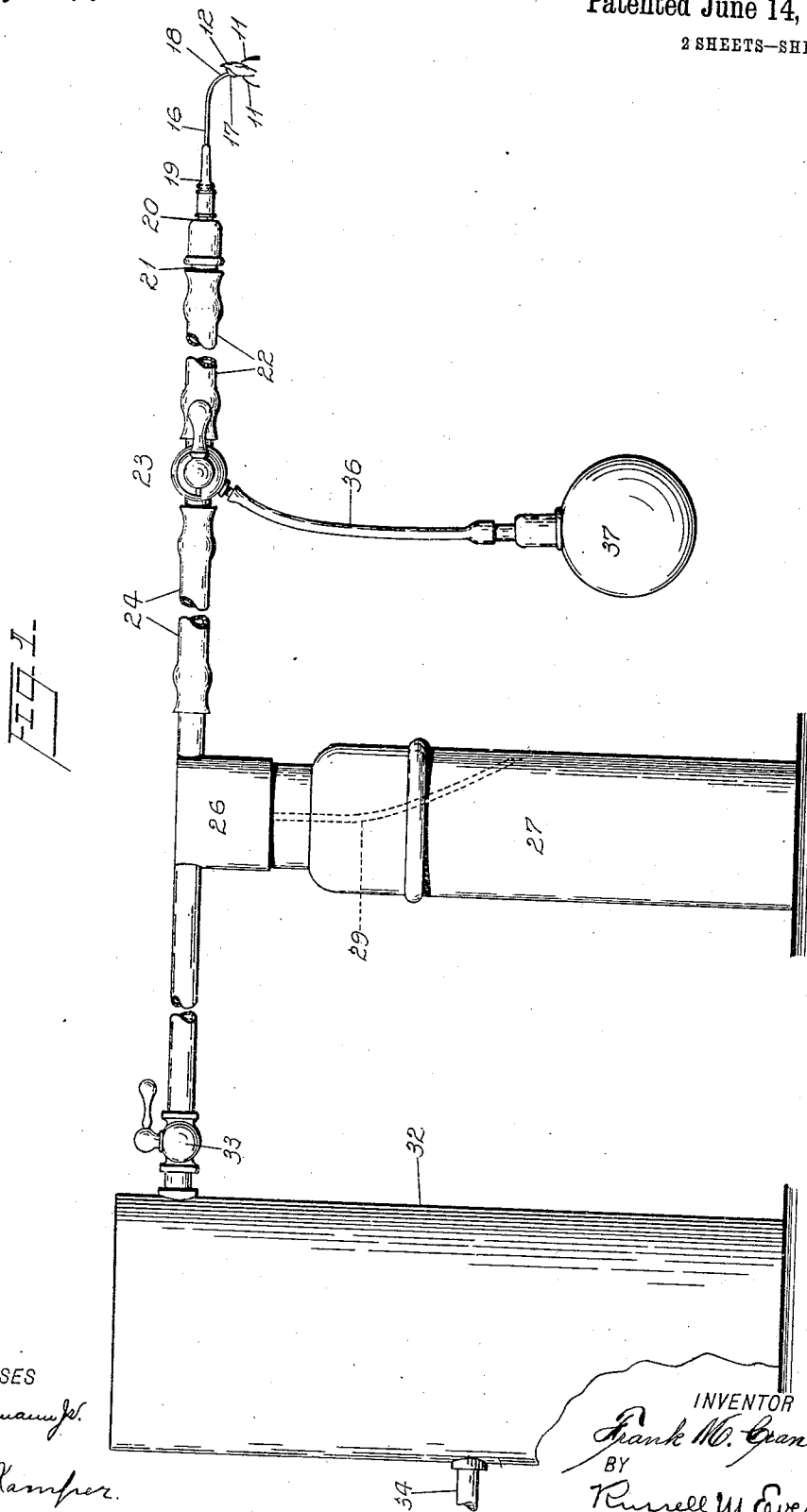


F. M. CRANE.
PROCESS FOR TREATING ULCERATED TEETH.
APPLICATION FILED SEPT. 28, 1908.

961,287.

Patented June 14, 1910.
2 SHEETS—SHEET 1.



WITNESSES
Frederick Germann, Jr.
John W. Kampfer.

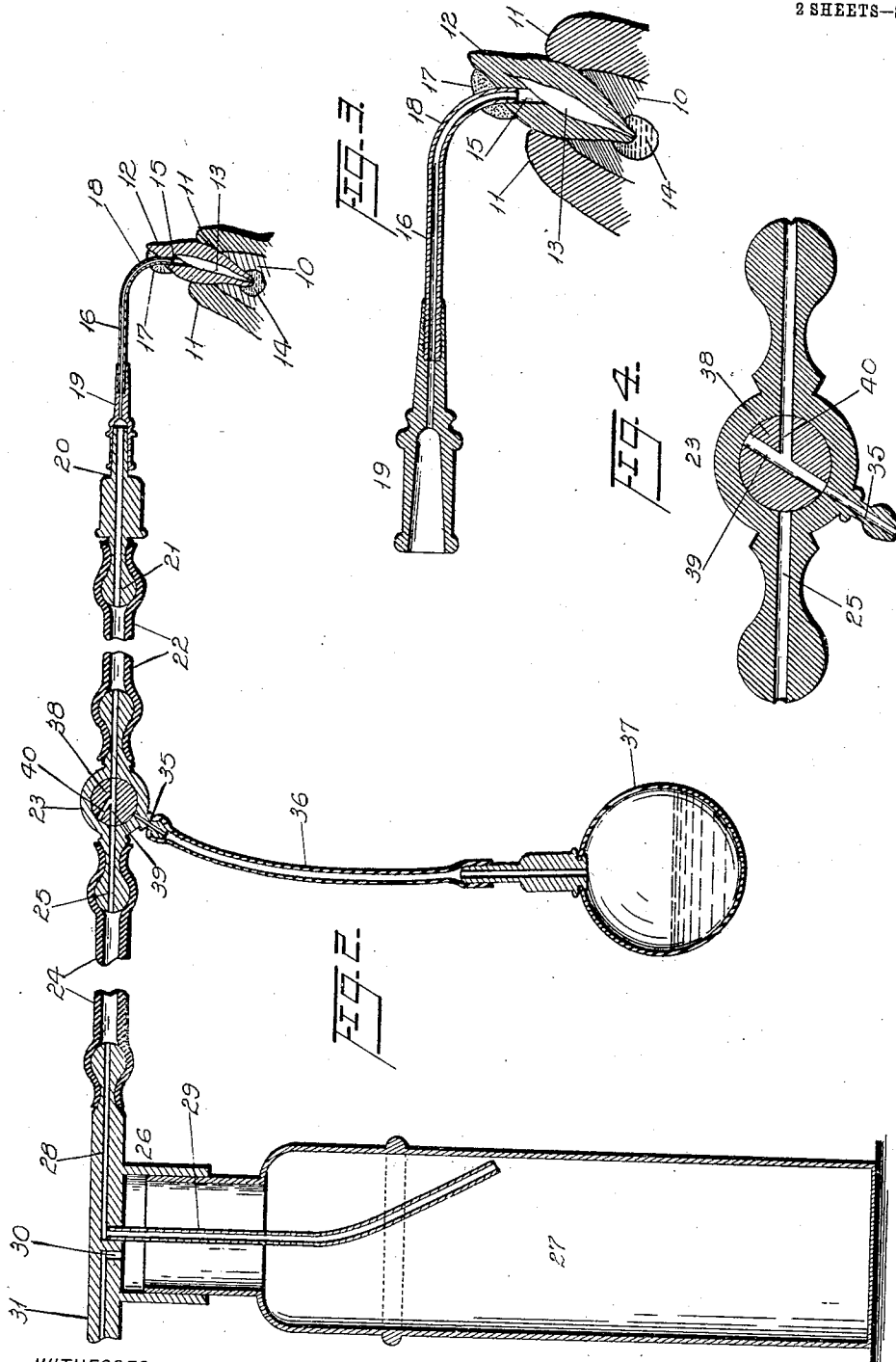
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WITNESSES

Frederick Bernaufer
John W. Kamper

INVENTOR

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UNITED STATES PATENT OFFICE.

FRANK M. CRANE, OF SOUTH ORANGE, NEW JERSEY.

PROCESS FOR TREATING ULCERATED TEETH.

961,287.

Specification of Letters Patent. **Patented June 14, 1910.**

Application filed September 28, 1908. Serial No. 455,195.

To all whom it may concern:

Be it known that I, FRANK M. CRANE, a citizen of the United States, residing at South Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Processes for Treating Ulcerated Teeth, of which the following is a specification.

This invention relates more particularly to the treatment of teeth in which the nerve is dead and an accumulation of gas, pus, congested blood or the like has formed in the nerve canal or at the apex of the root of the tooth in the surrounding tissue, the resulting pressure causing inflammation and great pain. The treatment of such a tooth heretofore has been by making an opening into the nerve canal of the tooth, and by the insertion of a slender instrument drawing out so much of the pus or like matter as possible, and then packing the cavity with suitable medicaments. Obviously, however, it has been impossible to reach or bring out all of the foreign matter with the said instrument, and furthermore the insertion of the instrument tends more or less to pack the said matter at the bottom of the canal. The treatment has been very imperfect, therefore, and in many cases inefficient.

The objects of the present improvements are to avoid the insertion of an instrument down through the nerve canal of the tooth to the diseased part; to secure a more perfect and complete withdrawal of the pus or like matter; to facilitate such removal; to enable the nerve canal and diseased part to be thoroughly and repeatedly washed out with any desired solution, and to obtain other advantages and results as may be brought out in the following description.

Referring to the accompanying drawings, in which like numerals of reference indicate the same parts in the several figures, Figure 1 is a side elevation of an apparatus for carrying out my improved method of treating a tooth, showing the same in use; Fig. 2 is a central vertical longitudinal section of said apparatus and of the tooth being treated; Fig. 3 is an enlarged view of the tooth and the tip of my improved apparatus applied thereto; and Fig. 4 is a section showing a certain controlling three-way valve in another position from that shown in Fig. 2.

In said drawings, 10 indicates the alveolar process of the jaw and 11 the flesh or gum;

12 is a tooth in the jaw with a nerve canal 13, and 14 indicates an ulcer or accumulation of pus, congested blood or the like at the apex of the root of the tooth, such as is commonly caused by a dead nerve. By my improved method of treating such a tooth, an opening 15 is made into the nerve canal at a convenient point. The end of the fine tubular tip 16 of the apparatus is then inserted in said opening, and the connection sealed or made impervious by packing cement 17 around the said tip against the outer wall of the tooth. The said tip 16 is preferably curved as at 18 to extend away from the tooth horizontally, and at its base is shown as screwed into the male member of a push coupling 19 adapted to receive a cooperating female member 20 to the other end 21 of which a flexible rubber tube 22 is connected. The other end of this rubber tube is slipped over one of the three ducts or outlets of a three-way valve casing 23, and beyond said casing another rubber tube 24 extends from another duct or outlet 25 of the valve casing to the cap 26 of a bottle or tube 27. This cap provides a duct 28 leading from the said tube 24, and from which duct an extension tube 29 leads downward into the bottle for a considerable distance. Another duct 30 leads from the upper part of the bottle out through the cap, and through a tube 31 to a chamber 32. A valve 33 is adapted to control the communication of said tube 31 with the chamber, and said chamber has an outlet 34 through which the air can be exhausted from its interior by any suitable means, such as an air pump (not shown). From the third duct or outlet 35 of the three-way valve casing 23, a tube 36 extends to a rubber bulb 37 adapted to contain liquid or any kind of an antiseptic or medicated solution. The valve 38 in said three-way valve casing has a diametric port 39 and a branch port 40 leading therefrom, the outlets of said ports through the walls of the valve being so located that when the diametric port 39 connects the two outlets 23 and 25 of the valve casing 23, the other duct 35 leading to the bulb 37 is closed, and on the other hand when the valve is turned so that a portion of the diametric port 39 and the branch port 40 connect the outlets 23 and 35 of the valve casing, the outlet 25 leading to the bottle 27 is closed. Communication can thus be es-

tablished between the tooth and either the bulb or bottle, as desired, the other being imperviously shut off meanwhile.

It will be understood that it was necessary in describing my invention herein to show some one definite apparatus for purposes of illustration, and accordingly I have shown the one above described. No claim is intended to be made herein to said apparatus, however, and other forms or constructions of apparatus could be employed if desired.

In carrying out my improved method of treating a tooth, the air is first exhausted from the chamber 32 and the valve 33 opened. The three-way valve is then turned into the position shown in Fig. 2, and the effect is to suck the pus or like matter at the base of the tooth out through the tube and three-way valve into the bottle 27, where its presence can be noted through the glass walls. The three-way valve is then turned into the position shown in Fig. 4, to establish communication between the bulb 37 and the tooth and to close off the bottle and exhaust means. Pressure upon the said bulb then forces its contents, or a portion thereof, into the tooth, after which the three-way valve is again turned to shut off the bulb and connect the exhaust means, when the contents of the tooth are immediately with-

drawn into the said bottle. The original accumulation of pus can, therefore, not only be drawn out of the tooth, but also the tooth can be filled with medicated solutions, which are again withdrawn, and thus the tooth or diseased part thereof repeatedly washed out. Finally, the tubular tip 16 is removed from the tooth and any suitable root filling inserted. Great thoroughness and expedition in the treatment of a tooth are thus secured by my improved method.

Having thus described the invention, what I claim is:

1. The herein described method of treating ulcerated teeth, which consists in making an opening into the nerve canal, inserting a tube air-tight in said opening, exhausting air from said tube, closing said tube while so exhausted, and forcing liquid into said exhausted tube.

2. The herein described method of treating ulcerated teeth, which consists in exhausting air from the nerve canal, and introducing a liquid into said nerve canal while so exhausted.

FRANK M. CRANE.

In the presence of—

RUSSELL M. EVERETT,

FREDERICK GERMANN, JR.