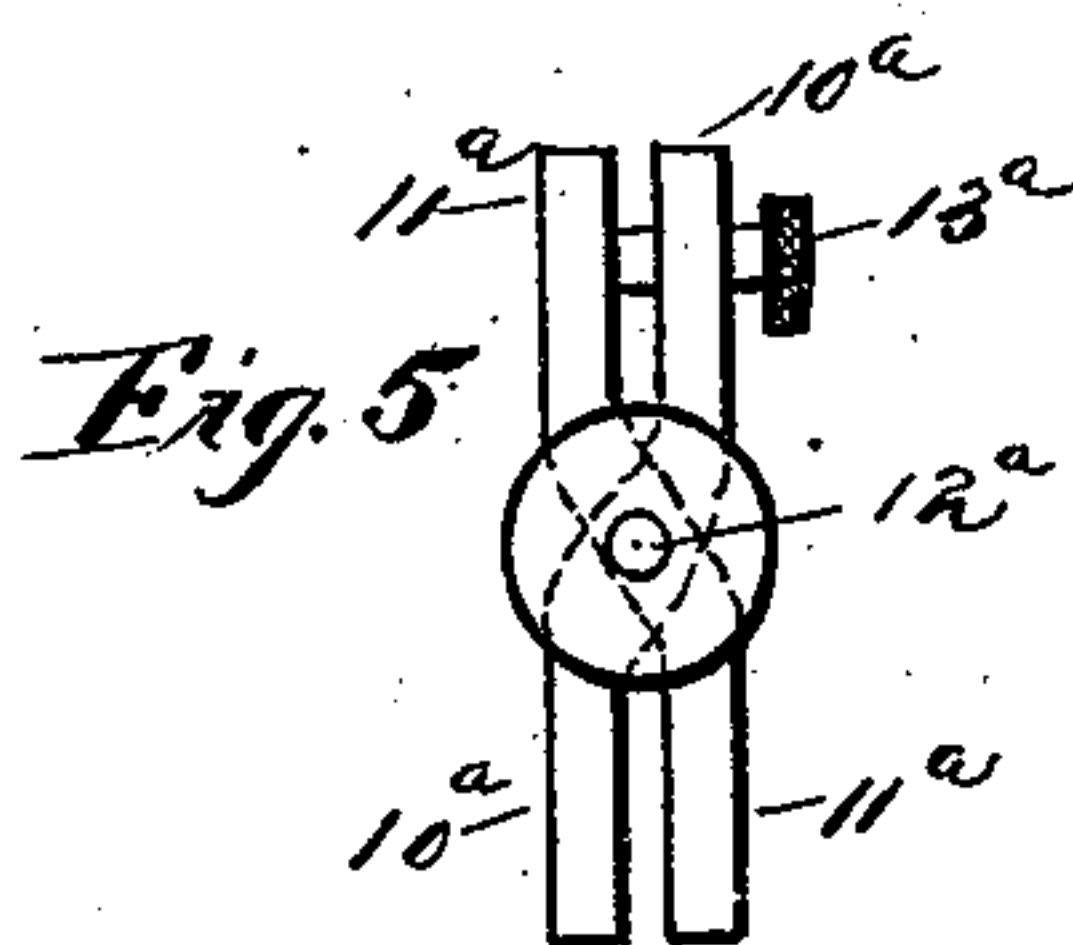
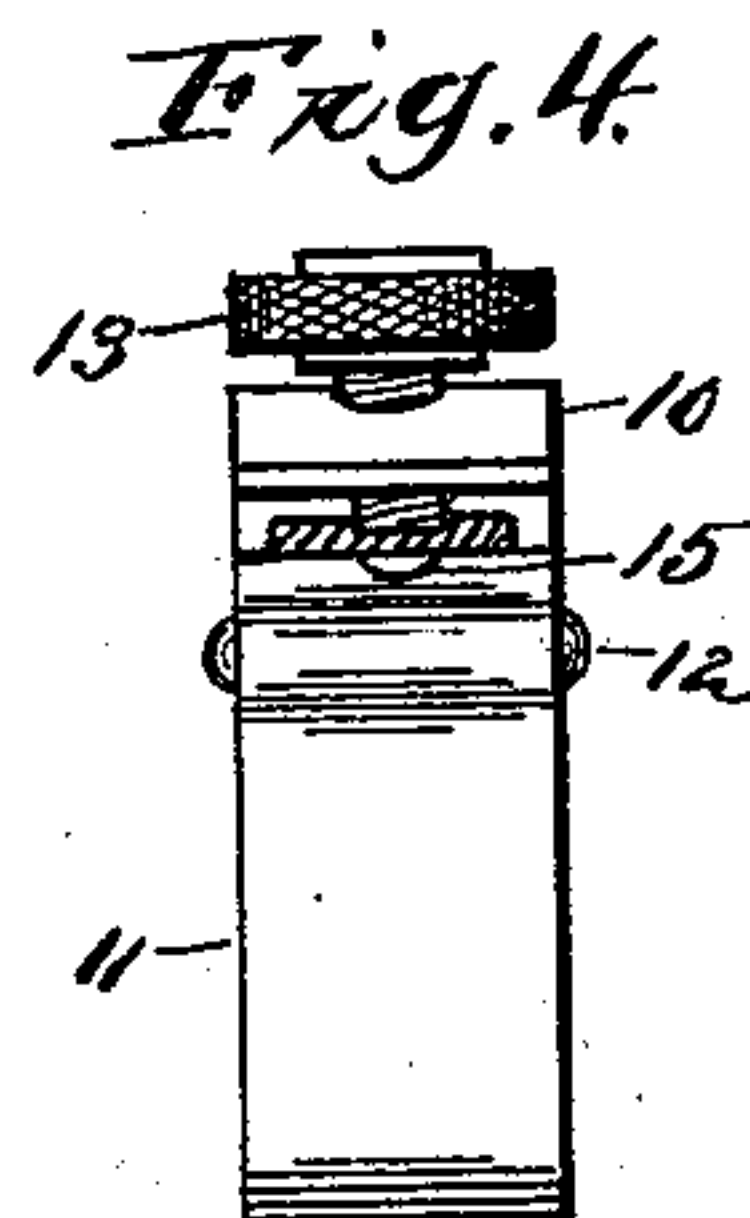
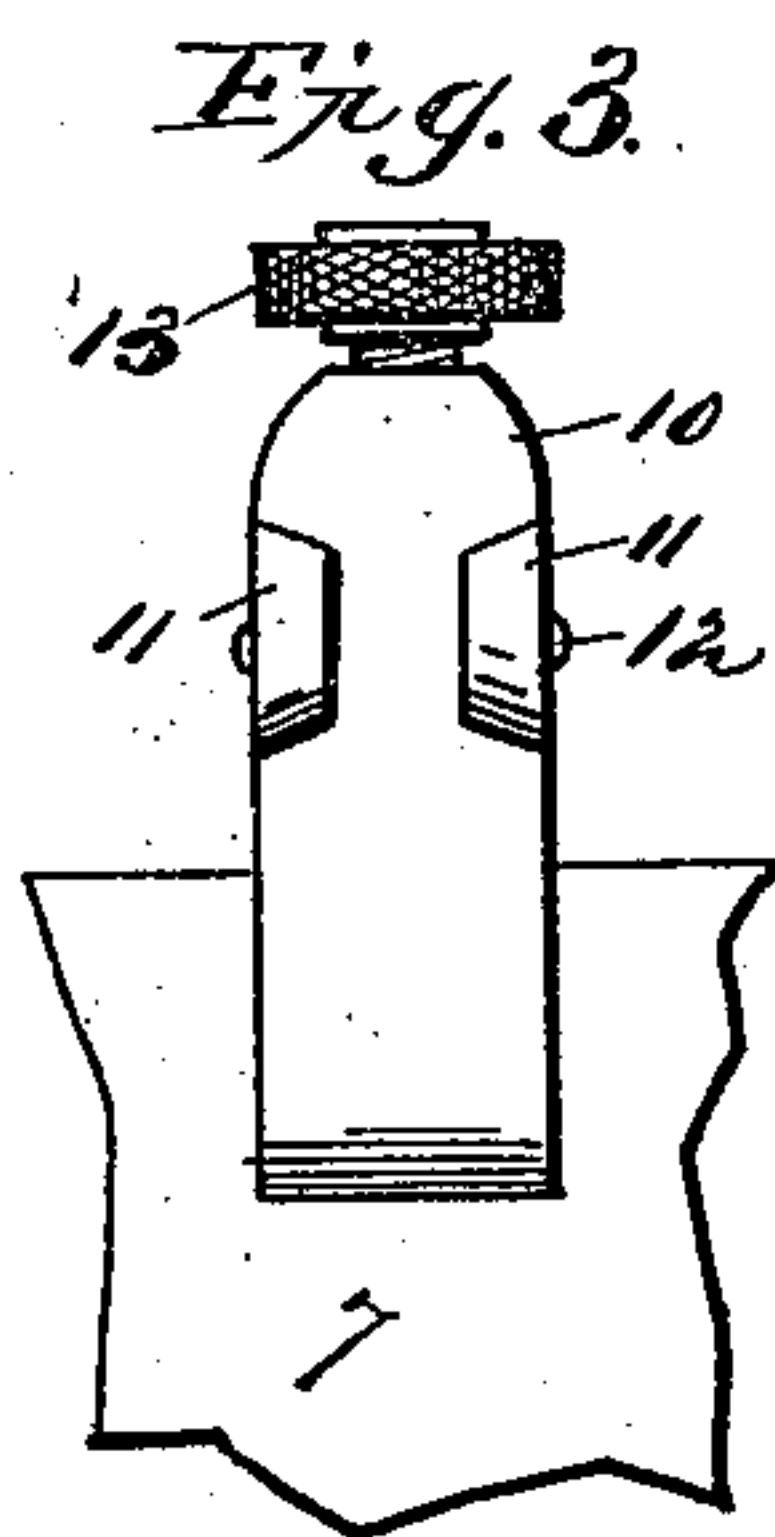
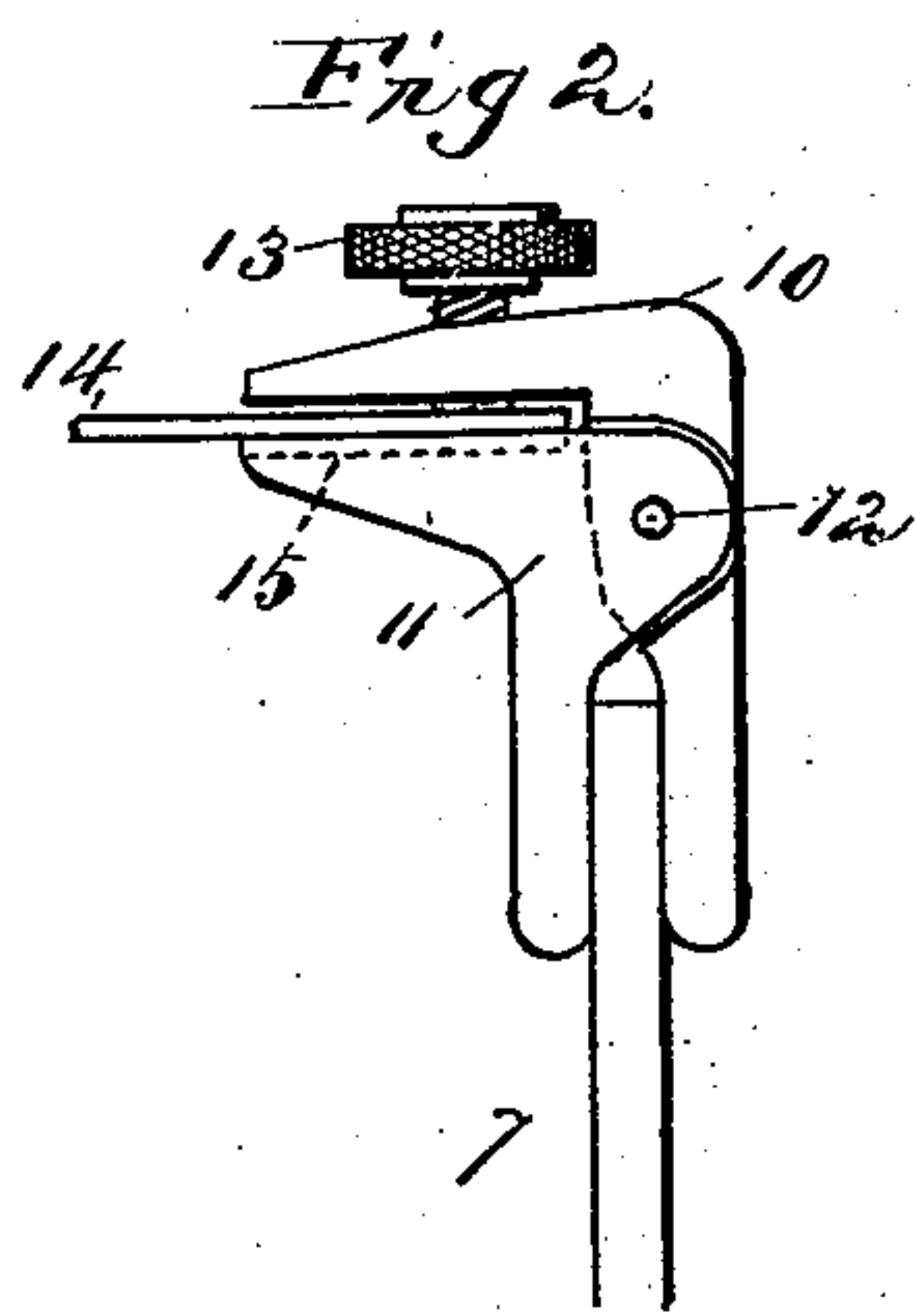
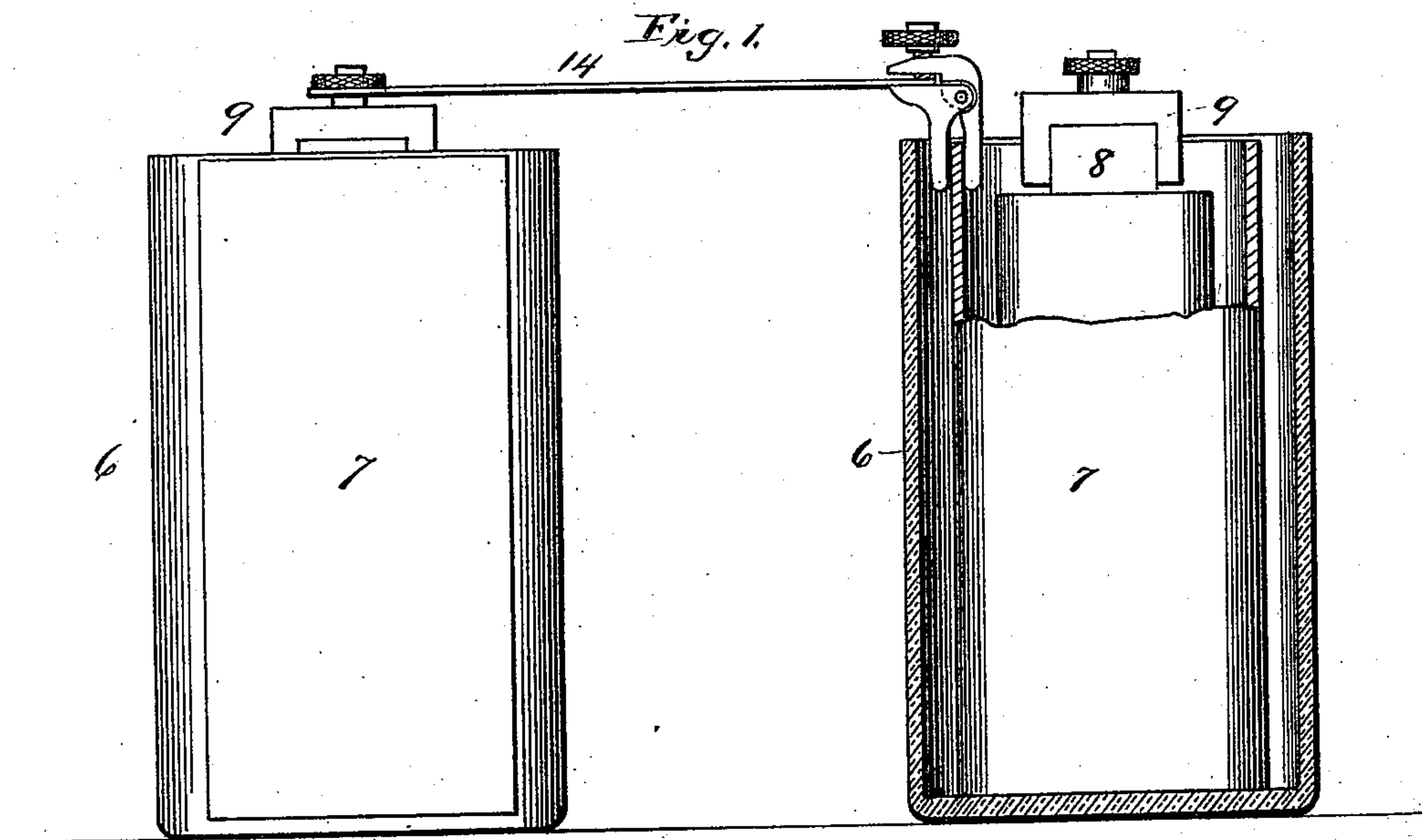


(No Model.)

F. G. CURTIS.  
ELECTRICAL CONNECTOR.

No. 510,898.

Patented Dec. 19, 1893.



Witnesses

Sam'l. J. Wallace,  
or Munderback

Inventor  
Frank G. Curtis  
By *Thomson H. Ansey*  
Attorney

# UNITED STATES PATENT OFFICE.

FRANK G. CURTIS, OF NEW YORK, N. Y.

## ELECTRICAL CONNECTOR.

SPECIFICATION forming part of Letters Patent No. 510,898, dated December 19, 1893.

Application filed February 13, 1893. Serial No. 462,155. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK G. CURTIS, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Electrical Connectors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to electrical connectors and is designed especially for employment in establishing a reliable electrical connection between a battery electrode and the end of the conducting wire or strip leading therefrom to a neighboring battery or to line.

The object of the invention is to lower to a minimum the resistance between the opposing surfaces of contact by insuring an absolutely efficient and trustworthy connection both between the connector and conductor and between the connector and electrode. To this end I have devised a construction wherein both of said connections are effected simultaneously and are dependent upon each other, the back pressure on the binding screw from the conductor on which it bears serving to simultaneously operate a clamp forming a part of the structure, and causing it to grasp the electrode with a correspondingly increasing pressure as the binding screw is being screwed down upon the conductor. In this manner the establishment of a good connection at the binding post end of the device positively insures an equally good connection with the electrode. The organization is moreover one of great simplicity of structure, and, having but a single manually-operated element, may be connected up, disconnected, and, when in use, supervised by the battery attendant with much facility.

In the accompanying drawings, Figure 1 represents the application of a connector embodying my invention to the connecting-up of two batteries of a familiar construction, one of the batteries being shown partly in section. Figs. 2, 3 and 4 represent respectively and on a larger scale a side elevation, rear elevation, and front elevation of said

connector; and Fig. 5 represents a modified form of said connector.

Similar numerals of reference indicate corresponding parts throughout the several views.

Referring to the drawings, 6, 6, indicate two battery cells adapted to contain the battery fluids and having electrodes 7, 8, of opposite sign, one of said electrodes having the customary terminal 9. It will, of course, be understood that the particular form of battery shown is not of the essence of my present invention but is chosen merely as an illustration of one of the ways in which the connector itself may be employed.

The preferred form or modification of the connector is illustrated in Figs. 1 to 4 inclusive. It consists essentially of two jaws 10, 11, of conducting material connected together by the pivot pin 12, one of said jaws as 10 having an interiorly-threaded aperture within which engages the externally threaded shank of a binding screw 13. The opposite jaw, as 11, is adapted to support the conductor, which may be a metallic band 14 having at or near its end a recess into which the end of the binding screw may enter, or which may be an ordinary conducting wire, in which latter case the surface of the jaw 11 is preferably grooved at 15 (see the dotted line in Fig. 2), thereby affording a recess within which the conducting wire may lie.

The operation is apparent: In establishing the connection between the conductor and electrode, the connector is interposed between them as shown, and the binding screw is screwed down upon the conductor and into the recess thereof, if the metallic band 14 is employed. The back pressure upon the binding screw causes the opposite ends of the two jaws to approach each other and to clamp the electrode between them. This clamping action increases with the continued screwing in of the binding screw, and it is evident that when the final binding of the screw upon the conductor takes place it is necessarily accompanied by an equally satisfactory and efficient mechanical and electrical connection of the jaws with the electrode, and on both sides of said electrode over a considerable surface



thereof. The contact thus secured is very intimate and protects the opposing surfaces against the action of the battery vapors and against the creeping action of the salts from the solutions.

In the modification shown in Fig. 5, the same characteristic features of construction are presented, but the jaws 10<sup>a</sup> 11<sup>a</sup> instead of being bent at right angles so as to extend outwardly, are simply crossed and extended in the same direction, whereby upon clamping a conductor between the one end, by the screw 13<sup>a</sup>, the opposite ends will be forced apart, adapting this form of the device for use in making contact with the interior of a hollow conductor.

Having thus described my invention, what I claim is—

1. An electrical connector, consisting of two jaws of conducting material, pivoted together at a point intermediate of their length, one of said jaws carrying a binding screw at one of its ends adapted to bear against the conductor supported by the corresponding end of the other jaw, and the opposite ends of the jaws constituting a clamp; substantially as described.

2. An electrical connector, consisting of two jaws of conducting material, pivoted together at a point intermediate of their length, the portions of the jaws on opposite sides of the pivot forming an angle with each other, one of said jaws carrying a binding screw at one of its ends adapted to bear against the conductor supported by the corresponding end of the other jaw, and the opposite ends of the jaws constituting a clamp; substantially as described.

3. An electrical connector, consisting of two jaws of conducting material, pivoted together at a point intermediate of their length, one of said jaws carrying at one of its ends a binding screw adapted to bear against the conductor, the corresponding end of the other jaw having a recess for the reception of the conductor supported by it, and the opposite ends of the jaws constituting a clamp; substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK G. CURTIS.

Witnesses:

H. G. WILEY,  
CHAS. RICHARDSON.