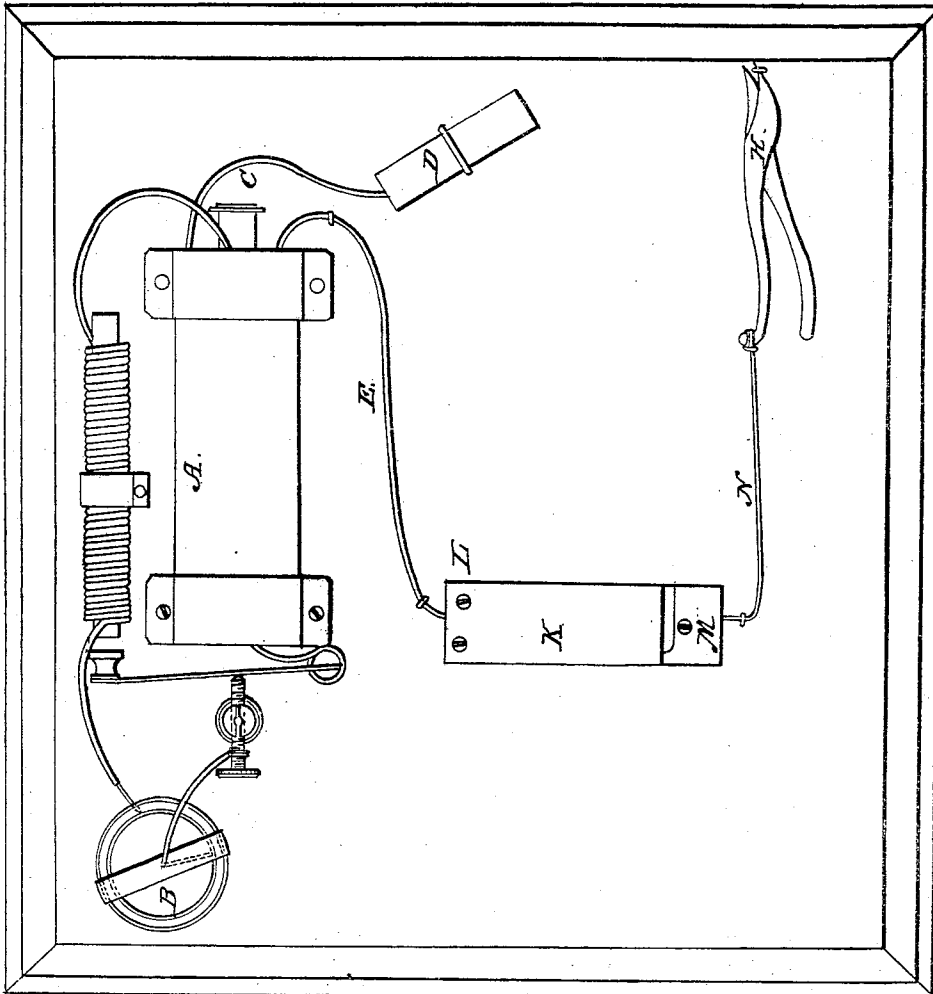


J. J. CLARK.
Electric Dental-Instrument.

No. 22,063.

Patented Nov. 16, 1858.



Witnesses
J. H. B. Jenkins
Thos. L. Vanderbeek

Inventor
James J. Clark

UNITED STATES PATENT OFFICE.

JAS. J. CLARK, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN MODE OF CONNECTING ELECTRO-MAGNETIC APPARATUS WITH TOOTH-FORCEPS.

Specification forming part of Letters Patent No. **22,063**, dated November 16, 1858.

To all whom it may concern:

Be it known that I, JAMES J. CLARK, of the city of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in the Combined Apparatus known as "Francis' Combination of Electro-Magnetic Machine and Dental Forceps;" and I do hereby declare the following to be a full and exact description of the same, reference being had to the annexed drawing, making a part of this specification, which represents a top view of said Francis' apparatus with my improvement attached.

It has been found in the practical use of said Francis' improvement that the most successful results are attained so far as concerns extracting the teeth with the least pain or inconvenience when the electric circuit is closed immediately after the forceps grasp the tooth and just before the dentist commences to pull the tooth. Where the patient takes the knob or pole in one hand and the other wire is connected directly to the forceps a slight current necessarily is felt in the tooth and gums while the forceps is being applied to the tooth. As the dentist's hands are occupied by the operation the service of an attendant seems indispensable to enable this result to be attained.

My improvement obviates the necessity of an attendant for this purpose; and it consists in the interposition of a foot-key in the course of one of the wires composing the circuit, so that the dentist can leave the circuit open or incomplete until the proper moment, and then with his foot close it, thus preserving the free use of his hands.

In the accompanying drawing, A represents an ordinary electro-magnetic machine; B, the battery, with its proper connection to the electro-magnetic machine; C, the wire passing to the knob D, which the patient is to grasp with his hand; E, the other wire passing to the forceps H. K is a small metallic spring-lever attached at one extremity, L, and moving up and down into and out of contact with

a metallic seat or anvil, M. When the operator's foot presses on K it comes down on M, and thus makes a continuous circuit through E, K, M, and N to the forceps H. Whenever the operator's foot is not pressed on K the spring of K elevates it from M and breaks the circuit at that point.

The mode of using my arrangement is as follows: The spring K and anvil M being attached to a small board, it is placed upon the floor convenient to the dentist's operating-chair, and then the connections being all made, as shown in the drawings, the dentist places the knob D in the patient's hand and adjusts the forceps H to the patient's tooth, the dentist's foot being all this time on the floor, and the spring-lever K elevated from the anvil M. At the instant the dentist grasps the tooth with the forceps H and commences to pull he presses on K, and thus closes the circuit, and causes the current to pass through the tooth during the pulling part of the operation. Thus he brings the current into action only at the moment when its beneficial effect is needed, dispensing with an attendant, and at the same time leaving the operator's hands free to manipulate the forceps.

The foot-key K might be placed in the circuit C instead of E, or in the course of the wires passing between the battery B and machine A, as a break in any one part of either of these circuits would be equally effective.

Having thus described my improvement, I do not desire to claim the combination of electro-magnetic machine and forceps, as that has been invented by Francis; but

What I do desire to claim is—

The employment of the foot-key K or its equivalent in combination with the electro-magnetic machine and forceps, arranged and operating substantially as above described.

JAMES J. CLARK.

Witnesses:

J. H. B. JENKINS,
JNO. B. KENNEY.