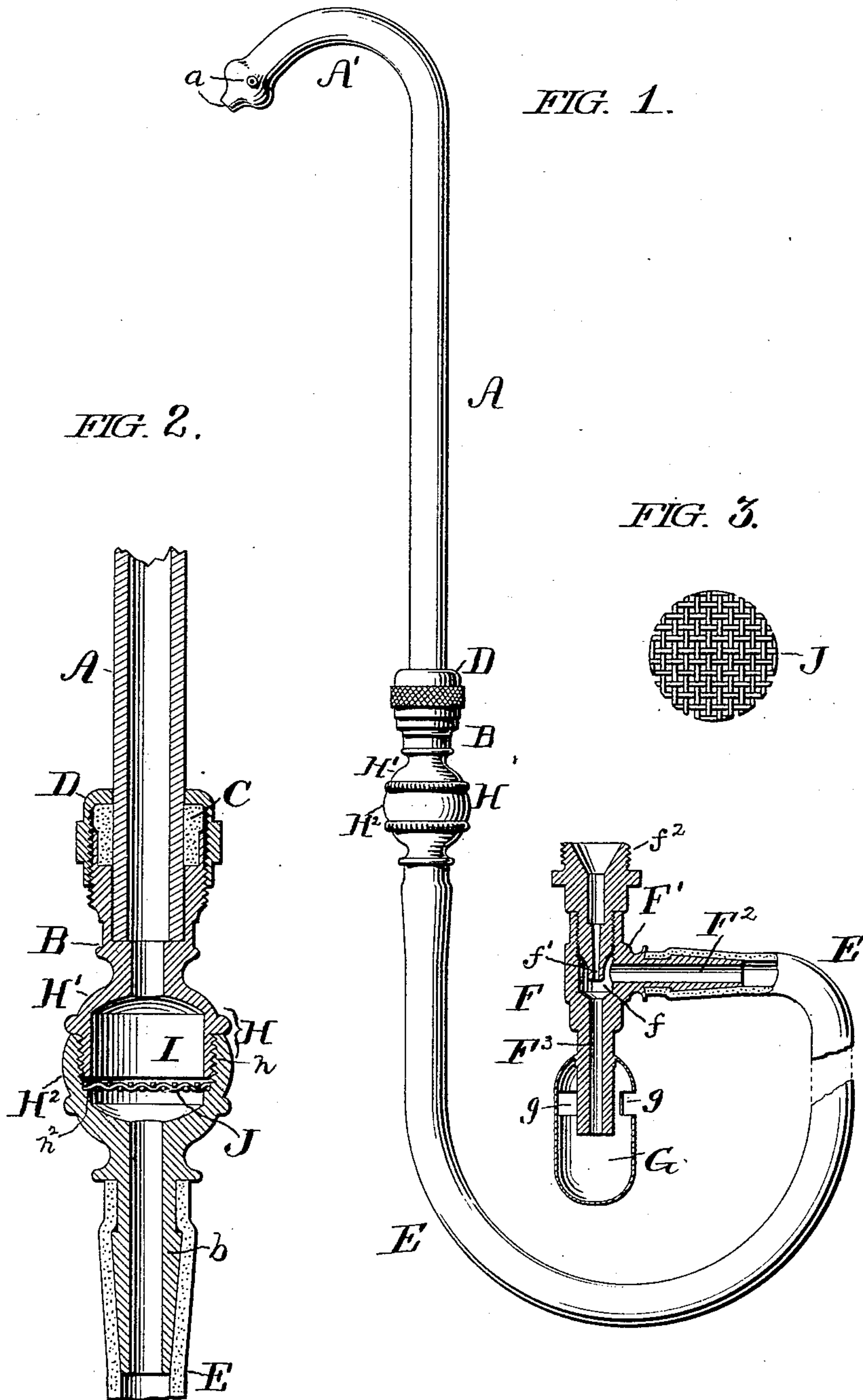


(No Model.)

A. W. BROWNE & C. M. KENNEDY.
SALIVA EJECTOR.

No. 602,572.

Patented Apr. 19, 1898.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ARTHUR W. BROWNE AND CHARLES M. KENNEDY, OF PRINCE'S BAY, NEW YORK, ASSIGNORS TO THE S. S. WHITE DENTAL MANUFACTURING COMPANY, OF PHILADELPHIA, PENNSYLVANIA.

SALIVA-EJECTOR.

SPECIFICATION forming part of Letters Patent No. 602,572, dated April 19, 1898.

Application filed August 19, 1897. Serial No. 648,750. (No model.)

To all whom it may concern:

Be it known that we, ARTHUR W. BROWNE and CHARLES M. KENNEDY, citizens of the United States, residing at Prince's Bay, in the county of Richmond and State of New York, have invented a certain new and useful Improvement in Saliva - Ejectors; and we 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.

Our invention relates to an improvement, as hereinafter claimed, in saliva-ejectors for use by dentists; and our object is to provide the saliva-tubes of such ejectors with strainers for preventing said ejectors from becoming clogged and the flow of water and saliva through them stopped or impeded.

In the accompanying drawings, Figure 1 is a view, partly in side elevation and partly in vertical central section, of a suitable saliva-ejector embodying our improvement. Fig. 2 is an enlarged view, in vertical central section, of a portion of the ejector, more plainly showing the strainer-chamber and the strainer therein. Fig. 3 is a plan detached view of the strainer.

Our improvement is shown as applied to a saliva-ejector of the class employing a suction device constructed on the principle of the well-known "Giffard" injector, although it may be used in connection with various other forms of suction devices.

The apparatus shown consists of a saliva mouth-tube A, preferably of glass and provided with the usual curved or bent end A', having the openings *a a* for the entrance of saliva, the bent end of the tube being adapted to be introduced into the mouth of a patient in suitable well-known way. The mouth-tube is connected to a coupling-tube B by means of a rubber washer or packing C and a collar D, which screws upon the coupling-tube and forces the washer around the mouth-tube, so as to make a liquid-tight connection between the parts. The rear end of the coupling-tube is provided with a nipple *b* for the attachment of a flexible tube E, as of rubber, for connecting the coupling-tube with the suction device F. This suction device consists of a tube F',

provided with a vacuum-chamber *f* and an ejector-nozzle *f'*, opening into said chamber. Also opening into the vacuum-chamber is a branch tube or nipple F², by way of which the flexible tube E is connected to the suction device. The tube F' is extended downwardly to form an outlet-tube F³, communicating with the vacuum-chamber and surrounded at its lower end by a trap G, which is closed at its lower end and provided with the outlet-openings *g g* in its sides at a point above the lower end of the outlet-tube F³. The suction device is adapted to be attached by way of its upper threaded end *f*² to a suitable water-supply tube or faucet in such a way as to overhang or be placed in the bowl of a fountain-spittoon, as will readily be understood, it not being necessary to show either the spittoon or the supply-tube, as they form no part of our invention.

It will readily be seen that as water under pressure is forced from the ejector-nozzle it passes through the vacuum-chamber, through the outlet-tube F³, into the trap G and escapes by way of the openings *g*. The force of the water passing through the chamber *f* tends to create a vacuum therein and causes a sucking action in the saliva mouth-tube by way of the flexible connecting-tube and nipple F². The effect of this is to draw the saliva from the mouth of a patient in which the mouth-tube is inserted through the said mouth-tube and flexible connecting-tube into the chamber *f*, where it mingles with the water from the ejector-nozzle and is carried off by way of the tube F³ and trap G. In order to create the proper amount of suction necessary to draw the saliva from the mouth, the ejector-nozzle should be of small size and the dimensions of the chamber *f* and outlet-tube F³ proportioned relatively to said nozzle. Small particles of solid matter—such as broken bits of teeth, filling material, glass, &c.—are often carried with the saliva from the mouth through the ejector, and oftentimes these solid particles lodge in and fill up the vacuum-chamber and choke the outlet-tube F³, thus stopping the sucking action of the ejector. This is a very serious objection in this class of saliva-ejectors owing to the

fact that at such times not only is the saliva not withdrawn from the mouth of the patient, but the water from the ejector-nozzle, being prevented from passing through the outlet-tube, is forced to pass out by way of the nipple F^2 and causes a backflow of the saliva in the saliva-tube and flexible tube into the mouth of the patient. Obviously this is exceedingly disagreeable to the patient.

To overcome the above-mentioned objection, we have provided the apparatus with a sieve or strainer which effectually prevents all solid particles from reaching the vacuum-chamber. While the strainer may be located at any point between the glass mouth-tube and the suction device, we have preferred in this instance to locate it in the coupling-tube which connects the mouth-tube with the flexible tube. For this purpose the said coupling-tube is provided with a hollow and preferably spherical enlarged portion H , consisting of detachable sections H^1 and H^2 , united by threaded connection h and forming a chamber I . A sieve or strainer J , preferably made of wire mesh, is placed within the chamber I and is held in fixed position therein between the end of the section H^1 and an annular shoulder h^2 , formed on the section H^2 of the spherical enlargement of the coupling-tube. In a saliva-ejector provided with our strainer all particles of solid matter, instead of passing to the suction device, as above described, will be caught and held by the strainer, and should the strainer become clogged sufficiently to prevent the passage of saliva therethrough the apparatus would simply cease to withdraw the saliva and there would be no backflow, as happens when the suction device becomes clogged. The increased size of the strainer and strainer-

chamber as compared to the bore of the mouth-tube, the former being preferably several times larger than the latter, permits of the accumulation of a considerable quantity of solid matter in the strainer-chamber before the strainer becomes clogged, and in the event of the strainer becoming clogged the parts of the spherical enlargement may be readily separated and the strainer removed and cleansed.

It will thus be seen that we have provided a saliva-ejector in which the disagreeable effects of backflow of saliva are effectually obviated and the parts of which can readily be separated for cleansing.

The form of strainer, as well as the form and construction of the strainer-chamber, may be altered and the strainer located in any suitable part of the apparatus and applied to ejectors of various forms without departing from the spirit of our invention.

We claim as our invention—

The combination in a saliva-ejector of the coupling-tube provided at one end with means for holding a mouth-tube, and at its opposite end with means for attachment of a flexible tube, and also provided with an enlarged portion consisting of detachable sections united by threaded connection, and forming a strainer-chamber, and a strainer detachably held in said chamber, substantially as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

ARTHUR W. BROWNE.
CHARLES M. KENNEDY.

Witnesses:

SEYMOUR CASE,
M. A. COLE.