filed November 29, 1886. Serial No. 220,125. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN BRANNAN and WILLIAM E. STONE, both citizens of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented a new and useful Electric Forceps, of which the following is a specification.

Our invention relates to surgical instruments through which currents of electricity are passed for the purpose of anæstheticising the nerves with which it comes in contact; and the object of our invention is to provide a means of conducting a current of electricity to the parts operated on through the instrument used, especially through the forceps used in dentistry. We obtain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side view of a pair of dental forceps, showing one handle insulated and where the connecting - wires are attached. Fig. 2 is a pair of forceps, showing the insulation between the arms. Fig. 3 is a section through the rivet which holds the arms in place and the arms and insulation, and Fig. 4 is a sectional view illustrating another way of connecting the electric conductors with the jaws.

Similar letters refer to similar parts throughout the several views.

The arm *a* of the forceps is insulated from the arm where it passes by or through *b*, and also is *b* insulated from the rivet *d*, which holds *a* and *b* together, as shown at *c*, Fig. 3. There is also an insulator placed on or around one or both of the arms or handles of the forceps to prevent the operator from receiving the current, which insulator is represented by *e* in the drawings. Thus it will be seen that by attaching the positive pole of an electric battery to one of the arms of the instrument and the negative pole to the other arm a connection will be made between them as soon as the beak touches a conductor like a tooth in an animal's jaw, and the current will

pass through this conductor and form a circuit. It has been practically demonstrated that the passage of such a current through a nerve will act as an anæsthetic and make the nerve so operated upon insensible of pain, which would with ordinary means be very acute.

We are aware that previous to our invention a current of electricity has been used for the purpose; but with the means used for applying it (which are very inconvenient and impracticable) the full benefits have not been obtained. We do not confine ourselves to this exact manner of connecting the current with the beak of the forceps, as it may be passed through the jaws of the beak alone, which may be insulated from the arms or handles; or it may be conducted to the tooth by a wire or other conductor laid in slots or holes in the beaks and insulated up to the point where the end of the wire or other conductor reaches the tooth or nerves. (See Fig. 2, dotted lines, marked *f*, and Fig. 4.)

Therefore, what we claim, and desire to secure by Letters Patent of the United States of America, is—

1. In surgical or dental forceps, the combination of a forceps having a hole or slot in the jaws of the beak in which a wire or other conductor of electricity is placed for the purpose of carrying a current of electricity to a nerve, for the purpose substantially as described and set forth.

2. The dental forceps herein described, having their arms or jaws pivoted together with insulating material between their inner facing-surfaces where the jaws cross each other and surrounding the pivoting-pin, and electric conductors connected to said jaws, substantially as described.

JOHN BRANNAN.  
WILLIAM E. STONE.

Witnesses:

J. A. POLE,  
P. S. HALL.