

No. 726,771.

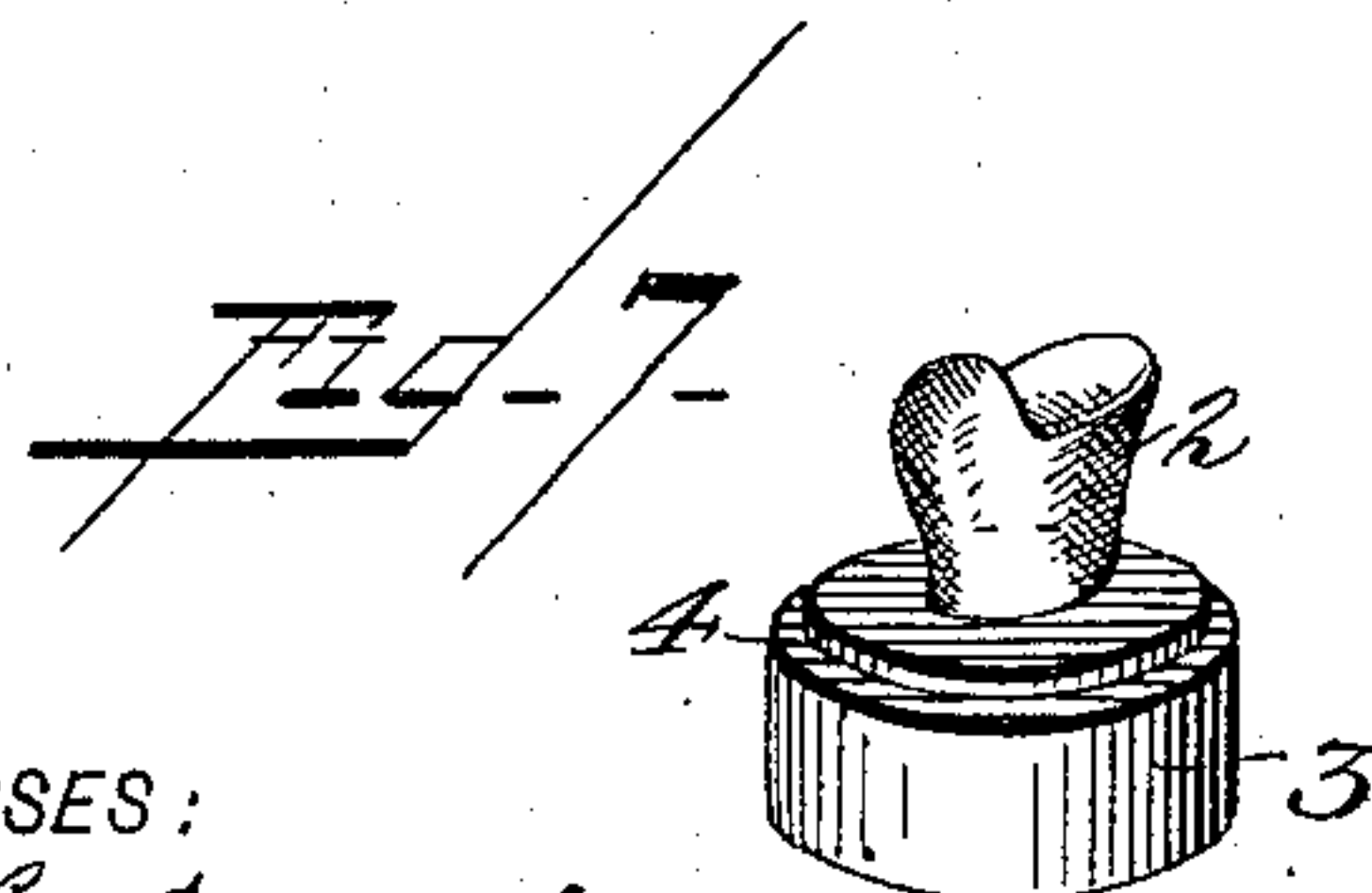
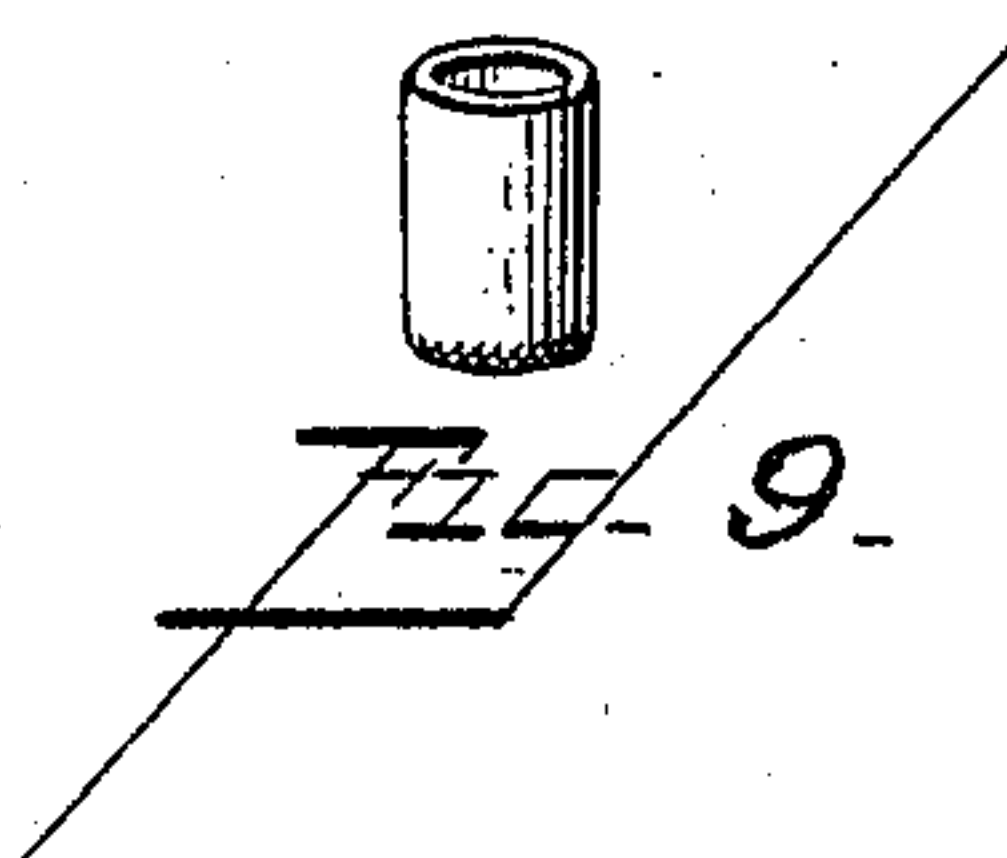
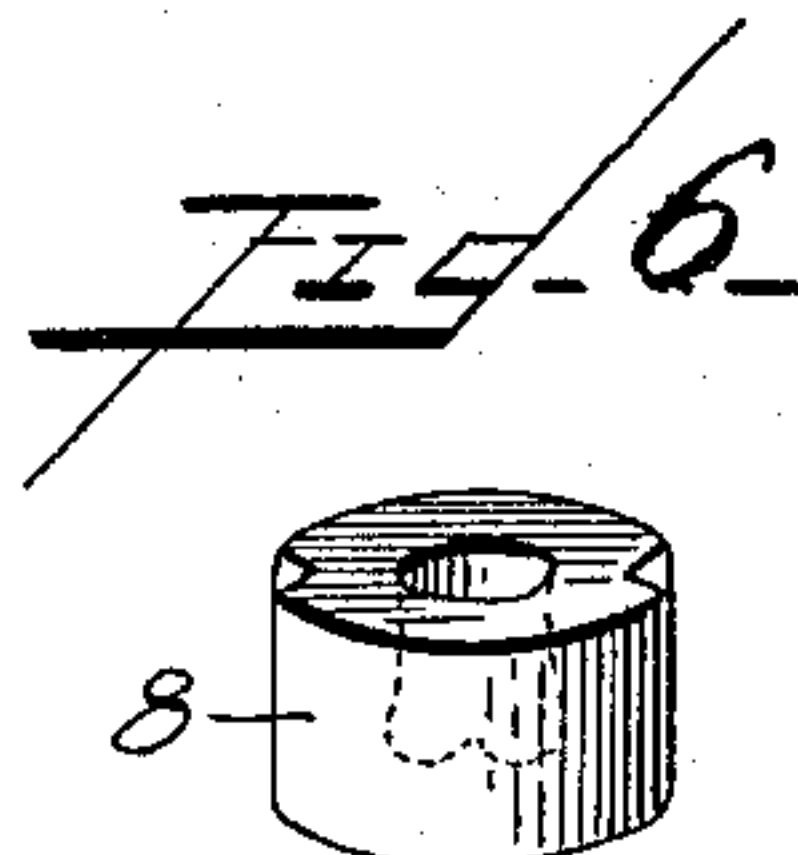
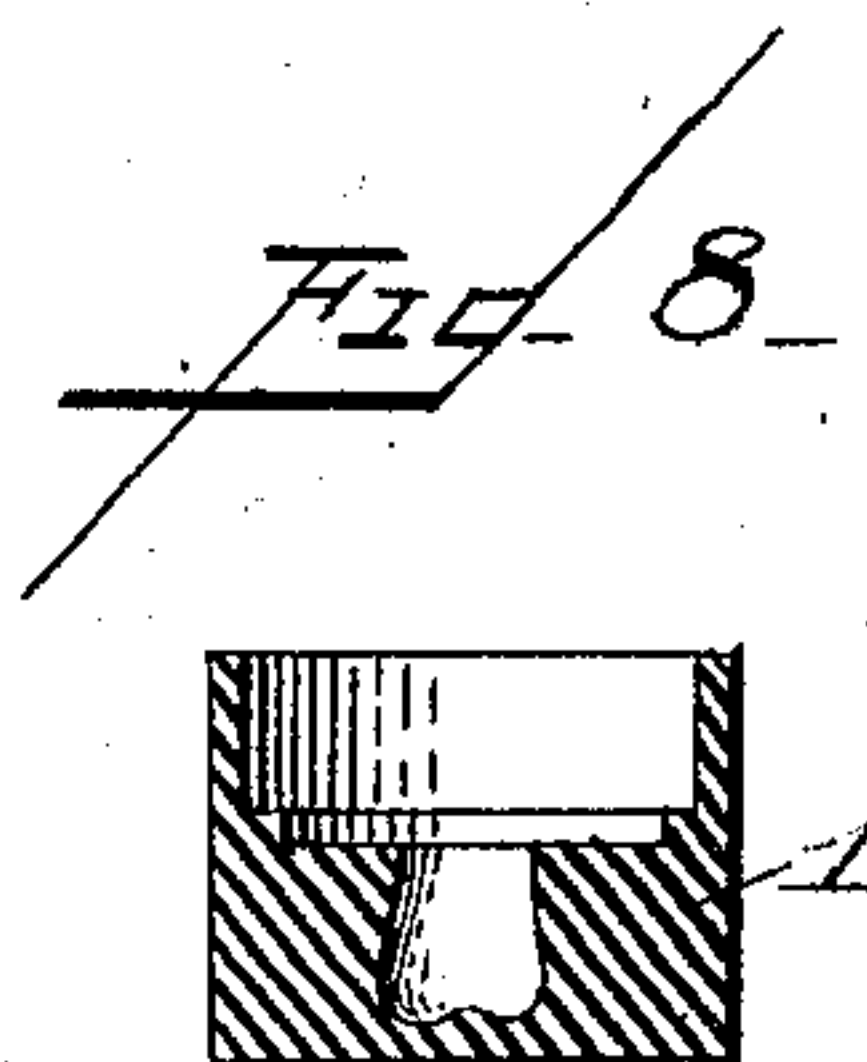
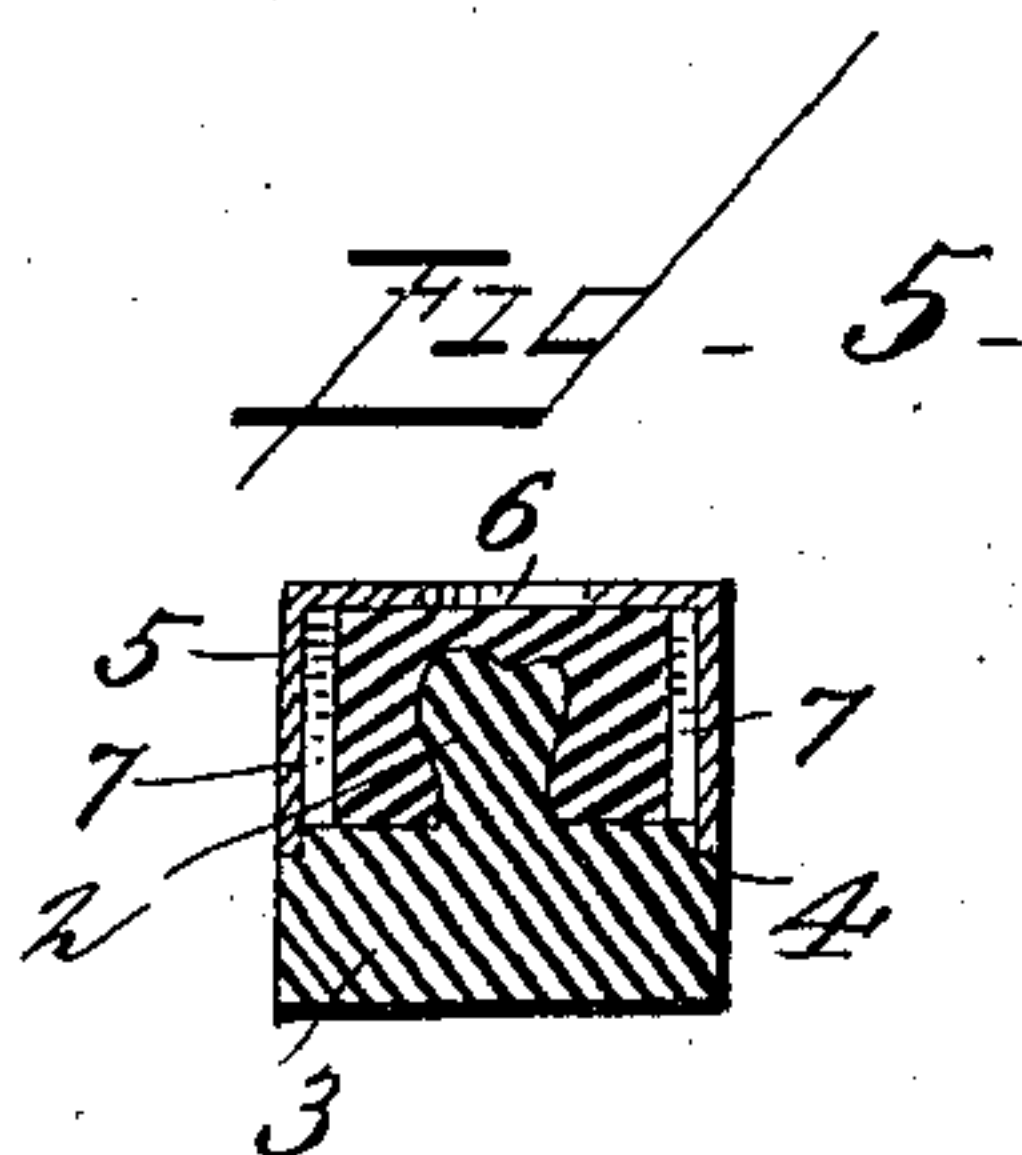
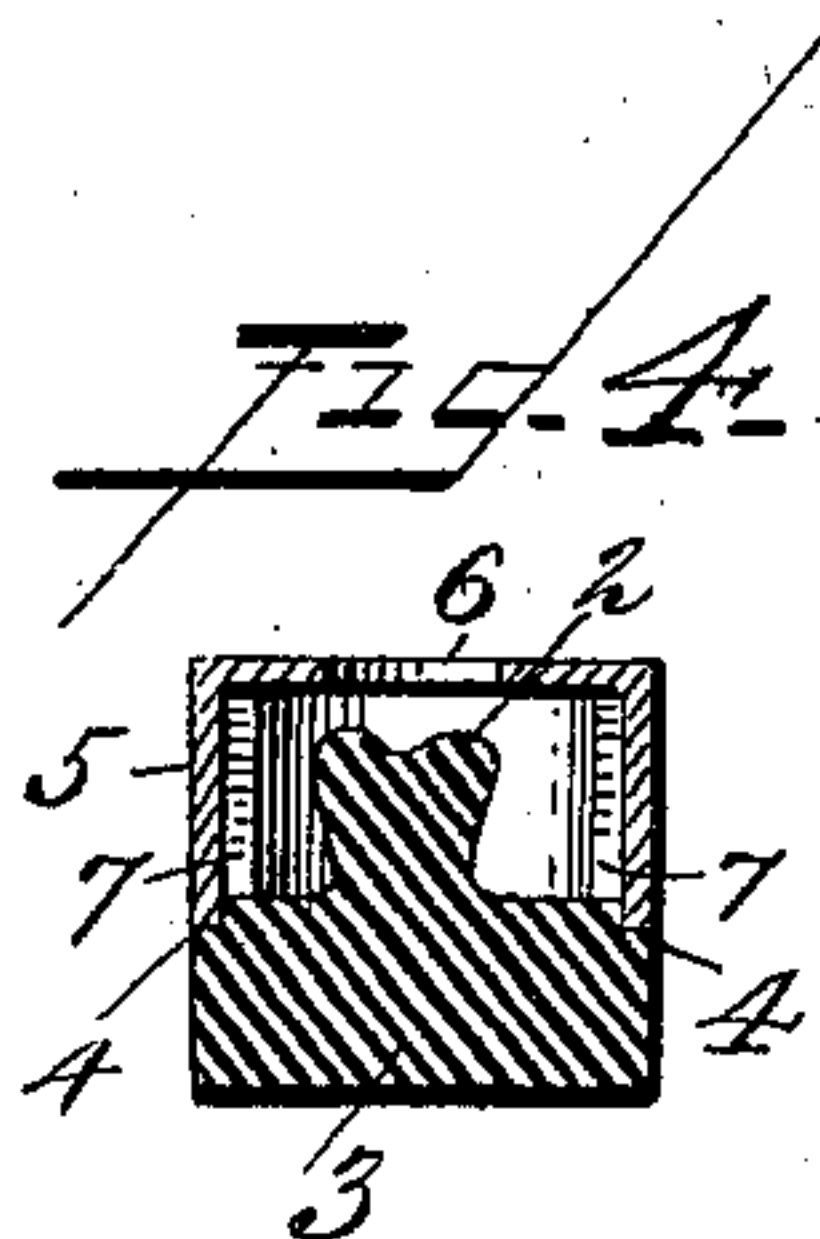
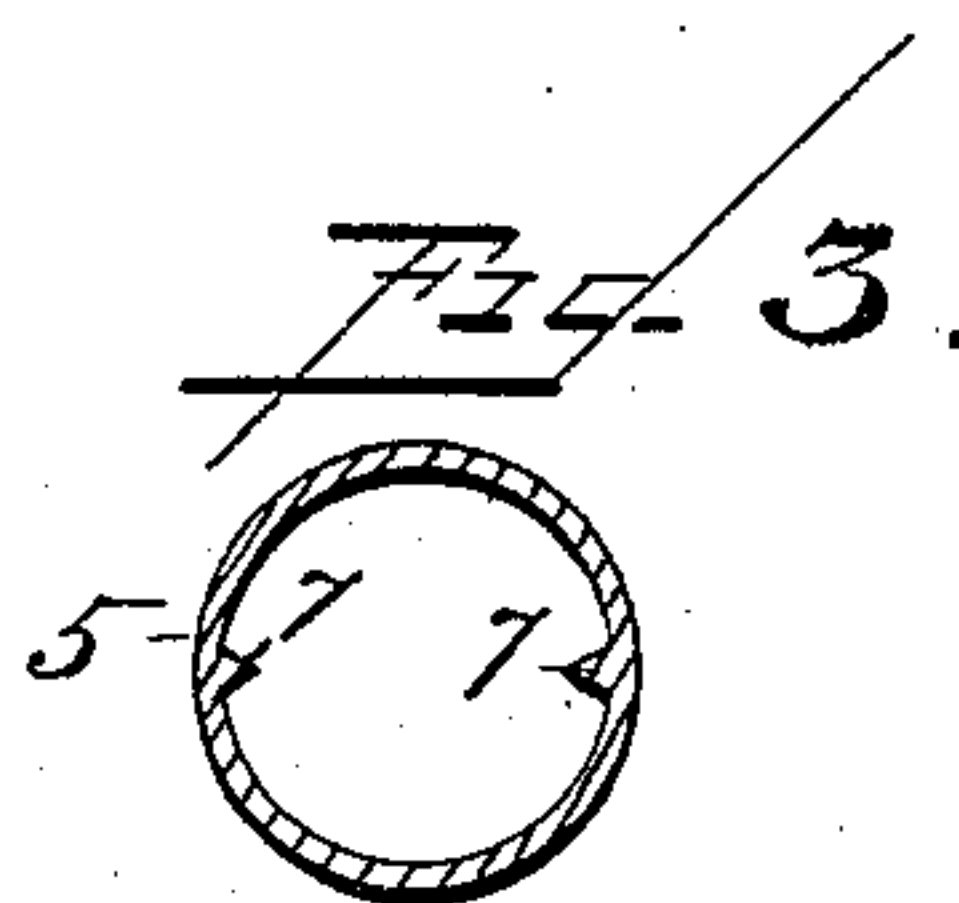
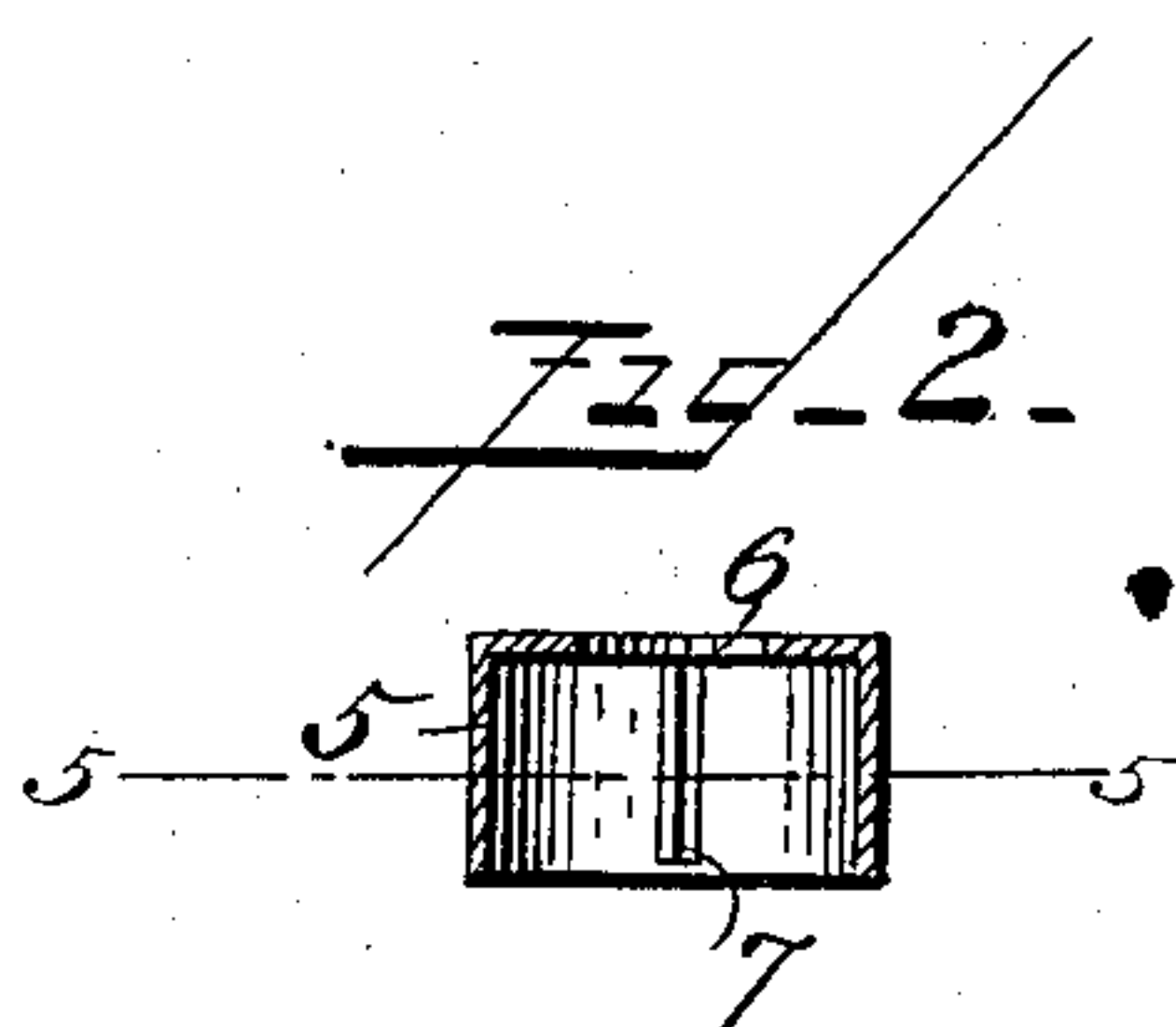
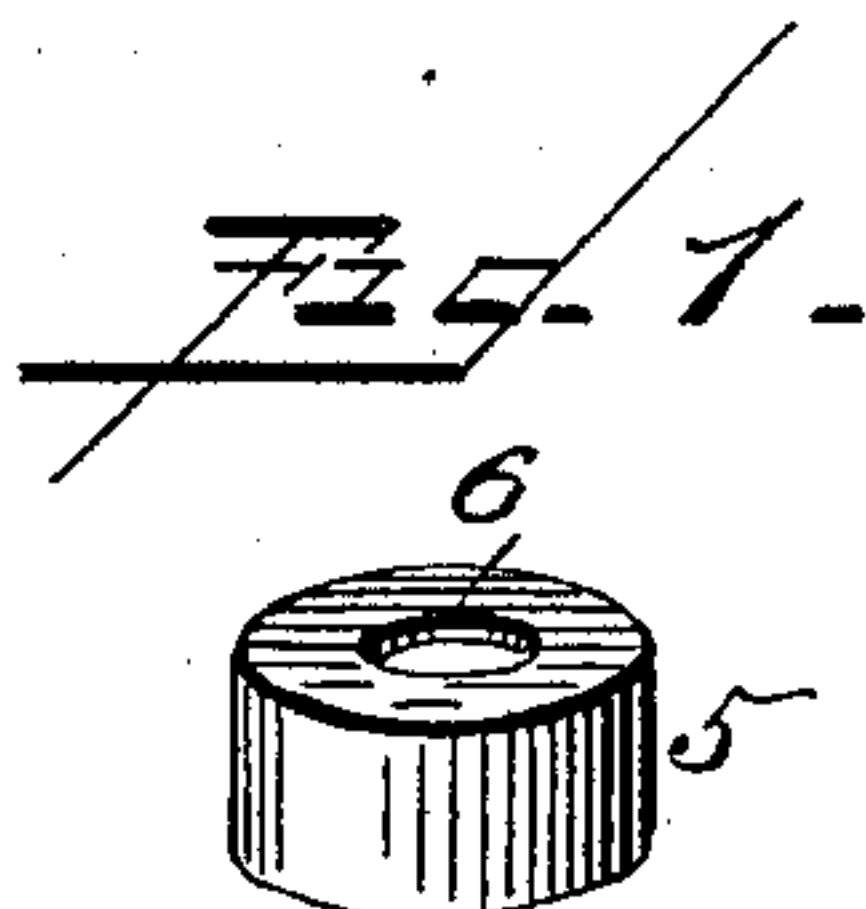
PATENTED APR. 28, 1903.

W. M. SHARP.

CORE FOR CASTING MOLDS FOR TOOTH CAPS.

APPLICATION FILED JUNE 6, 1901. RENEWED JULY 11, 1902.

NO MODEL.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WARREN M. SHARP, OF BINGHAMTON, NEW YORK.

CORE FOR CASTING MOLDS FOR TOOTH-CAPS.

SPECIFICATION forming part of Letters Patent No. 726,771, dated April 28, 1903.

Application filed June 6, 1901. Renewed July 11, 1902. Serial No. 115,220. (No model.)

To all whom it may concern:

Be it known that I, WARREN M. SHARP, a subject of the King of Great Britain, residing at Binghamton, in the county of Broome and State of New York, have invented new and useful Improvements in Cores for Casting Molds for Tooth-Caps, of which the following is a specification.

Since metal caps for teeth have come into use many attempts have been made to construct a seamless cap which shall have the contour of a natural tooth. The principal obstacle to be overcome in this construction is the making of a suitable mold within which a previously-constructed straight-walled metal cap can be shaped. The difficulty in making such a mold lies in the circumstance that the crown of a tooth is much larger than the part next to the gums, which prevented the use of a solid—that is, non-flexible—core for casting the mold unless either the mold or core were made in sections. Both of these alternatives have been resorted to and apparatus patented for carrying out the same. To overcome these difficulties is the object of my invention, and this is accomplished by constructing a flexible core which is unaffected by the heat of the molten metal and which can be withdrawn from the completed mold and used over and over again. A great advantage to be derived from the permanency of the cores is that one can construct a graduated series of these flexible cores representing all classes and sizes of teeth, thereby enabling a dentist after measuring the tooth operated upon to pick out the right size of core for forming the required mold for use in shaping the cap. This object is accomplished by the simple and novel construction described in this specification and claimed, and illustrated in the accompanying drawings, forming a part thereof, in which—

Figure 1 is a perspective of a mold for casting a slug. Fig. 2 is a vertical section of the same. Fig. 3 is a horizontal section of the same. Fig. 4 is a section of the mold in combination with a core and pedestal. Fig. 5 is a section of the same with a slug. Fig. 6 is an inverted perspective of the slug. Fig. 7 is a perspective of a bicuspid and its pedestal. Fig. 8 shows a mold for making one size of

the flexible cores. Fig. 9 shows one of the unfinished caps.

Like numerals of reference designate like parts in the different views of the drawings.

It is generally supposed that molten metal will destroy any but the hardest rubber on coming in contact therewith; but I have discovered that this is not universally true and that a flexible elastic core for the purpose above set forth may be formed of rubber, around which core a low-fusing molten metal may be poured and allowed to cool without injuring the core, which can be pulled out and used an indefinite number of times.

The method of forming my core is to take a mold 1, such as is shown in Fig. 8, and tamp it full of small pieces of high-grade elastic vulcanized rubber and then heat the mold to a temperature of about 260° Fahrenheit and keep it so for about twenty minutes, after which the core may be pulled out and when cool will remain soft and very elastic. The core so prepared is of the shape shown in Fig. 7 and consists of a part 2, the counterpart of a tooth, integral with a flexible cylindrical base or pedestal 3, having a ledge 4 around its upper edge. This ledge 4 serves as a support for the mold in casting slugs for cap-molds.

The low-fusing metal used for casting the slugs consists of bismuth, eight ounces; cadmium, two ounces; tinner's solder, six ounces, which mixture fuses at about 240° Fahrenheit.

To cast the slugs, a mold such as is illustrated in Figs. 1, 2, and 3 is used. This mold 5 consists of a cylindrical casing, open at the bottom and partially closed at the top, leaving only a small opening 6 for pouring in the metal. Small V-shaped ribs 7 are formed within the mold, which serve to groove the slug, so it may be easily broken, if desired, after forming a cap. In casting, mold 5 is placed over the core 2 and rested on the ledge 4 (shown in Fig. 4) and the metal poured in, as shown in Fig. 5, making a slug 8, such as shown in Fig. 6. The slug 8 is then used, as before stated, to form caps. To do this, a straight-walled cap, such as is illustrated in Fig. 9, is taken, placed in the slug-mold 8, and swaged in any well-known way, such as

partially filling with sand and driving in a small punch to make it conform to the contour of the mold. After this is completed the mold may be melted off or broken and the cap set free. Another advantage of the flexible core is that in case the mold is cracked after casting—that is, split by means of a tool, as before mentioned—the core will not be injured in the slightest by accidentally coming in contact with the tool used in splitting the mold. In case plaster-of-paris cores are employed this is not the case, and great care must always be taken to avoid injuring the core if it is desired to reuse it.

I do not wish to be limited as to details of construction, as these may be modified in many particulars without departing from the spirit of my invention.

Having described my invention, what I claim as new, and wish to secure by Letters Patent, is—

1. In a device of the class described, the combination with a pedestal having a ledge around the upper edge thereof for supporting a mold, of a flexible core the shape of a tooth located on the upper surface of said pedestal, substantially as described.

2. A device of the class described, comprising a flexible pedestal having a ledge around the upper edge thereof for supporting a mold, and a flexible core the shape of a tooth, located on the upper surface of said pedestal, substantially as described.

3. In a device for forming metal tooth-caps the shape of a natural tooth, the combination

of a mold constructed to contain molten metal, and a flexible core the shape of a tooth-crown, substantially as described.

4. In a device for forming metal tooth-crowns the shape of a natural tooth, the combination of a mold for holding molten metal, and an elastic flexible core the shape of a tooth-crown which core will not be injured by molten metal at about 240° Fahrenheit, substantially as described.

5. In a device of the class described, the combination of a flexible core the shape of a tooth, said core being constructed as not to be injured by molten metal at about 240° Fahrenheit, a mold, and a pedestal whereby said mold is supported, substantially as described.

6. The combination, of a mold, and a flexible non-collapsible rubber core the shape of a swell-headed tooth-crown, substantially as described.

7. In a device for forming metal tooth-caps the shape of a natural tooth, the combination of a flexible non-collapsible rubber core the shape of a tooth-crown and a pedestal constructed to support a mold to contain a slug surrounding said core, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WARREN M. SHARP.

Witnesses:

GUY E. PADGETT,
BENNETT S. JONES.