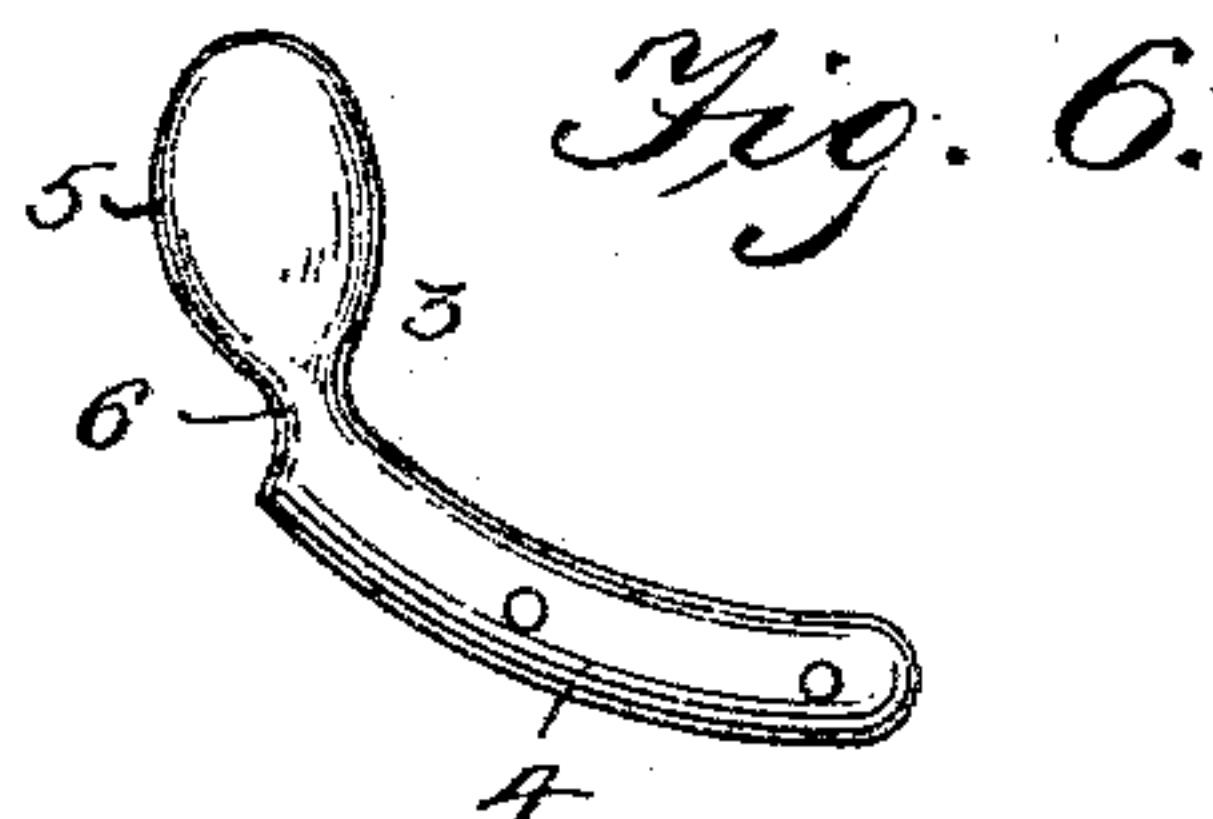
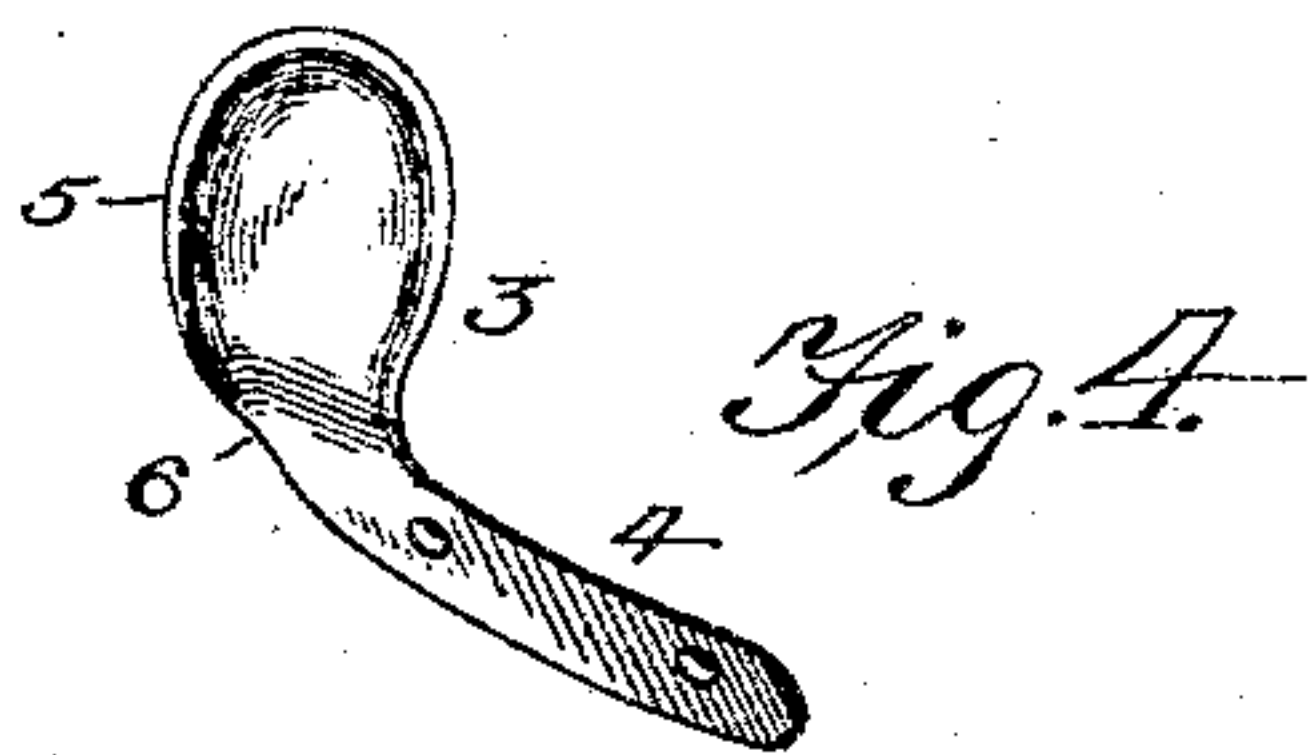
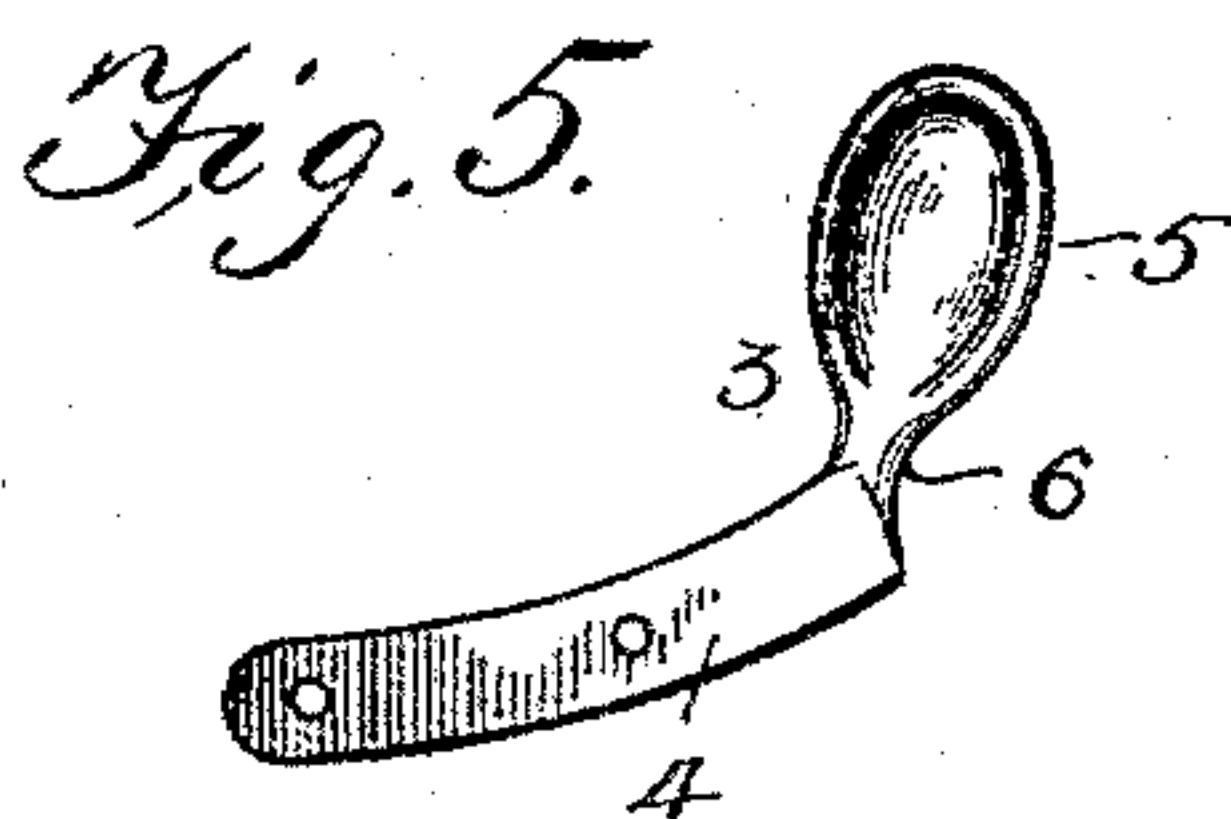
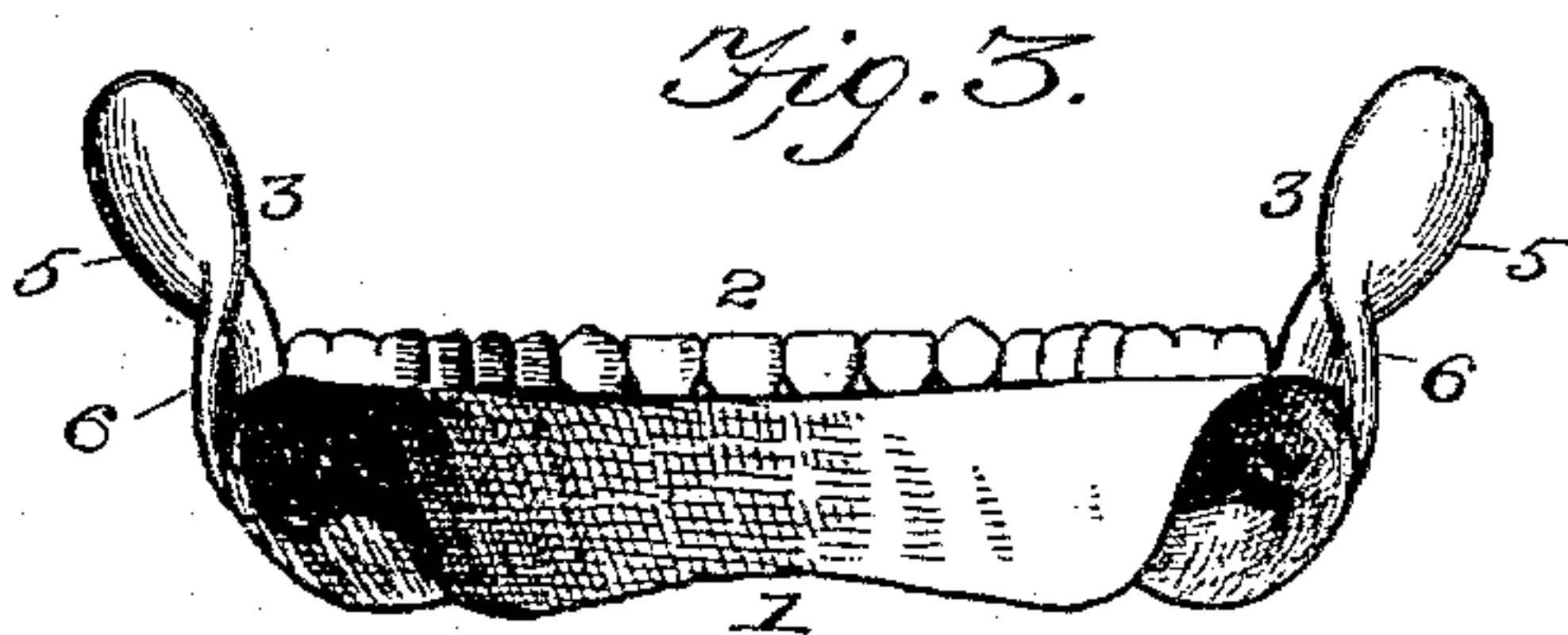
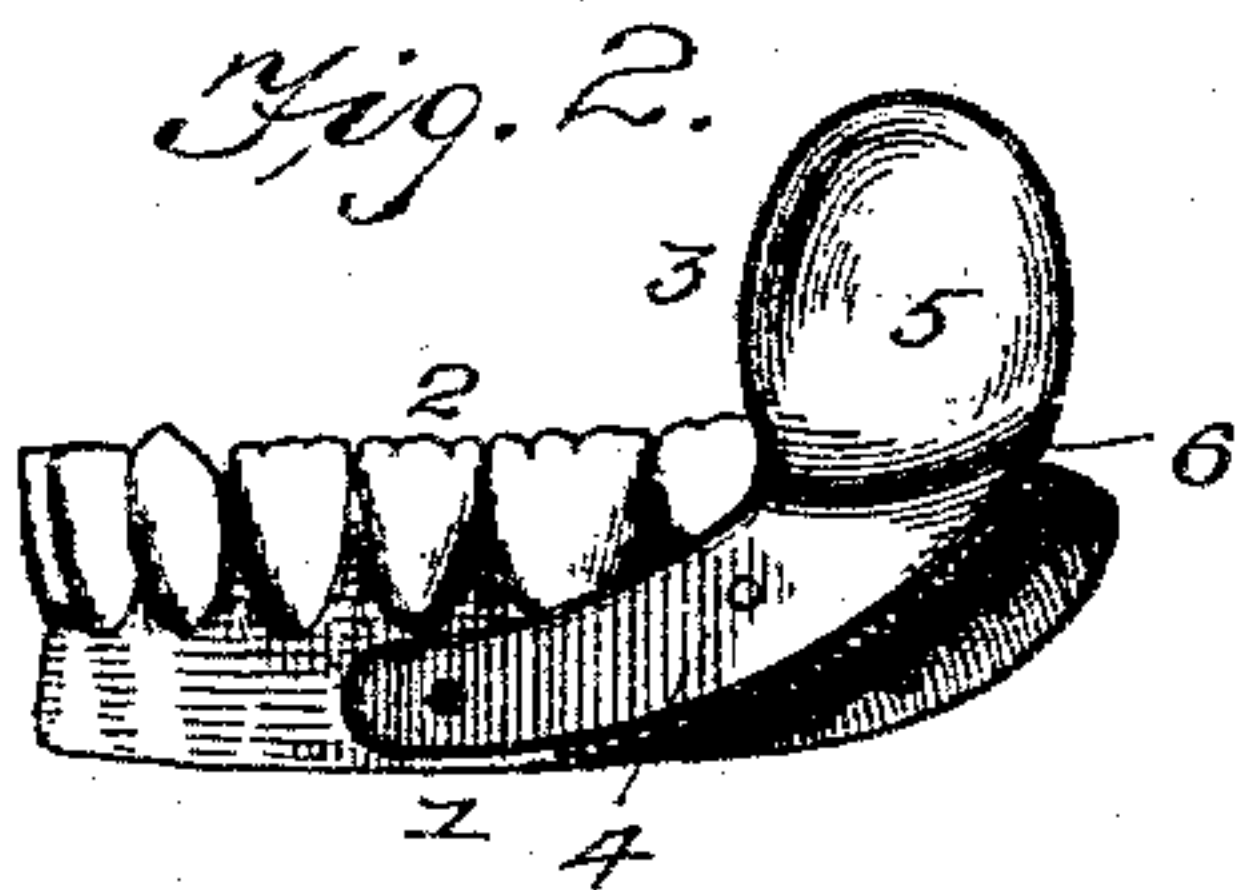
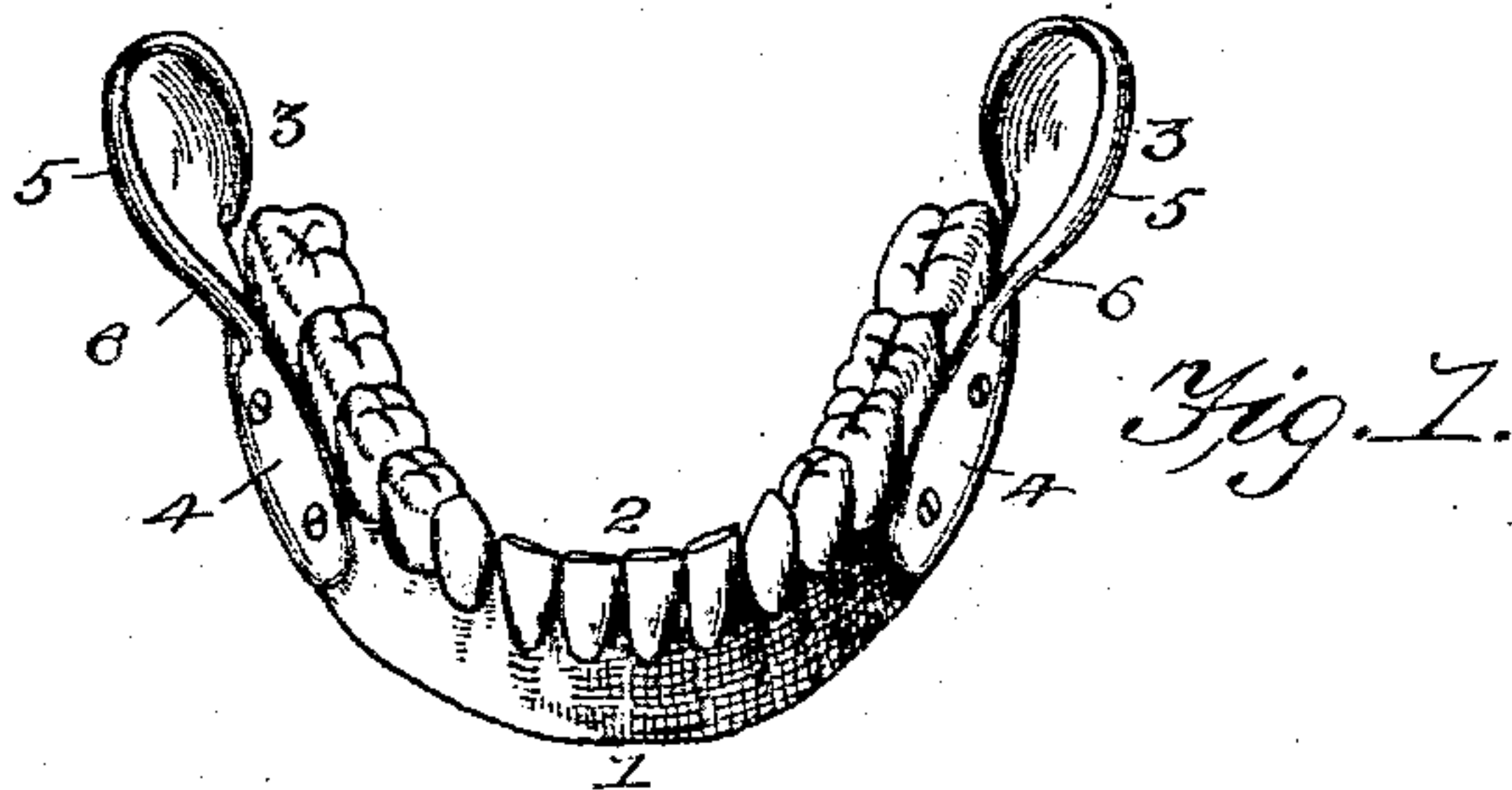


(No Model.)

G. A. JOHNSTON & H. M. CARROLL.  
ARTIFICIAL TEETH.

No. 546,331.

Patented Sept. 17, 1895.



Witnesses

E. H. Monroe.  
U. B. Hillyard

By their Attorneys.

Inventors  
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# UNITED STATES PATENT OFFICE.

GEORGE A. JOHNSTON AND HOUSTON M. CARROLL, OF SAN ANTONIO,  
TEXAS.

## ARTIFICIAL TEETH.

SPECIFICATION forming part of Letters Patent No. 546,331, dated September 17, 1895.

Application filed June 4, 1895. Serial No. 551,638. (No model.)

*To all whom it may concern:*

Be it known that we, GEORGE A. JOHNSTON and HOUSTON M. CARROLL, citizens of the United States, residing at San Antonio, in the county of Bexar and State of Texas, have invented a new and useful Improvement in Artificial Teeth, of which the following is a specification.

This invention relates to artificial dentures, and particularly to lower sets, and aims to provide retainers and combine them with the plate, so as to hold the denture in place against accidental displacement during the process of articulation, prehension, mastication, and deglutition.

Dentures of this character have been provided with clasps to engage with the jaws, the alveolar process, or gums, and have been found objectionable because of the discomfort attendant upon their wearing and because the clasps do not give satisfactory results.

The present invention provides retainers which fill a vacuum in the mouth never heretofore utilized in the construction of artificial teeth and which form a rest for the muscles in their contraction incident to the movements of the jaws, and these retainers render a lower set of artificial teeth as comfortable and serviceable as if they were natural.

The improvement consists of the novel features which hereinafter will be more fully set forth and claimed, and which are shown in the accompanying drawings, in which—

Figure 1 is a perspective view of a lower set of artificial teeth, showing the application of the invention. Fig. 2 is a side elevation, and Fig. 3 a rear view thereof. Fig. 4 is a detail view of a retainer. Figs. 5 and 6 show, respectively, the obverse and reverse sides of a modified form of retainer.

The numeral 1 designates a plate for a lower set of artificial teeth, and 2 the teeth attached thereto, and this plate 1 may be of any desired pattern common in the construction of lower dentures.

The retainers 3 may be made of any suitable material, either metal or a plastic composition, and are separate and independent of the plate and are attached thereto in any

convenient manner, and may be attached to either side of the plate, according to the convenience of the wearer. These retainers comprise a curved shank portion 4, by means of which the retainers are attached to the plate, and an expanded portion 5, the latter curving upwardly and outwardly and convexed on the side designed to come opposite to the cheek. The expanded portion 5 is concaved on its inner side to conform to the convexity of the outer side, thereby attaining a light structure, and this expanded portion 5 is partially twisted at 6 and inclines outwardly and sets at an angle to the shank 4, so as to conform to the shape of the mouth and secure ease and comfort to the wearer. When the retainers are properly positioned, the expanded portions 5 project vertically from the rear ends of the plate and serve to secure the latter in position and prevent tipping and loosening thereof during the several movements of the jaws.

The retainer may be wide at the point of juncture of the upwardly-extending portion 5 with the shank 4, as shown most clearly in Figs. 2 and 4, or the said juncture may be contracted to form a comparatively small neck portion, as shown in Figs. 5 and 6, the latter construction being preferred in some instances. In every case the expanded portion 5 will be concavo-convex, so as to attain the best possible results in the accurate and proper fitting of the denture within the mouth.

The invention is readily adapted for dentures now in use, as well as those to be constructed, and in adapting the same to the particular requirement it is to be understood that changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is—

1. In an artificial denture, a lower plate having retainers extending vertically from its inner or rear ends, and above the plane of the biting edge of the teeth substantially as described for the purpose set forth.



2. The combination with a lower set of artificial teeth, of retainers having curved shank portions which are attached to the inner ends of the plate, and having expanded portions  
5 which extend vertically and are concavo-convex, said expanded portions standing at opposite angles, substantially as set forth for the purpose described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

GEORGE A. JOHNSTON.  
HOUSTON M. CARROLL.

Witnesses:

J. E. TAYLOR,  
CLAUDE WRIGHT.