

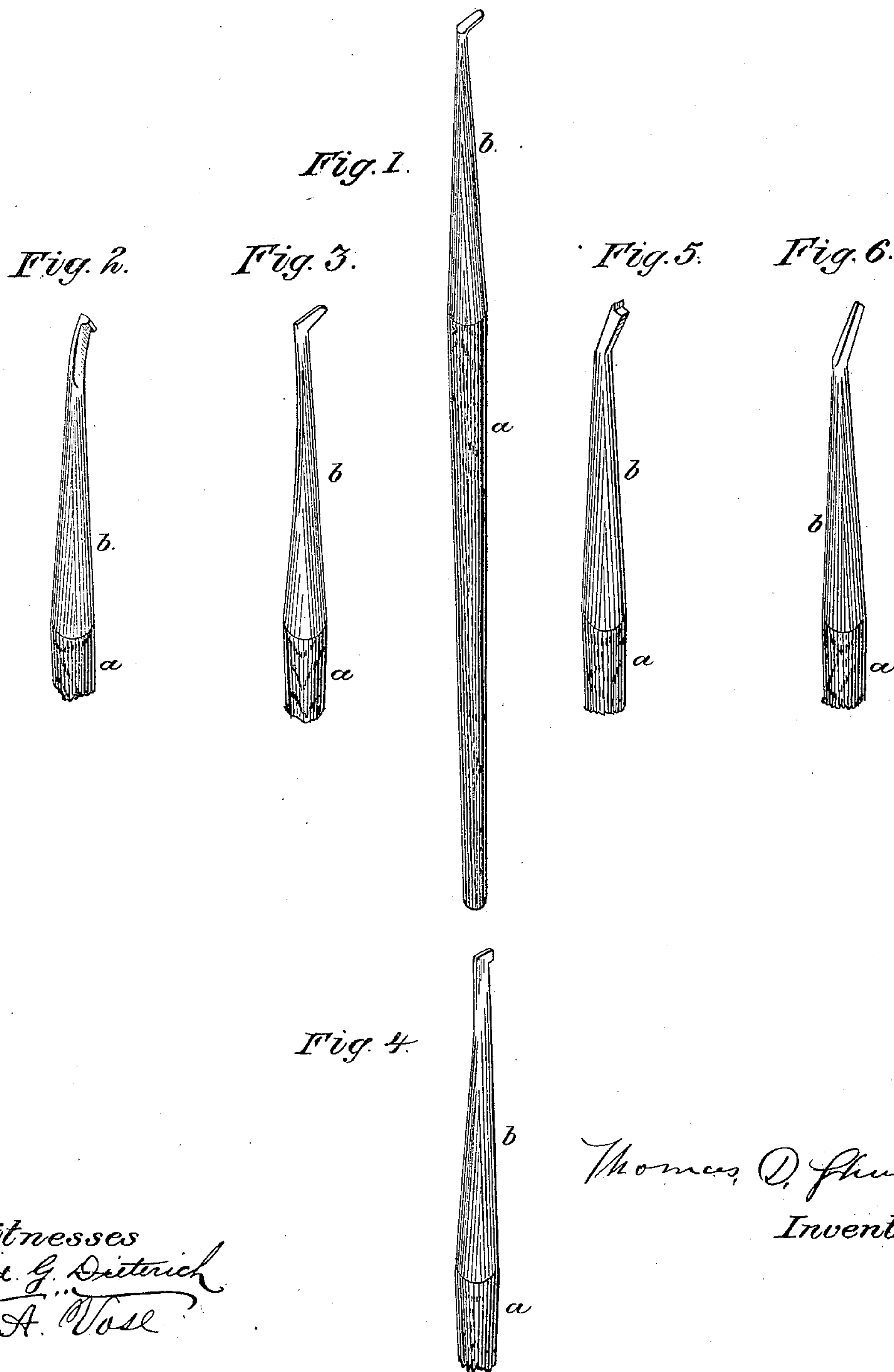
(Model.)

T. D. SHUMWAY.

DENTAL PLUGGER.

No. 246,981.

Patented Sept. 13, 1881.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## DENTAL PLUGGER.

SPECIFICATION forming part of Letters Patent No. 246,981, dated September 13, 1881.

Application filed February 15, 1881. (Model.)

*To all whom it may concern:*

Be it known that I, THOMAS D. SHUMWAY, a citizen of the United States, residing at Plymouth, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Dental Instruments; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to an improvement in that class of dental instruments employed in filling or plugging the cavities of teeth with the material known as "cohesive gold," or other foil having similar characteristics, the object being to avoid the difficulty which has heretofore been encountered in the use of metallic instruments in filling cavities with cohesive foil arising from the change in the condition or hardening of the foil when manipulated with said instruments, which cause it to lose its cohesive qualities and form simply a series of disconnected layers from the bottom of the cavity to the top, each layer presenting a burnished surface to the succeeding layer, thus losing that cohesive property which, when fully retained, causes the foil to fill the cavity perfectly with a homogeneous mass. To accomplish this result instruments have been made with gold points, which were to a certain degree successful, as the cohesive quality of the foil is not lost under their manipulation; but the fact that the operator is liable to use greater force than is needed when using instruments of metal, thus causing pain to the patient in filling tender teeth, and their great cost, have prevented them from coming into general use. Wood has also been tried for this purpose, but has failed, not because any change was produced in the gold by its use, but that its nature is such as to become softened and its fibers disintegrated in use to such an extent as to leave particles of the instrument embedded in the filling, which, absorbing moisture, swells and causes the filling to expand and become loose and spongy. Attempts have also been made to substitute other materials

for the hard metal (steel) commonly employed, but without success, as they generally produced a burnishing effect or such an electric action as changed the nature of the gold, thus destroying its cohesiveness. These efforts all tend to show the difficulty which dentists have recognized and have endeavored to overcome without accomplishing anything more than partial success.

After a long series of experiments with various materials in the manufacture of these instruments I have discovered that solid ivory produces a working-surface on the instrument that avoids the difficulties experienced in the use of hard metals and many other materials, and meets fully the requirements of the situation. My invention therefore consists in dental instruments used for filling or plugging cavities in teeth with cohesive foil having operating or working surfaces composed of solid ivory, as will be hereinafter fully described.

In the accompanying drawings, Figure 1 shows an instrument complete with its handle. Figs. 2, 3, 4, 5, and 6 show the ivory tips in different forms to suit the various sizes and shapes of the cavities to be filled.

The handle *a* of the instrument, which, as no force is used, does not require great strength, but rather lightness and elasticity, is preferably constructed of some light material—such as wood, vulcanized rubber, or celluloid—and provided with an extension which enters a socket in the ivory tip *b*, thus forming a solid joining of the tip and handle, which is found to be very satisfactory in use.

The tip *b* is formed of solid ivory, free from pores or spongy parts, tapering gradually from its junction with the handle, and having its working surface or extremity shaped to suit the special purpose to which it is to be applied. The cavities in teeth being not only in the crown, but in the sides, and of very different forms and dimensions, a series of instruments provided with tips to correspond will be needed by the operator. Of course, these tips may be formed to connect with the handle in other ways than that described—as, for instance, instead of the socket being formed in the tip and the handle inserted therein, the order may be reversed, the socket being in the handle



and the tip inserted; or a single handle may be provided with devices for holding any tip required.

5 It will be understood that in the use of these instruments all force such as that applied to those of metal by the use of a mallet or other percussive implement is avoided, thus obviating the difficulties and dangers experienced in their use. There being no burnishing action  
10 of this instrument upon the foil, its surfaces, as they are brought in contact by the action of the instrument as it is manipulated within the cavity, unite, by the natural cohesive attraction of the foil, into a solid mass, the whole  
15 operation being performed with such slight pressure as to avoid injury to exposed nerves, and therefore without pain to the patient.

To recapitulate: Among the advantages secured by the use of my instrument may be mentioned the facility it gives to the dental operator  
20 of filling tender cavities with cohesive foil without the application of force. Further, as heretofore stated, the material of which the instrument-tips are formed being softer than the gold  
25 and free from oily matters, there can be no bur-

nishing action upon the latter or loss of its cohesive properties from such cause. Again, the instrument-tips being of a material for which gold has no affinity, its contact therewith cannot change the nature of the metal as  
30 it does in operating with instruments formed of the baser metals, which render it hard and destroy its malleability when in the excited or cohesive state; and, lastly, these instruments furnish the only means now known to the pro-  
35 fession by which cohesive gold can be successfully used in filling dental cavities.

Having thus described my invention, I claim the following:

As a new article of manufacture, a dental  
40 instrument consisting of a light handle formed of suitable material and the attached ivory tips *b*, constructed and arranged for use in the manner described.

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

THOMAS D. SHUMWAY.

Witnesses:

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M. E. HATHAWAY.