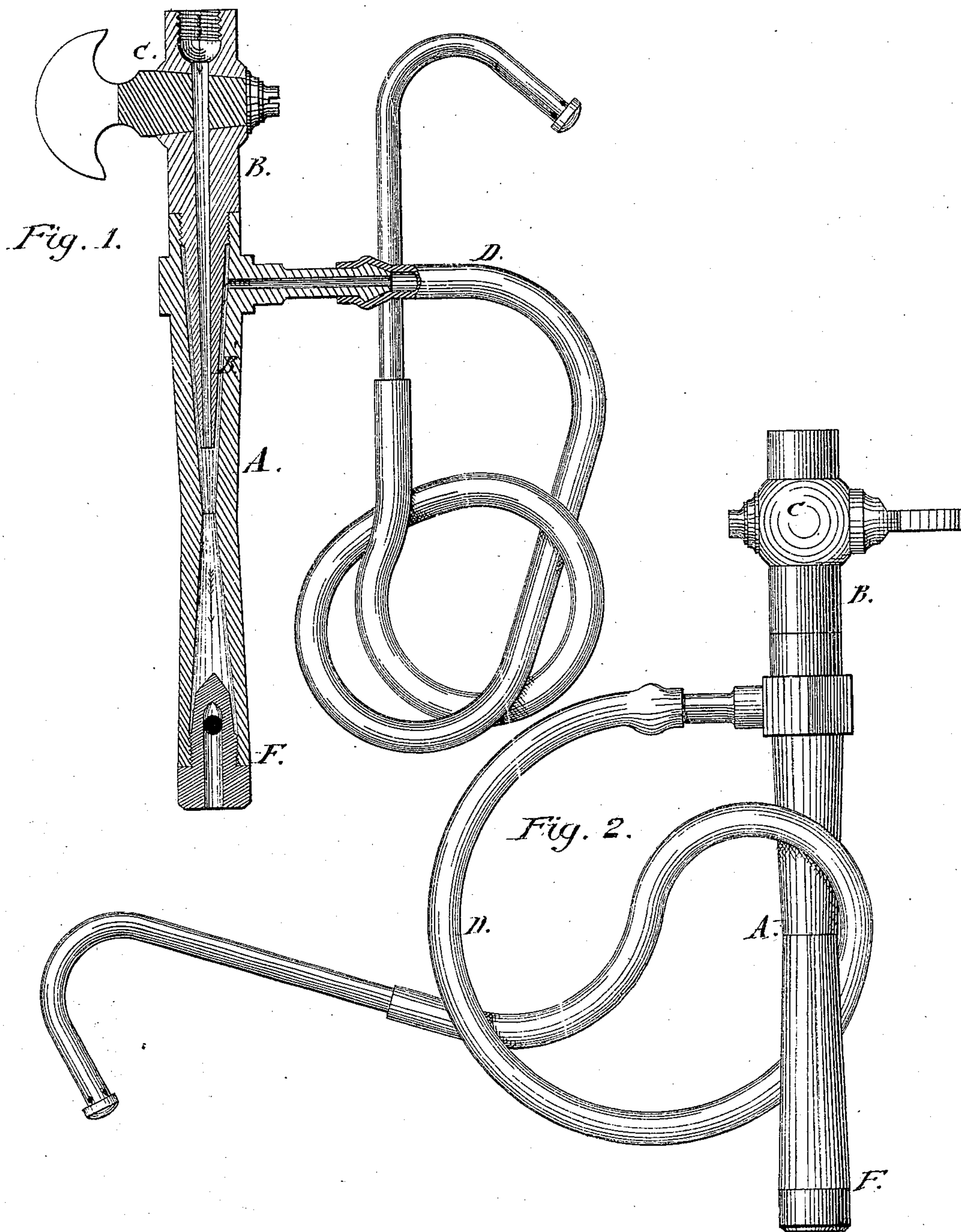


J. E. FISK.
Saliva-Ejectors.

No. 148,290.

Patented March 10, 1874.



Witnesses:
J. A. Bassett.
H. L. Fiske

Inventor:
Joseph E. Fisk

UNITED STATES PATENT OFFICE.

JOSEPH E. FISK, OF SALEM, MASSACHUSETTS.

IMPROVEMENT IN SALIVA-EJECTORS.

Specification forming part of Letters Patent No. **148,290**, dated March 10, 1874; application filed November 14, 1873.

To all whom it may concern:

Be it known that I, JOSEPH E. FISK, of Salem, in the county of Essex and State of Massachusetts, have invented a Saliva-Ejector for Dental Purposes, of which the following is a specification:

My invention relates to an improved method of removing the saliva from the mouth by automatic means in dental operations; and it consists, for this purpose, of an instrument in which, by means of a rapid current of water, a vacuum is produced and maintained, and, by suitable connections, so arranged as to induce a second current, which draws the saliva from the mouth.

Figure 1 of the drawing shows a longitudinal sectional view, and Fig. 2 a side elevation, of the ejector.

The principle upon which my invention is founded is that of inducing a second current by the rapid flow of water in tubes arranged concentrically or otherwise. In this instance water is used as the most convenient vehicle with which to extract the saliva, although other fluids may be used whenever water is not easily obtained or is inconvenient.

The drawing represents a vertical section of the apparatus employed, and it consists of an upright tube, A, about six inches in length, the upper part, which contains a stop-cock, C, for controlling the water-supply, being screwed into the lower part or body of the instrument. This part of the tube is extended down into the tube A, forming an inner tube, and terminates in a nozzle about one-sixteenth of an inch in diameter. It is surrounded by a conical chamber, into which the saliva-tube D opens. The saliva-tube is provided with a flexible tube of convenient length, and curved mouth-piece. The cone-shaped tube surrounding the water-tube forms a chamber of gradually-diminishing diameter until it reaches a point just beyond the nozzle of the water-tube. At this point it is enlarged, forming a cone-shaped vacuum-chamber, B', terminated by a check-outlet, F, through which the combined water and saliva are discharged. The

outlet-check F is a removable plug screwed into the lower end of the tube A, having openings at right angles with the discharge-outlet, and its object is to break up and disperse the column of water, so as to close the outlet to the external air and assist in producing the vacuum. The arrows show the direction of the currents of water. The inlet-tube B of the ejector is connected with a water-supply having a pressure sufficient to induce a current from the mouth through the saliva-tube.

The ejector may be placed at any convenient place, preferably near the operator's chair, the water-supply stop-cock being placed within convenient reach of the operator.

The waste-pipe should be larger than the inlet-pipe, and carried to the lowest attainable point in order to increase the vacuum.

The construction of this instrument, substantially as shown and described, and the shape of the entrance and vacuum chambers, with the check-outlet, and other working parts, are the result of a series of experiments to obtain the greatest effective working power with the smallest quantity of water, and will be found to accomplish this result in the most economical manner.

By this method the saliva is automatically removed, and no labor is required on the part of the operator or attendant, as is the case with the apparatus at present in use.

A current of air is introduced into the mouth, soothing to the patient, and allaying the discomfort of protracted operations.

I do not claim anything for the form of ejector, which of itself is not new.

I claim as my invention—

The saliva-ejector formed by the attachment of the tapered concentric tubes and check-outlet to the water-supply pipe, and the flexible tube with its mouth-piece, for insertion in the saliva, all substantially as described and shown.

JOSEPH E. FISK.

Witnesses:

J. A. BASSETT,
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