No. 824,218. PATENTED JUNE 26, 1906.

S. TOWLE.

PROCESS FOR MAKING DENTAL DEVICES.

APPLICATION FILED NOV. 10, 1905.

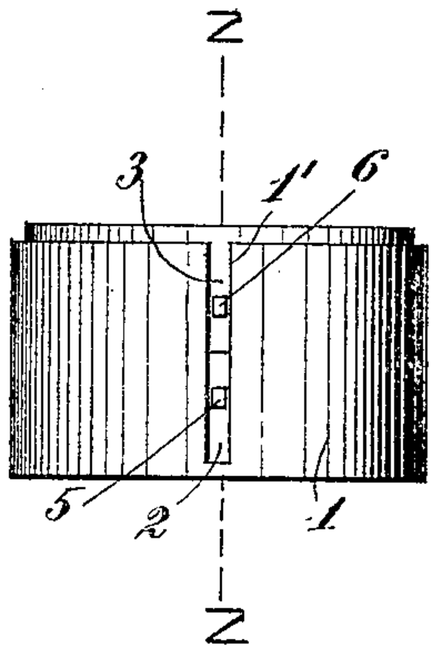

Fig. 1.

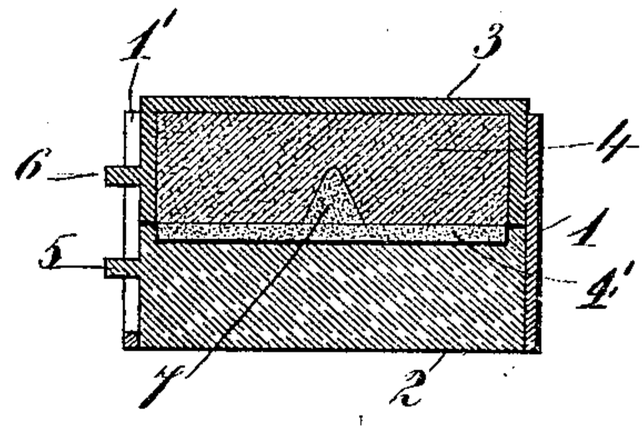

Fig. 2.

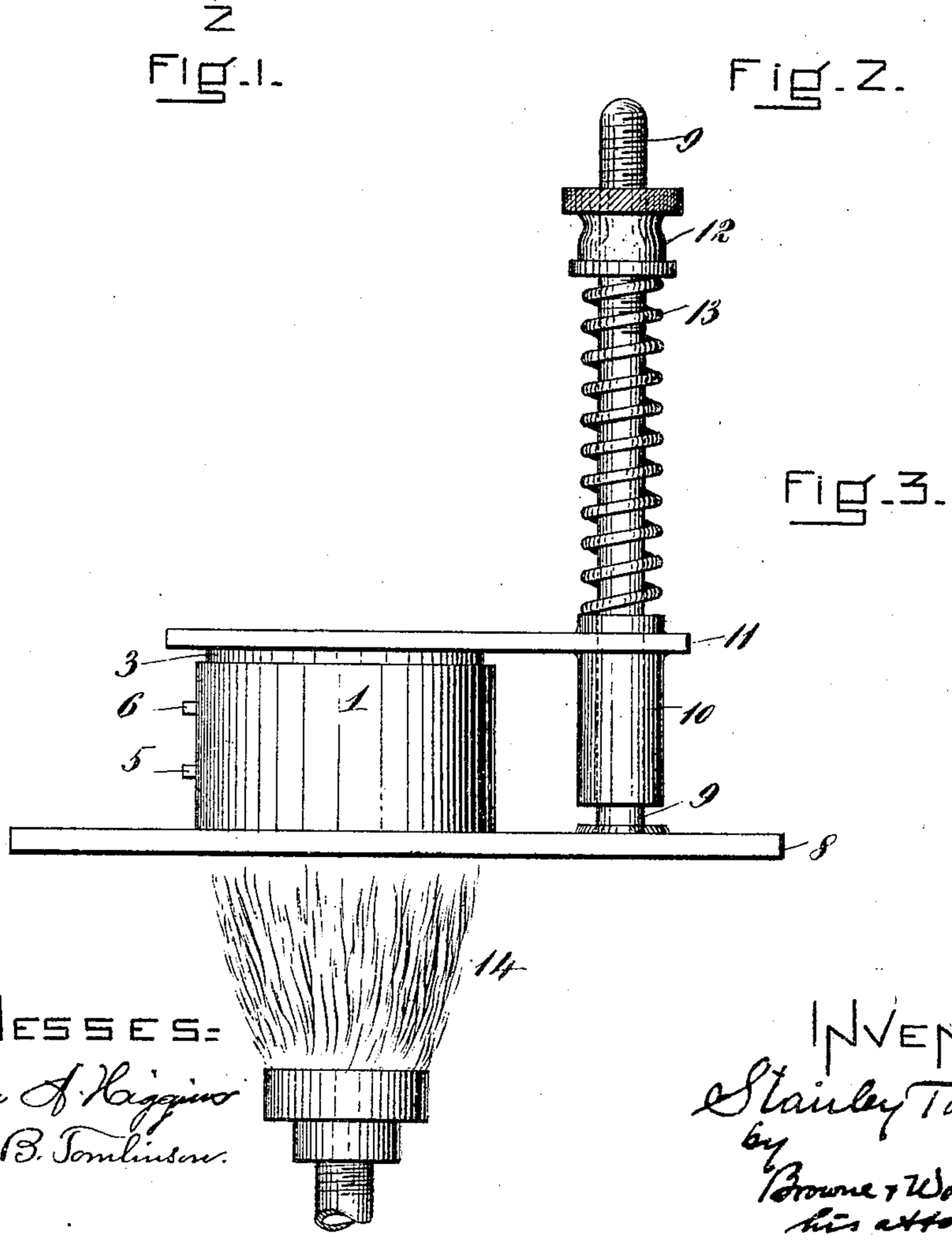

Fig. 3.

WITNESSES:

Georgia A. Higgins

Ellen B. Tomlinson.

INVENTOR:

Stanley Towle

by Browne & Woodworth

his attorneys.

UNITED STATES PATENT OFFICE.

STANLEY TOWLE, OF FALL RIVER, MASSACHUSETTS.

PROCESS FOR MAKING DENTAL DEVICES.

No. 824,218. Specification of Letters Patent. Patented June 26, 1906.

Application filed November 10, 1905. Serial No. 286,658.

To all whom it may concern:

Be it known that I, STANLEY TOWLE, a citizen of the United States, residing at Fall River, in the county of Bristol and State of Massachusetts, have invented a Process for Making Dental Devices, of which the following is a specification.

My invention relates to processes for making dental devices such as artificial substitutes for missing teeth or parts thereof; and the object of my invention is to provide such artificial substitute which shall be superior to those heretofore employed.

With said object in view my invention consists in a process for making an artificial substitute for missing teeth or parts thereof out of celluloid, as hereinafter defined, and permanently securing the same to the natural tooth.

My invention may best be understood by having reference to the drawings which accompany and form a part of this specification and which illustrate one of the many forms of apparatus whereby the hereinbefore-stated object of my invention may be effected.

In the drawings, Figure 1 is an elevation of a mold-casing containing the mold members. Fig. 2 is a section of said mold-casing and members, taken on the line 2 2 of Fig. 1; and Fig. 3 illustrates a simple apparatus whereby the mold members may be heated under pressure.

In the drawings, 1 represents a cylindrical mold-casing provided with a slot 1′ for receiving the projections 5 and 6, which are integral with the mold members 2 and 3, respectively. The lower mold member consists of a disk of tin or other suitable good heat-conducting material, and the upper member consists of a disk of any suitable metal. Both members are provided with a recess on their juxtaposed faces for receiving plaster-of-paris or other suitable investing material. (Shown in Fig. 2 at 4 and 4′.)

By means of the mold I prepare, by the action of heat and pressure, artificial substitutes for natural teeth, such as crowns and bridges, or artificial substitutes for parts of teeth, such as fillings, in the manner now to be described. With any material suitable for the purpose an impression or core is made of the tooth-cavity to be filled or the crown and bridge to be supplied, and said impression or core is placed upon the plaster-of-paris or other investing material upon the upper side of the lower mold member 2, as shown in Fig. 2 at 7. Plaster-of-paris or other suitable investing material is then placed in the recess with which the upper mold member is provided, and said member is then placed in the mold-casing and pressed down upon the lower member, so that the aforesaid impression or core projects into the plaster-of-paris 4 to form the mold. After the plaster-of-paris or other investing material has hardened the mold member 3 is removed and the core 7 is taken out of its investment. The mold is then ready for receiving a sufficient quantity of celluloid for the purpose of forming the filling, crown, or bridge to be used. After a suitable quantity of such material has been placed in the mold the upper member 3 is replaced, the projections 5 and 6, which coöperate with the slot 1′, insuring the correct position of the members 2 and 3, and the casing 1 is placed between the spring-pressed jaws 8 and 11 of the device shown in Fig. 3. This device consists of the jaw 8, which also forms the base of the device, and an upper jaw 11, formed integral with the sleeve 10, which coöperates with the standard 9, carrying an adjusting-screw 12 and spring 13. The press is then placed over a flame 14, as shown in Fig. 3, and the heat of the latter, which is communicated to the celluloid through the mold member 2, softens such celluloid and causes it to completely fill the mold made as above stated. It will be obvious that as the celluloid is heated the spring 13 causes the upper mold member 3 to descend, and thereby forces the celluloid, which has become plastic by heating, into the mold. The press is then removed from the flame and the mold allowed to cool and the celluloid to harden. When the celluloid has hardened, the mold is taken apart, the filling, crown, or bridge extracted and cleaned, and by means well known to those skilled in the art permanently secured to the natural tooth or teeth.

As a material for the filling, crown, or bridge made as above described I prefer celluloid of a tough quality. Such celluloid is susceptible of receiving a color exactly the same as that of the tooth and is otherwise well suited to give the desired results. However, it is to be distinctly understood that I do not limit myself to any particular kind of celluloid or to any particular modification or derivative thereof, but merely use said term as a convenient one to define any suitable cellulose-guncotton-camphor compound.

While I have shown in Fig. 3 a specific form of press whereby the mold may be heated under pressure, it is to be understood that such specific form of press is shown merely for the purpose of more clearly and fully disclosing my invention and that my invention is broader than mere apparatus, being capable of being carried into effect by a great variety of apparatus.

Having fully described my invention, I claim—

The method of forming artificial substitutes for missing teeth or parts thereof, which consists in preparing a core having the shape of the tooth or part thereof to be supplied, forming a mold to correspond to said core, and forming in said mold by heat and pressure a celluloid device having the shape of the tooth or part thereof to be supplied.

In testimony whereof I have hereunto subscribed my name this 8th day of November, 1905.

STANLEY TOWLE.

Witnesses:

GEORGE LEMIST CLARKE,

GEORGE K. WOODWORTH