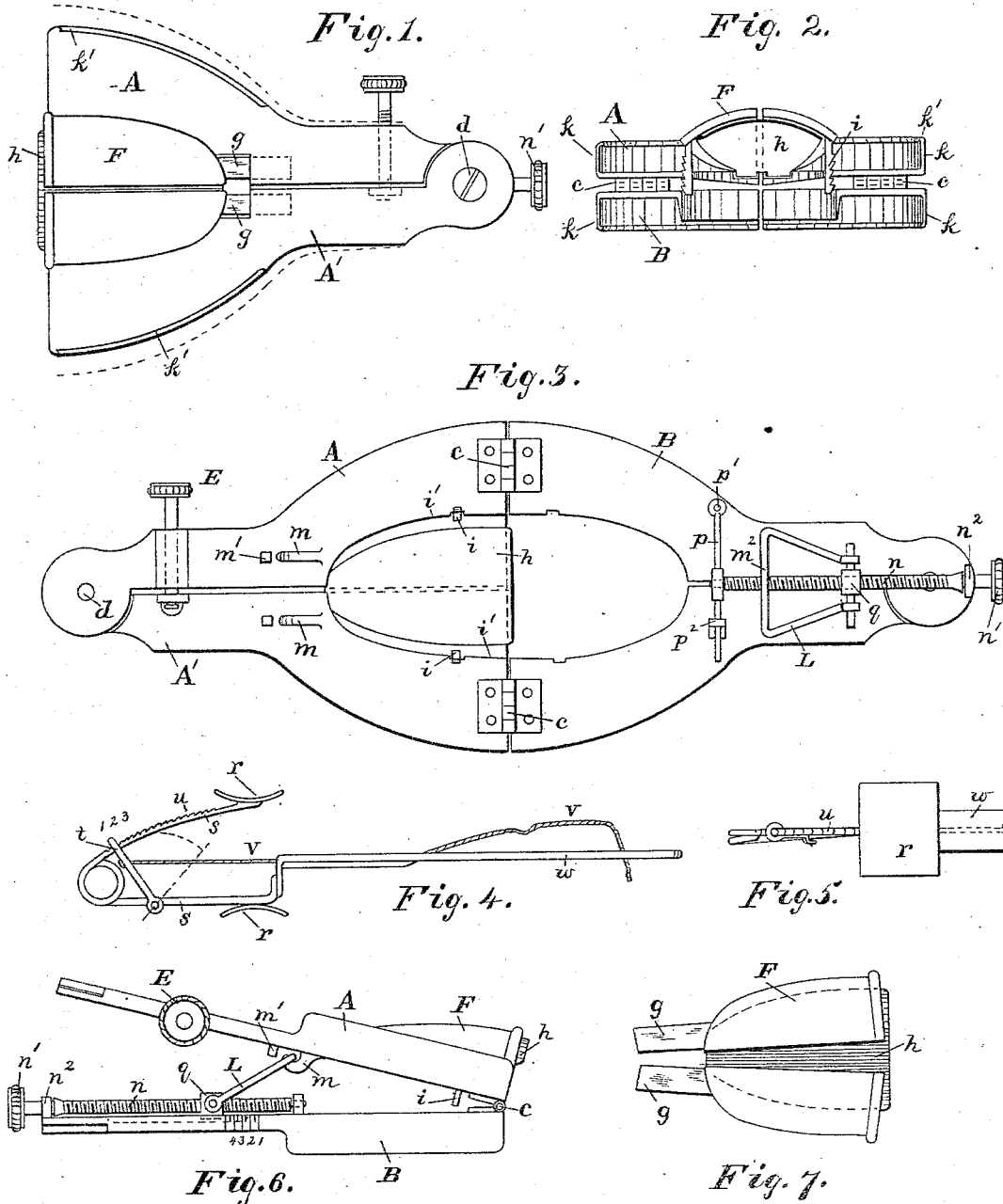


(No Model.)

R. F. CROWTHER.
DENTAL IMPRESSION CUP.

No. 305,900.

Patented Sept. 30, 1884.



Witnesses:
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UNITED STATES PATENT OFFICE.

RODNEY F. CROWTHER, OF BALTIMORE, MARYLAND.

DENTAL IMPRESSION-CUP.

SPECIFICATION forming part of Letters Patent No. 305,900, dated September 30, 1884.

Application filed February 13, 1884. (No model.)

To all whom it may concern:

Be it known that I, RODNEY F. CROWTHER, a citizen of the United States, residing at Baltimore, State of Maryland, have invented certain new and useful Improvements in Dental Impression-Cups, of which the following is a specification.

My invention relates to an impression-cup adapted to take the "bite," by the use of which both the impression and bite may be taken at one operation.

The construction of the improved devices whereby the desired result is accomplished will be described in connection with the accompanying drawings, which illustrate what is deemed the best method of carrying the invention into effect.

Figure 1 is a top view of the upper impression-cup. Fig. 2 is a rear view of the complete device. Fig. 3 is a view of the reverse side of the cups, both being spread apart flat. Figs. 4 and 5 are views of the trial bite. Fig. 6 is a side view of the cups. Fig. 7 is a top view of the palate-plate.

The letter A designates the upper impression-cup, and B the lower cup. These two cups are hinged together at *c*. Both cups are made of two separate sides, the shanks A' and B' of which are jointed together at the extremities *d*, whereby the sides of each cup may spread apart, as indicated by broken lines in Fig. 1, so as to fit wide jaws. This spreading of the jaws is regulated by a screw, E, which enters the side of the shanks of the upper cup.

A palate-plate, F, consists of two halves, which together form an arch attached to the upper cup. Each half of the arch has at the front end a thin tang, *g*, which enters a socket in the front end of the cup, (indicated by broken lines in Fig. 1,) and is thereby held. When the sides of the cup spread apart, as before described, the two halves of the palate-plate separate; and to keep the impression-wax up to the roof of the mouth when the palate-plate separates, a supplemental plate, *h*, is attached to one of the halves and laps over the separating edges onto the other half, as seen in Figs. 2, 3, and 7. The thin tangs *g* of the palate-plate also act as springs, whereby the palate-plate may yield or be pressed down to suit a mouth with a low roof. A racked spring-bar, *i*, is shown at each side of the palate-

plate, (see Fig. 2,) and the racks or teeth are arranged to engage with the edges *i'* of the upper cup. These racked bars are desirable in some cases to hold the palate-plate when it has been pressed down to suit a shallow-roofed mouth. Both impression-cups have rims *k* to prevent the wax from spreading, and each rim has its edge *k'* slightly turned inward, as seen in Figs. 1 and 2, to better hold the wax on. The omission of rims *k* at the front allows the front of the upper or lower jaw to project.

The upper and lower cups being hinged together, the means to adjust them toward or away from each other, so as to suit the bite or articulation of the jaws of any person, consists of the hinged yoke L, which props the two cups apart, as shown in Fig. 6. To the upper cup are two hooks, *m*, one on each side, and in front of the open part of each hook is a stud, *m'*. A straight side, *m''*, of the yoke engages with these hooks. This straight side of the yoke is enough longer than the space between the two hooks to allow the two sides of the cups to spread apart on the joint *d*. A screw, *n*, has one bearing in a lug, *n''*, on the cup-shank, and another bearing, *n'''*, on a rod, *p*, which has one end, *p'*, fixed to one side (or one shank) and the other end resting loosely in an eye, *p''*, on the outer side, (or other shank.) When the two sides of the cup spread apart, the rod *p* will slide in the eye. The screw *n* may be turned by the knob or button *n'*, and will rotate in its bearings, but does not advance. The yoke L is hinged to a nut, *q*, which travels on the screw *n*. By turning the knob *n'* the nut travels on the screw and carries the yoke. It will thus be readily understood how, by moving the hinged end of the yoke, the upper and lower cups may be separated from or moved toward each other.

The device for trying the bite, so as to obtain the measurement between the upper and lower jaws as it should be when the teeth articulate properly, consists of an upper and lower biting-plate, *r*, each of which is supported on one of the arms of a V-shaped wire spring, *s*. To one arm of the spring is pivoted a binder-pawl, *t*, which has its free end arranged to swing along the notches *u* on the other arm of the spring. These notches are numbered 1, 2, 3, and upward. A cord, *v*, is

attached to the pivoted binder-pawl and extends along the handle *w*, which supports the device. When a person's jaws are closed on the plates *r*, the cord may be drawn to bring the pawl *t* forward on the notched arm. The pawl in this position will retain the plates as set by the jaws, and thus the device shows the measurement between the jaws, which is called the "bite."

In order now to adjust the impression-cups so that they shall have the same measurement or bite as the "trial-bite" device, a row of marks is made on the edge of the shank *B'*. (See Fig. 6.) These marks are numbered 1, 2, 3, and upward, and it is only necessary to turn the knob *n'* until the rear edge of nut *g*, which carries the yoke *L*, is coincident with that number of mark which corresponds with the same number of notch on the V-shaped arm. By this means the proper adjustment is effected of the cups.

From the foregoing the manner of using the improved impression-cups will be readily understood by any one conversant with the use of such instruments.

Having described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination of two dental impression-cups—one for the upper and the other for the lower jaws—and a hinge connecting the two cups, as set forth.

2. The combination of two dental impression-cups—one for the upper and the other for the lower jaws—a hinge connecting the two cups, and means for adjusting the said hinged cups, as set forth.

3. The combination of a dental impression-cup and an arched palate-plate composed of two separable halves, as set forth.

4. The combination of a dental impression-cup, made of two separate sides jointed together to adapt the sides to be spread apart laterally, and a palate-plate composed of two separable halves, one of which is attached to each of the said jointed sides, as set forth.

5. The combination of a dental impression-cup, made of two separate sides jointed together to adapt the sides to be spread apart laterally, a palate-plate composed of two separable halves, one of which is attached to each of the said jointed sides, and a supplemental plate attached to one of the halves and lapping over the separating edges onto the other half, as set forth.

6. In a dental impression-cup, the combination, substantially as set forth, of an upper and lower cup, each made of two separate sides, a joint at the front of each to connect the sides, and a hinge connecting the two cups.

7. An upper and lower dental impression-cup connected together by a hinge, means to adjust the two cups toward or away from each, and numbered marks on the edge of one cup (or its shank) by which to adjust the cups to secure the proper bite, as set forth.

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

RODNEY F. CROWTHER.

Witnesses:

JNO. E. MORRIS,
JNO. T. MADDOX.